SB

112

Lisa

Should reorder the sections:

1. Purpose (unnumbered)
2. FMA's (500)
3. PLANS (530)
4. NOTICE (510)
5. REQUIREMENTS (550)
6. CREDITS (570)
7. MOST QUALIFIED (520)
8. BEST INT. FINDING (540)
9. INCREMENTAL VOLUME (580)
10. EXTENSIONS (560)
11. OTHER AUTHORITIES (590)

PURPOSE

FOREST MGMT AGMTS.

PLANS

NOTICE OF PROP'D AGMT

REQTS OF FMA

CREDITS

MOST QUAL'D BIDDER

BEST INT. FINDING

EXTENSIONS

INCREMENTAL VOLUME

OTHER AUTHORITIES.

HOUSE COMMITTEE REPORT

(9)

Date referred: 3/13/87 FURTHER REFERRALS: Finance

DATE: 5-4-88

The Resources Committee has considered CSSB 112(Res)

"An Act relating to forest management agreements."

RECOMMENDS:

[X] replace with HCS CSSB 112 (Res) [X] the same title
[ ] attached amendment(s) [ ] a new title

- [ ] do pass
- [ ] do not pass
- [X] no recommendation
- [ ] individual recommendations
- [ ] additional referral to the _____ Committee

ADOPTS: [X] Hs. Res letter of intent

ATTACHES NEW FISCAL NOTE(s):

[X] fiscal impact 2
[ ] zero fiscal note
[ ] zero with analysis
[ ] same as previous fiscal note published _____
[X] same as previous zero fiscal note published _____

SIGNING DO PASS:

SIGNING OTHER RECOMMENDATIONS:

Mike Navarre - no rec -
Fran Hoffman - NR Rec.
Adelheid Herrmann NR Rec
Cliff Davidson (no rec)
John Lund (no rec)

Chairman's signature

5-0567P

Original sponsors: Jones and Sturgulewski

IN THE SENATE BY THE RESOURCES COMMITTEE

HOUSE CS FOR CS FOR SENATE BILL NO. 112 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to forest management agreements."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 36.30.850(b) is amended by adding a new paragraph to read:

(14) agreements for the management of state timber under AS 41.17.500 - 41.17.640.

* Sec. 2. AS 41.17 is amended by adding new sections to read:

ARTICLE 5A. FOREST MANAGEMENT AGREEMENTS.

Sec. 41.17.500. PURPOSE. (a) The purpose of AS 41.17.500 - 41.17.640 is to authorize the commissioner to enter into forest management agreements that may include provisions for the development of a forest products plant and facilities or services such as reforestation, road construction and maintenance, recreation improvements, and fish and wildlife habitat protection, monitoring of activities under a forest management agreement, and the enforcement of terms, conditions, and laws protecting other beneficial uses of state land.

(b) A forest management agreement must provide for consideration of other existing beneficial uses of forest land in an agreement under AS 41.17.500 - 41.17.640.

(c) A forest management agreement may

(1) relieve the state of some of the administrative responsibility of developing and managing a timber sale;

(2) provide for the long-term management of state timber, creating stability for the forest products industry, and incentives

for the responsible use of state timber; and

(3) provide an operator with a stable source of timber from a designated area on the basis of successive renewals of contractual rights.

(d) The provisions of AS 41.17.500 - 41.17.640 do not affect the obligation of an operator to comply with state laws or regulations on environmental conservation, timber practices, fish and game, or any other resource or use of a resource.

Sec. 41.17.510. FOREST MANAGEMENT AGREEMENTS. (a) The commissioner may, after consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development and with affected municipalities, enter into an agreement for the management of the forest resources of the state under AS 41.17.500 - 41.17.640.

(b) A forest management agreement is subject to each applicable state and federal law and regulation in effect on the effective date of the agreement and to all laws and regulations adopted after the effective date of the agreement.

Sec. 41.17.520. PLANS. (a) A forest management agreement entered into under AS 41.17.500 - 41.17.640 must be consistent with the Alaska coastal management program, an area and a management plan adopted by the commissioner under AS 38.04.065, and a land classification adopted by the commissioner under AS 38.05.300. A management plan that allows forest management agreements must include

(1) an inventory of human uses and renewable and nonrenewable resources in the area;

(2) location, type, and duration of access for forest management;

(3) operable timber base areas that may be harvested;

(4) annual allowable cut as determined by the commissioner;

(5) silvicultural prescriptions;

(6) possible facility development;

(7) area-specific management practices or prescriptions needed in addition to forest practices regulations and best management practices to protect or enhance fish and wildlife habitat and harvest, public recreation, water quality, and other significant public or private resources and uses of the area.

(b) Before the commissioner enters into a forest management agreement, a bidder selected under AS 41.17.560 shall submit a master plan for implementation of the proposed forest management agreement, a five-year operating plan and an annual harvesting plan for the first two years of operation. The commissioner shall prepare a plan for administrative oversight of the forest management agreement in consultation with other affected state agencies. The master, operating, harvesting, and administrative plans are subject to agency and public review under AS 41.17.570.

(c) Each year the operator shall prepare and the commissioner shall review and shall approve, reject, or require a revision of an annual harvesting plan. During the term of a forest management agreement the operator shall annually update the master plan and five-year operating plans subject to the approval of the commissioner.

Sec. 41.17.530. NOTICE OF INTENT TO DEVELOP AN AGREEMENT. After meeting the planning requirements under AS 41.17.520(a) and before a forest management agreement is offered for bid under AS 41.17.560, the commissioner shall publish notice under AS 38.05.945 of the intention to consider a forest management agreement for an area. The commissioner shall provide written notice to private property owners within and adjacent to the proposed agreement area and shall hold public

hearings in affected communities.

Sec. 41.17.540. REQUIREMENTS OF FOREST MANAGEMENT AGREEMENT. (a) A forest management agreement for the harvest of state timber under this section must provide for

(1) the term of the initial agreement, not to exceed 20 years, and the conditions for an extension of the term under AS 1.-17.600;

(2) the stumpage prices to be charged for the timber and a periodic review and, if appropriate, adjustment of the stumpage prices;

(3) the penalties for the violation of the terms of the agreement and provisions for termination of the agreement under (d) of this section;

(4) an annual update of the master and operating plans;

(5) public use of state land involved in the forest management agreement, except that the commissioner may limit access in an area that is being harvested or where hazardous conditions exist;

(6) the protection of multiple uses, such as mining, recreation, and fish and wildlife habitat and harvest;

(7) performance and payment bonds from the purchaser to protect the interests of the state;

(8) specific mitigating measures and monitoring plans to protect water quality;

(9) protection of state-owned land within a minimum of 100 feet of rivers, lakes, or streams to provide soil stability, protect fish and wildlife habitat, water quality, and other important uses although more state land may be protected as determined in the master plan, the five-year operating plan, or the annual harvesting plan;

(10) provisions to protect or enhance areas of high public

value other than timber;

(11) the maximum annual allowable cut as determined by the commissioner;

(12) the maximum and minimum development requirements as determined by the commissioner;

(13) the preclusion of a contractor under a forest management agreement from bidding on timber sales of 5,000,000 board feet or less under AS 38.05.115;

(14) the preparation of reports required by the commissioner; and

(15) other terms, conditions, and limitations determined to be in the public interest by the commissioner.

(b) The commissioner shall establish by regulation the requirements of a forest management agreement for access, development, harvest, management, the contents of plans required under AS 41.17.-520(b), and reforestation of timber.

(c) A forest management agreement may require the purchaser to

(1) enter into a reimbursable services agreement with the state for monitoring and enforcement of the terms and conditions of the agreement and applicable state law;

(2) compensate the state for the scaling services required to account for the timber sold;

(3) construct and maintain roads required for the harvest of timber by the agreement; and

(4) designate a percentage of the timber volume to be subcontracted to a small operator; the commissioner shall make the final designation from areas included in the operating plan.

(d) A forest management agreement entered into or extended under AS 41.17.500 - 41.17.640 must contain a requirement that the operator

comply with the terms of the forest management agreement and AS 41.-17.500 - 41.17.640 and must contain conditions under which the agreement may be terminated or subject to other penalties including a cease and desist order, a fine, a reduction in the allowable cut, location or cutting periods, or other remedies as determined by the commissioner on a finding that the operator has not complied with the terms of the agreement or with state law.

Sec. 41.17.550. CREDITS. (a) In a forest management agreement, the commissioner may provide, subject to (c) of this section, for contractor credit against future stumpage payments due under the forest management agreement. A credit against future stumpage is not transferable between contractors or between sales and may not be paid in cash. A credit may not exceed the value owed to the state. A credit against future stumpage payments may be granted for the

(1) loss of roads and drainage structures that

(A) have future value to the state; and

(B) are lost through an act of God not due to negligence on the part of the contractor;

(2) construction that

(A) does not directly contribute to the management or harvest of timber resources such as recreation improvements;

(B) was not included in the initial agreement or its extensions; and

(C) is reviewed by affected agencies and authorized in advance by the commissioner; or

(3) additional silviculture treatments beyond those required in the agreement reviewed by affected agencies and authorized in advance by the commissioner.

(b) The commissioner shall provide public notice under

AS 38.05.945 before granting a credit under (a)(2) or (3) of this section.

(c) The grant of credit against future stumpage payments under this section may be made under the following procedures:

(1) the commissioner shall submit a report to the Legislative Budget and Audit Committee on the credit that is proposed to be granted;

(2) 45 days shall elapse before the grant of the credit unless the Legislative Budget and Audit Committee recommends that the grant of credit be made;

(3) if within the 45-day period the Legislative Budget and Audit Committee recommends that the commissioner not grant the credit, the commissioner shall again review the proposed grant of credit; if the commissioner decides to grant the credit after further review, the commissioner shall provide a statement of the commissioner's reasons for granting the credit before the grant of the credit is made.

Sec. 41.17.560. MOST QUALIFIED BIDDER DETERMINED. (a) The commissioner shall determine the most qualified bidder for a forest management agreement based on minimum qualifications established for bidders in regulations and in a multiple variable bid process. In reviewing bids received the commissioner shall consider

(1) the stumpage payments proposed by the bidder;

(2) the amount of the investment in plant and facilities proposed by the bidder;

(3) the forest resource utilization standards proposed by the bidder;

(4) the number of jobs to be provided by the bidder;

(5) road construction, reforestation, and recreation improvements requested by the commissioner;

(6) measures proposed by the bidder to maintain, enhance, or mitigate the effects on other beneficial uses or resources of forest land; and

(7) other items requested by the commissioner or offered by the bidder.

(b) Before requesting bids or accepting applications, the commissioner shall adopt regulations detailing the bidding procedure and the method of determining the most qualified bidder.

Sec. 41.17.570. REVIEW AND PUBLIC NOTICE. Before the commissioner enters into or extends an agreement or makes a finding under AS 41.17.580, the proposed agreement, the proposed best interest finding under AS 41.17.580, and each plan prepared under AS 41.17.520(b) and (c) shall be reviewed by the commissioners of environmental conservation, fish and game, and commerce and economic development and by affected municipalities. The commissioner shall provide public notice under AS 38.05.945 before adopting the best interest finding, the proposed agreement, the master plan, the five-year operating plan, and the annual harvesting plan and shall hold appropriate public hearings.

Sec. 41.17.580. BEST INTEREST FINDING. Before the commissioner enters into or extends an agreement, the commissioner shall issue a written finding that the proposed agreement or extension is in the best interest of the state. The finding shall include an analysis of the social, economic, and environmental effects of the proposed agreement or extensions.

Sec. 41.17.590. INCREMENTAL VOLUME AVAILABLE. If allowed in an agreement, at any time during an agreement the commissioner may make incremental volume available to the contractor if the commissioner determines that forest management by the contractor has increased the

annual allowable cut consistent with the other objectives of the agreement.

Sec. 41.17.600. EXTENSIONS OF FOREST MANAGEMENT AGREEMENT. (a) Each five years of the agreement, either during or after the initial term of the agreement, the commissioner may extend the forest management agreement if

(1) the term of the extension does not exceed five years;

(2) the contractor submits a proposed operating plan for the next five years of operation and amends the master plan for the forest management agreement, as the commissioner considers necessary; and

(3) the commissioner, after review of existing and proposed operations and consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, and with other affected agencies and municipalities finds that the operator has complied with AS 41.17.500 - 41.17.640 and the terms of the forest management agreement.

(b) Before extending a forest management agreement, the commissioner shall

(1) adopt a best interest finding under AS 41.17.580; and

(2) provide public notice under AS 38.05.945 and hold appropriate public hearings.

Sec. 41.17.610. ACCOUNTING. The commissioner of administration shall separately account for money received under this section that the Department of Natural Resources deposits in the general fund. The annual estimated balance in the account may be used by the legislature to make appropriations to the department to carry out the purposes of AS 41.17.500 - 41.17.640.

Sec. 41.17.620. OTHER AUTHORITIES UNAFFECTED. The provisions of

AS 41.17.500 - 41.17.640 do not affect the authority of

(1) the Department of Fish and Game, the Board of Fisheries, or the Board of Game under AS 16 or AS 41.99.010;

(2) the Department of Environmental Conservation under AS 46.03; or

(3) state agencies and municipalities under AS 44.19.-145(a)(11) and AS 46.40.100.

Sec. 41.17.630. EXEMPTION. Agreements for the management of state timber under AS 41.17.500 - 41.17.640 are exempt from AS 36.30.

Sec. 41.17.640. DEFINITIONS. In AS 41.17.500 - 41.17.640

(1) "annual harvesting plan" is a site specific plan that identifies on maps locations of roads and harvest units, gives estimated volumes by species, miles of road to be constructed, facilities to be constructed and mitigating measures for protection of other associated resources, and provides details of management such as engineering, silviculture, enhancement projects for fish and wildlife habitat, and protection of water quality in a forest management agreement;

(2) "area plan" means a regional land use plan adopted under AS 38.04.065 that is developed to provide management direction for the multiple-use of the forest resources of the state, prepared by the department, and involves interagency and public participation;

(3) "five-year operating plan" is a description of management and harvest activities over a five-year period that may include the general location of units, roads, volumes to be harvested, and necessary improvements in a forest management agreement;

(4) "management plan" means a regional land use plan adopted under AS 38.05.065 that makes more detailed allocation decisions, gives more detailed guidance for management than an area plan, is

prepared by the department, and involves interagency and public participation;

(5) "master plan" means a general resource use plan to provide direction for the harvesting of timber and management of other resources in a forest management agreement; and

(6) "small operator" means a timber business that

(A) employs an average of 25 or fewer full-time equivalent employees;

(B) is not owned, in whole or in part, by the operator under a forest management agreement; and

(C) is not controlled by contract or agreement by the timber operator.

* Sec. 3. AS 38.05.120 is amended by adding a new subsection to read:

(b) The commissioner may also dispose of timber under AS 41.17.500 - 41.17.640.

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: HCS CSSB 112 (Res)
PUBLISH DATE: 4/25/88

FISCAL NOTE

REQUEST:

Revision Date: 4/25/88
Title: "An act relating to Forest Management Agreements"
Sponsor: Jones & Sturgulewski
Requestor: Resources Committee

Agency Affected: Environmental Conservation
BRU: Environmental Quality
Components: SERO, SCRO, NRO

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES	-0-	40.5	61.6	61.6	61.6	61.6
TRAVEL	-0-	6.0	9.0	9.0	9.0	9.0
CONTRACTUAL	-0-	3.0	4.5	4.5	4.5	4.5
SUPPLIES	-0-	2.0	3.0	3.0	3.0	3.0
EQUIPMENT	-0-	1.0	1.5	1.5	1.5	1.5
LAND & STRUCTURES	-0-	-0-	-0-	-0-	-0-	-0-
GRANTS, CLAIMS	-0-	-0-	-0-	-0-	-0-	-0-
MISCELLANEOUS	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL OPERATING	-0-	52.5	79.6	79.6	79.6	79.6
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND	-0-	52.5	79.6	79.6	79.6	79.6
FEDERAL FUNDS	-0-	-0-	-0	-0-	-0-	-0-
OTHER	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	-0-	52.5	79.6	79.6	79.6	79.6

POSITIONS:

FULL-TIME	-0-	-0-	-0-	-0-	-0-	-0-
PART-TIME	-0-	2.0	3.0	3.0	3.0	3.0
TEMPORARY	-0-	-0-	-0-	-0-	-0-	-0-

ANALYSIS: (Attach a separate page if necessary)

See Attachment

Prepared by: Douglas R. Redburn, Chief WOM
Phone: 465-2653
Division: Environmental Quality
Date: 4/28/88

Approved by Commissioner: Dennis D. Kelso
Date: April 28, 1988
Agency: Environmental Conservation

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

HCSCSSB112 ANALYSIS

The fiscal note includes funding for Department of Environmental Conservation participation in the development of the terms of forest management agreements on state lands. These tasks are:

(1) early involvement in developing management practices and other mitigating measures to ensure water quality protection;

(2) assistance to Department of Natural Resources (DNR) staff in developing monitoring programs to evaluate the effectiveness of management practices in protecting water quality and other beneficial uses of state forested lands;

(3) participation on state agency interdisciplinary teams responsible for designing timber sales;

(4) review of five-year operating plans and annual harvesting plans and review of the finding of the Commissioner of DNR.

The fiscal note breaks down costs within the Division of Environmental Quality. All costs are associated with "upfront" involvement in developing forest management agreements and do not include costs associated with field monitoring and enforcement. The fiscal note includes funds for two permanent, part time positions in FY 89, one position located in each of the Southeast and Southcentral Regional Offices. A third permanent, part time position is included in the Northern Regional Office beginning in FY 90. These positions would each work six months of the year.

The Division of Environmental Quality (DEQ) must review forest land management plans and agreements for both state and federal lands. These reviews are normally assigned to the Division's regional offices. Currently, one position in each region is largely responsible for reviewing up to 150 dredge and fill permits, miscellaneous land use permits, timber plans, and other items, as well as conducting field assessments for these projects. Current staffing levels do not allow for the review of all projects and plans. In particular, the Division has a low level of involvement in implementation of the State Forest Practices Act. The projected workload for reviewing the provisions of the forest management plan and operating plans submitted under AS 41.17.520 would require additional part-time staff. It is expected that the demands would initially be highest in the Southeast and Southcentral Regional Offices given the amount of forested state lands in these areas and the interest in forest product industries in the Matanuska-Susitna Valley.

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: HCS SB 112
PUBLISH DATE: 4/30/88

FISCAL NOTE

REQUEST:

Revision Date:
Title: Forest Management Agreements

Sponsor: Jones & Sturgulewski
Requestor:

Agency Affected: Dept. of Fish & Game
BRU: Habitat, Game, Commercial Fisheries, Sport Fisheries, FRED and Subsistence Div.
Components: GF or other funds

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES	103.2	103.2	108.2	108.2	113.2	113.2
TRAVEL	5.0	5.0	5.5	5.5	5.5	5.5
CONTRACTUAL	7.0	7.0	7.5	7.5	7.5	7.5
SUPPLIES	1.0	1.0	1.5	1.5	1.5	1.5
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	116.2	116.2	122.7	122.7	127.7	127.7
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	116.2	116.2	122.7	122.7	127.7	127.7
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME	2.25	2.25	2.25	2.25	2.25	2.25
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Bruce Baker for Bruce Baker
Phone: 465-4105
Division: Habitat Division
Date: 5/02/88

Approved by Commissioner: Don Collinsworth
Date: 5·3·88
Agency:

Distribution: (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

Line 100

HB III	12 mo	52.8
GB II	6 mo	23.4
FB II	6 mo	17.4
CT III	4 mo	9.6

Total 103.2

Line 200

Travel to areas proposed for/or under FMAs in the Susitna Basin, Kodiak Archipelogo, Interior Forest, Yakutat/IcyBay, and SE Alaska. 5.0

Line 300

Telephone, xerox	2.0
Blair Charter- monitoring and entering FMAs, data collection	5.0

Total 7.0

1.0

Line 400

Total 116.2

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION : SB 112
PUBLISH DATE :

FISCAL NOTE

REQUEST:

Revision Date: 3/5/87
Title : An act relating to Forest Management Agreements
Sponsor : Jones
Requestor : House Resources

Agency Affected : Dept. Natural Resources
BRU : Forest Management
Components :

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

An agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long-term commitment of timber to private enterprise

Prepared by : James L. McAllister
Division : Forestry
Phone : 465-2401
Date : 3/5/87

Approved by Commissioner : L Smith
Agency : Natural Resources
Date : 1-12-88

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

LETTER OF INTENT
HCS CS SB 112 (Resources)

It is the intent of the legislature in enacting this Act to encourage the Governor to have a task force review the Forest Practices Act. The task force should include representatives from the timber industry, fishing groups, and environmental groups. Staff from the departments of Fish and Game, Natural Resources, and Environmental Conservation should work with the task force on the Forest Practices Act.

Rep. Sam Cotten
co-chair House Resources

Rep. Adelheid Herrmann
co-chair House Resources

PUBLIC PROCESS IN
PROPOSED HCS CSSB 112 (Res)
[4/30/88]

Statutory requirement	Agency/public involvement
*1. Public land and resource planning (41.17.520(a))	DNR prepares/revises an area and management plan, considering all resource values and providing for public and agency involvement.
*2. Notice of intent to develop FMA (41.17.530)	Before proceeding with bidding, DNR announces general intent, possibly in response to industry interest. Other agencies will have concurrence authority. Public hearings.
*3. FMA requirements and contents (41.17.540-550,590)	The generic FMA must contain a variety of protections. These are in the statute and should be refined in regulations.
4. Selection of a bidder (41.17.560)	DNR accepts FMA proposals in response to a bid.
5. Bidder prepares FMA plans (41.17.520(b))	The selected bidder proceeds with detailed master, operating, and harvest plans.
*6. Public and agency review. (41.17.570-580)	Proposed FMA plans, agreement, and interest finding go out for public review, including hearings, municipal review.
*7. Final contract. (41.17.510,580)	DNR may enter into the agreement if it serves the interests of the state and if other state agencies concur. (30-day public notice required under 38.05.945 for competitive disposals of interest.)
*8. Extensions. (41.17.590-600)	The FMA can be extended with a new interest finding, public review, and agency concurrence.

* = a step involving significant public or interagency involvement or notice.

Official Business

COMMITTEE: Hs. Res.

DATE: May 3, 88

Subject of meeting:

SIGN-IN

NAME	ADDRESS	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
BALLISS R	119 SEWARD #10	586-6813	E.P.	HB 524
Don Easton	P.O. Box C Juneau, AK 99811-1800	465-2640	ADEC	CSHB 524
John Dankers	1803 B St. Juneau 99701	586-4465	self	SB 112 Yes
Paul Barnett	419-6th St., Ste 323	586-3751	Sierra Club Legal Defense Fund	HB 524 Yes
Karl Ohls	P.O. Box V. Juneau	465-4922	Sen. Zharoff	SB 309 If needed
Rick Lauber	321 Highland Dr. Juneau	586-6366	Pacific Seafood Processors Assn.	SB 309 if needed.

1. Example / Witness Register

CONVERSION FACTORS FOR METRIC TO ENGLISH UNITS.

1 Hectare = 2.471 Acres
1 Cubic Meter = 35.31 Cubic Feet = 140 Board Feet Scribner

Eripainos Silva Fennica 1/1986

Silva Fennica 1986, vol 20 n:o 1: 35–44

The Forest 2000 Programme

Guidelines for developing Finnish forestry and the forest industries

TIIVISTELMÄ: METSÄ 2000-OHJELMA

The Forest 2000 Programme. Guidelines for developing Finnish forestry and the forest industries. Tiivistelmä: Metsä 2000-ohjelma. Silva Fennica 20 (1):35–44.

The Forest 2000 Programme is a long-term programme for forestry and the forest industries. It attempts to obtain a better integration of timber production and other forms of forest use. The total annual cut is to be increased by 15 mill. m^3 by the year 2010. This is almost one third greater than the level during the first few years of the 1980's. In order to achieve the cutting targets, the cut area will have to be increased by almost a third by the turn of the century. The area of thinnings will experience the greatest increase. Considerable changes are proposed in silvicultural and basic improvement work. According to the programme, the growth of the raw-material base and the consumption of the wood-based products will permit an annual increase of about 3 % in the production of the forest industries as a whole until the end of the century. This would be the same as the target growth rate of the GNP.

Metsä 2000-ohjelma on metsä- ja puutalouden pitkän aikavälin ohjelma. Siinä pyritään sopeuttamaan entistä paremmin toisiinsa puuntuotanto ja metsien muut käyttömuodot. Vuoteen 2010 mennessä on tavoitteena metsien vuotuisen hakkuumäärän suurentaminen 15 milj. m^3:llä eli lähes kolmanneksella 1980-luvun alkuvuosiin verrattuna. Hakkuutavoitteiden saavuttamiseksi on hakkuupinta-aloja suurennettava. Voimakkaimmin kasvaa harvennushakkuiden ala. Metsänhoito- ja perusparannustöihin esitetään huomattavia muutoksia. Ohjelman mukainen raaka-ainepohjan kasvu ja metsäteollisuustuotteiden käytön kehitysnäkymät mahdollistavat arvion mukaan koko metsäteollisuuden tuotannon nostamisen vuosittain noin 3 prosentilla vuosisadan loppuun saakka. Se olisi sama kuin yleisesti tavoitteeksi asetettu bruttokansantuotteen kasvuvauhti.

Key words: Timber production, cutting targets
ODC 905.2:72:83:916
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Approved on 26. 2. 1986

The task and organization of the programme

The Forest 2000 Programme sub-committee was appointed by the Economic Council on the 21st of February 1983. The task of the sub-committee was to draw up a long-term programme for forestry and the forest industries. The sub-committee consisted of a group of executive representatives from various important interest groups, as well as a working committee subordinated to it. Working groups for silviculture and forest management, for timber procurement, for the development of the forest industries, and for the multiple-use of forests were set up by the sub-committee to procure the information for drawing up the programme.

The elements of the programme

Alternative analysis was used in defining the cutting and timber production targets of the programme, and in determining the development prospects of the wood-processing industry. This meant that the most important environmental factors, such as trends in the demand for products of the forest industries and the overall effect of the multiple-use of forestry, could be taken into account in the profitability calculations carried out for the comparison. The goals of the Forest 2000 Programme were finalised on the basis of the results of the alternative calculations. As well as defining the goals, an attempt was made to develop the economic, industrial and forest policy instruments needed to achieve these goals.

Methods

A modified version of the MELA forest calculation programme, recently developed by the Finnish Forest Research Institute and the Department of Forest Mensuration (University of Helsinki) was used in designing the cutting and timber production programme. In the first stage, MELA simulated the management options for the stands, and the development of the stands when managed accordingly. In the second stage, the programme assembled from these management alternatives a cutting and timber production programme implementing the cutting removal or other targets set for the management of the forests.

When preparing the different options available to the Forest 2000 Programme, the forest calculation programme was used both for defining the combination of measures designed to produce the desired removal, and for determining the development of the growing stock and the removal achievable through a particular combination of measures. At the same time, an attempt was made to ensure that the achieved solution was also economically optimal.

The analysis of the cutting and timber production options also included a profitability comparison of the different alternatives. Cost-benefit analysis was used in the comparison. The result showed that as the cutting removal increased, the profitability only improved if industry was able to utilize all the roundwood which became available. At least this was the case when sustained yield management was practised, i.e. where the cutting potential did not decrease in the future.

The objectives of the programme

The starting point when practising a forestry and wood-based economy is to increase the prosperity of society throught the exploitation of the forests. The most important aims of forest policy are: 1) support for the general targets of economic policy, 2) balanced development of the different forms of forest use, 3) complete utilization of the productive capacity of forest land, 4) economic viability of the measures applied, 5) matching the timber assortment structure and volume of timber utilized with the cutting potential, and 6) the creation of conditions favourable for viable forest-based industries.

Considerable investments were made in silvicultural and basic improvement work in Finnish forestry during the 1960's and 1970's in order to increase timber production. As a result, the annual cutting potential has increased since the middle of the 1950's by 13–14 mill. m^3. At the same time, the use of wood as fuel and the export of roundwood have considerably decreased. Timber imports have correspondingly increased. Although industrial wood raw material consumption has more than doubled, the overall trend in the annual cut has slightly decreased. An increasing proportion of the cutting potential has remained unexploited since the middle of the 1960's. The difference between the annual allowable cut and total removal, mainly in the form of large-dimensioned spruce and non-coniferous cordwood, has over the years been about 10 mill. m^3/a. This is equivalent to a good 15 % of the potential cut.

Following the objectives and factors outlined above, the main emphasis in the Forest 2000 Programme is directed at increasing the level of cuttings. At the same time, attention is paid to the role of silvicultural and basic improvement work in increasing timber production.

The multiple-use of forests

The programme attempts to obtain a better integration of timber production and other forms of forest use. The total value of all the subsidiary forest products was, at the beginning of the 1980's, approximately 10 % of the value of the timber cut annually along long-distance transport routes. The area of forest land reserved mainly for protection and recreational use totals 1.7 mill. ha. This area is expected to increase by only about 0.1–0.2 mill. ha by the year 2000.

Multiple-use applications are expected to decrease the annual cutting potential by a total of 2.2 mill. m^3 (3–4 %) by the year 2000. The programme notes that more attention should be paid to the needs of multiple forest use, in addition to timber production, both in planning and in the measures employed in forestry.

Cutting and timber production targets

The removal targets of the Forestry 2000 Programme, i.e. the targeted amounts of roundwood harvested from the forests, are presented in Table 1 and Fig. 1.

The total annual cut is to be increased by 15 mill. m^3 by the year 2010. This is almost one third greater than the level during the first few years of the 1980's. Achieving this

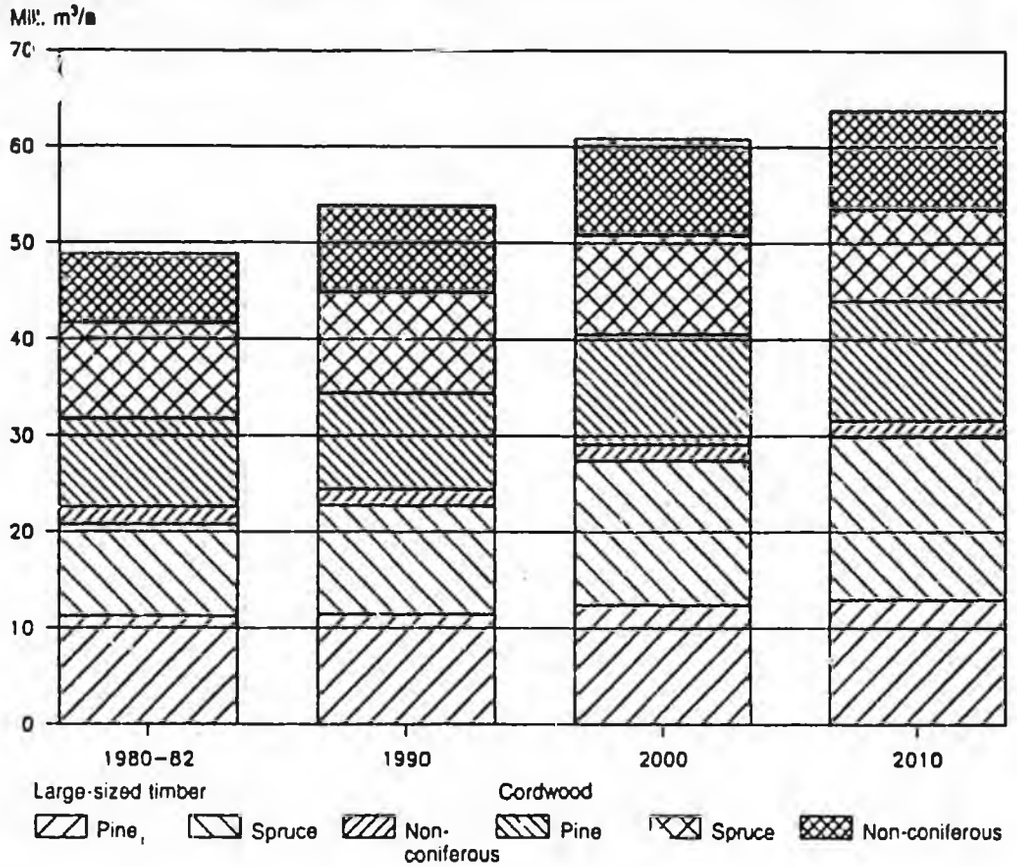


Fig. 1. The removal targets of the Forest 2000 Programme. The cut can be increased annually by 650 000 m³ until 2000. Almost half of this increase is large-sized sprucelogs, and a third pine and non-coniferous cordwood.

Table 1. The removal targets of the Forest 2000 Programme.

Type	Implemented 1980–82	Targets 1990	2000	2010
		mill. m³/a		
Total	48.8	54.0	61.0	64.0
Pine	20.5	21.5	24.0	25.5
Spruce	19.4	21.8	25.3	26.5
Non-coniferous	8.9	10.7	11.7	12.0
Of which:				
Large-sized timber	22.6	24.5	29.2	31.7
Pine	11.3	11.5	12.5	13.0
Spruce	9.5	11.3	15.0	17.0
Non-coniferous	1.8	1.7	1.7	1.7
Cordwood	26.2	29.5	31.8	32.3
Pine	9.2	10.0	11.5	12.5
Spruce	9.9	10.5	10.3	9.5
Non-coniferous	7.1	9.0	10.0	10.3

goal presupposes that the cutting potential is exploited to a greater extent than was the case during the 1970's and 1980's. Half of the increase in cuttings would be large-sized spruce logs and a fifth deciduous cordwood. Cuttings of these timber assortments have decreased during the past few years. The cutting targets of other timber assortments, apart from large-sized hardwood logs, are also to be increased. In order to achieve the cutting targets, the area cut will have to be increased by almost a third by the turn of the century (Fig. 2). The annual area of thinnings will experience a considerable increase (70 %).

Considerable changes are proposed in silvicultural and basic improvement work (Figs. 3 and 4), e.g. the proportion of natural regeneration will be increased in forest regeneration work. A start has already been made on this part of the programme. Site preparation and the cleaning of regeneration areas will

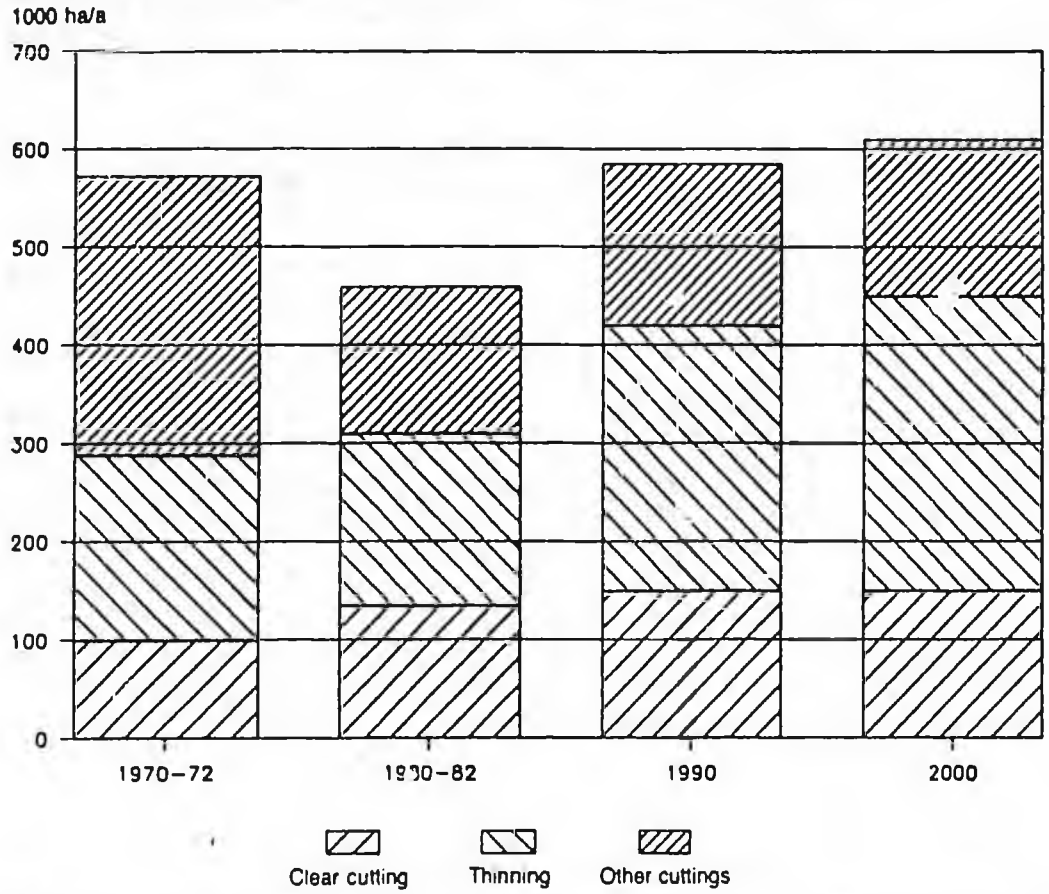


Fig. 2. The cutting areas of the Forest 2000 Programme. The area of the annual cut will increase by almost a third from the present level. The main emphasis is on thinnings, but the area of regeneration cuttings will also increase.

increase to some extent; a technology less harmfull to the environment will be used on these sites. Artificial regeneration will see a slight shift from planting to sowing. The greatest changes will occur, however, in basic improvement work. All new drainage work is to be completed before the end of the century. The amount of redrainage, which includes ditch cleaning and supplementary drainage, should triple by the year 2000. The level of forest fertilization is expected to double. It is also proposed that the pruning of standing trees be increased.

The calculations indicate that the programme will lead to a 20–30 % increase in the costs of silvicultural and basic improvement work by the end of the century, and an increase of about 10 % in state-funded forest improvement work.

If the targets of the programme can be implemented in their proposed form, then the volume of the growing stock will increase by about 10 % and the annual increment by about 20 % by the year 2020 (Fig. 5). The growing stock will change from its present composition to one that is more pine dominated.

The fact that the cutting and timber production targets are also presented in the programme by area (by forestry board district) will presumably assist in the planning the implementation of the programme on a regional basis.

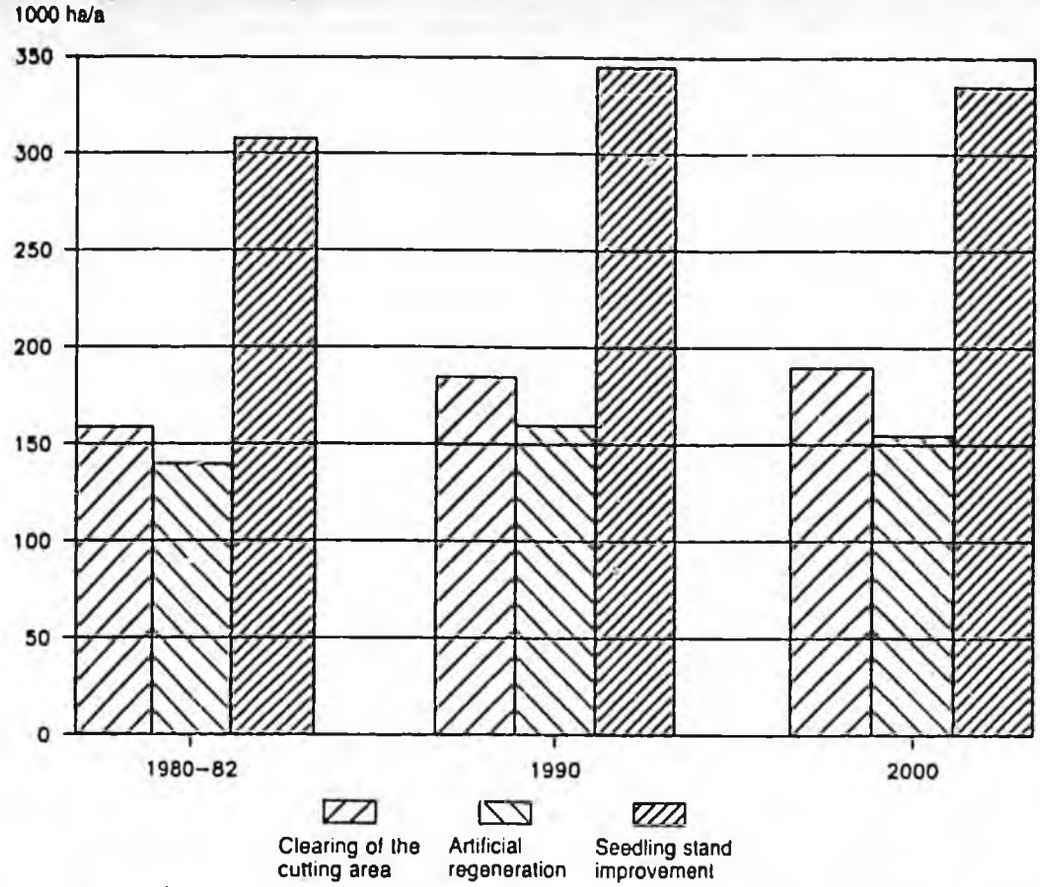


Fig. 3. The silvicultural targets of the Forest 2000 Programme. The need for silvicultural work will increase slightly from the present level.

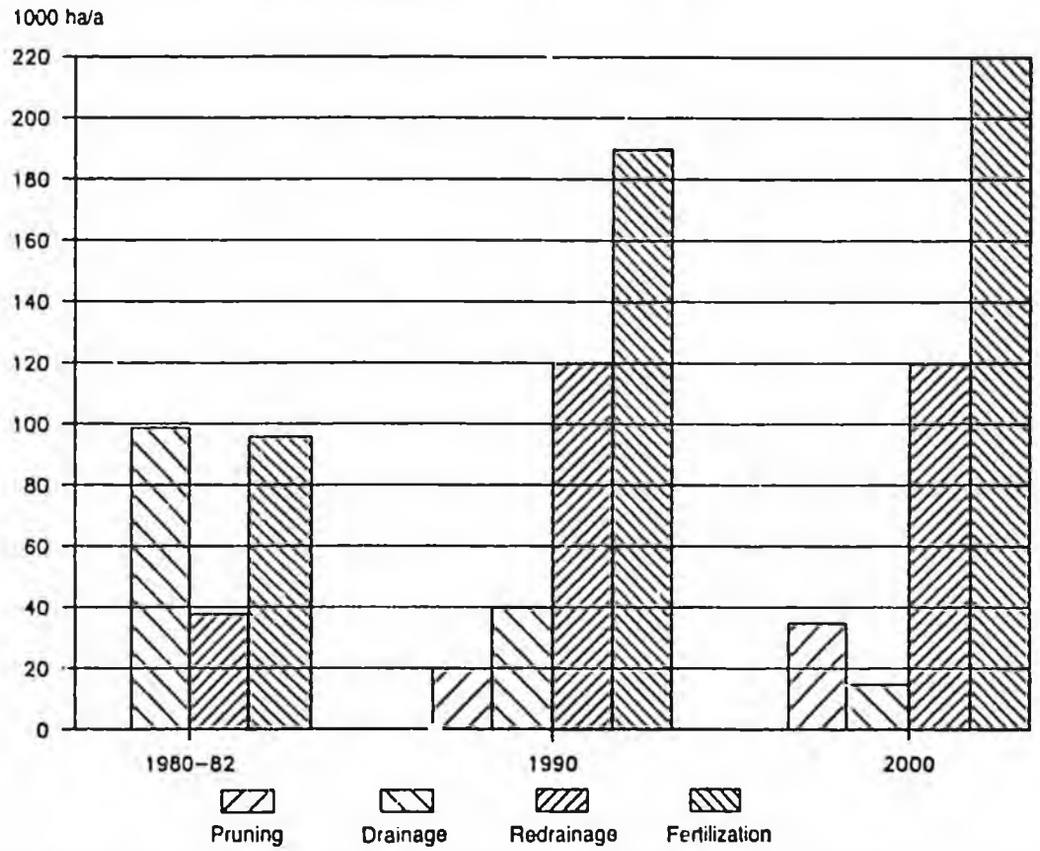


Fig. 4. The forest improvement targets of the Forest 2000 Programme. Drainage of new areas will fall sharply and, in practice, cease completely by the turn of the century. The need for redrainage will correspondingly increase. It is recommended that pruning of standing trees be made eligible for forest improvement funding. It is also recommended that the annual level of forest fertilization be increased to that prevailing at the beginning of the 1970's.

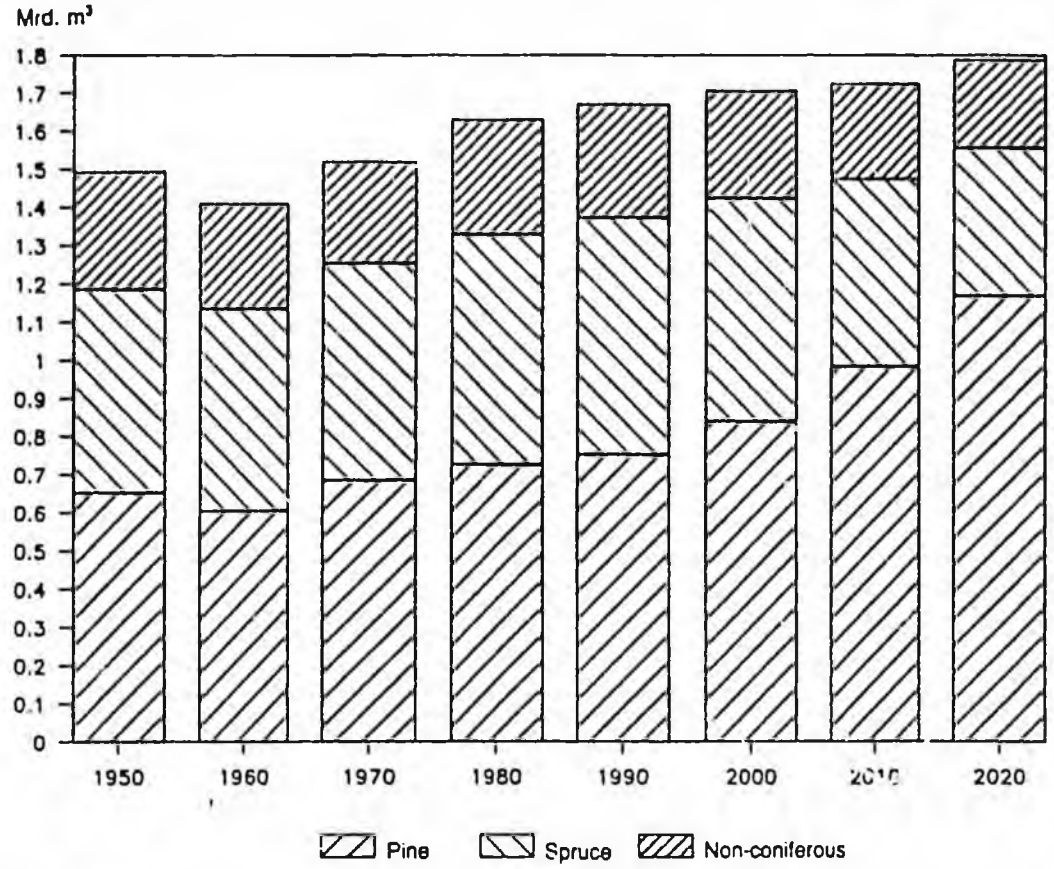


Fig. 5. Development of the growing stock volume. The cutting targets have been set at a level below the annual increment. This means that the growing strock volume will increase by 10 % from its present level by the year 2020. The proportion of pine in the growing stock will considerably increase.

The development possibilities of the forest industries

The development possibilities of the forest industries up to the year 2000 are examined in the programme by taking the cutting targets as the starting points. The predictions indicate that the consumption of the most important groups of products will grow during the period 1980–2000 as follows:

Product group	Whole world	Western Europe
	Annual growth %	
Sawnwood	1.1 . . . 1.5	−0.7 . . . 0.7
Wood-based panels	2.2 . . . 4.7	2.4 . . . 4.6
Paper	3.3 . . . 3.7	2.5 . . . 2.8
Paperboard	2.8 . . . 3.5	2.0 . . . 2.8

According to these estimates, the total demand for forest industry products, weighted by the present structure of Finnish exports, will grow at a rate of about 3 % a year until the end of the century.

According to the targets of the programme, the raw material base of the forest industries will increase annally by 650 000 m³. Almost half of this amount will be large-sized spruce logs, and a third pine and non-coniferous cordwood. It appears that products based on kraft pulp will remain sufficiently competitive, consequently there will continue to be a demand for them in the future. A clear structural change has taken place in Europe dur-

ing the past few years in the supply of spruce sawnwood and non-coniferous pulp. Pulp production based on extensive forest plantations has appeared in Continental Europe, especially in Spain and Portugal. New sawmill capacity has also been built in Continental Europe. This production is, on the basis of its location, already more competitive on the European market than its Finnish equivalent. It is clear that in the coming years the Finnish forest industries will have to make greater investments in product development and marketing.

It can be assumed on the basis of past developments that the proposed cutting targets can be achieved as long as competitive production can be ensured:

	Implemented 1960–80	Forest 2000 1980–2000
	Annual growth %	
Forest industries		
– volume of production	+ 4.4	+2.6...+3.3
– wood consumption	+ 2.3	+1.2
– consumption of non-coniferous pulpwood	+11.2	+2.4
– consumption of large-sized spruce logs	+ 3.0	+2.5

Four development alternatives for the forest industries, which differ from each other with regard to the volume of the spruce logs used, are analysed in the programme. The results are presented in Table 2 and Fig. 6.

It appears that the raw material situation for the sawmill industry will remain satisfactory for the rest of the century. The production of pine sawnwood could be increased slightly compared to the level at the beginning of the 1980's, and that of spruce sawnwood considerably increased if the product is made competitive on the international markets. However, if the cutting targets are to be met, it will probably be necessary to direct an increasing proportion of large-sized spruce logs to the pulp industry, mainly for the production of mechanical pulp. This means that, of the presented alternatives, III and IV are the most realistic.

Owing to unfavourable competition in the market for particle and fibreboard, significant increases in the production of these products will be unlikely. The future production of plywood depends on whether the proportion of spruce in the product can be increased.

Growth in the forest industries will seemingly take place almost entirely in the pulp and paper industry. The potential annual

Table 2. The development possibilities of the primary forest industries according to the Forest 2000 Programme.

Product group	Implemented 1980–82	Production possibilities in 2000			
		Alternative			
		I	II	III	IV
		1000 m^3/a			
Coniferous sawnwood	8 522	11 900	10 600	9 500	8 500
– pine	5 106	5 700	5 700	5 700	5 700
– spruce	3 416	6 200	4 900	3 800	2 800
Plywood	613	770	770	770	770
Particle and fibreboard	970	1 000	1 000	1 000	1 000
		1000 mt/a			
Pulp	7 101	10 400	10 800	11 400	12 200
– mechanical	2 387	4 100	4 500	5 100	5 900
– chemical	4 714	6 300	6 300	6 300	6 300

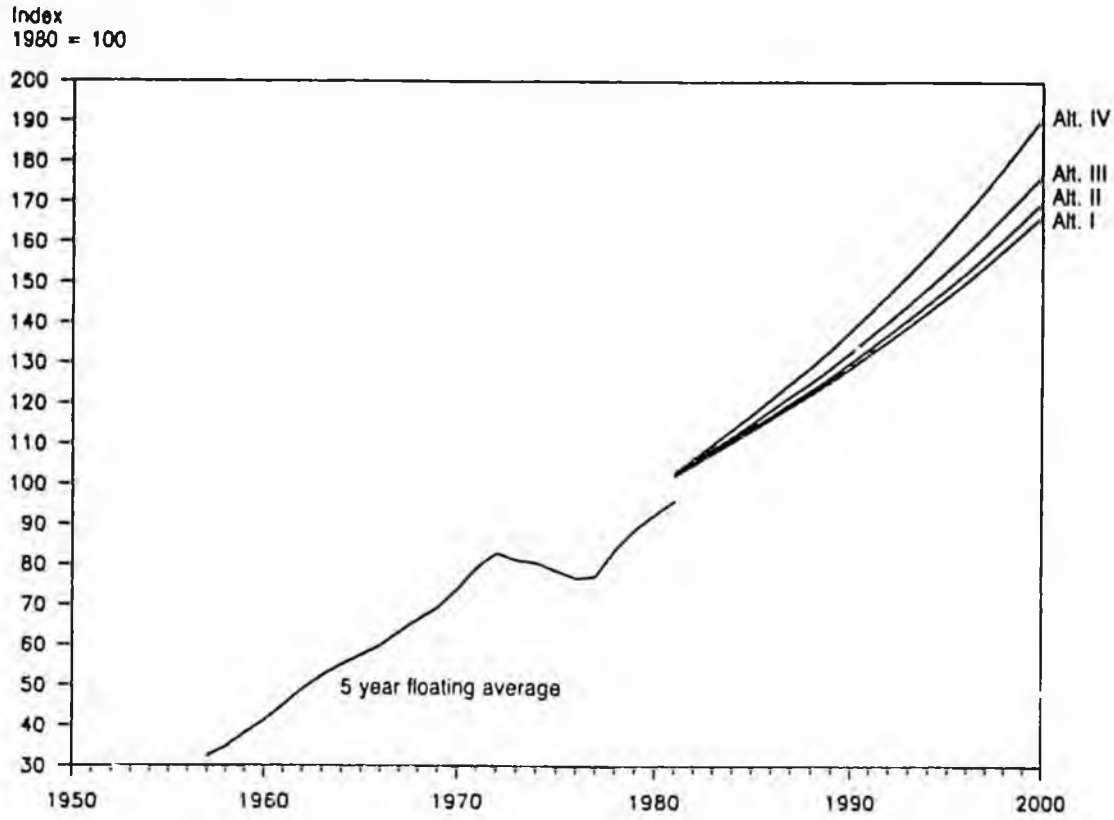


Fig. 6. The development prospects of the forest industry. The production volume of the forest industries as a whole can be increased by about 3 % a year. This corresponds to the estimated long-term increase in the demand for forest industry products.

growth in the production of pulp until the end of this century is 2–3 %, for chemical pulp 1.5 %, and for mechanical pulp 3–5 %. Production in the paper and paperboard industry could grow annually by 3.5–5 %.

According to the programme, the growth of the raw material base will permit a 3 % annual increase in the production of the forest industries as a whole up until the end of the century. This would be the same as the target growth rate the GNP. However, the increased production presupposes that the functioning, competitiveness and raw material supply of the forest industries is maintained, and that their wood consumption structure is adapted to the structure of the cutting targets.

The means available for achieving the targets

The targets of the programme are ambitious and demanding. The measures, as presented, will presumably not be enough. It will be necessary, therefore, to devise additional measures to supplement the programme while it is being carried out.

The most important of the means available for increasing timber supply are forestry planning and an increase in the advice and services directed at the forest owners. By the beginning of the 1990's, individual forestry plans will have been drawn up for 90 % of the privately-owned forest area. Personal advisory services, and the execution of forestry plans, will have to be made more effective. All the forest owners, including those living out-

side the area where their holdings are situated, will have to be brought within the scope of the advice and service facilities. This will require a staff increase of about 50 in the district forestry boards, as well as in the number of staff needed by the local forestry associations.

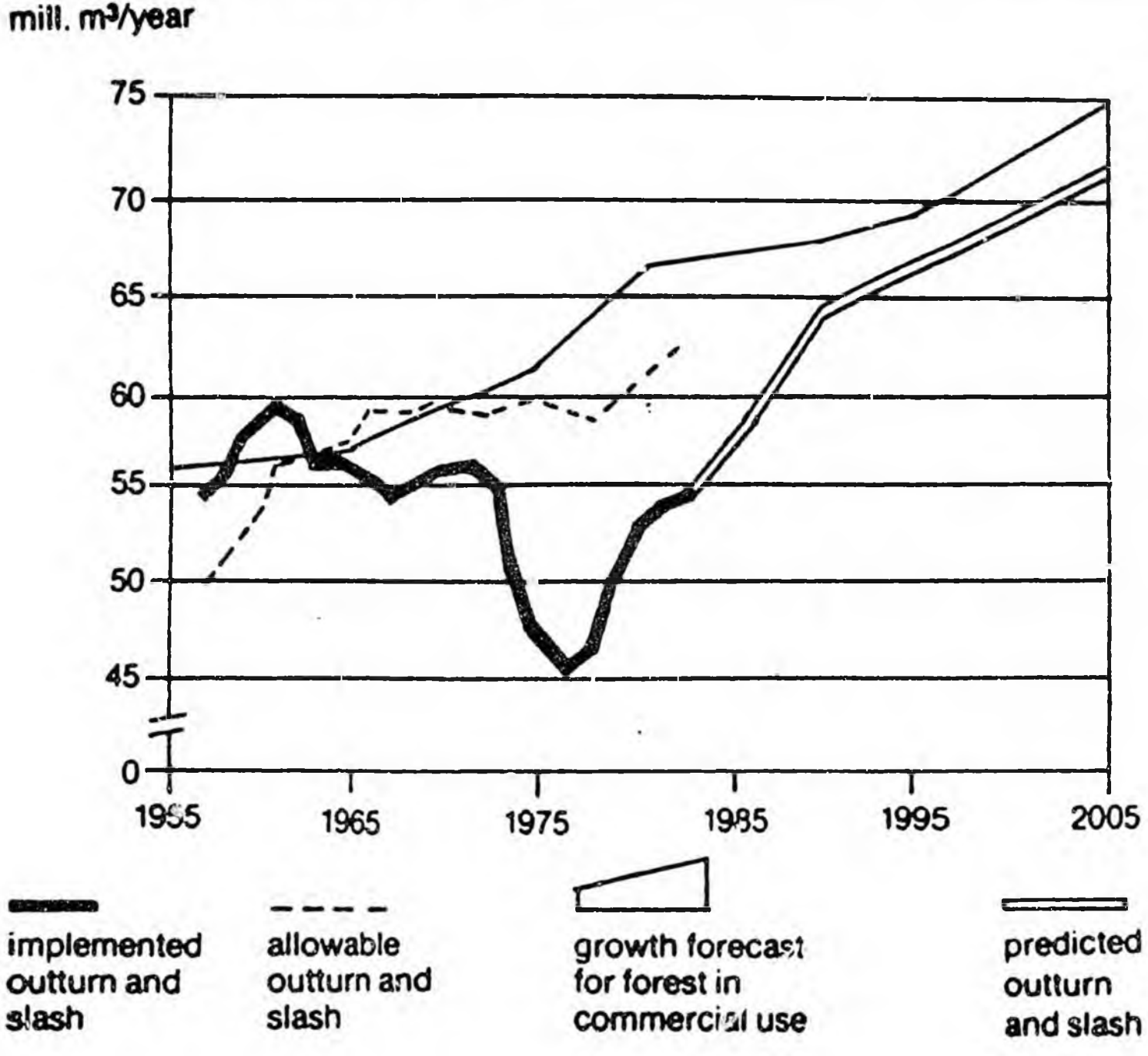
Other means of increasing timber production proposed in the programme include the development of forest ownership, forestry legislature and forest taxation, increasing the effectiveness of forest cooperation at the regional level, and improving the functioning of the roundwood markets. Active and constructive cooperation between the different interest groups is essential.

Economic, investment, energy and foreign trade policy, research and development work, and the effective marketing of wood-based products, all play a central role in strengthening the demand for timber.

Monitoring and updating the programme

Social development and environmental conditions, such as acid precipitation, can bring about relatively rapid changes in forest management and in the forest ecosystem. It is also difficult to predict the activities of the forest owners and forest industries. Implementation of the programme must be monitored continously, and its targets and choice of means checked at least every 5–10 years. The continuity of the necessary research work, data systems and data registers, as well as development of the planning models, must be ensured. Since the Forest 2000 Programme is a long term project, it must be supplemented, at fairly short intervals (about 5 years), with a programme in which the targets and measures are scheduled annually, and which are checked and continued each year.

Growth and removal forecast



Growing stock 1984

million m^3 solid volume incl. bark

whole country	South Finland	North Finland
1660	1171	489
100%	71%	29%

Tree species
distribution by volume

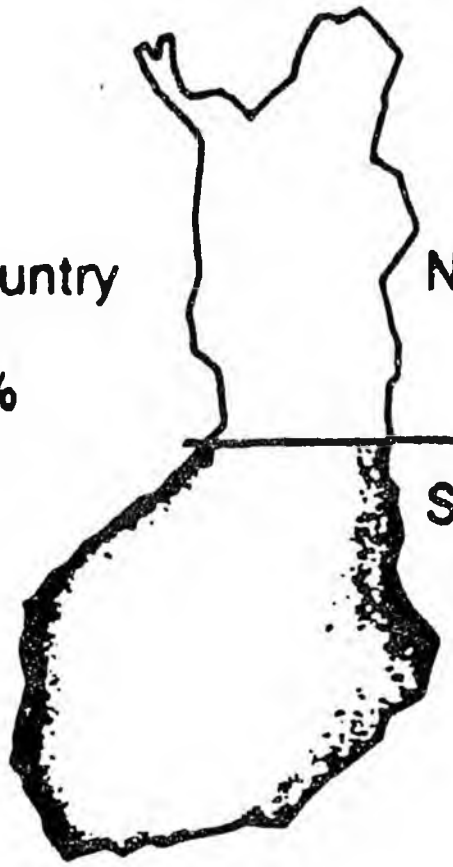
	whole country	South Finland	North Finland
pine	45	39	59
spruce	37	43	23
birch	15	15	17
alder and aspen	3	3	1
	100%	100%	100%

Mean growing stock,
m^3/ha incl. bark

whole country	South Finland	North Finland
81	101	54

Annual increment 1984

million m^3 solid volume incl. bark



whole country
68,4
100%

North Finland
15,0
22%

South Finland
53,4
78%

Mean volume increment on forest land, solid volume incl. bark/ha

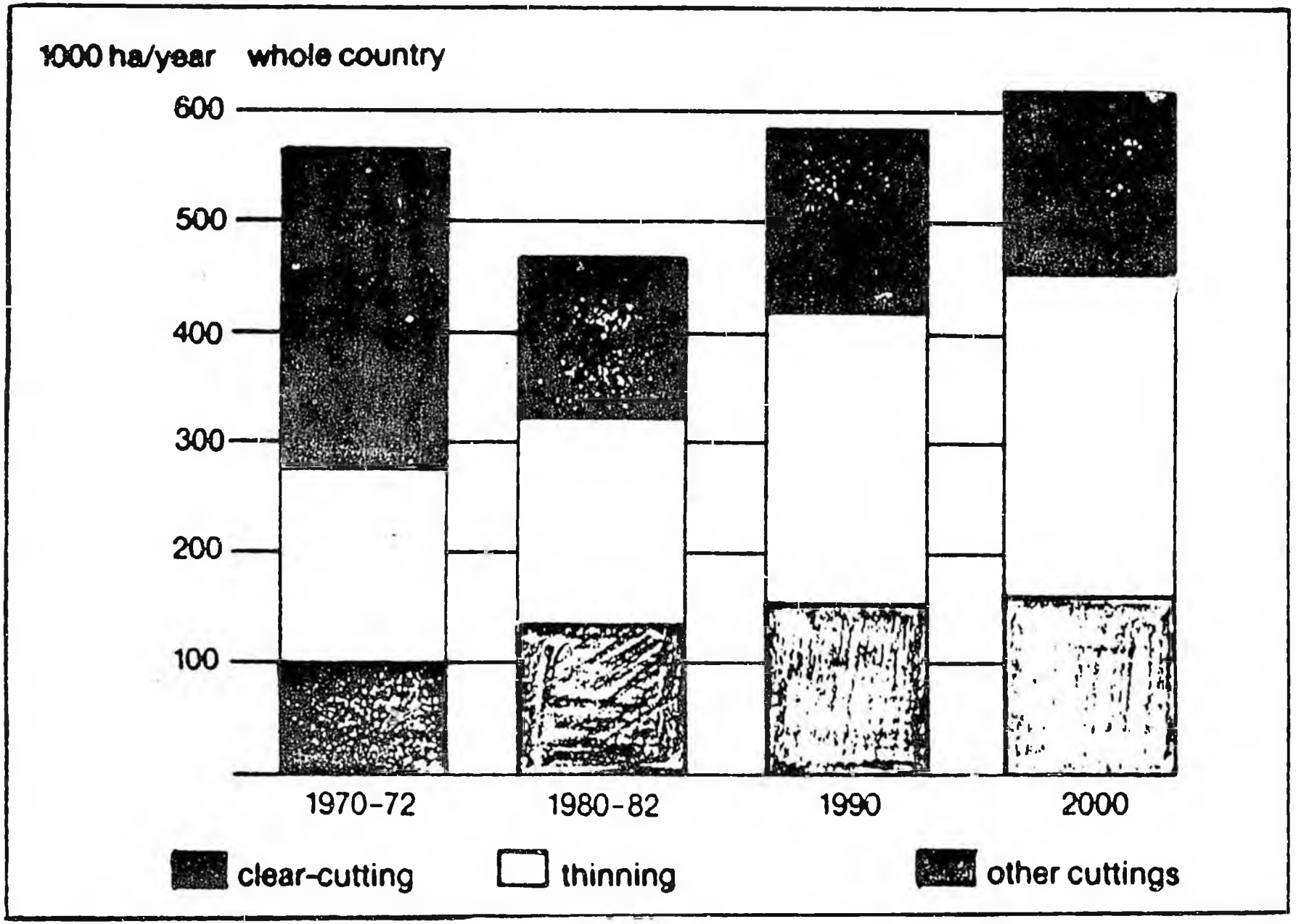
whole country	South Finland	North Finland
3,4	4,6	1,7

Forest balance 1984

million m^3 solid volume incl. bark

	mean 1974-84	1984
allowable drain	61,3	65,1
total drain	49,7	52,3
forest balance	+ 11,5	+ 12,8

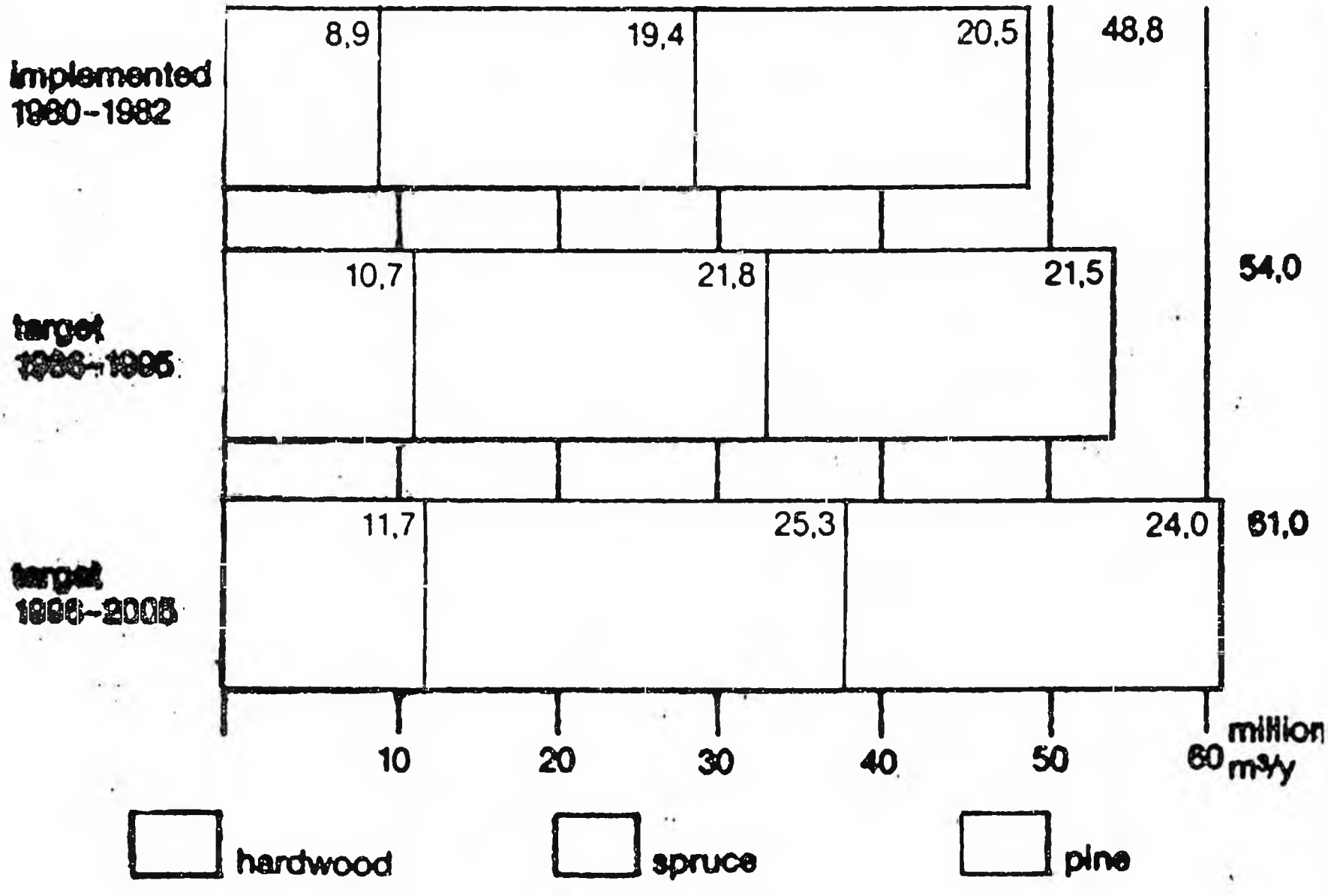
The Forest 2000-programme: Felling area



Silvicultural improvement work in 1985

	1985	2000 (Forest 2000 programme)
reforestation (seeding and planting)	129 000 ha	155 000 ha
young stand tending	279 000 ha	335 000 ha
pruning	6 300 ha	35 000 ha
fertilization	84 000 ha	220 000 ha
new drainage	70 000 ha	15 000 ha
supplementary drainage	3 900 km	120 000 ha
ditch cleaning	8 800 km	
forest roads	3 900 km	2 500 km

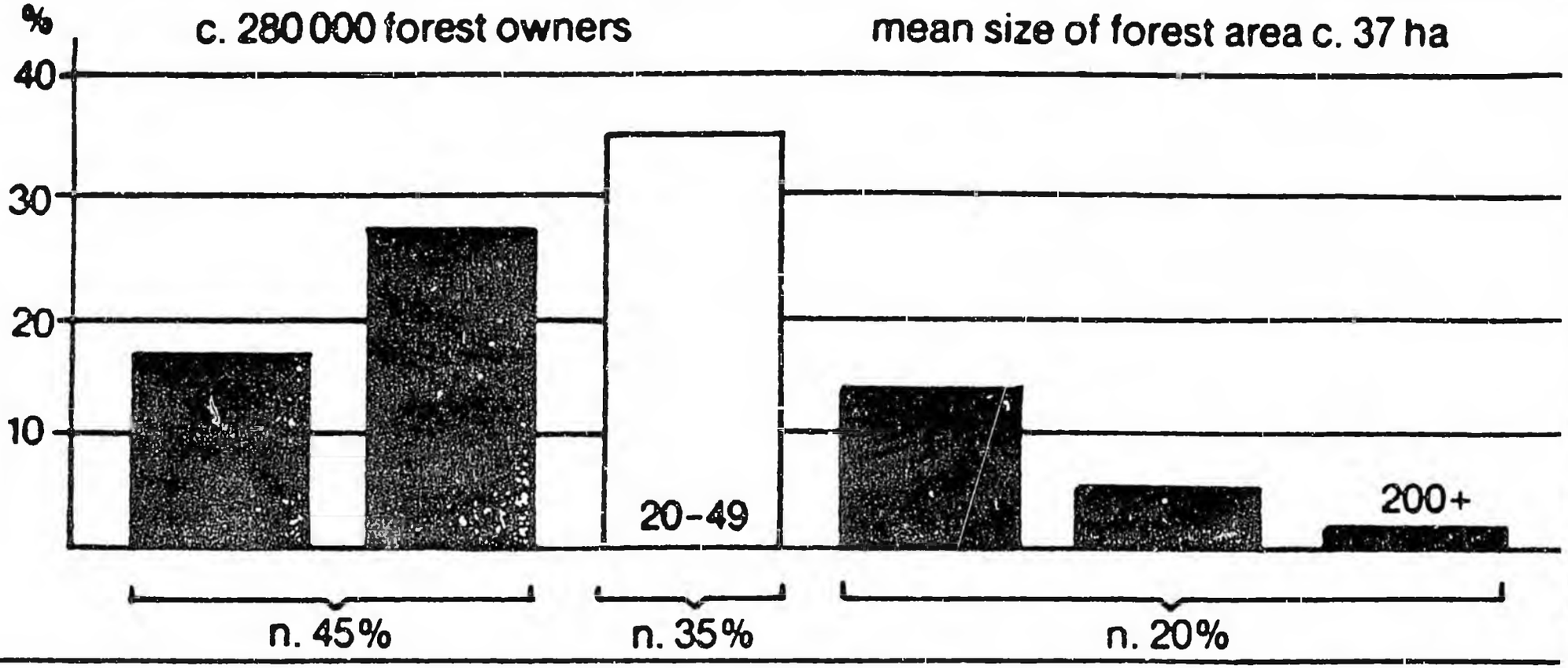
The Forest 2000-programme: Targeted outturn by tree species



Natural forest products 1985

commercial wood	43,6	mill. m^3
peat consumption and exports		
- fuel peat	3 992 000	tonnes
- horticultural peat	1 067 000	-"-
lichen exports	585	-"-
sales of forest berries	4 970	-"-
sales of wild mushrooms	1000	-"-
sales of reindeer meat	3 000	-"-
forest game birds	155	-"-
field game birds	33	-"-
hares	1 109	-"-
elk and deer	11 506	-"-
fur pelts	336 000	no.

Distribution of privately-owned forest holdings by size



Protection areas 1987

Established under the nature protection act:

	no.	total area 1000 ha
national parks	22	670
strict nature reserves	20	154
wetland protection areas	102	78
other protected areas	13	8
privately-owned nature protection areas	650	12
		922

Areas protected by official order:

special conservation forests	234
primeval areas	34
peatlands protected from drainage	63
	331
Total	1253

The Finnish forest industry in 1986

Mechanical sector

	no. of units	production	exports %
sawmill ind.	161[1)]	7,1 mill. m^3	64
plywood	25	0,6 -"-	84
particle board	11	0,6 -"-	40
wallboard	3	0,08 mill. tn.	57

1) in addition, c. 6000 local small sawmills.

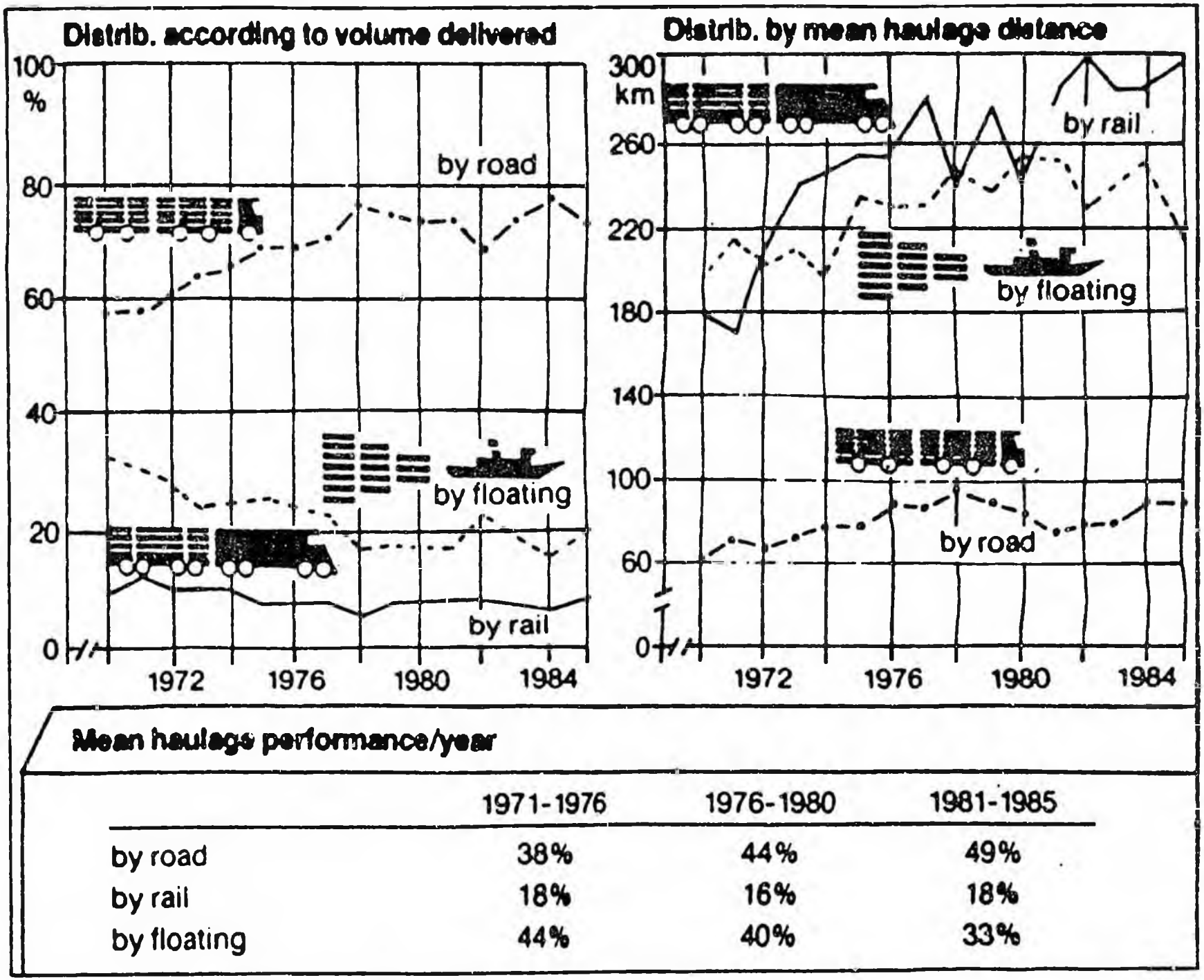
Chemical sector

	no. of units	production	exports %
pulp	47	7,9 mill. ton.	19
paper	30	5,8 -"-	82
paperboard	16	1,7 -"-	79

The forest industry in Finland and the rest of the world, 1984

	coniferous sawnwood 1000 m³	plywood 1000 m³	particle board 1000 m³	wood pulp total 1000 tn	of which chemical pulp 1000 tn	paper and paperboard total 1000 tn	of which newsprint 1000 tn	printing and writingpaper 1000 tn
Production								
the whole world	338 581	43 960	43 467	135 350	93 957	187 683	28 916	48 835
Europe (excl. USSR)	68 986	3 160	22 524	33 701	20 727	55 433	6 896	18 000
Finland	8 146	592	541	8 031	4 568	7 318	1 878	2 970
Finland's share (%)	2,4	1,3	1,2	5,9	4,9	3,9	6,5	6,1
in European production	11,8	18,7	2,4	23,8	22,0	13,2	27,2	16,5
International trade								
the whole world's imports	69 123	7 180	6 382	21 369	18 562	39 451	13 567	9 969
Finland's exports	4 803	480	180	1 561	1 386	6 062	1 675	2 548
Share of Finland's exports (%) in global imports	6.9	6.7	2.8	7.3	7.5	15.4	12.3	25 6
Imports of Europe (excl. USSR)	25 481	3 160	4 853	11 378	10 064	19 696	3 834	5 808
Finland's exports to Europe (excl. USSR)	3 420	419	169	1 168	1 151	3 939	1 208	1 521
Share of Finland's exports (%) in European imports (excl. USSR)	13,4	13,3	3,5	10,3	11,4	20,0	31.5	26,2

Wood transportation 1985



Mean haulage performance/year

	1971-1976	1976-1980	1981-1985
by road	38%	44%	49%
by rail	18%	16%	18%
by floating	44%	40%	33%

CS SB 112 - FOREST MANAGEMENT AGREEMENTS

SECTIONAL ANALYSIS

PURPOSE. The purpose of a Forest Management Agreement is to allow for an agreement between the state and a private party for the cooperative management of public forest land. A FMA may relieve the state of some of the financial burden associated with developing and managing timber.

In an FMA a contractor might be responsible for developing a plant and facilities or providing services such as road construction and maintenance, reforestation, recreation improvements and protection of other uses of state land.

An FMA does not permit the avoidance of other state laws or regulations affecting environmental conservation, timber practices, fish and game or any other resource or use of a resource.

FOREST MANAGEMENT AGREEMENTS. The commissioner must consult with the commissioners of environmental conservation, fish and game and commerce and economic development before entering into a FMA. The agreement must be consistent with any existing area plan and land classification in effect.

MOST QUALIFIED BIDDER. Establishes the items to be considered in a multiple variable bid process. The commissioner must develop minimum qualifications for a bidder through regulation. The commissioner may establish maximum and minimum development requirements and the maximum annual allowable cut.

PLANS. Before an agreement is signed the successful bidder is required to submit a management plan if the area is less than 1,280 acres and there is no existing land use plan or classification under AS 38.04.065 is in effect. The plan shall cover all land that is or may be subject to an agreement. The plan must be developed consistent with AS 38.04.065, Land Use Planning and Classification. Specific items are listed which must be included in the management plan.

Also prior to entering into an agreement the successful bidder must submit a five-year operating plan and an annual harvesting plan for the first two years of operation.

The commissioner must prepare a plan for administrative oversight of the agreement in consultation with other affected state agencies.

BEST INTEREST FINDING. Before entering into or extending an agreement the commissioner must issue a written finding that the proposed agreement is in the best interest of the state. The finding and all plans will be reviewed by the commissioners of DEC, F&G and CED. Public notice will be served for the proposed agreement, the written finding, the management plan and the five-year operating plan. Public hearings must be held when appropriate.

REQUIREMENTS OF FOREST MANAGEMENT AGREEMENTS. Items which must be addressed in a forest management agreement: term of the contract, stumpage prices and adjustments, penalties for violations, update of the five-year operating plan and annual harvesting plan, public access, protection of other uses, purchaser bond, protection of buffer strips, preparation of reports required by the commissioner and other items in the public interest as determined by the commissioner.

Regulations must be established by the commissioner for the requirements for access development, harvest, management and reforestation.

Establishes optional items which may be required from the purchaser: compensation for monitoring and enforcing the terms and conditions of the agreement and state law, compensation for scaling services, construction and maintenance of access roads and designation of timber volume for small operations.

The forest management agreement and any extensions must contain a provision that the operator comply with the terms of the FMA.

EXTENSIONS OF FOREST MANAGEMENT AGREEMENTS. An agreement may be extended if the extension is requested at any time between the fifth and tenth year during or after the initial term of an agreement. The amount of time added to an extension may not exceed the amount of time used on the initial agreement. (i.e. a contractor with a 20 year contract may apply for an extension in the tenth year of the initial agreement. If the extension is granted, up to ten years may be added to the end of the initial term. Extensions may continue to be applied for and granted after the initial term has expired and the contractor is operating under the extension).

In the extension process the contractor must submit a proposed operating plan for the next five years of operation and amend the management plan as the commissioner deems necessary.

The commissioner must review existing and proposed operations, consult with the commissioner of DEC, F&G, CED, other affected agencies and municipalities and find that the operator has complied with the terms of the law and the forest management agreement before granting an extension.

Before granting an extension the commissioner must adopt a best interest finding, provide public notice and hold appropriate public hearings.

CREDITS. Allows for purchasers credits to be granted against future stumpage payments under specific conditions. The credit given may not exceed the value owed to the state.

INCREMENTAL VOLUME AVAILABLE. If the commissioner determines the contractor has increased the annual allowable cut through his management techniques, the incremental volume may be made available to the contractor at the same or a reduced rate if it is consistent with other objectives of the agreement.

OTHER AUTHORITIES UNAFFECTED. An FMA does not affect the authority of the Department of Fish and Game, the Board of Fisheries, the Board of Game, the Department of Environmental Conservation or other state agencies and municipalities.

Section 3 amends the AS 38.05.120 which requires the commissioner to select the highest qualified bidder in a timber sale. The amendment allows timber to be disposed of through a FMA which calls for multiple variables to be considered.

5-0567N
Bradley
4/25/88

Original sponsors: Jones and Sturgulewski

IN THE SENATE BY THE RESOURCES COMMITTEE

HOUSE CS FOR CS FOR SENATE BILL NO. 112 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to forest management agreements."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. PURPOSE. (a) The purpose of this Act is to authorize the commissioner of natural resources to enter into forest management agreements that may include provisions for the development of a plant and facilities or services such as reforestation, road construction and maintenance, and recreation improvements and to provide for efficient monitoring of activities under forest management agreements and effective enforcement of terms, conditions, and law protecting other beneficial uses of state land.

(b) A forest management agreement may

(1) provide for equal consideration of other existing beneficial uses of forest land in an agreement as provided under AS 41.17.010;

(2) relieve the state of some of the financial burden of developing and managing a timber sale;

(3) provide for the long-term management of state timber, creating stability for the forest products industry and incentives for the responsible use of state timber; and

(4) provide an operator with a stable source of timber from a designated area on the basis of successive renewals of contractual rights.

(c) The provisions of this Act do not permit an operator to avoid compliance with state laws or regulations affecting environmental conservation, timber practices, fish and game, or any other resource or use of a resource.

* Sec. 2. AS 41.17 is amended by adding new sections to read:

ARTICLE 5A. FOREST MANAGEMENT AGREEMENTS.

Sec. 41.17.500. FOREST MANAGEMENT AGREEMENTS. The commissioner may, after consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, enter into a long-term agreement for the management of the forest resources of the state under AS 41.17.500 - 41.17.580 if the agreement is consistent with an area plan and land classifications then in effect.

Sec. 41.17.510. MOST QUALIFIED BIDDER DETERMINED. (a) The commissioner shall determine the most qualified bidder for a forest management agreement based on minimum qualifications established for bidders in regulations and in a multiple variable bid process. In reviewing bids received the commissioner shall consider

(1) the stumpage payments proposed by the bidder;

(2) the amount of the investment in plant and facilities proposed by the bidder;

(3) the utilization standards proposed by the bidder;

(4) the number of jobs to be provided by the bidder;

(5) road construction, reforestation, and recreation improvements requested by the commissioner;

(6) measures proposed by the bidder to maintain, enhance, or mitigate the effects on other beneficial uses or resources of forest land; and

(7) other items requested by the commissioner or offered by the bidder.

(b) The commissioner may establish maximum and minimum development requirements and the maximum annual allowable cut.

Sec. 41.17.520. PLANS. (a) If a land use plan has not been approved under AS 38.04.065, before entering into an agreement that involves more than 1,280 acres, the commissioner shall require the

successful bidder selected under AS 41.17.510 to submit a management plan for the land that is or may be subject to an agreement. The management plan shall be developed consistent with AS 38.04.065. The management plan must include

(1) an inventory of renewable and nonrenewable resources present, their human uses and their economic value as measured by net present value;

(2) location, type, and duration of access;

(3) operable timber base areas to be harvested;

(4) annual allowable harvest;

(5) silvicultural prescriptions;

(6) facility development;

(7) area-specific management practices or prescriptions needed in addition to forest practices regulations and best management practices to protect or enhance fish and wildlife habitat and harvest, public recreation, and other significant public or private resources and uses of the area.

(b) In addition, the operator shall submit a five-year operating plan and an annual harvesting plan for the first two years of operation. The commissioner shall prepare a plan for administrative oversight of the agreement in consultation with other affected state agencies.

Sec. 41.17.530. BEST INTEREST FINDING. Before entering into or extending an agreement, the commissioner shall issue a written finding that the proposed agreement, as supported by the management plan and operating plan submitted under AS 41.17.520, is in the best interest of the state. The finding and all plans shall be reviewed by the commissioners of environmental conservation, fish and game, and commerce and economic development. The commissioner shall provide public

notice of the proposed agreement, the written finding, and the management plan, and the five-year operating plan under AS 38.05.945 and shall hold appropriate public hearings.

Sec. 41.17.540. REQUIREMENTS OF FOREST MANAGEMENT AGREEMENT. (a) An agreement for the harvest of state timber under this section must provide for

(1) the term of the initial agreement, not to exceed 20 years, and conditions for an extension of the term under AS 41.17.-550(a);

(2) the stumpage prices to be charged for the timber and a periodic review and, if appropriate, adjustment of the stumpage prices;

(3) penalties for violation of the terms of the agreement and termination of the agreement under AS 41.17.550(c);

(4) the update of the operating plan each five years;

(5) the update of the annual harvesting plan;

(6) public use of state land involved in the agreement, except that the contractor may limit access in an area that is being harvested or where hazardous conditions exist;

(7) the protection of compatible and noncompatible uses, such as mining, recreation, and fish and wildlife habitat and harvest;

(8) a bond from the purchaser to protect the interests of the state;

(9) protection of state-owned land within 100 feet of rivers, lakes, or streams to provide soil stability, protect fish and wildlife habitat, water quality, and other important uses although more state land may be protected as determined in the management plan, the five-year operating plan, or the annual harvesting plan;

(10) the preparation of reports required by the

commissioner; and

(11) other terms, conditions, and limitations determined to be in the public interest by the commissioner.

(b) The commissioner shall establish by regulation requirements for access development, harvest, management, including the contents of plans required under AS 41.17.520, and regeneration of timber on state land that is subject to an agreement under AS 41.17.500 - 41.17.580.

(c) In an agreement for the harvest of state timber entered into under AS 41.17.500 - 41.17.580, the commissioner may require the purchaser to

(1) compensate the state for monitoring and enforcement of the terms and conditions of the agreement and applicable state law;

(2) compensate the state for the scaling services required to account for the timber sold;

(3) construct and maintain access roads necessary to the harvest of the timber; and

(4) designate a percentage of the timber volume to be subcontracted to small operators; the commissioner shall make the final designation from areas included in the operating plan.

(d) A forest management agreement entered into or extended under AS 41.17.500 - 41.17.580 must contain a requirement that the operator comply with the terms of the forest management agreement and AS 41.-17.500 - 41.17.580. A forest management agreement entered into under AS 41.17.500 - 41.17.580 must contain the conditions under which the agreement may be terminated by the commissioner on a finding that the operator has not complied with the terms of the agreement or with state law.

Sec. 41.17.550. EXTENSIONS OF FOREST MANAGEMENT AGREEMENT. (a) At any time between the 5th and 10th year of an agreement, either

during or after the initial term of the agreement, the commissioner may extend the forest management agreement if

(1) the term of the extension does not exceed the term of the initial agreement;

(2) the contractor submits a proposed operating plan for the next five years of operation and amends the management plan for the forest management agreement, as the commissioner considers necessary; and

(3) the commissioner, after review of existing and proposed operations and consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, and other affected agencies and municipalities finds that the operator has substantially complied with AS 41.17.500 - 41.17.580 and the terms of the forest management agreement.

(b) Before extending a forest management agreement, the commissioner shall

(1) adopt a best interest finding under AS 41.17.530;

(2) after review of existing and proposed operations and after consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, determine that the contractor had complied with AS 41.17.500 - 41.17.580 and the terms of the forest management agreement; and

(3) provide public notice under AS 38.05.945 and hold appropriate public hearings.

Sec. 41.17.560. CREDITS. The commissioner may grant a contractor credit against future stumpage payments due under the forest management agreement. A credit against future stumpage is not transferable between contractors or between sales and may not be paid in cash. A credit may not exceed the value owed to the state. A credit

against future stumpage payments may be granted for the

(1) loss of roads and drainage structures that

(A) have future value to the state; and

(B) are lost through an act of God not due to negligence on the part of the contractor;

(2) construction of capital items that

(A) do not directly contribute to the management or harvest of timber resources;

(B) were not included in the initial agreement or its supplements; and

(C) were authorized in advance by the commissioner; or

(3) additional silvicultural treatments beyond those required in the agreement and authorized in advance by the commissioner.

Sec. 41.17.570. INCREMENTAL VOLUME AVAILABLE. At any time during an agreement, the commissioner may make the incremental volume available to the contractor at the same or at a reduced rate if the commissioner determines that the management of the contractor has increased the annual allowable cut consistent with the other objectives of the agreement.

Sec. 41.17.580. OTHER AUTHORITIES UNAFFECTED. The provisions of AS 41.17.500 - 41.17.580 do not affect the authority of

(1) the Department of Fish and Game, the Board of Fisheries, or the Board of Game under AS 16 or AS 41.99.010;

(2) the Department of Environmental Conservation under AS 46.03; or

(3) state agencies and municipalities under AS 44.19.-145(a)(11) and AS 46.40.100.

* Sec. 3. AS 38.05.120 is amended by adding a new subsection to read:

(b) The commissioner may also dispose of timber under

AS 41.17.500 - 41.17.580.

CSSB 112 Forest Management Agreements

Comments from:

Department of Natural Resources
Kluckwan Forest Products
Fish and Game
Environmental Lobby
Alaska Center for the Environment
Susitna Valley Association

Summary of comments:

Public Process

1) The public and state agencies should have an opportunity to participate in decisions on access, cutting units, facility development and resource management prior to an agreement being put out for bid.

2) It needs to be made clear that the final agreement as well as the proposed agreement are subject to review before being signed.

3) Environmental, social and economic impact studies should be prepared by DNR, DEC and ADF&G and made available for public review and comment.

4) Agencies should have an opportunity to review annual operating plans as a context for annual permitting.

Interagency Coordination

1) Strengthen F&G and DEC's involvement to more than just consultation.

2) FMA's should be scheduled early enough for all involved state agencies to be able to determine their level of involvement and request the necessary funds to cover their participation though the normal budget process.

3) F&G should conduct fish and wildlife analyses and be consulted in the development of mitigation measures for the protection of these resources.

4) The best interest finding should be prepared by the commissioners of DNR, DEC and ADF&G.

Contract Extension

1) The initial term of the contract should be shorter than 20 years, preferably five with five year extensions. A best interest finding to cancel or extend the agreement should be required. Extensions should be subject to the same public and inter-agency review as the initial agreement.

2) Require an operator to "comply" with state law and the terms of the agreement rather than "substantially comply."

Purchasers Credits

1) Credits should not exceed the value owed to the state.

2) A credit should not be granted if damage caused by natural causes was due to improper design or installation by the contractor.

Multiple Variable Bid Process

1) Include as a variable the mitigation measures a contractor would use to lessen potential environmental impacts.

Items to be Included in an Agreement

1) Strengthen protection of the riparian zone.

2) Strengthen public access.

3) Strengthen bond language.

4) Include maximum clearcut size, reforestation, controls on pesticides, requirement for sustained yield.

Susitna Valley Association comments:

1) Strengthen consideration of other uses.

2) Notify private property owners within and adjacent to a proposed sale area and give them adequate time to comment.

3) Half-mile buffers around subdivisions, open-to-entry areas and lodges.

4) Give equal power to the departments.

KLUKWAN FOREST PRODUCTS, INC.

P.O. Box 34659 · Juneau, Alaska 99803-4659 · 907-789-7104 · Fax: 907-789-0675

April 12, 1988

The Honorable Sam Cotten
Co-chairman, House Resource Committee
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Dear Representative Cotten:

After reviewing House Resource language that may be incorporated into Senate Bill 112, we suggest the following changes:

* That the Department of Commerce and Economic Development be named as a participant in the interagency co-ordination. Reason: this would give economic reality to a forest management agreement that may be entered into by state and private parties. We feel economics are important to FMA's.

* On page 4, under suggested language, paragraph 7, we feel that the language be changed to manage the riparian zone instead of 100-foot buffers. Reason: in the event that a river or stream has a cliff, long marsh flat or muskeg, the 100-foot buffers may not be needed or may not be adequate; therefore, site-by-site would be better.

Thanks for the opportunity to make comments.

Sincerely,

William Thomas
Lobbyist

WT:sw

Alaska Environmental Lobby, Inc.

P.O. Box 22151 Juneau, Alaska 99802 907-586-2345

April 14, 1988

Representative Sam Cotten, co-chair
Representative Adelheid Herrmann, co-chair
House Resources Committee
P. O. Box V
Juneau, Alaska 99811

Dear Representatives Cotten and Herrmann:

On behalf of its member groups, the Alaska Environmental Lobby would like to thank you for the opportunity to comment on proposed changes to SB 112 Forest Management Agreements. The changes address key deficiencies in the the bill as it passed the Senate. The proposed changes are improvements, however, the concept of the bill remains flawed.

The basic principle of forest management agreements allows private management of a public resource. This is unacceptable to us. The desire of the industry for a stable timber supply is understandable, but dealing with active public participation is part of the price that industry must pay for the privilege of using public resources. A well-planned program of conventional short-term timber sales using existing procedures can accomplish the goal of industry stability without the relinquishment of state control of public resources.

Forest management agreements appear to be essential only if some sort of giveaway program is necessary to encourage massive scale timber development. The strong and broad-based public outcry over recent large-scale proposals, such as the Susitna Valley timber sale indicates a decided lack of support for such development. If the public policy goal is to respond to the product needs and the land use concerns of the people, a diverse timber industry based on a number of small mills providing forest products for in-state use would best provide the desired mix of local economic benefits, industry stability, and community control. Short-term conventional timber sales would best serve these goals and allow fine-tuning to economic fluctuations and the product demand.

With these reservations in mind, below are point-by-point comments on the proposed changes:

PUBLIC PROCESS

* Public hearings must be held after the commissioner and contractor have negotiated a final agreement, as well as during the process of developing that agreement. Allowing negotiation without final public approval makes earlier participation meaningless.

* The long-term contract, even with 5-year review, remains a problem for both the industry and the public. While the intent of this provision is to accomodate differing interests, balancing them will be difficult. If the public review reveals difficulties which result in termination of the agreement, the goal of industry stability is not served. If agreements cannot be terminated as a result of the review, then the review process has no teeth.

* An outline operating plan for the entire 20-year contract period is necessary to allow informed public comment. Plans for the first five years do not give the overview needed to properly evaluate the agreement.

INTER-AGENCY COORDINATION

* "Consultation" and "review" by DEC and ADF&G lacks real strength; agreement or approval should be required in this provision. DNR should not be given sole control over final decisions involving multiple resource values.

* The inadequacies of DEC and ADF&G powers to balance timber management with other resources are perpetuated. Weaknesses of the existing Forest Practices Act are not corrected.

CONTRACT EXTENSION

* While the concept of making contract extension contingent upon adequate performance is a commendable one, the problem of providing meaningful public control while maintaining industry stability remains unresolved.

* The language does not clearly indicate that the full term of the agreement shall not exceed 20 years from the time of the extension.

PURCHASERS CREDITS

* The incentive to provide non-timber management services is laudable, but this provision appears to have potential for abuse. The setting of stumpage prices for credits must be carefully monitored, and the need for the capital construction carefully evaluated. The U.S. Forest Service experience in Southeast Alaska indicates that credits for road construction can exceed the value of the timber made accessible by the road.

MULTIPLE VARIABLE BID PROCESS

* The requirement to consider a number of variables in selecting bids is a worthwhile improvement.

* Conspicuously absent from the list of factors to be considered is any requirement for assessing the environmental impact of management activities and infrastructure development, and mitigation of those impacts. Those proposals that demonstrate the highest levels of environmental responsibility should be favored in the bid selection process.

* The type of forest management activities proposed by the bidder should also be carefully considered. Intensive monoculture; use of chemical fertilizers, pesticides, and herbicides; and practices which lead to long-term depletion of the soil or significant reduction of the diversity necessary to support the forest ecosystem should be discouraged. Though many such activities may initially appear to boost production, the criteria for evaluation must be long-term, sustainable yield and protection of the state's forest resource base.

* With respect to plant and facilities development, any tacit assumption that "more is better" must be avoided. Facilities must be economically and environmentally justifiable. Past errors, such as the Valdez grain terminal, point out the necessity for careful scrutiny to determine whether infrastructure development is truly beneficial.

* If the bidder constructs such items as roads and recreation improvements, who will maintain them, both during and after the contract period? Is there a means to evaluate whether the improvements are really desirable? Would some areas be better left untouched?

ITEMS TO BE INCLUDED IN AN AGREEMENT

* Maintenance of public access is very important. Without strong provisions, "No Trespassing" signs could effectively lock up public lands.

* Protection of a full range of multiple uses, rather than creation of a single-use timber production category, is a key problem with the entire forest management agreement concept. Though it is good to see concern for other uses incorporated in the proposed changes, that concern is better addressed by the conventional timber sale process. Turning over the complete management of our forests to private industry may well be a mistake. The goal of industry is to manage for profit, not to manage for stewardship of the land and protection of a variety of uses.

* The bond amount must be large enough to allow the state to restore any damage done to public land in the event of a default. As we are beginning to see in other instances, a token bond is not adequate. A review of the likely cost of cleanup and restoration activities for each sale should be required before the bond amount is set.

* The 100-foot buffer strip for rivers, lakes, and streams is grossly inadequate. Past state timber sales with 100-foot buffers have had problems with windthrow, resulting in salvage logging and disturbance of the area inside the buffer. One-quarter mile buffers should be stipulated for all lakes, rivers, and major streams. Feeder streams and minor tributaries should be protected by buffers of at least 100 yards. These requirements should apply to water bodies on borough and private lands, as well as to those actually located on state land.

INCENTIVE FOR IMPROVED MANAGEMENT PRACTICES

* While rewarding better management is desirable, we question how many years it will take before those effects can be reliably measured. Will there be pressure to give out the rewards before the improved production can really be verified? Will contractors employ chemical fertilizers, pesticides, and herbicides; large-scale monoculture; or other techniques that boost short-term production but "burn out" the forest soil and ecosystem and lead to long-term destruction of the resource? Our present state of knowledge may not be sufficient to ensure that we do not inadvertently do such damage. Enhanced production must be carefully examined to determine whether it is truly sustainable over the long term.

OTHER ITEMS

* The only guidance for activities under forest management agreements will be the provisions of our state Forest Practices Act. This act is desperately in need of strengthening; its current requirements are certainly

inadequate to regulate activities under forest management agreements.

* Subcontracting to small operators is helpful, but a more diverse industry that is better attuned to local needs would be created by small-scale conventional timber sales. Small operators will be dependent upon the large contract holder for work, effectively establishing a monopoly and limiting their access to good timber supplies. Would small operations still be able to provide the custom milling, selective logging, and specialty products, such as houselogs and musical-instrument grade spruce, which are not available from large-scale operations? Experience with federal policy in the Tongass National Forest has shown that large contractors tend to dominate and control the market, despite Forest Service efforts to help the small operators.

Once again, thank you for the opportunity to comment. We would be happy to provide any other information as necessary.

Sincerely,

Gail Gatton
Executive Director

Bill Glude
Volunteer

Alaska Center for the Environment

700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

April 15, 1988

Representative Sam Cotten
PO Box V
Juneau, AK 99811

RE: SB 112 Draft Language

Dear Representative Cotten:

The Alaska Center for the Environment (ACE) appreciates the opportunity to comment on the draft language for SB 112 (forest management agreements).

ACE is opposed to the concept of long term management of public multiple use resources by private industry. Public lands should be managed by public agencies subject to public review and comment, not by private corporations. Therefore, while this bill may be "improved" by certain changes, we remain concerned about the impacts FMA's will have on our public resources.

The following comments are a quick response to the recently released suggested language. Any additional comments after further study will be submitted later. Our initial concerns are as follows:

Public Process

- The proposed contract and the final contract should be available for public and inter-agency review and comment prior to being signed. We are concerned about the possibility of the commissioner making substantial changes in the contract after public review and comment.

- Since FMA's represent substantial investment of public resources, environmental, social, and economic impact studies should be prepared by DNR, DEC, and ADF&G, and made available for public review and comment.

- The best interest finding should be prepared by the commissioners of DNR, DEC, and ADF&G.

Inter-Agency Coordination

This language perpetuates the inadequate provisions of the existing Forest Practices Act regarding inter-agency involvement. Since long-term FMA's are a more significant commitment of public resources than are typical small scale, short-term timber sales, FMA's should be held to a much higher standard of environmental protection. Therefore, the commissioners of ADF&G and DEC should be given the power to consult, review, and approve FMA's.

Contract Extension

- Specific provisions, in the event of non-compliance with state law and/or the terms of the agreement, should be included.

- "Complied" should be substituted for "substantially complied". The operator should be expected to comply fully with state law and terms of the agreement.

Purchaser Credits

- The state should not be required to reimburse the operator if damage due to natural causes was the result of improper design and/or construction.

- At 2(c), add "subject to review and comment by DEC, ADF&G, and the public".

Multiple Variable Bid Process

- The amount of potential environmental impact, and provisions for mitigation, should be a consideration.

- How will the state be able to verify that the number of jobs a bidder claims to be able to provide will actually occur?

Items to be Included in an Agreement

- At Item (7), 100' buffers have repeatedly been shown to be inadequate. Buffers this narrow have often blown down and subsequently been removed, thereby resulting in no protection of rivers, lakes and streams. Also, very small tributary streams which are critical for salmon rearing should be protected by buffers. We suggest 1/4 mile buffers at rivers, lakes, and streams, and 100 yard buffers at small tributaries. Susbstantial, undisturbed riparian habitat is crucial for continued healthy populations of fish and wildlife.

- As stated previously, FMA's should be subject to the highest level of environmental protection. Therefore, provisions for maximum clearcut sizes, reforestation, controls on pesticides and other chemicals, and other concerns including a requirement for sustained yield, should be incorporated in any agreement. These provisions should be specifically established in this act.

Incentive for Improved Management Practices

- It is unclear how this would be determined, considering the lengthy time periods involved in revegetation.

Thank you for your consideration of our concerns. If you have any questions regarding our comments, please do not hesitate to call.

Sincerely,

Alan Phipps

Alan Phipps
State Land Use Specialist

Susitna Valley Association
9600 Slalom Drive
Anchorage, Alaska 99516
346-1943

April 16, 1988

Representative Sam Cotten
House Resources Committee
P. O. Box V
Juneau, AK 99811

Attention: Lisa Weisler

Dear Lisa;

Following are the written comments on the FMA proposals you asked me to send down following our telephone conversation.

(1) **Forest Management Concept.** The Susitna Valley Association has serious reservations regarding the Forest Management Agreement concept. This concept is best applied to state forests and private lands where the primary use is devoted to forestry. Most lands in Alaska are public lands and are designated for multiple use. For instance, in the Susitna Area Plan, in every sub-unit where forestry is designated as a Primary Use, it shares that designation with at least two other Primary Uses. No where in the Plan is it the **only** designated use. The FMA concept does not allow for adequate consideration of these other uses. The emphasis and focus is strictly on forestry.

(2) **Private Property.** The FMA concept being proposed gives no consideration to private properties located within, and adjacent to, the sale areas. Again, we are not dealing with a state forest. We are dealing with multiple-use lands that includes "settlement" as one of the uses. The private properties are not "inholdings". They are one of the multiple uses of the area as determined by the state, and sold to individuals by the state for recreational use and/or permanent residences. For instance, within the area under consideration for the Susitna Valley timber sale, there are over 5000 private parcels.

Therefore, the two concerns below must be **included** in any forest management agreement. (1) The state must notify the private property owners within and adjacent to a proposed sale area and give them adequate

time to comment. (2) Actions must be taken to lessen potential negative impacts on private properties that a large-scale clearcut logging operation would present. Possible ways the latter could be accomplished would be to allow half-mile buffers around subdivisions, Open-to-Entry areas, and lodges. Areas where there are extensive private properties could be removed from the sale proposal entirely.

(3) **DNR Authority.** We are concerned that the FMA concept, as proposed, gives too much power to one department (DNR), and to one individual (the Commissioner of DNR). The Departments of Fish and Game and Environmental Conservation would only have the right to "review" any timber harvesting plan. The Commissioner of DNR would only have the obligation to "consult" DF&G and DEC on what DNR had decided to do. Even if DF&G and DEC were totally negative on the plan, they would not necessarily have any power to stop, or substantially change, the plan. Whether or not their concerns were given consideration could be left to the whim of the Commissioner of DNR. Since the state would be dealing with multiple-use lands, it is imperative that all three departments have equal power in formulating and approving (or disapproving, as the case may be) the FMAs.

(4) **Comments on the proposals for a substitute bill:**

(a) Under CONTRACT EXTENSION, on page 3, the "suggested language" states that "the commissioner must find that the operator has substantially complied with applicable state law and terms of the FMA." We would suggest that the word "substantially" be dropped. The operator should expect to be required to **comply** with state laws and terms of the agreement, not only substantially so. If the operator has not complied, legal action may be necessary, rather than a contract extension.

(b) Under PURCHASERS CREDITS, the contractor should not receive a credit if the damage resulted due to negligence on the part of the contractor. For instance, a flood may wash out a road, but only because the contractor failed to put in a necessary culvert. Also, in this section,

agreement, if substantial, may need to be subjected to review and comment by all three state agencies and the public before being allowed to be placed. Such construction which might be of concern would be additional roading, rerouting of streams, bridges, dock construction, etc.

(c) In MULTIPLE VARIABLE BID PROCESS, mitigation efforts to lessen potential environmental impacts should be one of the considerations listed.

(d) Under ITEMS TO BE INCLUDED IN AN AGREEMENT, (7), we would like to see the minimum protection be greater than the stated 100 feet. This should preferably be at least one-fourth mile. Again, we are dealing with multiple-use lands, and one-fourth mile hardly seems like much to give up for other uses such as animal habitat and recreation.

In the same section, still (7), we would like to see "feeder streams" or "tributaries" added to the list for "protection". These feeder streams are even more important to the spawning of salmon than are the primary streams.

We would appreciate receiving a copy of the draft bill when you get it together. If Sam does decide to present a substitute bill, we do hope these suggestions will be given consideration.

Sincerely,

Loisann Reeder

Loisann G. Reeder, President

SB 112 - FOREST MANAGEMENT AGREEMENTS

Goals for forest management agreement legislation:
- Improve public involvement/notice
- Improve inter-agency coordination
- Provide for extensions of an agreement
- Provide for purchasers credits
- Provide for a multiple variable bid process
- Specify items to be included in an agreement
- Provide incentive for improved management practices

PUBLIC PROCESS

To assure public participation in a forest management agreement the following would be required:

1) public notice of the intent to have a sale;
2) public notice given and hearings held prior to the commissioner entering into an agreement and whenever the agreement comes up for an extension.

The commissioner would make available for review:
1) a master plan for the term of the initial agreement;
2) an operating plan for the first five years;
3) an annual harvesting plan for the first two years of operation;
4) the proposed contract; and
5) a best interest finding prepared by the commissioner.

Suggested language:

Before entering into or extending an agreement, the commissioner shall provide public notice under AS 38.05.945 (public notice) of the proposed agreement, the written findings and plans and shall hold appropriate public hearings.

INTER-AGENCY COORDINATION

To assure the involvement of the Departments of Fish and Game and Environmental Conservation in a forest management agreement the departments should:

1) be consulted prior to the commissioner announcing a potential sale;
2) review the best interest finding, proposed agreement and the master, operating and harvest plans prior to the commissioner entering or extending an agreement; and
3) be consulted when an extension is being considered.

Suggested language:

The commissioner may, after consultation with the commissioners of environmental conservation and fish and game, and if consistent with a land use plan and land classifications then in effect, enter into a long-term agreement for the management of the forest resources of the state.

Before entering into or extending an agreement, the written finding and plans shall be reviewed by the commissioners of environmental conservation and fish and game.

CONTRACT EXTENSION

The "evergreen" clause would provide for extensions to the existing long-term agreement. Extensions could also be applied for once the initial agreement has expired and the contractor is operating on an existing extension.

In applying for an extension a contractor would submit a five year operating plan for the next five years and an amended master plan covering the extension.

Prior to granting an extension the commissioner would:

1) prepare a best interest finding;
2) review existing and proposed operations;
3) consult with the commissioners of environmental conservation and fish and game;
4) find that the operator has complied with state law and the terms of the forest management agreement; and
5) provide for public notice and hearings.

Suggested language:

At any time between the 5th and 10th year of an agreement, either during or after the initial term of the agreement, the commissioner may extend the forest management agreement under the following conditions:

(1) the full term of the agreement after the extension may not exceed 20 years; and

(2) the contractor shall submit a proposed operating plan for the next five years of operation and shall amend the master plan for the forest management agreement, as appropriate.

In considering an extension of the forest management agreement the commissioner:

(1) shall prepare a best interest finding;

(2) after review of existing and proposed operations and consultation with the commissioners of environmental conservation and fish and game, must find that the operator has substantially complied with applicable state law and terms of the forest management agreement; and

(3) shall provide appropriate public hearings and public notice under AS 38.05.945.

PURCHASERS CREDITS

A credit may be applied against future stumpage payments for replacement of a road or other infrastructure that was damaged by natural causes or if the operator provides items which do not directly contribute to the management or harvest of timber (i.e. scenic turnouts or parking areas).

Suggested language:

The commissioner may grant a contractor credit against future stumpage payments due under the forest management agreement. A credit against future stumpage is not transferable between contractors or between sales and may not be paid in cash. A credit against future stumpage payments may be granted for the

(1) loss of roads and drainage structures that
  (A) have future value to the state; and
  (B) are lost through an act of God; or

(2) construction of capital items that
  (A) do not directly contribute to the management or harvest of timber resources;
  (B) were not included in the initial agreement; and
  (C) were authorized in advance by the commissioner.

MULTIPLE VARIABLE BID PROCESS

Present law requires the commissioner to award timber sales to the highest qualified bidder. Since forest management agreements involve more than stumpage value, a multiple variable bid process should be instituted.

Suggested language:

The commissioner shall determine the most qualified bidder for a forest management agreement based on a multiple variable bid process. In reviewing bids received the commissioner shall consider

(1) the stumpage payments proposed by the bidder;

(2) the amount of the investment in plant and facilities proposed by the bidder;

(3) the utilization standards proposed by the bidder;

(4) the number of jobs to be provided by the bidder;
(5) the relevant experience of the bidder;
(6) road construction, reforestation and recreation improvements requested by the commissioner; and
(7) other items requested by the commissioner or offered by the bidder.

ITEMS TO BE INCLUDED IN AN AGREEMENT

Suggested language:

An agreement for the harvest of state timber under this section shall provide for
(1) the term of the initial agreement, not to exceed 20 years, and conditions for an extension of the term;
(2) the stumpage prices to be charged for the timber;
(3) penalties for violation of the terms of the agreement and termination of the agreement;
(4) public use of state land involved in the agreement, except that the contractor may limit access in an area that is being harvested or where hazardous conditions exist;
(5) the protection of compatible and noncompatible uses, such as mining and recreation;
(6) a bond from the purchaser to protect the interests of the state;
(7) protection of state-owned land within 100 feet of rivers, lakes, or streams to provide soil stability and protect fish habitat, although more state land may be protected as necessary for these purposes;
(8) the preparation of reports required by the commissioner; and
(9) other terms, conditions, and limitations determined to be in the public interest by the commissioner.

INCENTIVE FOR IMPROVED MANAGEMENT PRACTICES

If an operator is able to increase the allowable annual cut through his management techniques the incremental volume should be made available at the same or a reduced rate.

Suggested language:

At any time during an agreement, if forest inventory data indicate an increase in the allowable annual cut resulting from the management activities of the contractor, the commissioner may make the incremental stumpage available to the contractor at the same or a reduced rate.

Other items that might be addressed in SB 112:

Renegotiation of stumpage fees
Regulation requirements
Optional items to be required of the purchaser:
1) compensation for the scaling services required to account for the timber sold;
2) construction and maintenance of access roads necessary for the harvest of timber; and
3) designation of areas to be subcontracted to small operators

THE ALASKA WILDLIFE ALLIANCE
P.O. BOX 190953
ANCHORAGE, ALASKA 99519
907-277-0897

May 3, 1988

I am Ginny De Vries speaking for the Alaska Wildlife Alliance. Yesterday and today I attended the House Resource teleconference hoping to testify on SB112. We are concerned that people haven't had an opportunity to testify on the most recent committee substitute. This important bill is passing along much too quickly without discussion.

We are opposed to SB112 because it would allow large areas of public land for private development of an intensive single use logging industry. We think it is premature to enact this legislation without first establishing a comprehensive forestry policy for multiple use lands. The forest management agreement contractor has no incentive to protect fish and wildlife habitat or to maintain adequate windform buffers at lakes and streams. Finally it is poor public policy for private for corporations to manage public lands for the establishment of a single use industry at the expense of other resources. As today's Anchorage Daily News editorial stated, "Why should any state resource be managed by the special interest that wants to profit from it?"

Thank you for this opportunity to comment.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH V STATE CAPITOL
JUNEAU ALASKA 99811
907 465 3800

MEMORANDUM May 3, 1988

SUBJECT: Credits for stumpage fees
(HCS CSSB 112(Res))

TO: Representative Sam Cotten, Co-Chair
House Resource Committee

FROM: Tamara Brandt Cook TBC
Director
Division of Legal Services

I have been informed that the attorney general's office has expressed concerns about Sec. 41.17.550 of the draft bill relating to forest management agreements. That section permits the commissioner to grant a credit against future stumpage payments due to the state to a contractor in certain cases. As I understand it, the attorney general's office has expressed concerns that this may amount to an "indirect appropriation" and possibly violate the constitutional requirements that expenditures from the state treasury be made only pursuant to appropriations. The question is whether providing for some sort of legislative oversight over the granting of credits solves this perceived legal problem.

In my opinion it would not. If these credits are truly appropriations, they can be accomplished only through enactment of an appropriation bill by the legislature. The legislature may not delegate its power over appropriations to a committee or smaller group. (Kelly v. Hammond, Superior Court, First Judicial District, C.A. 77-4, April 12, 1978) If, on the other hand, the granting of these credits is a permissible executive branch function, exercise of that function cannot be contingent upon legislative approval without raising substantial separation of powers questions. (Marine View Chapter, Juneau Tenants Association v. ASHA, Superior Court, First Judicial District, No. 1JU-80-1037 Civ., November 4, 1981)

While the matter cannot be determined with certainty, I believe that there exists a good possibility that a court would not consider the credits provided for under Sec. 41.17.550 to be appropriations. No money flows from the treasury. There are many situations in which the executive branch makes decisions that affect the amount of money realized by the state treasury and create benefits to third parties (leases, settlement of litigation, etc.) In reaching a decision as to whether the legal risk embodied in Sec. 41.17.550 of the draft is worth taking, the committee may also want to bear in mind the fact that unconstitutional provisions in a bill are severable. (AS 01.10.030)

TBC:gc
WKG3:056

5-0567N
Bradley
4/25/88

Original sponsors: Jones and Sturgulewski

IN THE SENATE BY THE RESOURCES COMMITTEE

HOUSE CS FOR CS FOR SENATE BILL NO. 112 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to forest management agreements."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. PURPOSE. (a) The purpose of this Act is to authorize the commissioner of natural resources to enter into forest management agreements that may include provisions for the development of a plant and facilities or services such as reforestation, road construction and maintenance, and recreation improvements and to provide for efficient monitoring of activities under forest management agreements and effective enforcement of terms, conditions, and law protecting other beneficial uses of state land.

(b) A forest management agreement may

(1) provide for equal consideration of other existing beneficial uses of forest land in an agreement as provided under AS 41.17.010;

(2) relieve the state of some of the financial burden of developing and managing a timber sale;

(3) provide for the long-term management of state timber, creating stability for the forest products industry and incentives for the responsible use of state timber; and

(4) provide an operator with a stable source of timber from a designated area on the basis of successive renewals of contractual rights.

(c) The provisions of this Act do not permit an operator to avoid compliance with state laws or regulations affecting environmental conservation, timber practices, fish and game, or any other resource or use of a resource.

* Sec. 2. AS 41.17 is amended by adding new sections to read:

ARTICLE 5A. FOREST MANAGEMENT AGREEMENTS.

Sec. 41.17.500. FOREST MANAGEMENT AGREEMENTS. The commissioner may, after consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, enter into a long-term agreement for the management of the forest resources of the state under AS 41.17.500 - 41.17.580 if the agreement is consistent with an area plan and land classifications then in effect.

Sec. 41.17.510. MOST QUALIFIED BIDDER DETERMINED. (a) The commissioner shall determine the most qualified bidder for a forest management agreement based on minimum qualifications established for bidders in regulations and in a multiple variable bid process. In reviewing bids received the commissioner shall consider

(1) the stumpage payments proposed by the bidder;

(2) the amount of the investment in plant and facilities proposed by the bidder;

(3) the utilization standards proposed by the bidder;

(4) the number of jobs to be provided by the bidder;

(5) road construction, reforestation, and recreation improvements requested by the commissioner;

(6) measures proposed by the bidder to maintain, enhance, or mitigate the effects on other beneficial uses or resources of forest land; and

(7) other items requested by the commissioner or offered by the bidder.

(b) The commissioner may establish maximum and minimum development requirements and the maximum annual allowable cut.

Sec. 41.17.520. PLANS. (a) If a land use plan has not been approved under AS 38.04.065, before entering into an agreement that involves more than 1,280 acres, the commissioner shall require the

successful bidder selected under AS 41.17.510 to submit a management plan for the land that is or may be subject to an agreement. The management plan shall be developed consistent with AS 38.04.065. The management plan must include

(1) an inventory of renewable and nonrenewable resources present, their human uses and their economic value as measured by net present value;

(2) location, type, and duration of access;

(3) operable timber base areas to be harvested;

(4) annual allowable harvest;

(5) silvicultural prescriptions;

(6) facility development;

(7) area-specific management practices or prescriptions needed in addition to forest practices regulations and best management practices to protect or enhance fish and wildlife habitat and harvest, public recreation, and other significant public or private resources and uses of the area.

(b) In addition, the operator shall submit a five-year operating plan and an annual harvesting plan for the first two years of operation. The commissioner shall prepare a plan for administrative oversight of the agreement in consultation with other affected state agencies.

Sec. 41.17.530. BEST INTEREST FINDING. Before entering into or extending an agreement, the commissioner shall issue a written finding that the proposed agreement, as supported by the management plan and operating plan submitted under AS 41.17.520, is in the best interest of the state. The finding and all plans shall be reviewed by the commissioners of environmental conservation, fish and game, and commerce and economic development. The commissioner shall provide public

notice of the proposed agreement, the written finding, and the management plan, and the five-year operating plan under AS 38.05.945 and shall hold appropriate public hearings.

Sec. 41.17.540. REQUIREMENTS OF FOREST MANAGEMENT AGREEMENT. (a) An agreement for the harvest of state timber under this section must provide for

(1) the term of the initial agreement, not to exceed 20 years, and conditions for an extension of the term under AS 41.17.-550(a);

(2) the stumpage prices to be charged for the timber and a periodic review and, if appropriate, adjustment of the stumpage prices;

(3) penalties for violation of the terms of the agreement and termination of the agreement under AS 41.17.550(c);

(4) the update of the operating plan each five years;

(5) the update of the annual harvesting plan;

(6) public use of state land involved in the agreement, except that the contractor may limit access in an area that is being harvested or where hazardous conditions exist;

(7) the protection of compatible and noncompatible uses, such as mining, recreation, and fish and wildlife habitat and harvest;

(8) a bond from the purchaser to protect the interests of the state;

(9) protection of state-owned land within 100 feet of rivers, lakes, or streams to provide soil stability, protect fish and wildlife habitat, water quality, and other important uses although more state land may be protected as determined in the management plan, the five-year operating plan, or the annual harvesting plan;

(10) the preparation of reports required by the

commissioner; and

(11) other terms, conditions, and limitations determined to be in the public interest by the commissioner.

(b) The commissioner shall establish by regulation requirements for access development, harvest, management, including the contents of plans required under AS 41.17.520, and regeneration of timber on state land that is subject to an agreement under AS 41.17.500 - 41.17.580.

(c) In an agreement for the harvest of state timber entered into under AS 41.17.500 - 41.17.580, the commissioner may require the purchaser to

(1) compensate the state for monitoring and enforcement of the terms and conditions of the agreement and applicable state law;

(2) compensate the state for the scaling services required to account for the timber sold;

(3) construct and maintain access roads necessary to the harvest of the timber; and

(4) designate a percentage of the timber volume to be subcontracted to small operators; the commissioner shall make the final designation from areas included in the operating plan.

(d) A forest management agreement entered into or extended under AS 41.17.500 - 41.17.580 must contain a requirement that the operator comply with the terms of the forest management agreement and AS 41.17.500 - 41.17.580. A forest management agreement entered into under AS 41.17.500 - 41.17.580 must contain the conditions under which the agreement may be terminated by the commissioner on a finding that the operator has not complied with the terms of the agreement or with state law.

Sec. 41.17.550. EXTENSIONS OF FOREST MANAGEMENT AGREEMENT. (a) At any time between the 5th and 10th year of an agreement, either

during or after the initial term of the agreement, the commissioner may extend the forest management agreement if

(1) the term of the extension does not exceed the term of the initial agreement;

(2) the contractor submits a proposed operating plan for the next five years of operation and amends the management plan for the forest management agreement, as the commissioner considers necessary; and

(3) the commissioner, after review of existing and proposed operations and consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, and other affected agencies and municipalities finds that the operator has substantially complied with AS 41.17.500 - 41.17.580 and the terms of the forest management agreement.

(b) Before extending a forest management agreement, the commissioner shall

(1) adopt a best interest finding under AS 41.17.530;

(2) after review of existing and proposed operations and after consultation with the commissioners of environmental conservation, fish and game, and commerce and economic development, determine that the contractor had complied with AS 41.17.500 - 41.17.580 and the terms of the forest management agreement; and

(3) provide public notice under AS 38.05.945 and hold appropriate public hearings.

Sec. 41.17.560. CREDITS. The commissioner may grant a contractor credit against future stumpage payments due under the forest management agreement. A credit against future stumpage is not transferable between contractors or between sales and may not be paid in cash. A credit may not exceed the value owed to the state. A credit

against future stumpage payments may be granted for the

(1) loss of roads and drainage structures that

(A) have future value to the state; and

(B) are lost through an act of God not due to negligence on the part of the contractor;

(2) construction of capital items that

(A) do not directly contribute to the management or harvest of timber resources;

(B) were not included in the initial agreement or its supplements; and

(C) were authorized in advance by the commissioner; or

(3) additional silvicultural treatments beyond those required in the agreement and authorized in advance by the commissioner.

Sec. 41.17.570. INCREMENTAL VOLUME AVAILABLE. At any time during an agreement, the commissioner may make the incremental volume available to the contractor at the same or at a reduced rate if the commissioner determines that the management of the contractor has increased the annual allowable cut consistent with the other objectives of the agreement.

Sec. 41.17.580. OTHER AUTHORITIES UNAFFECTED. The provisions of AS 41.17.500 - 41.17.580 do not affect the authority of

(1) the Department of Fish and Game, the Board of Fisheries, or the Board of Game under AS 16 or AS 41.99.010;

(2) the Department of Environmental Conservation under AS 46.03; or

(3) state agencies and municipalities under AS 44.19.-145(a)(11) and AS 46.40.100.

* Sec. 3. AS 38.05.120 is amended by adding a new subsection to read:

(b) The commissioner may also dispose of timber under

AS 41.17.500 - 41.17.580.

5-0567P
Bradley
5/3/88

Original sponsors: Jones and Sturgulewski

IN THE SENATE BY THE RESOURCES COMMITTEE

HOUSE CS FOR CS FOR SENATE BILL NO. 112 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to forest management agreements."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. INTENT. It is the intent of the legislature that the commissioner provide timber opportunities for small ~~independent~~ operators within and near an area that may be subject to a forest management agreement.

* Sec. 2. AS 36.30.850(b) is amended by adding a new paragraph to read:

(14) agreements for the management of state timber under AS 41.17.500 - 41.17.640.

* Sec. 3. AS 41.17 is amended by adding new sections to read:

ARTICLE 5A. FOREST MANAGEMENT AGREEMENTS.

Sec. 41.17.500. PURPOSE. (a) The purpose of AS 41.17.500 - 41.17.640 is to authorize the commissioner to enter into forest management agreements that may include provisions for the development of a forest products plant and facilities or services such as reforestation, road construction and maintenance, recreation improvements, and fish and wildlife habitat protection, monitoring of activities under a forest management agreement, and the enforcement of terms, conditions, and laws protecting other beneficial uses of state land.

(b) A forest management agreement must provide for consideration of other existing beneficial uses of forest land in an agreement under AS 41.17.500 - 41.17.640.

(c) A forest management agreement may

(1) relieve the state of some of the administrative

responsibility of developing and managing a timber sale;

(2) provide for the long-term management of state timber, creating stability for the forest products industry, and incentives for the responsible use of state timber; and

(3) provide an operator with a stable source of timber from a designated area on the basis of successive renewals of contractual rights.

(d) The provisions of AS 41.17.500 - 41.17.640 do not affect the obligation of an operator to comply with state laws or regulations on environmental conservation, timber practices, fish and game, or any other resource or use of a resource.

Sec. 41.17.510. FOREST MANAGEMENT AGREEMENTS. (a) The commissioner may, with concurrence of the commissioners of environmental conservation, fish and game, and commerce and economic development and consultation with affected municipalities, enter into an agreement for the management of the forest resources of the state under AS 41.17.-500 - 41.17.640.

(b) A forest management agreement is subject to each applicable state and federal law and regulation in effect on the effective date of the agreement and to all laws and regulations adopted after the effective date of the agreement.

Sec. 41.17.520. PLANS. (a) A forest management agreement entered into under AS 41.17.500 - 41.17.640 must be consistent with the Alaska coastal management program, an area and a management plan adopted by the commissioner under AS 38.04.065, and a land classification adopted by the commissioner under AS 38.05.300. A management plan that allows forest management agreements must include

(1) an inventory of human uses and renewable and nonrenewable resources in the area;

(2) location, type, and duration of access for forest management;

(3) operable timber base areas that may be harvested;

(4) annual allowable cut as determined by the commissioner;

(5) silvicultural prescriptions;

(6) possible facility development;

(7) area-specific management practices or prescriptions needed in addition to forest practices regulations and best management practices to protect or enhance fish and wildlife habitat and harvest, public recreation, water quality, and other significant public or private resources and uses of the area.

(b) Before the commissioner enters into a forest management agreement, a bidder selected under AS 41.17.560 shall submit a master plan for implementation of the proposed forest management agreement, a five-year operating plan and an annual harvesting plan for the first two years of operation. The commissioner shall prepare a plan for administrative oversight of the forest management agreement in consultation with other affected state agencies. The master, operating, harvesting, and administrative plans are subject to agency and public review under AS 41.17.570.

(c) Each year the operator shall prepare and the commissioner shall review and [shall ~~may~~] approve, reject, or require a revision of an annual harvesting plan. During the term of a forest management agreement the operator shall annually update the master plan and five-year operating plans subject to the approval of the commissioner.

Sec. 41.17.530. NOTICE OF INTENT TO DEVELOP AN AGREEMENT. After meeting the planning requirements under AS 41.17.520(a) and before a forest management agreement is offered for bid under AS 41.17.560, the commissioner shall publish notice under AS 38.05.945 of the intention

to consider a forest management agreement for an area. The commissioner shall provide written notice to private property owners within and adjacent to the proposed agreement area and shall hold public hearings in affected communities.

Sec. 41.17.540. REQUIREMENTS OF FOREST MANAGEMENT AGREEMENT. (a) A forest management agreement for the harvest of state timber under this section must provide for

(1) the term of the initial agreement, not to exceed 20 years, and the conditions for an extension of the term under AS 41.-17.600;

(2) the stumpage prices to be charged for the timber and a periodic review and, if appropriate, adjustment of the stumpage prices;

(3) the penalties for the violation of the terms of the agreement and provisions for termination of the agreement under (d) of this section;

(4) an annual update of the master and operating plans;

(5) public use of state land involved in the forest management agreement, except that the commissioner may limit access in an area that is being harvested or where hazardous conditions exist;

(6) the protection of multiple uses, such as mining, recreation, and fish and wildlife habitat and harvest;

(7) performance and payment bonds from the purchaser to protect the interests of the state;

(8) specific mitigating measures and monitoring plans to protect water quality;

(9) protection of state-owned land within a minimum of 100 feet of rivers, lakes, or streams to provide soil stability, protect fish and wildlife habitat, water quality, and other important uses

although more state land may be protected as determined in the master plan, the five-year operating plan, or the annual harvesting plan;

(10) provisions to protect or enhance areas of high public value other than timber;

(11) the maximum annual allowable cut as determined by the commissioner;

(12) the maximum and minimum development requirements as determined by the commissioner;

(13) the preclusion of a contractor under a forest management agreement from bidding on timber sales of 5,000,000 board feet or less under AS 38.05.115;

(14) the preparation of reports required by the commissioner; and

(15) other terms, conditions, and limitations determined to be in the public interest by the commissioner.

(b) The commissioner shall establish by regulation the requirements of a forest management agreement for access, development, harvest, management, the contents of plans required under AS 41.17.-520(b), and ~~forestation~~ of timber.

(c) A forest management agreement may require the purchaser to

(1) enter into a reimbursable services agreement with the state for monitoring and enforcement of the terms and conditions of the agreement and applicable state law;

(2) compensate the state for the scaling services required to account for the timber sold;

(3) construct and maintain roads required for the harvest of timber by the agreement; and

(4) designate a percentage of the timber volume to be subcontracted to a small operator; the commissioner shall make the

final designation from areas included in the operating plan.

(d) A forest management agreement entered into or extended under AS 41.17.500 - 41.17.640 must contain a requirement that the operator comply with the terms of the forest management agreement and AS 41.17.500 - 41.17.640 and must contain conditions under which the agreement may be terminated or subject to other penalties including a cease and desist order, a fine, a reduction in the allowable cut, location or cutting periods, or other remedies as determined by the commissioner on a finding that the operator has not complied with the terms of the agreement or with state law.

Sec. 41.17.550. CREDITS. (a) In a forest management agreement, the commissioner may provide for contractor credit against future stumpage payments due under the forest management agreement. A credit against future stumpage is not transferable between contractors or between sales and may not be paid in cash. A credit may not exceed the value owed to the state. A credit against future stumpage payments may be granted for the

(1) loss of roads and drainage structures that

(A) have future value to the state; and

(B) are lost through an act of God not due to negligence on the part of the contractor;

(2) construction that

(A) does not directly contribute to the management or harvest of timber resources such as recreation improvements;

(B) was not included in the initial agreement or its extensions; and

(C) is reviewed by affected agencies and authorized in advance by the commissioner; or

(3) additional silviculture treatments beyond those

required in the agreement reviewed by affected agencies and authorized in advance by the commissioner.

(b) The commissioner shall provide public notice under AS 38.-05.945 before granting a credit under (a)(2) or (3) of this section.

Sec. 41.17.560. MOST QUALIFIED BIDDER DETERMINED. (a) The commissioner shall determine the most qualified bidder for a forest management agreement based on minimum qualifications established for bidders in regulations and in a multiple variable bid process. In reviewing bids received the commissioner shall consider

(1) the stumpage payments proposed by the bidder;

(2) the amount of the investment in plant and facilities proposed by the bidder;

(3) the forest resource utilization standards proposed by the bidder;

(4) the number of jobs to be provided by the bidder;

(5) road construction, reforestation, and recreation improvements requested by the commissioner;

(6) measures proposed by the bidder to maintain, enhance, or mitigate the effects on other beneficial uses or resources of forest land; and

(7) other items requested by the commissioner or offered by the bidder.

(b) Before requesting bids or accepting applications, the commissioner shall adopt regulations detailing the bidding procedure and the method of determining the most qualified bidder.

Sec. 41.17.570. REVIEW AND PUBLIC NOTICE. Before the commissioner enters into or extends an agreement or makes a finding under AS 41.17.580, the proposed agreement, the proposed best interest finding under AS 41.17.580, and each plan prepared under

AS 41.17.520(b) and (c) shall be reviewed by the commissioners of environmental conservation, fish and game, and commerce and economic development and by affected municipalities. The commissioner shall provide public notice under AS 38.05.945 before adopting the best interest finding, the proposed agreement, the master plan, the five-year operating plan, and the annual harvesting plan and shall hold appropriate public hearings.

Sec. 41.17.580. BEST INTEREST FINDING. Before the commissioner enters into or extends an agreement, the commissioner shall issue a written finding that the proposed agreement or extension is in the best interest of the state. The finding shall include an analysis of the social, economic, and environmental effects of the proposed agreement or extensions.

Sec. 41.17.590. INCREMENTAL VOLUME AVAILABLE. If allowed in an agreement, at any time during an agreement the commissioner may make incremental volume available to the contractor if the commissioner determines that forest management by the contractor has increased the annual allowable cut consistent with the other objectives of the agreement.

Sec. 41.17.600. EXTENSIONS OF FOREST MANAGEMENT AGREEMENT. (a) Each five years of the agreement, either during or after the initial term of the agreement, the commissioner may extend the forest management agreement if

(1) the term of the extension does not exceed five years;

(2) the contractor submits a proposed operating plan for the next five years of operation and amends the master plan for the forest management agreement, as the commissioner considers necessary; and

(3) the commissioner, after review of existing and proposed

operations and concurrence of the commissioners of environmental conservation, fish and game, and commerce and economic development, and consultation with other affected agencies and municipalities finds that the operator has complied with AS 41.17.500 - 41.17.640 and the terms of the forest management agreement.

(b) Before extending a forest management agreement, the commissioner shall

(1) adopt a best interest finding under AS 41.17.580; and

(2) provide public notice under AS 38.05.945 and hold appropriate public hearings.

Sec. 41.17.610. ACCOUNTING. The commissioner of administration shall separately account for money received under this section that the Department of Natural Resources deposits in the general fund. The annual estimated balance in the account may be used by the legislature to make appropriations to the department to carry out the purposes of AS 41.17.500 - 41.17.640.

Sec. 41.17.620. OTHER AUTHORITIES UNAFFECTED. The provisions of AS 41.17.500 - 41.17.640 do not affect the authority of

(1) the Department of Fish and Game, the Board of Fisheries, or the Board of Game under AS 16 or AS 41.99.010;

(2) the Department of Environmental Conservation under AS 46.03; or

(3) state agencies and municipalities under AS 44.19.-145(a)(11) and AS 46.40.100.

Sec. 41.17.630. EXEMPTION. Agreements for the management of state timber under AS 41.17.500 - 41.17.640 are exempt from AS 36.30.

Sec. 41.17.640. DEFINITIONS. In AS 41.17.500 - 41.17.640

(1) "annual harvesting plan" is a site specific plan that identifies on maps locations of roads and harvest units, gives

estimated volumes by species, miles of road to be constructed, facilities to be constructed and mitigating measures for protection of other associated resources, and provides details of management such as engineering, silviculture, enhancement projects for fish and wildlife habitat, and protection of water quality in a forest management agreement;

(2) "area plan" means a regional land use plan adopted under AS 38.04.065 that is developed to provide management direction for the multiple-use of the forest resources of the state, prepared by the department, and involves interagency and public participation;

(3) "five-year operating plan" is a description of management and harvest activities over a five-year period that may include the general location of units, roads, volumes to be harvested, and necessary improvements in a forest management agreement;

(4) "management plan" means a regional land use plan adopted under AS 38.05.065 that makes more detailed allocation decisions, gives more detailed guidance for management than an area plan, is prepared by the department, and involves interagency and public participation;

(5) "master plan" means a general resource use plan to provide direction for the harvesting of timber and management of other resources in a forest management agreement; and

(6) "small operator" means a timber business that

(A) employs an average of 25 or fewer full-time equivalent employees;

(B) is not owned, in whole or in part, by the operator under a forest management agreement; and

(C) is not controlled by contract or agreement by the timber operator.

* Sec. 4. AS 38.05.120 is amended by adding a new subsection to read:

(b) The commissioner may also dispose of timber under AS 41.17.-500 - 41.17.640.

Alaska State Legislature

Please enter into the record my testimony to the House Resource committee name

committee on SB 112 bill/subject, dated 4/26/88.

Mr. Chairman,

The Wasilla Chapter of SVA finds several serious flaws in the FMA bill, especially as it might affect DNR timber proposals for the Susitna Valley.

First, the bill has no requirement for sustained yield harvest strategy.

In addition, the commissioner is not required to demonstrate that activities under a FMA are even economically feasible.

The bill does not require equal consideration of other existing uses, according to p.1, lines 15-16.

In the same vein, the bill does not require concurrence of the resource conservation agencies, namely ADF&G and ADEC for any aspect of a FMA.

cont →

Signed: Michael J Beman

Testifier

Wasilla Chapter of Susitna Valley Assoc.

Representing (Optional)

PO Box 2176

Address

Palmer, AK 99645 376-3642

Phone No.

Finally, the bill grants inadequate protection of surface waters. On page 4, sentence 9, cutting can occur within 100 feet of streams and lakes if the commissioner determines that the affect of cutting on the water is not important enough to worry about.

In brief, the bill grants too much discretion to the commissioner in disposing of public timber resources with too little requirement for accountability to the public. We suggest that the committee hang onto the bill until these deficiences ~~are~~ can be corrected.

Thank you.

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)
(4/30/88 draft)

Page 3, line 19, after "review":
Delete "may approve"
Insert "approve, reject or revise"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)
(4/30/88 draft)

Page 4, line 18, after "protection of":
Delete "compatible or incompatible" and
Insert "multiple"

A M E N D M E N T #3

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)
(4/30/88 draft)

Page 5, line 6:

Insert a new section "(13) a provision precluding the holder of a forest management agreement from bidding on timber sales under AS 38.05.115 of five million board feet or smaller."

Renumber remainin sections accordingly.

A M E N D M E N T #4

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 5, line 13, after "and":

Delete "regeneration" and

Insert "reforestation"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 5, line 29, after "terminated":

Insert "or subject to other penalties including but not limited to cease and decease orders, fines, or reduction of allowable cut, location or cutting periods, or remedies as determined"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 6, line 18, after "supplements;":

Insert: "and"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 8, line 7, after "contractor":

Delete "at the same or at a reduced rate"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 10, line 16:

Delete all material and insert the following:

"(A) employs an average of 25 or fewer full-time equivalent employees;"

A M E N D M E N T

Offered in the HOUSE

TO: HCS CSSB 112 (Resources)

(4/30/88 draft)

Page 10, line 19 through line 20:

Delete all material and insert the following:

"(C) is not required to sell the timber to the operator of the forest management agreement."

SB 112: A Bill for an Act Entitled
"An Act relating to forest management agreements"

A review and Recommendations
for the House Resources Committee
Rep. Sam Cotten
Rep. Adelheid Herrmann
Co-Chairs

by
Theodore G. Smith
Box 1026
Willow, Ak. 99688

January 8, 1988

SUMMARY OF RECOMMENDATIONS

SB 112 as it passed the Senate is a flawed container for a good idea. It aroused a great deal of opposition in its present form and should be rewritten so that the good idea can be implemented. The good idea is the Forest Management Agreement and the Act to implement it should contain the following elements.

1. It should authorize the Commissioner of Natural Resources to enter into long term, end-result, stewardship contracts with private parties for cooperative management of the States' forest resources.

2. A method of operator selection other than high bid for volume removed should be authorized. A bid based on multiple variables is currently being developed by the Division of Forestry and may be the optimum method. Consideration should be given to the option of negotiations by the DNR subject to review and approval by an independent third party such as the Board of Forestry.

3. The Act should authorize price adjustments as an incentive for intensive forest management practices.

4. The use of the so-called "Evergreen Clause" should be authorized. This clause requires a review each 5 years of a contract's duration. At that review, the contract is either cancelled for noncompliance or extended for another 5 years.

5. The Act should direct a public review process for five year management plans, the 5 year review, and amendments to the plans or stewardship agreement.

6. Because of the evergreen clause and the planning process, a new procedure should be adopted for ensuring public participation in the decision-making process leading to the award of an FMA. The procedure should parallel the process used in granting concession contracts rather than the land disposal procedures in order to emphasize the fact that the FMA is directed toward mutually beneficial management of a continuing resource rather than termination of the States' interest in that resource.

7. Since the stewardship contract would be essentially a trusteeship relation between the State and the operator, there should be substantial bonding requirements as well as penalties for malfeasance.

BACKGROUND

One of the earliest proposals for Forest Management legislation was made by Paula Easley, then Executive Director of the Resource Development Council in a speech to the Council of Western State Foresters at Girdwood, Alaska on June 25, 1985. She suggested adoption of an FMA system such as the one in effect in Ontario, citing as benefits the generation of revenue through taxes and the reduction of expenses by transferring management costs to the private sector.

SB 112 was introduced by Senator Lloyd Jones of Ketchikan in the 1987 session of the Legislature. The bill stated that an FMA **"shall be used to foster the development of the states' forest products industry".** Testimony by James Clark on behalf of the Alaska Loggers Association said that the bill **"would increase the sale of timber in the Interior of Alaska"** and that such an increase **"could increase the size of the industry and thus increase the number of jobs associated with timber harvesting."** He summarized by saying **"The overall effect of this legislation then is to take the lid off the industry in the Interior and give it the opportunity to produce more jobs.**

The costs of providing these jobs will not be a cost to the State but be borne by the industry."

The bill was passed by the Senate and arrived in the House as **CSSB 112 (RES)am.** It authorized the Commissioner of Natural Resources to "**enter into an agreement . . . for the sale of timber from state land**" without regard to A.S. 38.05.110-.120, (all the current statutes dealing with sale of timber) and A.S. 38.05.300 (requiring classification before sale of land or resources.) It authorized adoption of regulations governing harvest and regeneration of timber. It authorized the Commissioner to provide for a number of contract items in any agreement including "**timber harvest to be at a volume in excess of that permissible under the nondeclining even-flow method of calculating sustained yield**". It listed several items to be considered by the Commissioner in entering into an agreement, and required consultation with other state or federal agencies. It required that the Commissioner request proposals under the bill within one year of the effective date of the Act.

The DNR provided the House with a zero fiscal note on the grounds that "**An agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long term commitment of timber to private enterprise.**"

The bill aroused a great deal of opposition on a variety of grounds. A major one was that although it was touted as a revolutionary management approach for state forest lands, the permissive language made it nothing more than authorization for long term negotiated timber sales. Waiving the existing laws and regulations granted the Commissioner unprecedented authority to negotiate for sale of state resources. The requirement that the Commissioner only "**consult**" with other agencies bothered many - they wished for a more positive

recognition of other agencies authority. The authorization to harvest in excess of the nondeclining even-flow method of calculating sustained-yield was seen by many as unconstitutional. Personnel of the Division of Forestry and others protested that the zero fiscal note coupled with the one year time-line for RFP's was totally unrealistic. Lack of protection for independent loggers was also a problem for many. After teleconference hearing on May 6, 1987, House Resources Co-Chairman Sam Cotten announced his intention to hold the bill over to the next session in order to do some work on it during the interim. This report is the result of some of that work, conducted by the author under contract to the House Resources Committee.

METHOD OF STUDY

The author, the first Director of both the Division of Forestry and the Division of Parks, conducted a number of interviews with parties who had expressed interest in the bill through prior comments or other means. The following is a synthesis of those interviews, information from research, and knowledge gained from over twenty-five years of Alaskan experience.

ISSUES AND RECOMMENDATIONS

One of the first questions is whether the bill is necessary. Clearly it is not, because other long term timber sales have been made and the State is currently advertising a twenty year, three hundred million board foot sale in the Susitna Basin. Parenthetically, that advertisement has made it difficult to discuss the benefits or drawbacks of the FMA idea - respondents reply on the merits of the sale rather than the merits of the FMA concept.

The corollary question of whether FMA authority is desirable hinges on two issues - will it help the economy by providing

added jobs and economic activity, and will it reduce state expenditures for forest management. Obviously, any answer to these questions involves a lot of guess work - following, for example:

1. The economic activity issue: There is currently a very large portion of the allowable annual cut of timber on state lands that is unutilized. What logging is done provides basically house logs, rough green lumber, and firewood. All of these are fairly low value products. In order to maximize benefits of the harvest, value should be added to the product by local manufacturing. Previous state efforts to require primary manufacture of timber harvested in Alaska were found unconstitutional by the U.S. Supreme Court. Careful construction of an FMA might avoid the constitutional problem while still assuring plant investment. For the proposed sale, the state feels that the problem will be overcome by making plant construction one of the number of variables in the bid process. The existence of a long term assured supply of timber should also have a beneficial effect on the financing of a manufacturing facility. The Alaska market for wood products is very small because of the small population. Therefore a plant sized for efficient production of products such as plywood, oriented-strand board, chip board and similar items, will have to look to export for the bulk of the market. The existence of an assured supply of raw material may be a factor in developing that market, but it is not the key. The real question is whether or not such items can be produced at a price that will be competitive on the world market. Cost and market studies will have to be conducted for any plant proposed, but the existence of the authority for an FMA will remove one possible constraint.

2. The management issue: Most state forest lands in the Interior are over-mature, i.e. they are decaying faster than they are growing. Intensive management of the forest would

undoubtedly increase their volume and the allowable annual cut, and probably improve the quality. State timber sale contracts have routinely included provisions such as slash reduction and scarification intended to assist regeneration. The State Division of Forestry has maintained a nursery - primarily with Federal assistance - and has done some replanting. Even though A.S. 41.17.300 establishes a State Land Reforestation Fund and authorizes appropriating 25% of the receipts from timber sales for activities such as planting, fertilizing, spraying, etc., no appropriations have been made to the fund, nor have any direct appropriations been made for those purposes. Because of a lack of those **"tending"** activities, many state timber sales have been taken over by grass and/or brush. Requiring those activities as part of an FMA would ensure a healthier forest and help to comply with the State Constitution mandate for sustained yield management of renewable resources. There would of necessity be contract administrators on the state payroll to ensure that contract provisions were followed. There would probably be little if any reduction in direct state expenditures, but the benefits received for those expenditures would be substantially increased.

RECOMMENDATION:

While FMA authority may not be required in order to make long term timber sales, there are enough potential benefits to make the idea worth trying.

Under current law, timber is basically sold by high bid. The value of the standing timber is estimated by either comparing it with other sales in the area or by working back from the end value of the product. This value becomes the minimum bid. In a competitive situation, an operator may bid more than the value of the sale, which makes him tend to cut corners on the road building, stream protection and other cost items. At the other end, an appraisal that is too high results in no bids and the loss of the time and effort put into the sale by state personnel. In sales with a low end product value (such as firewood), the appraisal process may indicate a loss. This may tend to be more true if the appraisal is for an FMA because of the expensive long term management requirements. The Province of Ontario solves this problem by saying those expenses are government responsibility and paying the operator for them. Their stumpage price to the operator is relatively high. Nevertheless, the ratio of government payments to receipts is about 5:1. Alberta takes the opposite approach, requiring the cost of management activities to be borne by the operator, and receiving very little for stumpage. Both provinces have a provision for legislative review of negotiated FMA's. British Columbia relied on an after the fact audit, one of which resulted in a minister of forest being found guilty of accepting a bribe in connection with an award of a tree farm license. Negotiation is generally not utilized in Alaska where sale of public assets is involved, and any negotiation authorized in connection with FMA legislation would probably have to be severely limited in order to achieve public acceptance. The proposed Susitna Basin sale anticipates a bid system based on multiple variables. Potential purchasers will be asked to bid on price per thousand board feet, dollar amount of plant investment, number of jobs created, volume of timber used, and other items.

RECOMMENDATION:

Award of an FMA should be based on factors other than or in addition to the amount paid for timber removal. The multiple variable system under development may prove to the optimum method of purchaser selection. If negotiation is authorized, it should be subject to review by an independent third party such as the Board of Forestry or the legislature, or both.

As noted above, methods of valuing standing timber can differ widely in their application. The Alberta example would seem to have the most merit for Alaska, given the historic reluctance to make investments in forest management. This would result in little direct income to the state, but the state would benefit from increased economic activity and better management of its resources. Other financial incentives may prove to be necessary, ranging from tax breaks to state investment in infrastructure. Such incentives should probably be considered separately from the FMA authorization, except for pricing of the stumpage. The management activities of the operator will result in an increase in the allowable annual cut. He should be permitted to utilize that increase and a reduction in the stumpage for the increase could be an incentive for more intensive management activities.

RECOMMENDATION:
FMA legislation should authorize price adjustments as an incentive for intensive forest management practices.

A key feature of an FMA is the "evergreen clause". This provides that, while the agreement is for a specified term, (usually 15-20 years) it is subject to review every 5 years. If the operator is performing satisfactorily at that time, the agreement can be extended for another 5 years. If he is in noncompliance with the terms, the agreement can be cancelled. This provision has little or no opposition.

RECOMMENDATION:
FMA legislation should include a requirement for a planning process and public and agency review of the plans and amendments thereto.

Most of the procedures under which the state land and resources are disposed of arose from the frenzy of land sale activity in the late 1970's and early 1980's and are designed

to deal with the permanent alienation of state interest in the land. The preliminary decision and final finding which precede the notice of sale seem to be redundant if the planning and classification process precede a decision to enter into a management agreement. In addition, the continuing involvement of the State and the public thought the evergreen clause and the planning process means that the decision can be changed much easier than can a sale of fee title.

RECOMMENDATION:

A new method of incorporating public input into the decision-making process should be adopted for forest management agreements. This process would recognize that the states' interest in the land and resource is not being alienated, but that the stewardship responsibilities are being assigned to a private operator.

The success of an FMA will depend on the operators ability to make a profit. If the profit margin declines, the management activities will be the first to suffer. If the margin declines enough, bankruptcy will ensue and the management activities will cease. The state could very well be left with substantial work undone and the need for action to prevent erosion, windthrow, or other loss of resources.

RECOMMENDATION:

An FMA agreement should carry a fairly high bond conditioned on the faithful performance of the operators stewardship functions, as well as penalties for his mis or malfeasance.

Several other issues were mentioned during interviews as requiring legislative attention. These included the need for road-building authority in the Department of Natural Resources; the need for authority for forestry field employees to be able to issue citations for theft of timber; and the need for an accepted log and lumber grading system for Alaska.

lie outside the issue of Forest Management Agreements and should be considered separately.

Addendum: List of interviews and meetings.

Matanuska-Susitna Borough

P.O. BOX 1608, PALMER, ALASKA 99645-1608 • PHONE 745-9642

ASSESSMENT DEPARTMENT

MATANUSKA-SUSITNA BOROUGH - TODAY

The Matanuska-Susitna Borough has been long recognized as the alternative lifestyle of Anchorage and a bedroom community for the state. Its economy has been based on real estate and residential construction which is why, two years ago, a re-assessment of priorities resulted in redirection. The following helps to explain how and why. (Appendix A)

I. Over half of our tax base is investment in land for future use. The '86 Federal Tax Reform Act changed the rules for investors regarding interest rate deduction and capital gains treatment. This has had most severe effect on local revenues through tax base.

II. As a bedroom community for Anchorage and slope oil and gas production employees we are impacted more severely by economic reversal because of the Valley's traditionally lower housing costs and attraction of the first to be transferred or terminated employees. The more transient of the boom were attracted to Valley housing economy, hence the present number of foreclosures are not unexpected, (5% of improved properties).

III. Basic economy of the MSB has been that of provider of developed land, housing, retail-commercial services, schools, and other governmental services. While we have endured real shock (unopened new schools) in the past year, the demand for '86 level of services has not declined substantially due to the attraction of the generally less affluent population from Anchorage. This fact is demonstrated in lower rents, comparatively little school enrollment variation, and even a developing competitiveness for "institutionally owned" residential housing due to speculative attraction and lowered qualifying standards by lenders.

IV. We live in the backlash of Anchorage economics which attracts city emigrants seeking something else. They and locals cry for local employment which is the basis of the Borough's impetus to develop permanent jobs. Locally we have demonstrated the capacity to develop and put construction work on the street, although our resources and abilities are very spent in expectation of greater future return dependent on state actions (i.e., Port, Timber, Tourism and Export).

Well over a year ago the Matanuska-Susitna Borough Assembly recognized the symptoms of economic change. Internal actions led to cost containment in budgets of general government (Appendix C). Very bold and aggressive action resulting in a two million dollar appropriation for economic development was directed toward:

1. Port Development
2. Timber Management
3. Hatcher Pass Development
4. Export Market Development (Finland & Korea)
5. Susitna River Drainage Tourism Development
6. Local employment
7. Local Land Management Opportunity

A weighed risk in committing to economic development involved departure from a financial strategy which would have resulted in property tax stabilization through fiscal year '88-'89. The risk was well managed as foreign markets have been identified, timber has been established as a marketable commodity, coal export has been announced to commence in 1991, all weather access is provided to a viable port site, and a major tourism destination is likely at Hatcher Pass. Downside of these positive expectations is a substantial local tax rate increase in 1988-89 (see Appendix B)).

Within the past two years community and citizen involvement in these jobs objectives include formation, encouragement and support of:

1. Regional Economic Development Corp. - citizens
2. Mat-Su Visitors and Convention Bureau - citizens
3. Foreign Trade Zone Application - Borough
4. Community Port Development Committee - citizens & Borough
5. Local Mayors Economic Development Council - elected officials
6. Encouragement of local opportunity identification - citizens

These efforts combining public and private concerns have had preliminary results with favorable economic impact. This is why we appeal to the Governor and Legislature to help see fruition of efforts to diversify the most severely unemployed municipality of the Railbelt. We are demonstrating collective Borough and citizen goals. Help! A very dynamic and beneficial process is operating, now!

John Rale
Borough Manager

Appendix A: Municipal Comparisons
Appendix B: '88-'89 Preliminary Budget
Appendix C: What have we done

APPENDIX A

1987 COMMUNITY TAX BASE COMPARISONS

	MOA	MSB
Tax Base 1987		
Real Property	$10,189,955,476	$2,366,953,891
Personal	1,492,800,000	171,798,809
AS43.56 oil & gas	61,094,970	4,199,140
	$11,743,850,446	$2,542,951,840
1988 tax base loss	-13%	-21%
Estimated '88 taxable	$10,239,000,000	$2,005,707,710
Structure Assessed	N/Available	46% of RP
Land Assessed	N/Available	54% of RP
Personal Property	12.7%	6.8% of Tax Base
Total Parcels	80,201	57,597
Residential Use	70%	29% of parcels
Commercial	7%	3% of parcels
Vacant	23%	68% of parcels
Oil & Gas State Assessed	.52%	.17% of Tax Base
Population	248,263	44,280
Mill Rate Schools	5.41	4.134
Local Gov't.	1.51	1.166
Total Areawide	6.92	5.3

APPENDIX B

1988-89 PRELIMINARY BUDGET

Real & Personal Tax Collection		
1987	2.538 Billion @ 5.3 Mills	$13,451,400
1988	2.005 Billion @ 5.3 Mills	10,626,500
	Loss	($ 2,824,900)

'88 Mill rate to equalize '87 revenues - 6.7 Mills ($13,451,400)

Assumptions:

1. No change in Budgets
2. No change in State Revenue distributions
3. No change in other revenue sources

Preliminary Budgets:	'87-88 Actual	1989 Preliminary
Local Gov't	$14,152,599	$13,756,690
School Budget	53,454,622	54,369,794
School Debt	24,254,622	24,343,969
Capital Projects & tsfs to non-lapsing funds	-0-	$ 2,594,000
	$91,861,843	$95,064,453

Local Levy	18,788,044		
Total Taxable	2,005,717,700	=	9.4 Mills

APPENDIX C

WHAT HAVE WE DONE

1987-88

1. Cut back to essential statutorily required services.
2. Early Retirement Program
3. Layoffs
4. Wage Freeze
5. Roll back executive salaries through change of administration.
6. Two tier salary system
7. Fund balance allocation $9,474,110
8. Volunteer, student hire, and Voc-Rehab program use
9. Utilizing Corrections Dept. Inmate Community Custody Program

1988-89

1. Privatization of facilities consideration
2. Economic diversification emphasis
3. Cutting local capital improvement projects
4. Cutting staff through attrition to the point of affecting required services
5. Hiring temporary employees on as needed basis where possible.
6. Fund balance allocation $6,771,198

Remarks on the Procedure
for a REQUEST FOR PROPOSAL
on the Southcentral Alaska Forest Resource

HOW FAR IS BACK?
WHERE IS SQUARE ONE FROM "GO"?

The most immediate concern of proponents for a large scale Susitna-Tyonek long-term timber harvest must be resolution of a semantic problem that has been created to confuse the situation. In February, Governor Steve Cowper announced that the Susitna-Tyonek timber proposal must be returned to "Square One". Some reporters who picked up on the phrase at the press conference have assumed that "Square One" essentially meant going back and looking at ALL of the trees and ALL of the animals. (And some state employees may also be under this impression.)

However, taking into account preceding studies of the forests, the trees (the animals and streams therein) and the reams of resulting publications, this conclusion by the mass media did not seem logical. It seemed desirable to clarify gubernatorial intent. Therefore, on Friday, Feb. 26, I asked Gov. Cowper -- in person-- for clarification of his intent in revising the timeframe and details of a preliminary finding of a Request for Proposal on the Susitna-Tyonek timber harvest. In brief, his comments were that the "RESOURCE base is not in question. It is a satisfactory answer to concerns of VALLEY citizens which must be addressed".

Literally hundreds (perhaps thousands) of public opinion messages have been beamed to Juneau and the reported preponderance have expressed concerns to the timber project. However, there remains a question as to whether the opposition is primarily to the timber harvest proposal, or rather to the timber harvest as offered in a document which officials now admit could have been more explanatory.

HOW MUCH STUDY IS ENOUGH STUDY?

One of Anchorage's major newspapers ran an editorial on March 23 taking the state to task for finally budgeting $100,000 for research and impact studies within the timber harvest area. The editorial was based on a story by one of the paper's reporters, and implied that the Division of Forestry has done little basic research in the timber area. It was a story which state forester John Galea said contained inaccurate information. The supplemental funding request, he said, was destined for administrative expenses of compiling, printing, and publishing results of hearings and public comments from the first public hearings and preparing a second public document for comment.

More importantly, compilation of a bibliography demonstrates nearly 98 pertinent studies have been completed within recent years about timber and other resources which relate to the Susitna Valley environment. Indeed, some of the specific studies are bound in more than one volume. To mention a few titles, there is a Soil Survey, Matanuska Valley; Soil Survey, Susitna Valley, Alaska; Susitna, Vegetative Class Tables; Procc., Proced., to Control Pollution from Silviculture; Streamside Management Zone, Statutes and Ordinances; Susitna Area Plan; Willow Sub-Basin Plan; Timber & Vegetative Resources Susitna Basin; USDA Investigations & Analyses, Susitna River Basin, Summary; Timber Resource Statistics, Beluga Block; Timber Resource Statistics, Talkeetna Block; Timber Resource Statistics, Upper Susitna; Timber Resource Statistics, Willow Block.

If these studies -- either specific or pertinent to the state's proposed large-scale timber harvest area -- were calculated at an average cost of $50,000 per study, then the expenditure to date would total $4,900,000.00. Considering the studies already gathering dust, it seems only reasonable that, rather than throw more money into studies, the state should follow its original intent. In effect, an RFP would say to private industry, "give us your best estimate of today's market value, outline your industrial process to add value, and keep in mind that neither side is obligated to consummate a contract". Any additional state studies can be performed to gather needed

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An important point is that the forest resource has a value and the people of Alaska own the resource. WE HAVE A RIGHT TO KNOW ITS ECONOMIC VALUE. And the RFP procedure seems the most feasible method of determining market value. Revision of the preliminary plan should be completed within the next six months and specific industry responses should be in hand.

RLE

4/4/88

An analysis by the
COALITION FOR BOREAL FOREST DEVELOPMENT
6821 Sherwood Avenue
Anchorage, Alaska 99504

Matanuska-Susitna Borough

BOX 1608, PALMER, ALASKA 99645 • PHONE 745-9661

DEVELOPMENT SERVICES DEPARTMENT

December 10, 1987

Steve Cowper, Governor
Office of the Governor
P.O. Box A
Juneau, AK 99811-0101

Dear Steve:

The undersigned elected officials strongly support the Susitna Basin timber sale ~~,~~ that the State Division of Forestry is offering. We not only support this sale, but respectfully request that the sale be expanded to include all commercially viable forest areas within the Susitna Basin and, if possible, the Matanuska Basin along with portions of the Kenai Borough. This expanded sale will allow private industry to identify those forest areas that they wish to bid on, based on their economy of scale. We are willing to work with these industries in the develop and diversification of our forest products industry in southcentral Alaska.

The undersigns also respectfully request the sale not be delayed and that if at all possible it be expedited.

Dorothy Jones, Mayor
Matanuska-Susitna Borough

Mayor John Stein
City of Wasilla

Mayor George Carte'
City of Palmer

Mayor Don Gilman
Kenai Peninsula Borough
(see letter attached)

Mayor ~~Tom~~ Tom Fink 1/5/88
Municipality of Anchorage

Gary Silvers, Deputy Mayor
Mat-Su Borough Assembly

Representative Curt Menard

Representative Ron Larson
Support to Except

Introduced by: Development Services
Prepared by: John Duffy

MATANUSKA-SUSITNA BOROUGH

Resolution Serial No. 88- 032

"A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING THE POINT MACKENZIE MARINE PORT DEVELOPMENT PLAN."

WHEREAS, the development of a marine port at Point MacKenzie will diversify natural resource development within the Matanuska-Susitna Borough and Interior Alaska; and

WHEREAS, a marine port at Point MacKenzie will make the Matanuska-Susitna Borough a more competitive location for industry and commerce and therefore aid in the establishment of a stable economy; and

WHEREAS, the Matanuska-Susitna Borough Planning Commission, Port Development Subcommittee and Assembly have taken initial steps towards the development of a marine port at Point MacKenzie; and

WHEREAS, it is important that the development of a port at Point MacKenzie proceed in a timely manner; and

Reso No. 88032

MATANUSKA-SUSITNA BOROUGH
ASSEMBLY

A S S E M B L Y M E M O R A N D U M

Meeting of: March 15, 1988 Date: March 8, 1988

ITEM TITLE: Point MacKenzie Marine Port Development Plan

Submitted by: Ric Davidge, Director Development Services
Prepared by: John Duffy, Chief of Planning

Background

The Planning Division was directed by the Borough Assembly and Planning Commission to create a concept development plan for a marine port at Point MacKenzie. The purpose of this plan is to evaluate several possible alternatives in the areas of: transportation, land use, port management and dock siting and construction and then to recommend a preferred set of alternatives. The preferred set of alternatives would then be implemented by Assembly, Planning Commission and/or administrative action or through a series of more detailed plans.

The plan was developed by utilizing a host of associated plans previously written for the Borough and obtaining comments from the private sector, government agencies and individuals. Well over three hundred draft and revised draft plans were distributed for review and comment. Three formal public hearings were held before the Planning Commission: November, 1987; February, 1988 and March, 1988. Comments received since November, 1987 are attached, those received prior to November were incorporated within the revised draft. The plan has also been discussed at several meetings of the Port Development Subcommittee.

Overview of Plan

The Point MacKenzie Marine Port Development Plan is a conceptual plan, that is, it describes a preferred set of alternatives for the following categories: 1) land use, 2) transportation, 3) port management, and 4) dock or port siting and construction. Should the plan be adopted it would be implemented by developing

FISCAL ACTION (TO BE COMPLETED BY FINANCE) FISCAL IMPACT? (YES)/NO
AMOUNT REQUESTED $ -0- FUNDING SOURCE Already in FY88 Budget
FROM ACCOUNT # — PROJECT #
TO ACCOUNT # PROJECT #
VERIFIED BY: D. W. Chaney CERTIFIED BY:
DATE: 3/8/88 DATE:

Reso 88-032

Number: AM88-075

separate plans for land use and transportation and by Assembly, Planning Commission and administrative actions for port management and port/dock siting and construction.

The plan sets forth a series of goals, objectives and policies for the port and considers a minimum of three alternatives in each of the aforementioned categories. In evaluating land use options the alternatives considered included: no land use regulations, land classifications and leasing, performance zoning and exclusionary zoning. Limited and phased land use regulations are recommended because it is critical that a suitable amount of land be available for industrial and commercial development and that incompatible uses be separated from one another. Performance zoning is recommended as the preferred alternative because it provides the best balance between flexibility and control. The plan also recommends that performance zoning occur in phases with those areas most likely to be developed first being considered first for zoning.

After evaluating transportation alternatives recommendations are made for air, rail, marine and road facilities. The recommendations regarding route alignments rely heavily on previous studies, especially the various Knik Arm Crossing studies. In addition, the Alaska Department of Transportation and Public Facilities and the Alaska Railroad were consulted with about transportation alternatives.

The management options considered included: new administrative unit within the existing Borough government, port commission, and port authority. The original plan considered the possibility of having an Economic Development Authority (EDA) manage the port but this alternative was dropped because an EDA is unlikely to be created in the near future. The recommended alternative is to create a new administrative unit within the existing Borough government because it is believed to be most amendable to Planning Commission and Assembly oversight and imposes a modest increase in costs. This method was used by the Port of Anchorage with success.

The plan does not recommend a specific port or dock site. Rather, the plan calls for the marketing of all potential sites and allowing the private sector to choose the preferred site. This alternative is recommended because it allows the Borough to maximize its opportunities by remaining open to various options and proposals. In addition, the plan recommends that the dock be built in phases, starting with a barge handling capabilities and proceeding to ocean going shipping as demand warrants.

Introduced by: Planning Division
Prepared by: John Duffy

MATANUSKA-SUSITNA BOROUGH

Resolution Serial No. 88-19

"A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION RECOMMENDING THAT THE BOROUGH ASSEMBLY ADOPT THE POINT MACKENZIE MARINE PORT DEVELOPMENT PLAN."

WHEREAS, the development of a marine port at Point MacKenzie will diversify natural resource development within the Matanuska-Susitna Borough and Interior Alaska; and

WHEREAS, a marine port at Point MacKenzie will make the Matanuska-Susitna Borough a more competitive location for industry and commerce and therefore aid in the establishment of a stable economy; and

WHEREAS, the Matanuska-Susitna Borough Planning Commission and Assembly have taken initial steps towards the development of a marine port at Point MacKenzie; and

WHEREAS, it is important that the development of a port at Point MacKenzie proceed in a timely manner; and

WHEREAS, it is vital that port development proceed in an orderly manner so that financial, real estate and manpower resources are used properly; and

WHEREAS, the Planning Commission and Assembly have requested that a marine port development plan be created to help guide development at Point MacKenzie; and

WHEREAS, the Point MacKenzie Marine Port Development Plan recommends specific actions be taken regarding

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF FISH AND GAME

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99518-1599
PHONE (907) 344-0541

January 21, 1988

Mr. John Duffy
Chief of Planning
Development Services Department
Matanuska-Susitna Borough
P.O. Box 1608
Palmer, AK 99645

Dear Mr. Duffy:

The Department of Fish and Game has reviewed the revised draft of the Matanuska-Susitna Borough's Point MacKenzie Port Development Plan. This department was an active participant several years ago in the development of the borough's draft Point MacKenzie Area Meriting Special Attention (AMSA) management plan. Although adoption of the AMSA plan was deferred by the borough, the port development plan appears to be a closely related component of that comprehensive planning effort.

Development of a port is an ambitious project that will benefit from close coordination between borough, state, and federal agencies. Representatives from the Environmental Protection Agency, U.S. Fish and Wildlife Service, and our department met with you and Ric Davidge in late May 1987 to express our interest in participating in the port development planning process. We appreciate this first opportunity to review the plan. However, there is additional resource information that should be included and issues that should be addressed in the plan. All projects identified under the alternatives discussed in the plan will require state and federal permits. Providing more opportunities for state and federal agency participation in the planning stage will ultimately facilitate the permit review process.

We are concerned that, for a project of this magnitude, the port development plan fails to fully consider existing and potential uses and activities of the Point MacKenzie area in addition to the proposed port and ancillary facilities. Ancillary development in the Point MacKenzie area may include roads, airports, railroads, industrial storage and

APPENDIX

DEPARTMENT OF FISH AND GAME COMMENTS

ON THE REVISED DRAFT OF THE PORT DEVELOPMENT PLAN

Maps

The symbols for the Point MacKenzie and study area boundaries appear to be reversed on Figure 2. The study area boundary is also incorrectly symbolized on figures 3, 5, and 11.

None of the maps identify the boundaries of the two state game refuges in the Point MacKenzie area: Susitna Flats and Goose Bay. The Goose Bay State Game Refuge is entirely encompassed by the Point MacKenzie area boundary delineated on Figure 2. The port development plan should recognize the specific land management authorities that currently apply in these refuges by delineating their boundaries on Figure 2.

Figure 3, Land Ownership, contains several inaccuracies. The parcel of land in the southwest corner of the study area is incorrectly identified as borough lands. This parcel is actually state-owned, mental health land within the Susitna Flats State Game Refuge. State-owned tidelands are delineated by a stippled pattern that is not identified in the key to Figure 3. These inaccuracies should be corrected.

On Figure 4, Wetlands and Topographical Features, wetland areas are not clearly shown and no source of information is provided. A better quality map should be used and it should include a reference. The U.S. Fish and Wildlife Service, National Wetlands Inventory Project, has mapped wetlands in much more detail on Point MacKenzie. We recommend that the U.S. Fish and Wildlife Service maps be used to delineate wetlands in the study area.

Land Ownership and Existing Land Use - page 5

"No refuges exist within the study area."

This statement is inaccurate and should be deleted. Most of section 31 and all of section 5 in the southwest corner of the study area are part of the Susitna Flats State Game Refuge.

Air Facilities - pages 44, 53, and 54

The plan's resource inventory (Chapter 3) and port development alternatives (Chapter 4) discuss the benefits of, and three possible sites for, large-scale airport facilities in the study area. It is not clear where one of the three sites is proposed to be located. This site is identified as "the Borough controlled land northwest of the Point MacKenzie Agricultural Project" (page 33), "in the northwest area of Point MacKenzie Agricultural Project" (page 42), and in the center of the Goose Bay State Game Refuge (page 43). All of the area immediately to the west of the Point MacKenzie Agricultural Project is part of the Susitna Flats State Game Refuge. Locating a large-scale jet airport in a game refuge would probably be incompatible with existing uses and activities.

Furthermore, the evaluation of alternatives (Chapter 5) assessed the likelihood of any large-scale airport in the Point MacKenzie area, concluding:

> Due to the close proximity to Anchorage International and Elmendorf Air Force Base obtaining FAA approval is unlikely; or, at the very least, it will be difficult and time consuming. . . . It is unlikely that [the already existing Goose Bay airport] could be expanded to accommodate jet aircraft. (page 44)

However, the final port development recommendations were:

> A commercial jet airport should therefore be built near the Point MacKenzie area. The best location would be northwest of the Point MacKenzie Agricultural Project [presumably in the Susitna Flats State Game Refuge]. (age 53)
>
> . . . the Goose Bay airport should be upgraded in phases to handle additional small engine aircraft and then at a latter date large propeller driven cargo aircraft (e.g., C-130s). (page 54)

The final recommendation appears to conflict with the conclusion of the evaluation of alternatives. The port development recommendations should be consistent with the plan's evaluation that any large-scale airport facility is unlikely in the area.

the Point Mackenzie Airport would need to be able to demonstrate that it would attract a significant number of small general aviation aircraft including precision approach training flights away from Anchorage International Airport (AIA).

Your draft report indicates that a 3,000 - 4,000 foot runway is needed for medium size commercial jets. We would generally consider a runway length of 5,000 to 6,000 feet the minimum length needed for medium size commercial jets and 8,000 to 10,000 feet for large commercial/cargo jets. The operational area minimum service level criteria under AASP guidelines for a "Transport" category airport are:

Runway - 5,000' by 100'
Apron - 120,000 square feet

The use of FAA funding to improve Goose Bay Airport or to develop a new cargo airport in the Point Mackenzie area would need to be justified based on demonstrated existing demand for aircraft operations at an activity level which warrants the improvements.

Ferry Service (Page 52)

Your draft plan indicates that the most promising method of crossing Knik Arm between Anchorage and Point Mackenzie is to establish a ferry service as an extention of the Alaska Marine Highwy System (AMHS). The primary mission of the AMHS is to provide a highway link for general travel between communities which are not connected by a road. Since the proposed port is expected to be connected to the road system and most of the transport requirements would be primarily related to cargo movements, it would appear that the proposed service would be more appropriate as a commercial cargo transport rather than as part of AMHS. If you wish to discuss the provision of this service by the AMHS in more detail, I would recommend contacting:

Should talk to Commissioner

George Davidson
System Director
Alaska Marine Highway System
Department of Transportation and Public Facilities
P.O. Box R
Juneau, Alaska 99811
Telephone: 465-3950

If you have any questions on our comments, please contact me or Roger Maggard, Area Planner, at 266-1653.

Sincerely,

William R. Snell
Regional Director

RM/cn

cc: George Davidson, System Director, AMHS, DOT&PF

MATANUSKA ELECTRIC ASSOCIATION, INC.

P.O. BOX 2929

PALMER, ALASKA 99645-2929

TELEPHONE
(907) 745-3231

January 25, 1988

Draft
Please note changes

RECEIVED

JAN 27 1988

PLANNING DEPARTMENT

Mr. Ric Davidge, Director
Development Services Department
Matanuska-Susitna Borough
Post Office Box 1608
Palmer, Alaska 99645

Dear Ric:

SUBJECT: Point MacKenzie Port Development Plan

On December 9, 1987, we acquired from the Borough a revised Figure 7 (Utilities within the Point MacKenzie Area) of its Point MacKenzie Port Development Plan. This revised Figure 7 does not incorporate the corrections from our October 19, 1987, comments (copy attached) on the September 18, 1987, Revised Draft of the Plan. Also, the revised Figure 7 shows additional incorrections:

> A "220 kV" line was added feeding a "CEA Transmission Substation" northeast of Lake Lorraine (just above the Borough's proposed East Port). This is a 230 kV line feeding a CEA 230 kV Switching Station. This station simply enables the switching between 230 kV underwater cables that cross Knik Arm at that location. It is not a substation, and we understand CEA has no intention of making it one, which is quite logical.

Attached is a correct Figure 7 for easy reference. It shows the electric utility information that MEA would like to see displayed. Three key features are:

- The statement which says THIS AREA IS WITHIN MEA'S ELECTRIC SERVICE TERRITORY.
- The display of MEA's distribution lines in the area.
- The label which identifies a FUTURE MEA SUBSTATION being fed from CEA's transmission substation near the Borough's proposed South Port. Currently this is the most cost effective location (transformer is already in place). MEA has commitment from CEA for a supply from that substation.

Sincerely,

James F. Palin
General Manager

WVL:bb
354.0122.1
Attachments
cc: Kenneth E. Ritchey, Manager of Engineering Services

MATANUSKA ELECTRIC ASSOCIATION, INC.

P.O. BOX 2929

PALMER, ALASKA 99645-2929

TELEPHO
(907) 745-3

RECEIVED

27 1988

PLANNING
DEPARTMENT

October 19, 1987

Mr. Ric Davidge
Director
Development Services Department
Matanuska-Susitna Borough
P. O. Box 1608
Palmer, Alaska 99645

Dear Ric:

SUBJECT: Revised Draft Point MacKenzie Port Development Plan

It was a pleasure meeting with you on October 14, and I sincerely hope that we can work closely together in the future to the mutual benefit of our organizations. You indicated that MEA had not responded to the above-mentioned Plan. Please refer to our letter of September 25, 1987 (copy attached) on this subject. (In addition, we have previously provided comments to the Borough on port development plans.) It appears those comments on the first draft were somehow overlooked.

Matanuska Electric Association, Inc. (MEA) makes the request that the following two points be added:

1. A statement that the Point MacKenzie area is within MEA's service territory, and

2. Include our distribution system on the utilities' map of the Point MacKenzie area.

The distribution substation that exists in the area is 34.5 kV and not 115 kV.

It is recommended the phrase "the proposed Fairbanks - Anchorage electrical intertie" be changed to read "the proposed addition to the Fairbanks - Anchorage electrical intertie."

The 138 kV line coming from Point MacKenzie toward the Wasilla area has now been upgraded to 230 kV.

120,000 /ea for fenders -

TO: Anchorage, Alaska

MEMO: FLUTING FACTORY/ALASKA

NEEDED:	Total volume of birch wood		15 MM^3
	Annual vol. chips of birch wood	400,000 t	625,000 M^3
	Area for industry with harbor		50 acres
	Fresh water		8000 M^3/d
	Steam		2400 t/d
	Electric power (1 MWh/t)		~~40 MW~~
	Labor force at factory		200-300 persons
	" " in wood harvesting		200 "
	" " administration		50-100 "
	" " total		450-600 "
	Investment (incl. harbor) approx.		$250 M
PROPOSED:	Capacity of the factory, fluting		250,000 t/a
	Revenue (about $420/t)		$105 M/a
	Location: Seward or equal		
	Partnership: American, Finnish, Japanese 30/30/40%		
	Marketing area: 60% Japan/40% world		
	Financing: American, Finnish, Japanese 30/30/40%		

TO BE STUDIED:
1. Harvest of the birch wood in the area of reasonable transport cost.
2. Cost of birch chips at factory.
3. Price of kWh of electricity.
4. Cost of Labor a) skilled
   b) semi-skilled
   c) unskilled
5. Agreeable location for factory.
6. Soil testing of factory site.
7. Resources of soft water.
8. Environmental standards.
9. Price estimate for product at factory.
10. Willingness of partners.

Cook Inlet Region - Fire Island -

Consultants had no surprise -

Should we raise money or should we use leverage? or should we use combination of the two -

Real Estate and Wharfage - about 50-50 income -

1. Ordinance No. 88-017(SUB) "AN ORDINANCE REAPPROPRIATING $26,350 FROM THE ECONOMIC DEVELOPMENT RESERVE ACCOUNT (203-610) TO A PROJECT (G209) ENTITLED 'FORESTRY ENVIRONMENTAL ASSESSMENT' IN FUND 820." AM 88-064(SUB)

Assemblywoman Palmquist moved, Assemblyman Holmes seconded, for adoption of Ordinance No. 88-017. Discussion followed. Voting on the motion, it failed with Assemblypersons Palmquist, Levesque and Lloyd in favor.

Passed 2. Ordinance No. 88-018 "AN ORDINANCE REAPPROPRIATING $10,000 FROM THE ECONOMIC DEVELOPMENT RESERVE ACCOUNT (203-610) TO A PROJECT ENTITLED "TIMBER EDUCATIONAL PROGRAM." AM 88-066

Assemblyman Barry moved, Assemblyman Silvers seconded, to rescind action on the granting of $30,000 to REDCOR. Discussion followed. Voting on the motion, it passed with Assemblypersons Palmquist and Levesque opposed.

Mayor Jones opened the public hearing and Miss. Christina Breck came forward to express her support of the education program and opposition to the timber sale; Ms. Dana Olson came forward to express her support of the educational program; Mr. Mike McCrary came forward to oppose Ordinance No. 88-018; Ms. Eleanor Malapanes came forward to express her support for Ordinance No. 88-018; and Ms. Betty Breck came forward to express her support for timber education but her opposition to the timber sale. The public hearing was closed and discussion moved to the Assembly.

Assemblyman Barry moved, Assemblyman Levesque seconded, for adoption of Ordinance No. 88-018. Discussion followed. Voting on the motion, it passed with Assemblymen Cypra and Holmes opposed.

The Assembly recessed at 10:05 p.m. and reconvened at 10:16 p.m.

Ms. Dahl excused herself from the meeting at 10:16 p.m.

SUSPENSION OF THE RULES

Mayor Jones requested that Audience Participation be heard at this time. There were no objections.

Mr. Dave Ring came forward to express his thanks to the Assembly for building the Point MacKenzie Road and requested that the Assembly have a worksession to work toward the increased release of salmon so that Upper Cook Inlet fisherman could enjoy a fairer share of the catch.

Mr. Paul Carr came forward to inquire on the Coastal Zone Management Agreement.

Discussion followed. Voting on the motion, it passed unanimously.

2. HARRIS GROUP

Mr. Hale introduced Mr. Glen Lansing and Mr. Frank Walker from the Harris Group. Mr. Lansing and Mr. Walker gave a brief presentation to the Assembly of the functions of the Harris Group.

CONSENT AGENDA

1. Ordinance No. 88-019 "AN ORDINANCE AMENDING TITLE 16 OF THE SUBDIVISION ORDINANCE AS APPROVED BY THE PLANNING COMMISSION." AM 88-070

2. Ordinance No. 88-020 "AN ORDINANCE REAPPROPRIATING $10,000 FROM THE AREAWIDE ASSEMBLY RESERVE (101-102) TO WILLOW COMMUNITY CENTER CAPITAL PROJECT (FUND T84, PROJECT B009) FOR REPAIRS TO THE WILLOW COMMUNITY CENTER." AM 88-074

Assemblyman Silvers moved, Assemblyman Levesque seconded, to introduce Ordinance Nos. 88-019 and 88-020 and set for public hearing on April 5, 1988. Discussion followed.

Assemblyman Lloyd requested to divide the question.

Voting on introducing Ordinance No. 88-019 and set for public hearing on April 5, 1988, to motion passed unanimously.

Assemblywoman Palmquist moved, Assemblyman Levesque seconded, to send Ordinance No. 88-020 back to Administration for further refinement. Discussion followed. Voting on the motion, it passed unanimously.

RESOLUTION

Assemblyman Silvers moved, Assemblyman Lloyd seconded, to waive the reading of the body of the resolutions. Assemblyman Silvers moved for unanimous consent. There were no objections.

1. Resolution No. 88-027 "A RESOLUTION SUPPORTING THE ESTABLISHMENT OF AN ALASKA DEVELOPMENT FUND."

2. Resolution No. 88-028 "A RESOLUTION SUPPORTING THE CREATION OF AN ALASKA DEVELOPMENT BOARD."

3. Resolution No. 88-029 "A RESOLUTION SUPPORTING THE COMMONWEALTH NORTH PERMANENT FUND EARNINGS PROPOSAL."

Assemblyman Silvers moved, Assemblyman Levesque seconded, for adoption of Resolution Nos. 88-027, 88-028 and 88-029.

List of Task Force Duties

1. Develop a recommendation for a permanent governance system, e.g., port commission.

2. Develop a recommendation for a permanent administration and management of the port.

3. Develop an initial marketing plan.

4. Develop a land management plan, i.e., how will Borough lands be utilized?

5. Develop recommendations on land use regulations throughout the Point MacKenzie Port area.

6. Develop recommendations and priorities on transportation improvements.

7. Identify potential users.

8. Develop recommendations for financing port related improvements, e.g., dock, infrastructure, etc.

SB 112

MAT-SU LOGGERS ASSOCIATION
BOX 111293
ANCHORAGE, ALASKA 99511

May 5, 1987

Rep. Sam Cotten, Co-Chairman
House Resources Committee
Pouch V
Juneau, AK. 99811

Dear Rep. Cotten:

The Cook Inlet Chapter of the Society of American Foresters sponsored a seminar on Forest Mangement Agreements last week which was very helpful in understanding SB 112, currently under consideration by your committee.

As we understand the term, a "Forest Management Agreement" is intended to make a long term supply of timber available to the wood products industry in exchange for industry participation in the active management of the resources on that land. Such a long term supply would require a large tract of land. The agreement would be a contract between the State and a private firm which would require the firm to undertake a range of management activities which might include the whole spectrum of forest management from regeneration to pest control to fire control to inventory to access development to harvest. Such an agreement would of necessity have to address other related activities such as private access for recreational or other purposes, minerals and materials development, processing sites or other non-forest land uses, etc. Implementation of such an agreement would require close and continuing co-operation between the parties to the agreement. The State would need to have experienced foresters available to monitor the agreement, either on staff or under contract. The private firm would need a substantial, conveyable interest in the state land and/or resources in order to obtain financing.

The Mat-Su Loggers Association takes no position on the desirability of the state having such a management tool available to it. The Canadian experience with this form of forest management indicates that we should approach such a decision with caution. We support further investigation in an effort to craft a bill which would meet the unique needs of Alaska.

We are very much opposed to SB 112 for two basic reasons: first, it does not do what it purports to do and second, it would be injurious to the existing wood products industry in the Mat-Su Valley.

1. SB 112 does not provide for forest management agreements as we understand the term. It is merely an authorization for negotiated long-term timber sales.

a. A forest management agreement should have a set of objectives which the agreement is designed to reach. SB 112 (at page 1, line 16) says that the only legislatively recognized purpose is to "foster the development of the state's forest products industry". While this is a very desirable goal, it is not in the best interest of the state as a whole to have this as the exclusive purpose governing the management of large tracts of public land.

b. SB 112 (at page 1, line 12) limits the subject matter of the agreement to "the sale of timber from state land". Sufficient law already exists to permit large scale, long term sales of timber from state land. If the scope of a management agreement is thus limited it amounts only to authorization for negotiation of large scale, long term timber sales. We believe public auction under existing law is more desirable.

c. One of the arguements in favor of FMA's that was expressed at the seminar referred to earlier, was that it would be a more bankable degree of title. It was said that timber sales are hard to finance, but that an agreement would be more acceptable as collateral. SB 112 is silent on that point. As indicated earlier, the existing language provides only for what is in essence a negotiated long term timber sale.

2. SB 112 would be injurious to the existing wood products industry in the Mat-Su Valley.

a. At the SAF seminar, one of the proponents of FMA's said the average size would be about 160,000 acres. The only areas of state forest land of this size which are not encumbered by existing timber sales are in the Matanuska-Susitna Valley and the Tanana Valley. Any proposed FMA would of necessity be located in one of those areas.

b. Under the Governors budget request, 1 1/2 man years are available for administering state timber sales in the Matanuska-Susitna Valley in the next fiscal year. We understand that the staffing situation is equally absurd in the Fairbanks area. In addition, the Senate version of the budget would cut another $90,000 from this program, plus deleting $50,000 from forest inventory. All of the currently available manpower in the Matanuska-Susitna Valley is devoted to administering existing small timber sales and preparing for a large bio-mass sale planned for this fall.

c. SB 112 requires (in section 2, page 2, line 26) that the commissioner request proposals for the management of state timber land within one year of the effective date of the act. With this mandatory timeline for implementation, a zero fiscal note on the bill is patently ridiculous. Drafting and adopting regulations alone would take at least six months. Collecting inventory data, defining the area of the FMA, and developing the terms of the agreement after the regulations were adopted would require devoting all of the available resources of the Division to the effort. This loss of manpower from the existing sales program plus the absence of a timber sales program by the Matanuska-Susitna Borough would deprive the members of our Association of the any dependable source of timber and destroy the existing wood products industry in the Valley.

In summary, while we do not oppose good legislation which would authorize forest management agreements, we are very much opposed to

SB 112 because: it authorizes negotiated long term timber sales; it fails to consider other beneficial land uses; it sets an unreasonable time line for implementation; it fails to recognize the cost of implementation; and it has an extreme negative impact on existing wood products industry. We urge that the bill be held for improvement during the interim. We would be pleased to work with you to redraft the bill to make it more acceptable to our Association.

Yours truly,

Ted Smith, Chairman
Board of Directors

cc: Senator Kertulla
Senator Szymanski
Senator Jones
Senator Sturgelewski
Representative Larson
Representative Menard
John Hale, Manager, Matanuska-Susitna Borough
Judy Brady, Commissioner, Department of Natural Resources

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

JUDITH M. BRADY, COMMISSIONER
POUCH M
JUNEAU, AK 99811
(907) 465-2400

PUBLIC AFFAIRS OFFICE
3601 'C' ST./POUCH 7-005
ANCHORAGE, AK 99510
(907) 561-2020

MEDIA RELEASE

DIVISION OF:

RELEASE DATE:

SUBJECT:

CONTACT:

PHONE:

DNR NEWSLINE:

Deputy Commissioner Lennie Gorsuch announced today that the Department of Natural Resources would take a fresh look at the Susitna Timber sale. " The Public response has been enormous stated Gorsuch: we have heard from legislators, lodge owners, large and small timber operators, fishermen, property owners, local governments, and a variety of interested groups."

"We're not suprised by the public interest shown during the meetings and comment period. The Department recognized during the 3 year Susitna area planning process that the public uses state lands in the Susitna Valley in a variety of ways. As the state's land managers, we're pleased with public's interest in this area and intend to use the comments people have made to fashion a timber sale which will benefit the valley's economy while protecting other uses."

"We are going to form a multi-disciplinary agency team to review the comments and prepare a new proposal for public review. We recognize that this will take additional time, but it will be worth it if we can develop a self-sustaining timber industry which can operate side by side with other facets of the valley economy. I have appointed Assistant Commissioner Tom Hawkins to assemble this team."

SB 112

MAT-SU LOGGERS ASSOCIATION
BOX 111293
ANCHORAGE, ALASKA 99511

May 5, 1987

Rep. Sam Cotten, Co-Chairman
House Resources Committee
Pouch V
Juneau, AK. 99811

Dear Rep. Cotten:

The Cook Inlet Chapter of the Society of American Foresters sponsored a seminar on Forest Mangement Agreements last week which was very helpful in understanding SB 112, currently under consideration by your committee.

As we understand the term, a "Forest Management Agreement" is intended to make a long term supply of timber available to the wood products industry in exchange for industry participation in the active management of the resources on that land. Such a long term supply would require a large tract of land. The agreement would be a contract between the State and a private firm which would require the firm to undertake a range of management activities which might include the whole spectrum of forest management from regeneration to pest control to fire control to inventory to access development to harvest. Such an agreement would of necessity have to address other related activities such as private access for recreational or other purposes, minerals and materials development, processing sites or other non-forest land uses, etc. Implementation of such an agreement would require close and continuing co-operation between the parties to the agreement. The State would need to have experienced foresters available to monitor the agreement, either on staff or under contract. The private firm would need a substantial, conveyable interest in the state land and/or resources in order to obtain financing.

The Mat-Su Loggers Association takes no position on the desirability of the state having such a management tool available to it. The Canadian experience with this form of forest management indicates that we should approach such a decision with caution. We support further investigation in an effort to craft a bill which would meet the unique needs of Alaska.

We are very much opposed to SB 112 for two basic reasons: first, it does not do what it purports to do and second, it would be injurious to the existing wood product industry in the Mat-Su Valley.

1. SB 112 does not provide for forest management agreements as we understand the term. It is merely an authorization for negotiated long-term timber sales.

a. A forest management agreement should have a set of objectives which the agreement is designed to reach. SB 112 (at page 1, line 16) says that the only legislatively recognized purpose is to "foster the development of the state's forest products industry". While this is a very desirable goal, it is not in the best irterest of the state as a whole to have this as the exclusive purpose governing the management of large tracts of public land.

b. SB 112 (at page 1, line 12) limits the subject matter of the agreement to "the sale of timber from state land". Sufficient law already exists to permit large scale, long term sales of timber from state land. If the scope of a management agreement is thus limited it amounts only to authorization for negotiation of large scale, long term timber sales. We believe public auction under existing law is more desirable.

c. One of the arguements in favor of FMA's that was expressed at the seminar referred to earlier, was that it would be a more bankable degree of title. It was said that timber sales are hard to finance, but that an agreement would be more acceptable as collateral. SB 112 is silent on that point. As indicated earlier, the existing language provides only for what is in essence a negotiated long term timber sale.

2. SB 112 would be injurious to the existing wood products industry in the Mat-Su Valley.

a. At the SAF seminar, one of the proponents of FMA's said the average size would be about 160,000 acres. The only areas of state forest land of this size which are not encumbered by existing timber sales are in the Matanuska-Susitna Valley and the Tanana Valley. Any proposed FMA would of necessity be located in one of those areas.

b. Under the Governors budget request, 1 1/2 man years are available for administering state timber sales in the Matanuska-Susitna Valley in the next fiscal year. We understand that the staffing situation is equally absurd in the Fairbanks area. In addition, the Senate version of the budget would cut another $90,000 from this program, plus deleting $50,000 from forest inventory. All of the currently available manpower in the Matanuska-Susitna Valley is devoted to administering existing small timber sales and preparing for a large bio-mass sale planned for this fall.

c. SB 112 requires (in section 2, page 2, line 26) that the commissioner request proposals for the management of state timber land within one year of the effective date of the act. With this mandatory timeline for implementation, a zero fiscal note on the bill is patently ridiculous. Drafting and adopting regulations alone would take at least six months. Collecting inventory data, defining the area of the FMA, and developing the terms of the agreement after the regulations were adopted would require devoting all of the available resources of the Division to the effort. This loss of manpower from the existing sales program plus the absence of a timber sales program by the Matanuska-Susitna Borough would deprive the members of our Association of the any dependable source of timber and destroy the existing wood products industry in the Valley.

In summary, while we do not oppose good legislation which would authorize forest management agreements, we are very much opposed to

SB 112 because: it authorizes negotiated long term timber sales; it fails to consider other beneficial land uses; it sets an unreasonable time line for implementation; it fails to recognize the cost of implementation; and it has an extreme negative impact on existing wood products industry. We urge that the bill be held for improvement during the interim. We would be pleased to work with you to redraft the bill to make it more acceptable to our Association.

Yours truly,

Ted Smith

Ted Smith, Chairman
Board of Directors

cc: Senator Kertulla
Senator Szymanski
Senator Jones
Senator Sturgelewski
Representative Larson
Representative Menard
John Hale, Manager, Matanuska-Susitna Borough
Judy Brady, Commissioner, Department of Natural Resources

CONVERSION FACTORS FOR METRIC TO ENGLISH UNITS.

1 Hectare = 2.471 Acres
1 Cubic Meter = 35.31 Cubic Feet = 140 Board Feet Scribner

Eripainos Silva Fennica 1/1986

Silva Fennica 1986, vol 20 n:o 1: 35–44

The Forest 2000 Programme

Guidelines for developing Finnish forestry and the forest industries

TIIVISTELMÄ: METSÄ 2000-OHJELMA

The Forest 2000 Programme. Guidelines for developing Finnish forestry and the forest industries. Tiivistelmä: Metsä 2000-ohjelma. Silva Fennica 20 (1):35–44.

The Forest 2000 Programme is a long-term programme for forestry and the forest industries. It attempts to obtain a better integration of timber production and other forms of forest use. The total annual cut is to be increased by 15 mill. m^3 by the year 2010. This is almost one third greater than the level during the first few years of the 1980's. In order to achieve the cutting targets, the cut area will have to be increased by almost a third by the turn of the century. The area of thinnings will experience the greatest increase. Considerable changes are proposed in silvicultural and basic improvement work. According to the programme, the growth of the raw-material base and the consumption of the wood-based products will permit an annual increase of about 3 % in the production of the forest industries as a whole until the end of the century. This would be the same as the target growth rate of the GNP.

Metsä 2000-ohjelma on metsä- ja puutalouden pitkän aikavälin ohjelma. Siinä pyritään sopeuttamaan entistä paremmin toisiinsa puuntuotanto ja metsien muut käyttömuodot. Vuoteen 2010 mennessä on tavoitteena metsien vuotuisen hakkuumäärän suurentaminen 15 milj. m^3:llä eli lähes kolmanneksella 1980-luvun alkuvuosiin verrattuna. Hakkuutavoitteiden saavuttamiseksi on hakkuupinta-aloja suurennettava. Voimakkaimmin kasvaa harvennushakkuiden ala. Metsänhoito- ja perusparannustöihin esitetään huomattavia muutoksia. Ohjelman mukainen raaka-ainepohjan kasvu ja metsäteollisuustuotteiden käytön kehitysnäkymät mahdollistavat arvion mukaan koko metsäteollisuuden tuotannon nostamisen vuosittain noin 3 prosentilla vuosisadan loppuun saakka. Se olisi sama kuin yleisesti tavoitteeksi asetettu bruttokansantuotteen kasvuvauhti.

Key words: Timber production, cutting targets
ODC 905.2:72:83:916
Correspondence: University of Helsinki, Department of Forest Products Marketing, Unioninkatu 40 B, SF-00170 Helsinki, Finland
Approved on 26. 2. 1986

The task and organization of the programme

The Forest 2000 Programme sub-committee was appointed by the Economic Council on the 21st of February 1983. The task of the sub-committee was to draw up a long-term programme for forestry and the forest industries. The sub-committee consisted of a group of executive representatives from various important interest groups, as well as a working committee subordinated to it. Working groups for silviculture and forest management, for timber procurement, for the development of the forest industries, and for the multiple-use of forests were set up by the sub-committee to procure the information for drawing up the programme.

The elements of the programme

Alternative analysis was used in defining the cutting and timber production targets of the programme, and in determining the development prospects of the wood-processing industry. This meant that the most important environmental factors, such as trends in the demand for products of the forest industries and the overall effect of the multiple-use of forestry, could be taken into account in the profitability calculations carried out for the comparison. The goals of the Forest 2000 Programme were finalised on the basis of the results of the alternative calculations. As well as defining the goals, an attempt was made to develop the economic, industrial and forest policy instruments needed to achieve these goals.

Methods

A modified version of the MELA forest calculation programme, recently developed by the Finnish Forest Research Institute and the Department of Forest Mensuration (University of Helsinki) was used in designing the cutting and timber production programme. In the first stage, MELA simulated the management options for the stands, and the development of the stands when managed accordingly. In the second stage, the programme assembled from these management alternatives a cutting and timber production programme implementing the cutting removal or other targets set for the management of the forests.

When preparing the different options available to the Forest 2000 Programme, the forest calculation programme was used both for defining the combination of measures designed to produce the desired removal, and for determining the development of the growing stock and the removal achievable through a particular combination of measures. At the same time, an attempt was made to ensure that the achieved solution was also economically optimal.

The analysis of the cutting and timber production options also included a profitability comparison of the different alternatives. Cost-benefit analysis was used in the comparison. The result showed that as the cutting removal increased, the profitability only improved if industry was able to utilize all the roundwood which became available. At least this was the case when sustained yield management was practised, i.e. where the cutting potential did not decrease in the future.

The objectives of the programme

The starting point when practising a forestry and wood-based economy is to increase the prosperity of society throught the exploitation of the forests. The most important aims of forest policy are: 1) support for the general targets of economic policy, 2) balanced development of the different forms of forest use, 3) complete utilization of the productive capacity of forest land, 4) economic viability of the measures applied, 5) matching the timber assortment structure and volume of timber utilized with the cutting potential, and 6) the creation of conditions favourable for viable forest-based industries.

Considerable investments were made in silvicultural and basic improvement work in Finnish forestry during the 1960's and 1970's in order to increase timber production. As a result, the annual cutting potential has increased since the middle of the 1950's by 13–14 mill. m^3. At the same time, the use of wood as fuel and the export of roundwood have considerably decreased. Timber imports have correspondingly increased. Although industrial wood raw material consumption has more than doubled, the overall trend in the annual cut has slightly decreased. An increasing proportion of the cutting potential has remained unexploited since the middle of the 1960's. The difference between the annual allowable cut and total removal, mainly in the form of large-dimensioned spruce and non-coniferous cordwood, has over the years been about 10 mill. m^3/a. This is equivalent to a good 15 % of the potential cut.

Following the objectives and factors outlined above, the main emphasis in the Forest 2000 Programme is directed at increasing the level of cuttings. At the same time, attention is paid to the role of silvicultural and basic improvement work in increasing timber production.

The multiple-use of forests

The programme attempts to obtain a better integration of timber production and other forms of forest use. The total value of all the subsidiary forest products was, at the beginning of the 1980's, approximately 10 % of the value of the timber cut annually along long-distance transport routes. The area of forest land reserved mainly for protection and recreational use totals 1.7 mill. ha. This area is expected to increase by only about 0.1–0.2 mill. ha by the year 2000.

Multiple-use applications are expected to decrease the annual cutting potential by a total of 2.2 mill. m^3 (3–4 %) by the year 2000. The programme notes that more attention should be paid to the needs of multiple forest use, in addition to timber production, both in planning and in the measures employed in forestry.

Cutting and timber production targets

The removal targets of the Forestry 2000 Programme, i.e. the targeted amounts of roundwood harvested from the forests, are presented in Table 1 and Fig. 1.

The total annual cut is to be increased by 15 mill. m^3 by the year 2010. This is almost one third greater than the level during the first few years of the 1980's. Achieving this

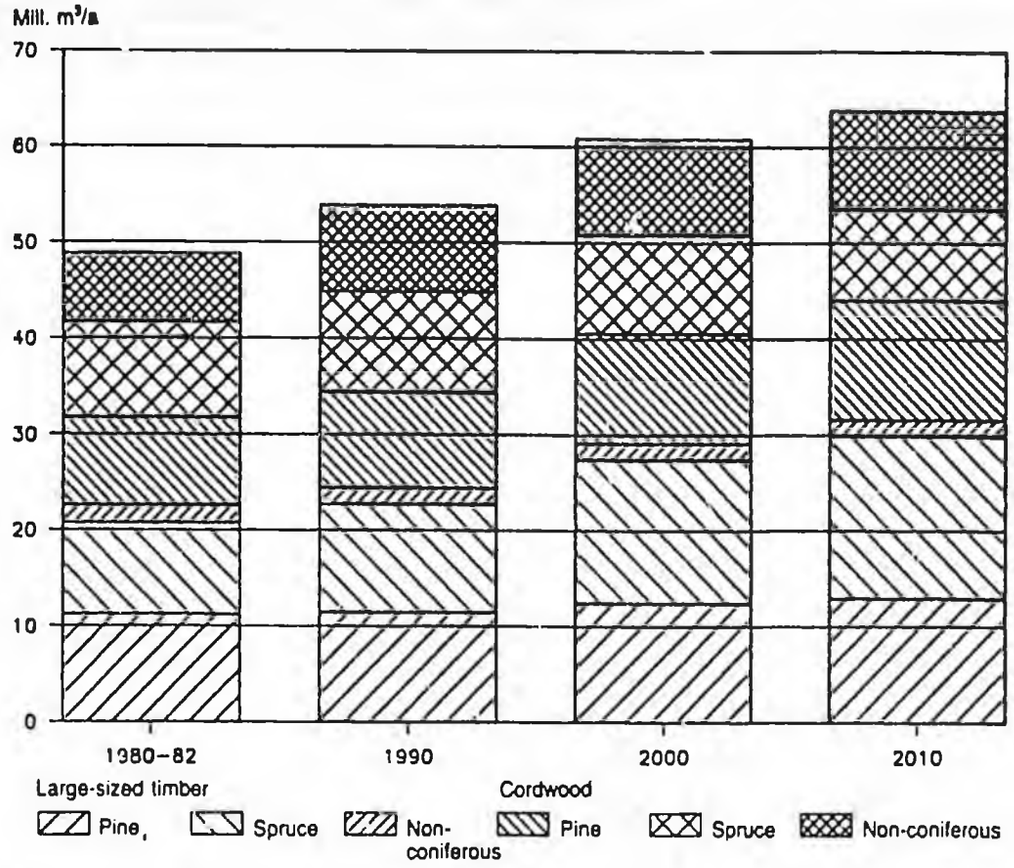


Fig. 1. The removal targets of the Forest 2000 Programme. The cut can be increased annually by 650 000 m³ until 2000. Almost half of this increase is large-sized sprucelogs, and a third pine and non-coniferous cordwood.

Table 1. The removal targets of the Forest 2000 Programme.

Type	Implemented 1980–82	Targets 1990	2000	2010
		mill. m³/a		
Total	48.8	54.0	61.0	64.0
Pine	20.5	21.5	24.0	25.5
Spruce	19.4	21.8	25.3	26.5
Non-coniferous	8.9	10.7	11.7	12.0
Of which:				
Large-sized timber	22.6	24.5	29.2	31.7
Pine	11.3	11.5	12.5	13.0
Spruce	9.5	11.3	15.0	17.0
Non-coniferous	1.8	1.7	1.7	1.7
Cordwood	26.2	29.5	31.8	32.3
Pine	9.2	10.0	11.5	12.5
Spruce	9.9	10.5	10.3	9.5
Non-coniferous	7.1	9.0	10.0	10.3

goal presupposes that the cutting potential is exploited to a greater extent than was the case during the 1970's and 1980's. Half of the increase in cuttings would be large-sized spruce logs and a fifth deciduous cordwood. Cuttings of these timber assortments have decreased during the past few years. The cutting targets of other timber assortments, apart from large-sized hardwood logs, are also to be increased. In order to achieve the cutting targets, the area cut will have to be increased by almost a third by the turn of the century (Fig. 2). The annual area of thinnings will experience a considerable increase (70 %).

Considerable changes are proposed in silvicultural and basic improvement work (Figs. 3 and 4), e.g. the proportion of natural regeneration will be increased in forest regeneration work. A start has already been made on this part of the programme. Site preparation and the cleaning of regeneration areas will

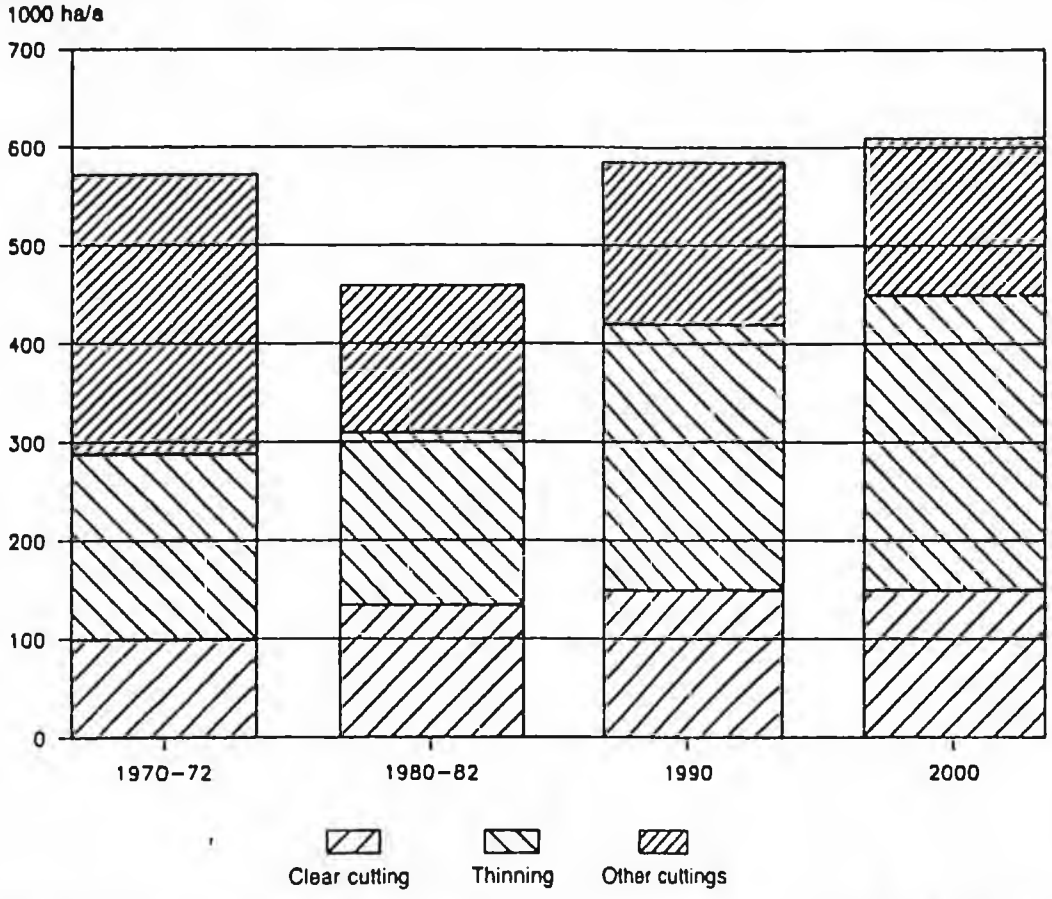


Fig. 2. The cutting areas of the Forest 2000 Programme. The area of the annual cut will increase by almost a third from the present level. The main emphasis is on thinnings, but the area of regeneration cuttings will also increase.

increase to some extent; a technology less harmfull to the environment will be used on these sites. Artificial regeneration will see a slight shift from planting to sowing. The greatest changes will occur, however, in basic improvement work. All new drainage work is to be completed before the end of the century. The amount of redrainage, which includes ditch cleaning and supplementary drainage, should triple by the year 2000. The level of forest fertilization is expected to double. It is also proposed that the pruning of standing trees be increased.

The calculations indicate that the programme will lead to a 20–30 % increase in the costs of silvicultural and basic improvement work by the end of the century, and an increase of about 10 % in state-funded forest improvement work.

If the targets of the programme can be implemented in their proposed form, then the volume of the growing stock will increase by about 10 % and the annual increment by about 20 % by the year 2020 (Fig. 5). The growing stock will change from its present composition to one that is more pine dominated.

The fact that the cutting and timber production targets are also presented in the programme by area (by forestry board district) will presumably assist in the planning the implementation of the programme on a regional basis.

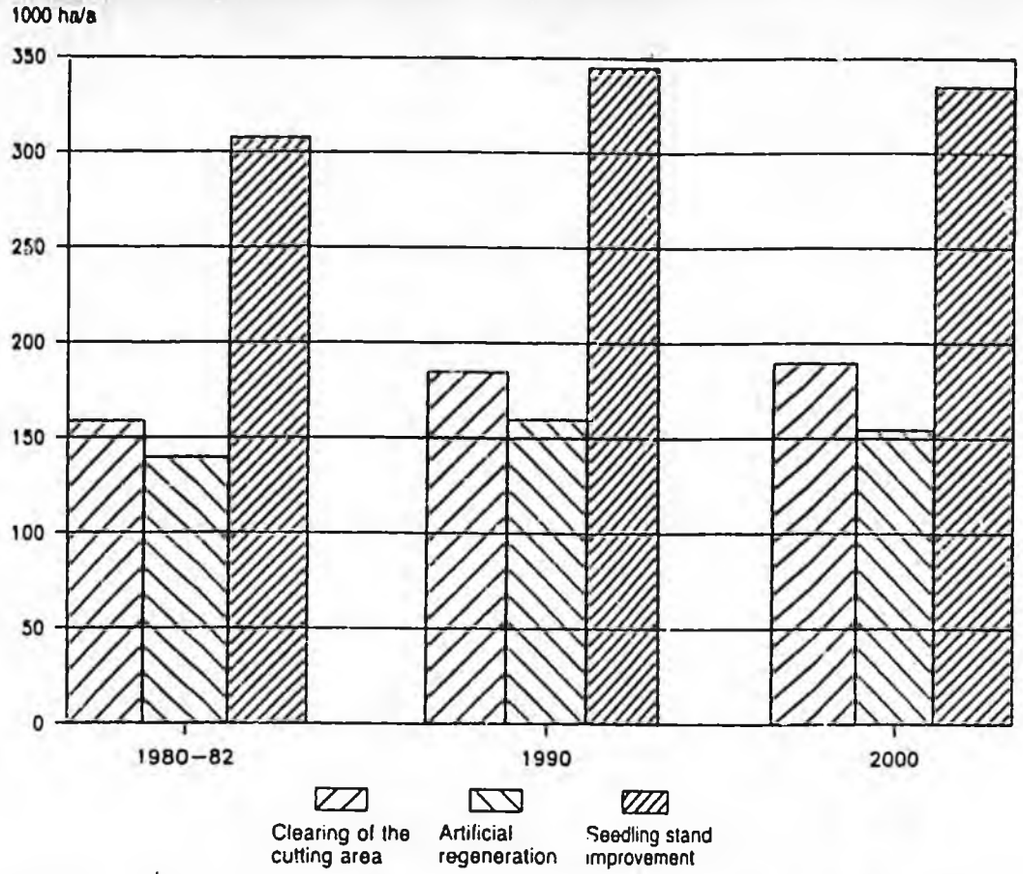


Fig. 3. The silvicultural targets of the Forest 2000 Programme. The need for silvicultural work will increase slightly from the present level.

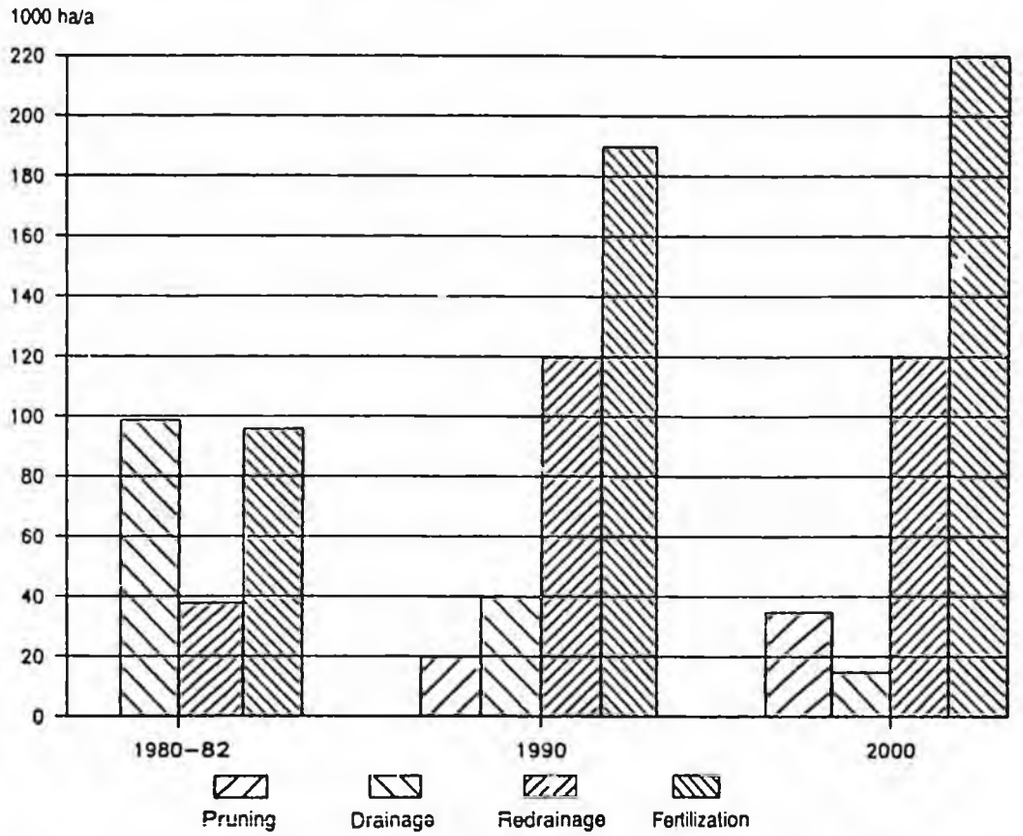


Fig. 4. The forest improvement targets of the Forest 2000 Programme. Drainage of new areas will fall sharply and, in practice, cease completely by the turn of the century. The need for redrainage will correspondingly increase. It is recommended that pruning of standing trees be made eligible for forest improvement funding. It is also recommended that the annual level of forest fertilization be increased to that prevailing at the beginning of the 1970's.

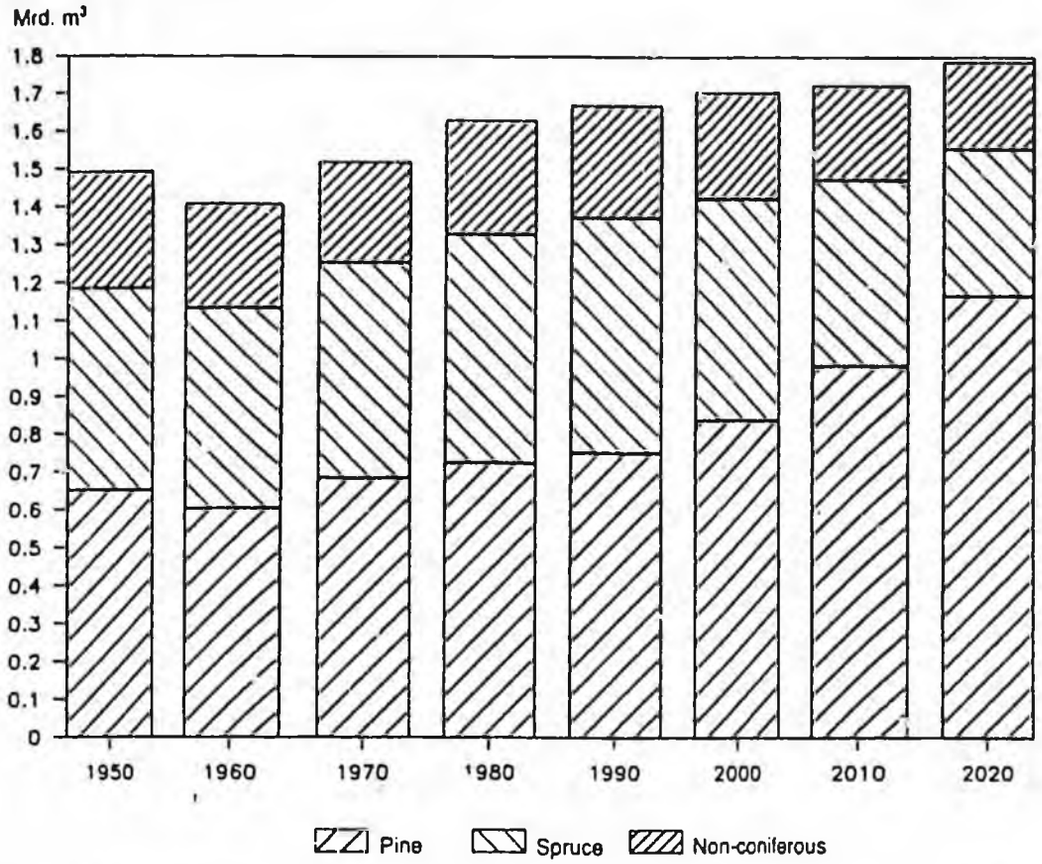


Fig. 5. Development of the growing stock volume. The cutting targets have been set at a level below the annual increment. This means that the growing strock volume will increase by 10 % from its present level by the year 2020. The proportion of pine in the growing stock will considerably increase.

The development possibilities of the forest industries

The development possibilities of the forest industries up to the year 2000 are examined in the programme by taking the cutting targets as the starting points. The predictions indicate that the consumption of the most important groups of products will grow during the period 1980–2000 as follows:

Product group	Whole world	Western Europe
	Annual growth %	
Sawnwood	1.1 . . . 1.5	−0.7 . . . 0.7
Wood-based panels	2.2 . . . 4.7	2.4 . . . 4.6
Paper	3.3 . . . 3.7	2.5 . . . 2.8
Paperboard	2.8 . . . 3.5	2.0 . . . 2.8

According to these estimates, the total demand for forest industry products, weighted by the present structure of Finnish exports, will grow at a rate of about 3 % a year until the end of the century.

According to the targets of the programme, the raw material base of the forest industries will increase annally by 650 000 m^3. Almost half of this amount will be large-sized spruce logs, and a third pine and non-coniferous cordwood. It appears that products based on kraft pulp will remain sufficiently competitive, consequently there will continue to be a demand for them in the future. A clear structural change has taken place in Europe dur-

ing the past few years in the supply of spruce sawnwood and non-coniferous pulp. Pulp production based on extensive forest plantations has appeared in Continental Europe, especially in Spain and Portugal. New sawmill capacity has also been built in Continental Europe. This production is, on the basis of its location, already more competitive on the European market than its Finnish equivalent. It is clear that in the coming years the Finnish forest industries will have to make greater investments in product development and marketing.

It can be assumed on the basis of past developments that the proposed cutting targets can be achieved as long as competitive production can be ensured:

	Implemented 1960–80	Forest 2000 1980–2000
	Annual growth %	
Forest industries		
– volume of production	+ 4.4	+2.6...+3.3
– wood consumption	+ 2.3	+1.2
– consumption of non-coniferous pulpwood	+11.2	+2.4
– consumption of large-sized spruce logs	+ 3.0	+2.5

Four development alternatives for the forest industries, which differ from each other with regard to the volume of the spruce logs used, are analysed in the programme. The results are presented in Table 2 and Fig. 6.

It appears that the raw material situation for the sawmill industry will remain satisfactory for the rest of the century. The production of pine sawnwood could be increased slightly compared to the level at the beginning of the 1980's, and that of spruce sawnwood considerably increased if the product is made competitive on the international markets. However, if the cutting targets are to be met, it will probably be necessary to direct an increasing proportion of large-sized spruce logs to the pulp industry, mainly for the production of mechanical pulp. This means that, of the presented alternatives, III and IV are the most realistic.

Owing to unfavourable competition in the market for particle and fibreboard, significant increases in the production of these products will be unlikely. The future production of plywood depends on whether the proportion of spruce in the product can be increased.

Growth in the forest industries will seemingly take place almost entirely in the pulp and paper industry. The potential annual

Table 2. The development possibilities of the primary forest industries according to the Forest 2000 Programme.

Product group	Implemented 1980–82	Production possibilities in 2000			
		Alternative			
		I	II	III	IV
		1000 m³/a			
Coniferous sawnwood	8 522	11 900	10 600	9 500	8 500
– pine	5 106	5 700	5 700	5 700	5 700
– spruce	3 416	6 200	4 900	3 800	2 800
Plywood	613	770	770	770	770
Particle and fibreboard	970	1 000	1 000	1 000	1 000
		1000 mt/a			
Pulp	7 101	10 400	10 800	11 400	12 200
– mechanical	2 387	4 100	4 500	5 100	5 900
– chemical	4 714	6 300	6 300	6 300	6 300

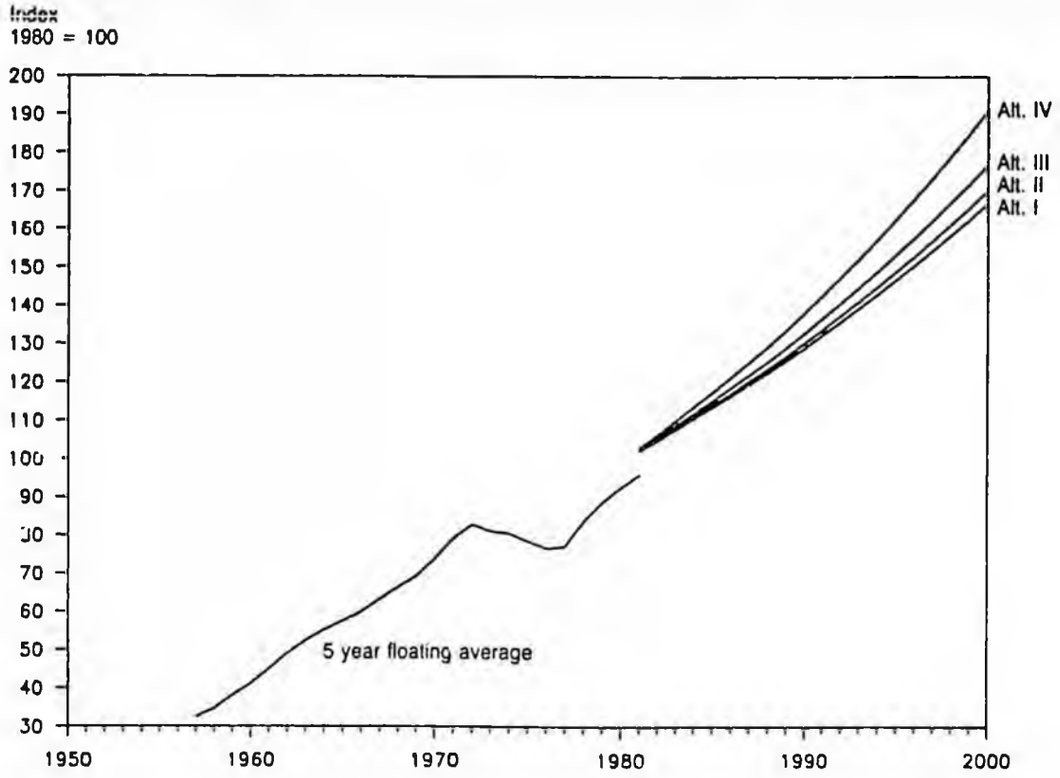


Fig. 6. The development prospects of the forest industry. The production volume of the forest industries as a whole can be increased by about 3 % a year. This corresponds to the estimated long-term increase in the demand for forest industry products.

growth in the production of pulp until the end of this century is 2–3 %, for chemical pulp 1.5 %, and for mechanical pulp 3–5 %. Production in the paper and paperboard industry could grow annually by 3.5–5 %.

According to the programme, the growth of the raw material base will permit a 3 % annual increase in the production of the forest industries as a whole up until the end of the century. This would be the same as the target growth rate the GNP. However, the increased production presupposes that the functioning, competitiveness and raw material supply of the forest industries is maintained, and that their wood consumption structure is adapted to the structure of the cutting targets.

The means available for achieving the targets

The targets of the programme are ambitious and demanding. The measures, as presented, will presumably not be enough. It will be necessary, therefore, to devise additional measures to supplement the programme while it is being carried out.

The most important of the means available for increasing timber supply are forestry planning and an increase in the advice and services directed at the forest owners. By the beginning of the 1990's, individual forestry plans will have been drawn up for 90 % of the privately-owned forest area. Personal advisory services, and the execution of forestry plans, will have to be made more effective. All the forest owners, including those living out-

side the area where their holdings are situated, will have to be brought within the scope of the advice and service facilities. This will require a staff increase of about 50 in the district forestry boards, as well as in the number of staff needed by the local forestry associations.

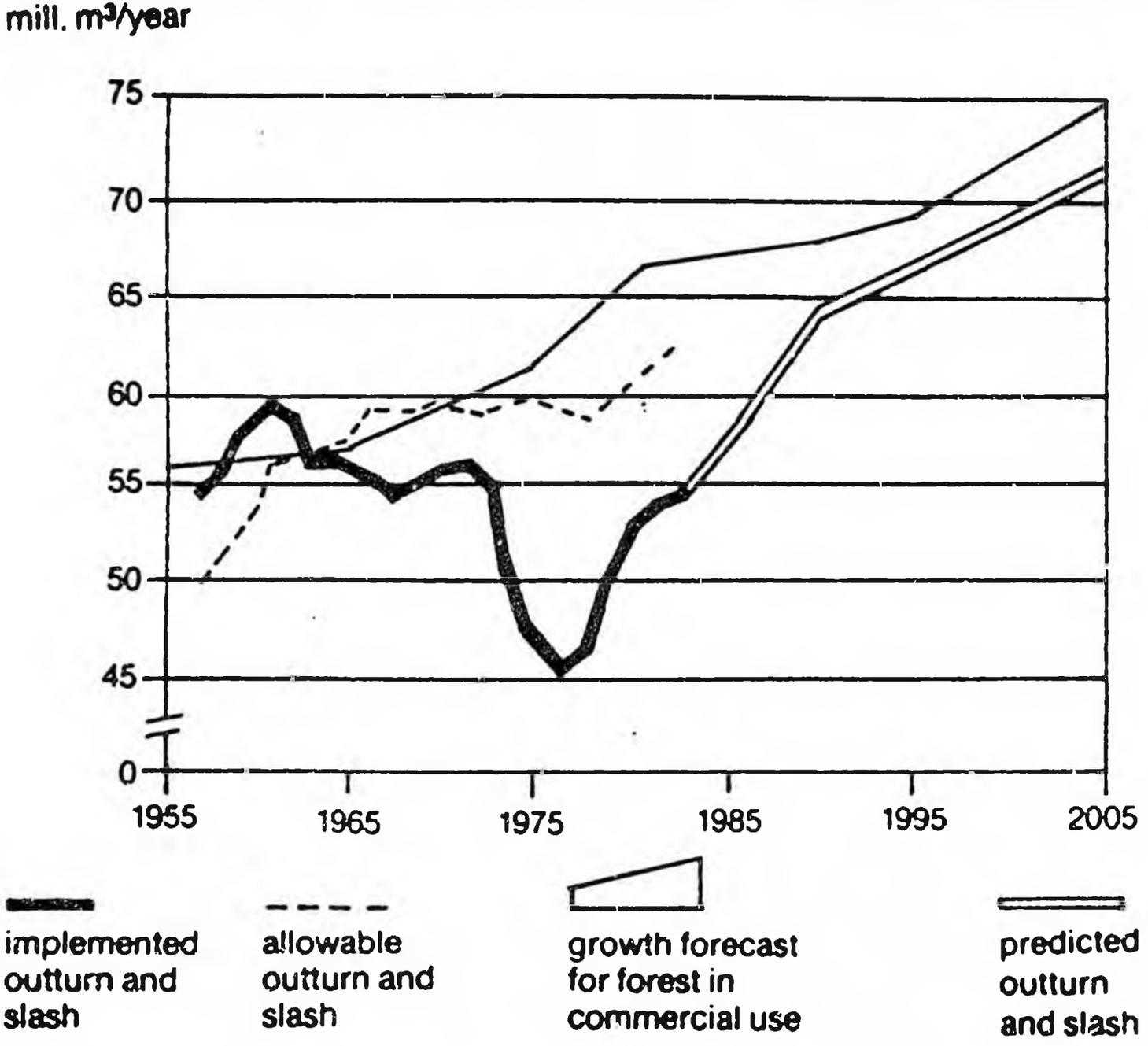
Other means of increasing timber production proposed in the programme include the development of forest ownership, forestry legislature and forest taxation, increasing the effectiveness of forest cooperation at the regional level, and improving the functioning of the roundwood markets. Active and constructive cooperation between the different interest groups is essential.

Economic, investment, energy and foreign trade policy, research and development work, and the effective marketing of wood-based products, all play a central role in strengthening the demand for timber.

Monitoring and updating the programme

Social development and environmental conditions, such as acid precipitation, can bring about relatively rapid changes in forest management and in the forest ecosystem. It is also difficult to predict the activities of the forest owners and forest industries. Implementation of the programme must be monitored continously, and its targets and choice of means checked at least every 5–10 years. The continuity of the necessary research work, data systems and data registers, as well as development of the planning models, must be ensured. Since the Forest 2000 Programme is a long term project, it must be supplemented, at fairly short intervals (about 5 years), with a programme in which the targets and measures are scheduled annually, and which are checked and continued each year.

Growth and removal forecast



Growing stock 1984

million m^3 solid volume incl. bark

whole country	South Finland	North Finland
1660	1171	489
100%	71%	29%

Tree species
distribution by volume

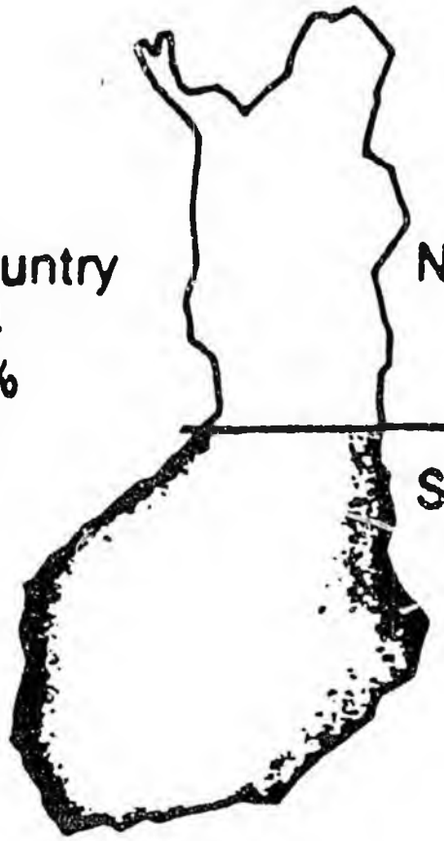
	whole country	South Finland	North Finland
pine	45	39	59
spruce	37	43	23
birch	15	15	17
alder and aspen	3	3	1
	100%	100%	100%

Mean growing stock,
m^3/ha incl. bark

whole country	South Finland	North Finland
81	101	54

Annual increment 1984

million m^3 solid volume incl. bark



whole country
68,4
100%

North Finland
15,0
22%

South Finland
53,4
78%

Mean volume increment on forest land, solid volume incl. bark/ha

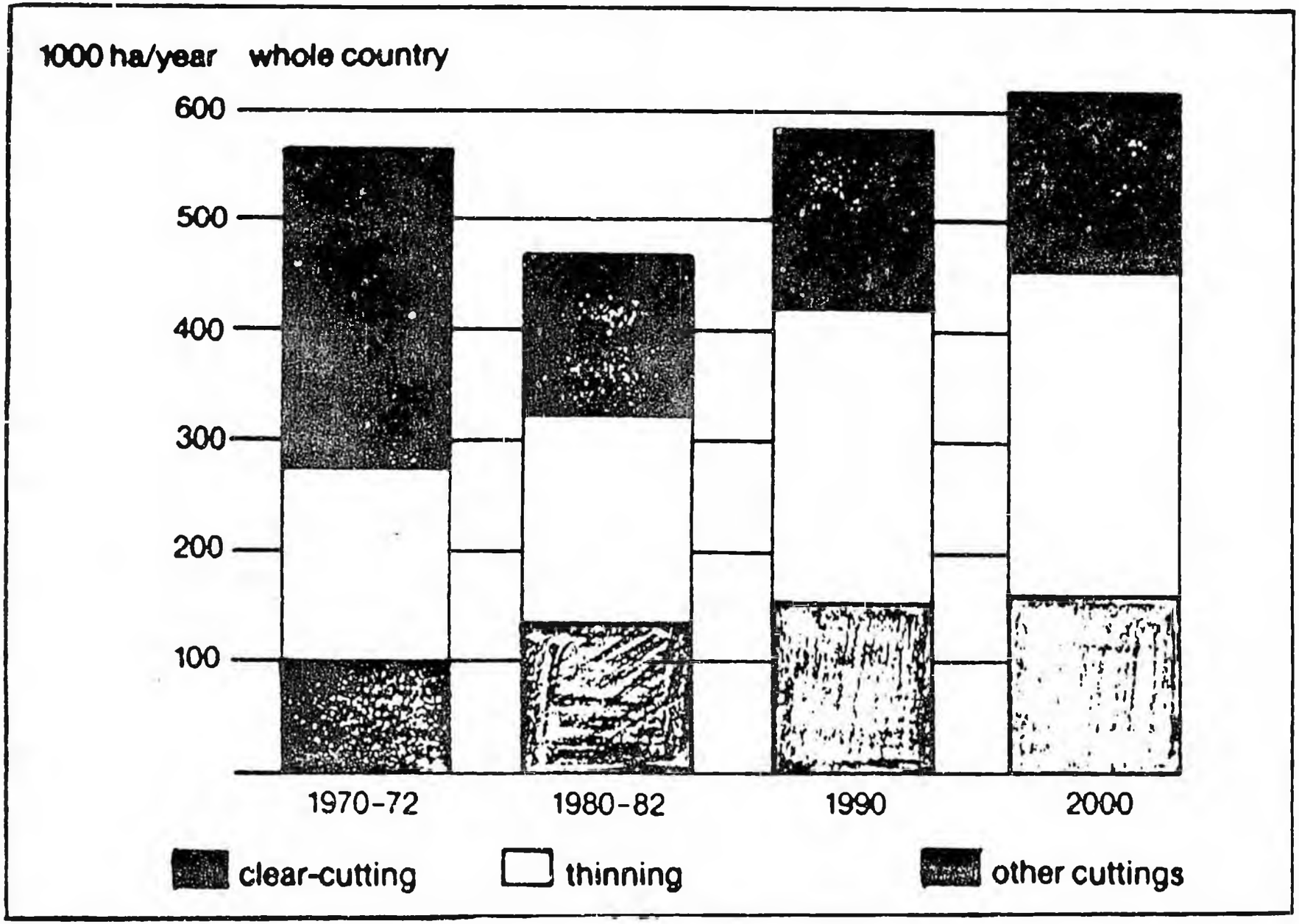
whole country	South Finland	North Finland
3,4	4,6	1,7

Forest balance 1984

million m^3 solid volume incl. bark

	mean 1974-84	1984
allowable drain	61,3	65,1
total drain	49,7	52,3
forest balance	+ 11,5	+ 12,8

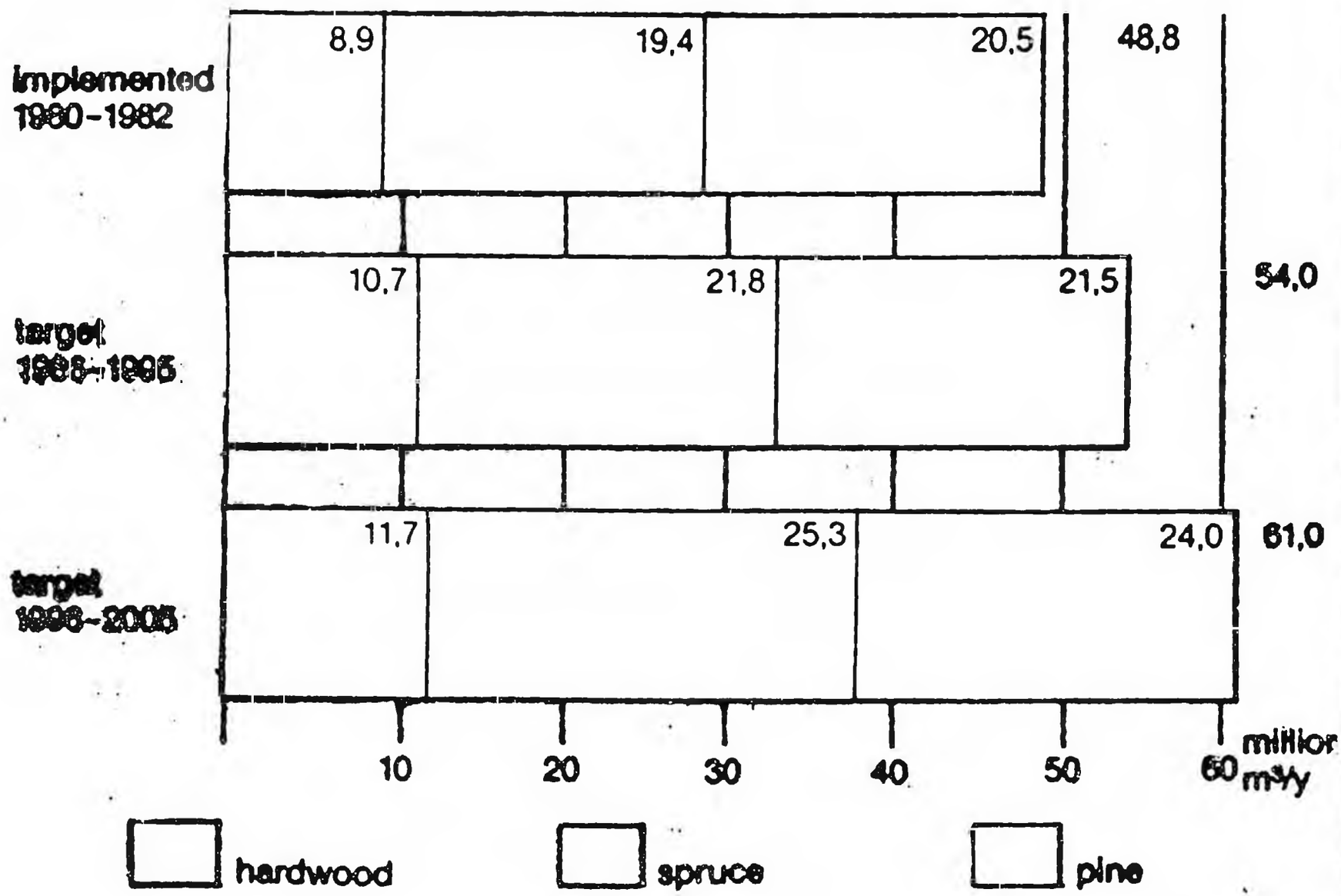
The Forest 2000-programme: Felling area



Silvicultural improvement work in 1985

	1985	2000 (Forest 2000 programme)
reforestation (seeding and planting)	129 000 ha	155 000 ha
young stand tending	279 000 ha	335 000 ha
pruning	6 300 ha	35 000 ha
fertilization	84 000 ha	220 000 ha
new drainage	70 000 ha	15 000 ha
supplementary drainage	3 900 km	120 000 ha
ditch cleaning	8 800 km	
forest roads	3 900 km	2 500 km

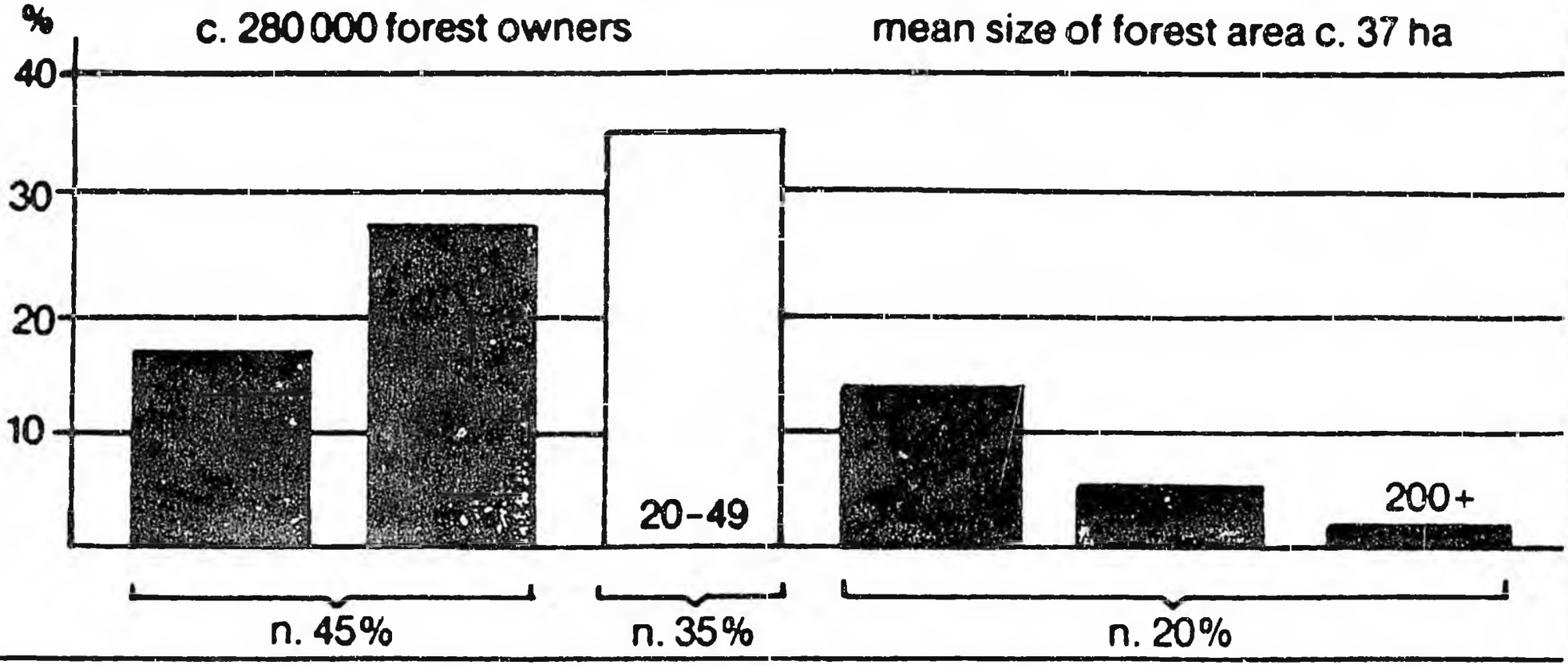
The Forest 2000-programme: Targeted outturn by tree species



Natural forest products 1985

commercial wood	43,6	mill. m^3
peat consumption and exports		
- fuel peat	3 992 000	tonnes
- horticultural peat	1 067 000	-"-
lichen exports	585	-"-
sales of forest berries	4 970	-"-
sales of wild mushrooms	1000	-"-
sales of reindeer meat	3 000	-"-
forest game birds	155	-"-
field game birds	33	-"-
hares	1 109	-"-
elk and deer	11 506	-"-
fur pelts	336 000	no.

Distribution of privately-owned forest holdings by size



Protection areas 1987

Established under the nature protection act:

	no.	total area 1000 ha
national parks	22	670
strict nature reserves	20	154
wetland protection areas	102	78
other protected areas	13	8
privately-owned nature protection areas	650	12
		922

Areas protected by official order:

special conservation forests	234
primeval areas	34
peatlands protected from drainage	63
	331
Total	1253

The Finnish forest industry in 1986

Mechanical sector

	no. of units	production	exports %
sawmill ind.	161[1)]	7,1 mill. m³	64
plywood	25	0,6 -"-	84
particle board	11	0,6 -"-	40
wallboard	3	0,08 mill. tn.	57

1) in addition, c. 6000 local small sawmills.

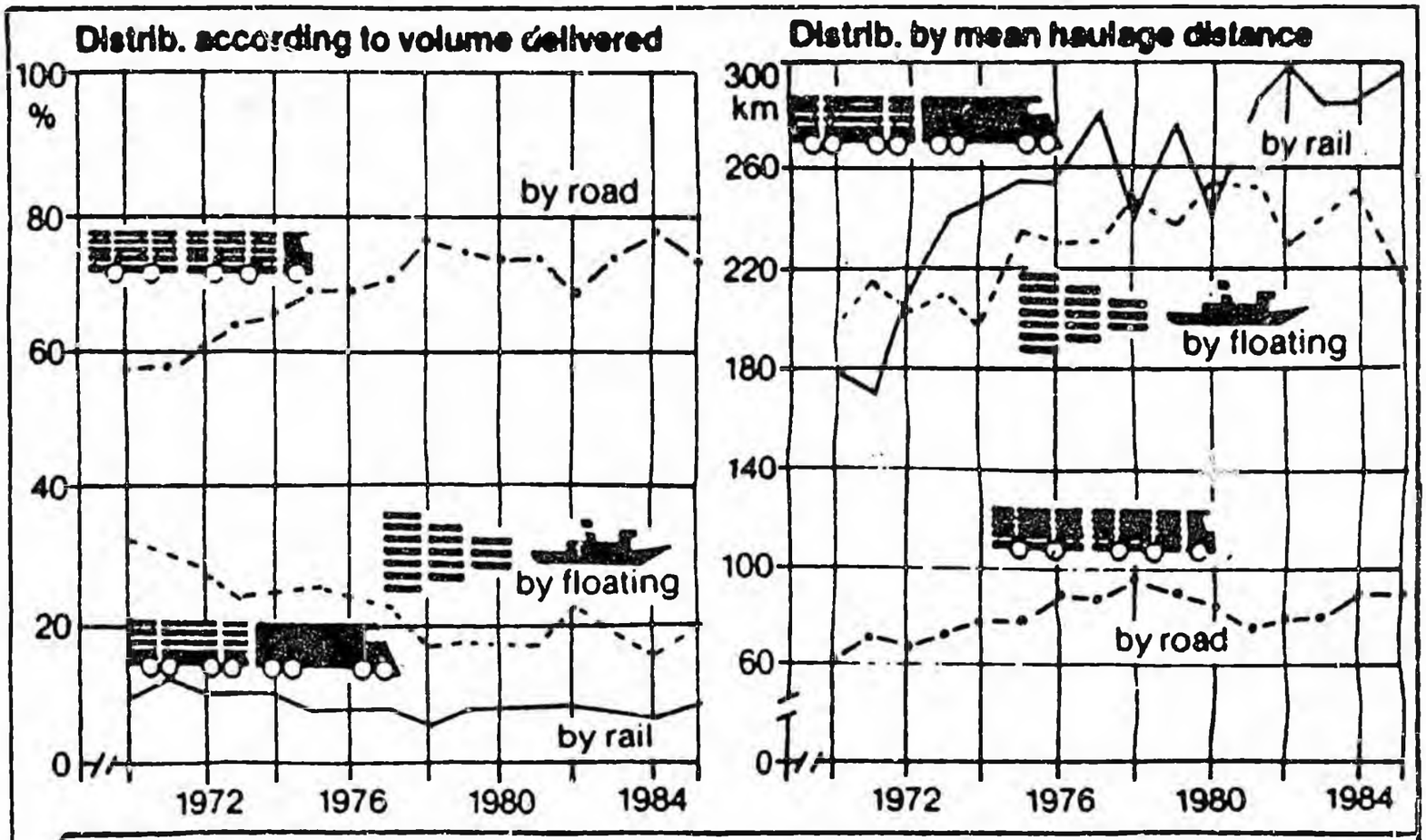
Chemical sector

	no. of units	production	exports %
pulp	47	7,9 mill. ton.	19
paper	30	5,8 -"-	82
paperboard	16	1,7 -"-	79

The forest industry in Finland and the rest of the world, 1984

	coniferous sawnwood 1000 m³	plywood 1000 m³	particle board 1000 m³	wood pulp total 1000 tn	of which chemical pulp 1000 tn	paper and paperboard total 1000 tn	of which newsprint 1000 tn	printing and writingpaper 1000 tn
Production								
the whole world	338 581	43 960	43 467	135 350	93 957	187 683	28 916	48 835
Europe (excl. USSR)	68 986	3 160	22 524	33 701	20 727	55 433	6 896	18 000
Finland	8 146	592	541	8 031	4 568	7 318	1 878	2 970
Finland's share (%)	2,4	1,3	1,2	5,9	4,9	3,9	6,5	6,1
in European production	11,8	18,7	2,4	23,8	22,0	13,2	27,2	16,5
International trade								
the whole world's imports	69 123	7 180	6 382	21 369	18 562	39 451	13 567	9 969
Finland's exports	4 803	480	180	1 561	1 386	6 062	1 675	2 548
Share of Finland's exports (%) in global imports	6,9	6,7	2,8	7,3	7,5	15,4	12,3	25,6
Imports of Europe (excl. USSR)	25 481	3 160	4 853	11 378	10 064	19 696	3 834	5 808
Finland's exports to Europe (excl. USSR)	3 420	419	169	1 168	1 151	3 939	1 208	1 521
Share of Finland's exports (%) in European imports (excl. USSR)	13,4	13,3	3,5	10,3	11,4	20,0	31,5	26,2

Wood transportation 1985



Mean haulage performance/year

	1971-1976	1976-1980	1981-1985
by road	38%	44%	49%
by rail	18%	16%	18%
by floating	44%	40%	33%

STATE OF ALASKA
1988 LEGISLATIVE SESSION

FULL VERSION: SB 112
PUBLISH DATE: _____

FISCAL NOTE

REQUEST:

Revision Date: 3/5/87
Title: An act relating to Forest Management Agreements
Sponsor: Jones
Requestor: House Resources

Agency Affected: Natural Resources
BRU: Forest Management
Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

An agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long-term commitment of timber to private enterprise

Prepared by: James L. McAllister
Phone: 465-2401
Division: Forestry
Date: 5/5/87

Approved by Commissioner: [signature]
Date: 1-12-88
Agency: Natural Resources

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

KLUKWAN FOREST PRODUCTS, INC.

P.O. Box 34659 · Juneau, Alaska 99803-4659 · 907-789-7104 · Fax: 907-789-0675

April 27, 1988

Alaska State Legislature
Representative, Sam Cotton
Pouch V
Juneau, Alaska 99811

The Honorable Sam Cotton:

The bill seems to be adequate in intent, and in most subject areas, but interpretations, unless clarified, could make it a difficult bill to pass, or to implement.

It must be kept in mind that the intent of a Forest Management Agreement is to create a cooperative public/private climate for the benefit of the people and the resources of the State. This is a concession to a private party wherein the State delegates activities, but not responsibilities of ownership. It is not necessary, therefore, for the State to seek third parties to undertake planning or other activities. The State (and public) has, by law and practice the ultimate review and approval of any plans developed to implement such a forest management contract.

Some specific clarifications, through rewording, while continuing drafter's apparent intent are:

(Note: words in parentheses are to be deleted, capitalized words are to be added.)

Page 1, Section 1 (b)(2) (relieve the State of some of the financial burden of developing and managing a timber sale;) CREATE FUNDING EFFICIENCY BY SHIFTING SOME BURDENS OF PLANNING, DEVELOPING AND MANAGING FOREST RESOURCES OWNED BY THE STATE OF ALASKA FROM PUBLIC TO PRIVATE ENTITIES, WITHOUT THE STATE LOSING OWNERSHIP OF ITS LANDS OR ULTIMATE CONTROL OF THEIR PRODUCTIVE CAPABILITIES.

Page 1, Section 1 (b)(3) provide for the long-term management of State timber AND RELATED FOREST RESOURCES, providing stability for the forest products industry, and incentives for the responsible use of State (timber) FORESTLANDS; and

Page 2, Sec. 41.17.510 (3) the FOREST RESOURCE utilization standards proposed by the bidder.

Page 5, 41.17.540 (c)(1) DELETE THIS PARAGRAPH. Reason: This is an open-ended, one-way clause, that has no place in a two-party contract of the nature herein contemplated. The state already has police power to enforce laws, and the forest management contract will have clauses for termination in the event the clauses are not adhered to. The state, through the courts, may assess punitive fines against a private party, if it is proven that a law is broken, and the court can, under law and rules assess costs. This proposed clause is evidently a result of and an attempt to emulate agreements between Akyeska Pipeline Service Co. (and other non-renewable resource transportation type endeavors) which agreed to pay for monitoring during construction. There is a vast technical and philosophical difference between those type of activities, and a two-party agreement wherein one party agrees to be an agent for another, and the final contract is based on mutual trust.

(2) (compensate the State for the) PAY FOR RECOGNIZED AND MUTUALLY AGREED UPON THIRD PARTY scaling services required to account for the timber (sold) HARVESTED.

SEC 41.17.550. (a) At any time between the 5th and (10th) 15th year of an agreement ...

Page 6 (1) The term of the agreement does not exceed (the term of the initial agreement) 20 YEARS FROM THE BEGINNING OF AN AGREEMENT OR THE BEGINNING OF AN EXTENSION OF AN AGREEMENT.

Page 6. Delete (b) line 15, and (b) (2) line 18-22 -- Then redesignate paragraph (b)(1) as (a)(4) and paragraph (b)(3) as (a)(5).

Sincerely,

William Thomas
Lobbiest

WT:skw

Susitna Valley Association
9600 Slalom Drive
Anchorage, Alaska 99516
346-1943

Testimony of Loisann Reeder

Forest Management Agreements Bill No. SB 112
Before the House Resources Committee
April 26, 1988

My name is Loisann Reeder. I am president of the Susitna Valley Association. The SVA is a broad-based group of individuals, businesses, and organizations formed primarily to comment on the proposed Susitna Valley timber sale which will affect all members of the association. Our current mailings to individual members, member businesses, and affiliate organizations reaches over 15,000.

The Susitna Valley Association has some serious concerns regarding the Forest Management Agreement bill.

(1) First, and foremost, **we have serious reservations regarding the Forest Management Agreement concept, in general**. This concept is best applied to state forests and private lands where the primary use is devoted to forestry. Most lands in Alaska are public lands and are designated for multiple use. For instance, in the Susitna Area Plan, in every sub-unit where forestry is designated as a Primary Use, it shares that designation with at least two other Primary Uses. No where in the Plan is forestry the **only** designated use. The FMA concept does not allow for adequate consideration of these other uses. The emphasis and focus is strictly on forestry.

Another concern about the FMA concept, is that long term contracts take the land out of public ownership, and place it in the hands of a private corporation. These are public lands, and public agencies should be managing them. We cannot expect a private corporation whose goal is to make money from the harvest of trees, to be sensitive to the other multiple uses of that land.

(2) **Our second concern is in regards to private property.** The FMA concept being proposed gives no consideration to private properties located within, or adjacent to, the sale areas. Again, we are not dealing with a state forest. We are dealing with multiple-use lands that includes "settlement" as one of the uses. The private properties are not "inholdings". They are one of the multiple uses of the area as determined by the state, and sold to individuals by the state for recreational use and/or permanent residences. For instance, within the area under consideration for the Susitna Valley timber sale, there are over 5000 private parcels. This is quite a sizable community and the state surely must expect those property owners to demand some say in what happens in their backyard.

Therefore, we believe the two following concerns should be included in any timber sale which the state might propose, and certainly should be a consideration for any forest management agreement.

(1) The state should notify the private property owners within and adjacent to a proposed sale area and give them adequate time to comment. The names and addresses can be easily obtained from the respective borough tax office. The borough will even supply mailing labels for a minimal charge.

The Recreation Rivers Bill, HB93, which is currently being addressed by the Senate, has a similar notification clause such as we are suggesting.

(2) Actions should be taken to lessen potential negative impacts on private properties that a large-scale clearcut logging operation would present. Possible ways the latter could be accomplished would be to allow half-mile buffers around subdivisions, Open-to-Entry areas, and lodges. Areas where there are extensive private properties could be removed from the sale proposal entirely. This would help "sustain the characteristics of the region that attracted people to the area", a recognized goal of the Susitna Area Plan, and also would provide the necessary supply of wood for personal use harvest.

2

(3) Our third concern is that **the FMA concept, as proposed, gives too much power to one department (DNR), and to one individual (the Commissioner of DNR).** The Departments of Fish and Game and Environmental Conservation would only have the right to "review" any timber harvesting plan. The Commissioner of DNR would only have the obligation to "consult" the other two departments on what DNR had decided to do. Even if the Departments of Fish and Game and Environmental Conservation were totally negative on the plan, they would not necessarily have any power to stop, or reasonably change, the plan. Since the state would be dealing with multiple-use lands, it is imperative that all three departments be equally involved in formulating and approving (or disapproving, as the case may be) the FMAs.

(4) Our fourth, and probably most important, concern at this point, is that **the community has a right to be involved in the public review process on an issue such as this.** We cannot adequately respond to something this complex when we just received the proposal twelve hours before the hearing. The Susitna Valley Association has numerous organizations, businesses, and individuals in its membership that are all directly impacted by this legislation. It is important to have adequate time to get this material dispersed, analyzed, and responded to. Neither the legislature nor the public will be able to do justice to the public process in attempting to deal with this bill in the few days left in this session. A similar lack of opportunity to have reasonable public input and comment last fall is the very type of situation that resulted in the formation of our organization. We would appeal to you to slow down, get more input from the individuals and agencies involved, and start with a new bill next year if that is still what people want.

I appreciate the opportunity to speak to you today and I will be pleased to answer any questions you may have.

3

Alaska Center for the Environment

700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

April 28, 1988

Rep. Sam Cotten
PO Box V
Juneau, AK 99811

Attn: Lisa Weissler

Re: SB 112

Dear Rep. Cotten:

The Alaska Center for the Environment appreciates the opportunity to comment on the 4/25/88 draft of SB 112. Attached please find handwritten suggestions on language which indicate some of our concerns. ACE remains opposed to the concept of private management of public lands for single, intensive, industrial uses. We are especially concerned about the fact that the present draft would allow for non-competitive bidding and subjective bidder selection by the commissioner of DNR. Competitive bidding and objective, defensible bidder selection is a cornerstone of the public bid process.

A brief summary of our concerns as expressed in my testimony before the House Resources Committee on April 26 on behalf of the Alaska Environmental Lobby, follows:

-This bill is premature in view of the present study regarding the Susitna Valley Timber Sale and the Governor's committment to review the Forest Practices Act.

-FMA's compromise the public review process.

-The "multiple variable bid process" is inappropriate.

-Planning is inadequate and inappropriate.

-Impact analysis by the state should be required.

-Long term contracts compromise the state's ability to enforce contract requirements and environmental laws.

Please call if you have any questions or comments.

Sincerely,

Alan Phipps

Alan Phipps

Alaska Center for the Environment
700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

Section 1. PURPOSE

Line 12, after "recreation improvements" add "and fish and wildlife habitat protection"

Line 12, delete "efficient"

Line 13, delete "effective"

Line 18, delete all of item (2)

Line 26, "compliance with existing and future state laws..."

Sec. 41.17.500

Line 3, delete "after consultation with" and add "with the concurrence of"

Sec. 41.17.510

Delete entire section. Replace with language requiring preparation of plans by the state and establishing a competitive bid process.

Sec. 41.17.520

Lines 27, 28, 29, delete "If a land use plan ... more than 1,280 acres"

Page 3, Lines 1, 3, 4, "management" plan should be called "master" plan to not be confused with management plan prepared by state.

There needs to be added language requiring Area Plan and step-down management plan prepared by state prior to bid process.

Alaska Center for the Environment
700 H Street, Suite 1 • Anchorage, Alaska 99501 • (907) 274-3621

Sec. 41.17.520 (cont.)

Page 3, Items (1), (2), (3), (4), and (7) should be prepared by the state

Sec. 41.17.530

Here, or elsewhere, the public process should be expanded to include public review and comment prior to the Request for Proposals, prior to selection of the bidder, and prior to signing the finalized contract.

Sec. 41.17.540

Line 18, revise as follows, "except that the commissioner [contractor] may limit access..."

Line 19, revise as follows, "...conditions exist, subject to public review and comment."

Line 24, revise as follows, "... within 300 feet of rivers, lakes, and streams, including feeder streams, to provide..."

Page 5, Line 6, revise as follows, "and re-forestation [regeneration] of timber..."

Sec. 41.17.550

Page 6, Line 13, delete "substantially"

Alaska Center for the Environment
700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

Section 41.17.560

Page 7, Line 9, item (2)(B), implies that changes can be made to the initial agreement, yet I find no provisions in this draft for how changes are made. Any changes should be subject to public review and comment.

Line 12, item (3), additional silvicultural treatments should be subject to public review and comment and concurrence with the DEC commissioner.

Section 41.17.540

Line 7, revise to read "not to exceed 5 [20] years..."

Miscellaneous Comments

- Environmental, Social, and economic impact studies of a proposal should be required to be prepared. These studies should be done by the state, and should include the negative impacts.

STEVE COWPER, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
OFFICE OF THE COMMISSIONER
P.O. BOX O, JUNEAU, ALASKA 99811-1800

Telephone: (907)
Address:
(907) 465-2600

April 28, 1988

The Honorable Sam Cotten
Co-Chairman, House Resources Committee
PO Box V
Juneau, AK 99811

Dear Representative Cotten:

We have reviewed the proposed committee substitute for SB 112 that was distributed on Tuesday. We have a few comments.

At page 1, line 10, the words "forest products" should be inserted before the work "plant" to clarify the intent of the requirement.

At line 15, subsection (b) should be amended by changing the word "may" to "will."

A new subsection (c) should be added before item (2) to say "A forest management agreement may . . ." This change is necessary to make it mandatory that the forest management agreement "provide for equal consideration of other existing beneficial uses of forest land."

Subsection (b)(2) at line 18, the words "financial burden" should be changed to "administrative responsibility."

Subsection (c), at line 25, should become subsection (d) and the wording should be amended as follows:

> (d) The provisions of this Act do not [permit] affect an operator's obligation to comply [to avoid compliance] with state laws or regulations affecting environmental conservation, timber practices, fish and game, or any other resource or use of a resource.

On page 2, at line 7, the agreement should also be required to be consistent with the Alaska Coastal Management Program. In addition the section should require any agreement to be consistent with the purposes in Section 1. This would ensure that the codified, operative sections of the statute reflect the commitment to equal consideration of other existing beneficial uses and to continued obligations under other state laws or regulations.

On page 3, at lines 1-4, review and approval steps for a plan proposed by a bidder should be added. Public involvement is essential.

On page 3, at line 16, the words "water quality" should be added after the words "public recreation."

On page 3, at line 23, it would seem appropriate to describe the content of the operating plan.

On page 3, line 27 should be revised as follows:

> The finding and all <u>operating and management</u> plans shall be <u>submitted for</u> review[ed] by the commissioners of the Departments of Environmental Conservation, Fish and Game, and Commerce and Economic Development.

On page 4, at line 29, a new subsection (10) should be added, to read as follows:

> (10) Specific mitigating measures and monitoring plans to protect water quality;

The following sections would then be re-numbered.

I appreciate the opportunity to comment.

Sincerely,

Dennis D. Kelso
Commissioner

From: NRSCFMI --JDCVM1 Date and time 04/28/88 09:17:32
To: NAGMBI --JDCVM1

FROM: FRANK MIELKE
DIV. OF LAND & WATER MANAGEMENT
DEPT. OF NATURAL RESOURCES
SUBJECT: John Galea and Larry Ostrovsky, SB 112 language

1)Bid process regulations: add as (c), line 27, p. 3 : (c)prior to requesting any bids or accepting applications, the commissioner shall adopt regulations detailing the bidding procedure and the method of determining the most qualified bidder.

2)Notice- add as 41.17.525 Notice of proposed agreement. In addition to the requirements of AS 38.05.945, the commissioner shall , after consulting with the commissioners of fish and game, environmental conservation, commerce and economic development and affected municipalities, but prior to the development of a 5 year operating plan or an annuyal harvesting plan, publish notice as required by AS 38.06.945, and hold at least one public hearing on the proposed agreement.

3)Public involvement - add to 41.17.550(a)(1), line 3, p 6, after the word excedd, the phrase "...a term of years equal to..." so that (1)reads:"the term of the extension does not exceed a term of years equal to the term of the initial agreement."

4)Plans-on page 6, 41.17.550 (a) and (b) - delete (b), change (b)(1) to (a)(4) and change (b)(3) to (a)(5); delete (b)(2).

5)Compensation - One page to add to 41.17.520(b) at the end of the first sentence add a new sentence: "If the commissioner determines that the operating or harvesting plan is inadequate, the commissioner may require the operator to revise the plan or may require the preparation or revision of plans at the expense of the operator, either by department staff or by a third party."

Also on page 3, beginning with line 1, delete the word "submit" with the words "provide for the preparation of, at his own expense, by a third party or by department staff,"

Also on pa. 5, line 11, delete the words "compensate the state" and replace with the words "enter into a reimburseable services agreement"

Also add as (4), line (20):(4)The commissioner of administration shall separately account for money received under this section that the Department of natural resources deposits in the general fund. The annuyal estimated balance in the account may be used by the legislature to make appropriations to the department tro carry out the purposes of this section.

6)Municipal involvement - one page 3, line 29 add the words "and a municipality if the land is within its boundaries". Also same language on page 6, line 11 and page 2, line 4.

7)Conform with existing and future laws - Add to 41.17.540, top of page 5 as (11)terms and conditions requiring the compliance with any and all laws, regulations and ordinances existing at the time or subsequently enacted.

Change (11) to (12)

8)Purposes - page 1, (b)(2), lines 18 and 19, change to read (2)provide for chge shifting of some or all of the financial burdens of the costs associated

with the preparation, development and management of a timber sale.

9) Small operators, p. 5, lines 17-19, add at end: "A small operator is a timber business which (a) employs 25 or fewer employees; (b) is not owned, in whole or in part by the timber operator and (c) is not controlled by contract or agreement by the timber operator.

10) Plans have been defined in an earlier memo done by Dave Wallingford. I'll send again to be sure. Definitions of land use plans are contained in 11 AAC 55 (should forward copies of proposed amendments to 11 AAC 55 to HRes).

After you get a chance to look these over, call if you things we should change.&

762-2692

1003 B Street
Juneau, Alaska 99801
Tel. 586-4409
28 April 1988

Representative Sam Cotten, &
Representative Adelheid Herrmann,
Co-Chairs
House Resources Committee
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

RE: CSSB 112

Dear Representatives Cotten & Herrmann:

I would like to suggest certain features to be included in a draft CS for CSSB 112 now under consideration in the Resources Committee. I will limit my suggestions to matters of stumpage revenues, regional economic development, and industrial structure.

As currently drafted (Work Draft 5-0567N, Bradley, 4/25/88), the CS does not address problems of monopolization by an FMA holder. This could occur immediately upon establishment of an FMA if the region's entire annual allowable cut (AAC) were committed to the FMA. More likely would be the gradual development of a monopoly if the FMA holder were allowed to bid on regular state timber sales in the region. The FMA holder in this case could buy out other mills, and/or outbid other state timber sale bidders until they went out of business or were effectively marginalized. This would make it very difficult for a region to produce timber products for its own market, let alone try to develop its ability to replace imports with locally-produced timber products, or to venture into exports of products not produced by the FMA holder.

It should be recognized that the regional dominance of an FMA holder, enjoying a long-term assured supply at favorable prices, may present difficulties for other local operators, with negative implications for public policy as regards regional economic development and public revenues. The following are suggested as minimum protections against these effects.

The planning for an FMA should determine a maximum percentage of the region's AAC that could be allocated to the FMA, and assure that sufficient, potentially accessible timber remained for other existing and potential local uses. The FMA holder should not be allowed to bid on state timber sales held off the FMA; the FMA holder would, however, be allowed to purchase logs or other timber products from non-FMA operators cutting on regular state timber sales. This would help to preserve competition, prevent excessively depressed stumpage prices and revenues, reserve a supply for local operators, and allow for market-derived determination of stumpage rates. This planning and determination of maximum percentage of AAC should be done by the state; it might best be incorporated into the draft CS as a new subsection (c) under Sec. 41.17.520 PLANS, on P. 3, after line 22.

In cases where the state will require the establishment of a production or export facility, or expansion of an existing facility, as a condition of an FMA, its maximum capacity should not be allowed to exceed its supply area's AAC less that area's annual projected local demand for timber products at import-replacement levels in each species of timber. Similar limits for round-log export should be imposed. This is necessary to allow survival of an area's local demand-oriented industry and its expansion into import replacement.

The Resources Committee should review and determine the adequacy of existing legislation prohibiting surrogate or "front" bidding for competitive timber sales on non-FMA state lands. If found to be adequate, their application to FMA holders should be noted in the bill; if existing statute is inadequate, the draft should incorporate a new section of safeguards. Without such safeguards, FMA holders could "sponsor" other operators, including their own contract loggers, who could front for them using the market advantage of the FMA's large assured supply of timber at low prices, to outbid others. Non-FMA state timber would then be bought by whichever operator could cut the sweetest deal with the FMA holder, or by operators financially dependent on the FMA holder, not by the most efficient operator, thus severely eroding competition. House Research Agency Report 83-149, p. 3 relates to this problem in Southeast Alaska, and there is evidence of the problem in British Columbia as well.

The justification for FMA legislation is often stated as a need to assure a long-term stable timber supply to a firm at favorable prices, in return for investments in productive capacity. If the committee accepts this argument, it need not necessarily accept that the firm should be subsidized with low-priced public timber in perpetuity, or indeed for any period of time beyond the amortization of the productive capacity that the FMA was designed to encourage. Once the FMA holder's investment is amortized, his dominant position in the region should be sufficient to allow profitable competition with other buyers of state timber, without further subsidy. The bill should include a requirement that the transactional evidence stumpage appraisal method be used to determine the floor price for negotiation of stumpage after the original term of the FMA (not more than 20 years) has expired.

On the matter of the term of the FMA, the current draft's extension provisions are unnecessarily liberal, considering the dominant position an FMA operation will enjoy after the 20-year original term. Five year extensions contingent upon satisfactory performance would be adequate, <u>not</u> renewals of the 20-year term every five years.

These suggestions should not be construed as approval of the FMA concept or of other features of the CS. Nevertheless, I appreciate the opportunity to participate in trying to improve this legislation.

Sincerely,

John Dunker

cc: Members, House Resources Committee
Representative Niilo Koponen

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

400 WILLOUGHBY AVE.
JUNEAU, ALASKA 99801-1796
PHONE: (907) 465-2400

May 5, 1987

The Honorable Adelheid Herrman, Co-Chairman
House Resources Committee
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

Dear Representative Herrman:

Subject: SB 112 - An Act Relating to Forest Management Agreements.

Response: The Department supports this bill.

Discussion: The idea of private management of public lands for commercial development is a good one. Such an agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long term commitment of timber to private enterprise.

Please contact me should you need any additional information on this proposed legislation.

Sincerely,

Judith M. Brady
Commissioner

cc: Senator Jones
Senator Sturgulewski
Committee Members
George Sullivan
Rod Swope

10-J9LH

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

REQUEST:

Bill Version :
Publish Date :

Revision Date: 3/5/87
Title : An act relating to Forest Management Agreements
Sponsor : Jones
Requestor : House Resources

Agency Affected : Natural Resources
BRU : Forest Management
Components :

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

An agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long term commitment of timber to private enterprise.

Prepared by : James I McAllister
Phone : 465-2401
Division : Forestry
Date : 5/5/87

Approved by Commissioner : Dennis Groseth
Date : 5/5/87
Agency : Natural Resources

Distribution (by preparer) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)
Senate Secretary

MEMORANDUM

TO: HOUSE RESOURCES COMMITTEE:
CO-CHAIR REP. ADELHEID HERRMANN
CO-CHAIR REP. SAM COTTEN

FROM: REP. NIILO KOPONEN

DATE: 14 APRIL 1987

RE: CSSB 112 (RES) am / HB 141 (Forest Management Agreements)

I wish to express some concerns I have regarding this bill, and to urge you to postpone scheduling it. This measure would enact radical and far-reaching changes in the way the state's timber lands are managed and timber rights conveyed.

SB 112 grants broad powers to the Commissioner of Natural Resources to negotiate with purchasers the rights to harvest public timber. No time or area limits are placed on these Forest Management Agreements (FMA's) in the bill, and the Commissioner responds to industry proposals rather than planning and initiating management of the state's forest lands in accordance with the various needs of the affected public or broader public policy. Stumpage amounts (the timber revenues) would be negotiated, not competitively determined; no formula or method for this is prescribed.

I think it is evident that larger and better-financed companies will be better able to prepare proposals for FMAs, and once the FMA is in place they will have an even greater competitive advantage over existing smaller, local logger/mill operators. Not having to pay competitive prices for their stumpage, they will then be able to out-bid local firms for timber sales that may occur outside of the FMAs. Their long-term, large-area timber rights could also serve as financing collateral to permit them to simply buy out smaller operators. This pattern of consolidation and concentration has been the case in large areas of British Columbia, one of the jurisdictions that served as models for the FMA concept in this bill. Once this pattern is established, there is no longer an effective market determination of stumpage values, and the state loses its

ability to determine fair value for its forest resources. This is also well documented in B.C.

State Forests are not exempt from this bill. Before acting on it, I believe we should determine what effect it would have on the management planning process now underway for the Tanana Valley State Forest and due for completion later this year. Whereas this process includes consideration for adjacent and affected land owners, such as native corporations and municipalities, no such process is provided for in this bill. Several groups of rural residents, recreationists, village councils, and native corporations have registered opinions about timber development, coordination of state and private timber sales and preservation of fair market prices for timber, road and trail access, and other matters in the Tanana Valley State Forest. How will these be addressed if industry does the planning via FMA proposals?

These are but a few of my concerns about this bill, which in two pages creates the potential for a great many threats to the public interest, to say nothing of its possible flouting of the Alaska Constitution by allowing harvest in excess of sustained yield. To compound the legislative-regulatory problem, the bill requires the Commissioner to request proposals from the industry within one year after the effective date.

This superficially simple bill is, in fact, extremely complex. Some jurisdictions where FMAs or similar systems have been tried are engaged in controversy over them; my staff is now collecting information on the experiences of these jurisdictions, but much information remains to be received. What I have seen so far is enough to convince me that FMAs require close study and thorough debate, and I would like to be sure that we have more information than is now at hand before we begin this effort.

I have begun informing constituents about this bill and my concerns with it. Due to the complexity of the issues involved, considerable time may be required for them to prepare to inform us of their views.

Thus, for several reasons I feel that more time is necessary to adequately prepare to consider SB 112 / HB 141, and that scheduling it for hearing at this time would be premature.

HOLD UNTIL - NEXT TIME

Ron - await the classification process.

Introduced: 2/9/87
Referred: Resources

.5-0567A

Coghill - how do we get the state forests into this bill.
If we have to amend the state forest statutes to include SF lands into this management system.
Steve Bailick - strongly disapprove - multiple use sustained yield timber strip mining. Just give it away to any logger who wants it.
Taylor in the House

BY JONES, STURGELEWSKI and Jim Clark

IN THE SENATE

SENATE BILL NO. 112

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to forest management agreements."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 38.05 is amended by adding a new section to read:

Sec. 38.05.122. FOREST MANAGEMENT AGREEMENTS. (a) Notwithstanding AS 38.05.110 - 38.05.120 and 38.05.300, the commissioner may enter into an agreement with a (contractor) doing business in the state for the sale of timber from state land on which the right to harvest timber has not been specifically prohibited by law. An agreement entered into by the commissioner under this section shall be used to foster the development of the state's forest products industry. In each agreement entered into by the commissioner under this section, timber harvest is the exclusive beneficial use of the land subject to the agreement.

(b) The commissioner shall establish by regulation requirements for the selection, harvest, and regeneration of timber on state land that is subject to an agreement under this section.

(c) In an agreement for the harvest of state timber entered into under this section, the commissioner may provide for

(1) the term of the sale and an extension of the term;

(2) the stumpage prices to be charged for the timber;

(3) incentives to the contractor for the completion of the agreement;

(4) compensation from the contractor for the scaling services required to account for the timber sold;

F.P. industry - under - developed.
Negotiated sales rather than reacting to bids } Jones
Mike Abbott - RDC - projects co-ordinator - issue of forest management agreements
① give commissioner authority
② Sec 2 get started right away
32 million acres north of Yukon
Jim McAllister - DOF - DNR - position paper - support private management of state lands; doesn't cover state forests; fiscal note providing state does not have to pay for roads + incentives

(5) the construction and maintenance of access roads necessary to the harvest of the timber, including the sale of materials from state land for the construction of the access roads;

(6) timber harvest to be at a volume in excess of that permissible under the nondeclining yield method of calculating sustained yield; (even flow method) ARTICLE 8 CONSTITUTION - amendment

(7) penalties for violation of the terms of the agreement and termination of the agreement;

(8) areas sized to the capability of small contractors; (purchaser)

(9) other terms, conditions, and limitations determined to be in the public interest by the commissioner; and

(10) the preparation of reports determined necessary by the commissioner.

(d) In entering into an agreement under this section, the commissioner shall consider

(1) the economic activity to be generated in the state by the proposed operation of the contractor; (purchaser)

(2) the technical and financial qualifications of the contractor; (purchaser)

(3) the stumpage payments proposed to the state by the contractor; (purchaser)

(4) the experience of the contractor in the state.

(e) The commissioner may (SHALL) consult with other agencies of the state or with federal agencies when considering an agreement under this section.

* Sec. 2. The commissioner of natural resources shall request proposals for the management of state timber land under AS 38.05.122, as enacted in sec. 1 of this Act, within one year after the effective date of this Act.

Sturgulewski - we want to see development - demand for it - she says she has a constituency who wants to use the land this way.

FMA's - ontario canada

MEMORANDUM State of Alaska

TO: Distribution

DATE: March 16, 1988

FILE NO:

TELEPHONE NO:

THRU:

SUBJECT: Cost of Production Model for Pen Rearing and World Markets for Salmon: Pen Reared Salmon Impacts

FROM: Paul Peyton, Program Manager
Division of Business Development
Department of Commerce & Economic Development

Attached is the final report on Costs of Production. The World Market report is still being worked on due to difficulties in identifying existing domestic markets for Alaska's salmon. This information is not compiled anywhere and must be derived indirectly. The task has proved more difficult than anticipated and the completion date has been moved to March 23.

Please call if you have any questions or suggestions concerning these findings. I have asked the contractors to be available for hearings next week and they will be available the 22nd and later.

PP/ltO138r
Attachment
031688a

COST OF PRODUCTION MODEL
FOR PEN-REARING OF SALMON IN ALASKA
AND CURRENTLY PRODUCING REGIONS

FINAL REPORT

Prepared for:
State of Alaska Department
Department of Commerce
and Economic Development
Juneau, Alaska

Prepared by:
The DPA Group Inc.
In association with
Hatfield Consultants Ltd.
and Dr. Trond Bjorndal
Vancouver, B.C.

March, 1988

EXECUTIVE SUMMARY

A. PURPOSE OF STUDY

The purpose of this study is to determine costs of production for net-pen rearing of salmon in Alaska. The State Department of Commerce and Economic Development commissioned the study in December, 1987 in conjunction with a second study to assess the impacts of projected farmed salmon supplies on markets for Alaska's wild salmon. Together, these studies can be used to determine the potential economic viability of production in Alaska.

The study first analyzes costs of production in the regions projected to be the largest suppliers. It then develops costs of production for Alaska from an analysis of biological, environmental and logistic conditions in the state.

B. SCOPE OF STUDY

Costs of production (COP) for Norway and Scotland were developed largely from recent studies. Costs of production for Chile were developed from recent studies and from COP models developed by Hatfield Consultants Ltd. for the Chilean industry. Costs of production for British Columbia were developed from a unit cost model recently developed by the DPA Group Inc. for the industry.

Costs of production for Japan were not developed because no cost of production data is available in the public domain or from the firsthand experience of study team members. However, sufficient data was obtained from previous studies and a recent visit by a study team member to draw some important conclusions about its cost structures and its development potential. These are presented in a narrative form.

In order to assess conditions for pen rearing salmon in Alaska we conducted reviews of previous environmental studies in Alaska. We also held telephone interviews with several fisheries officials in the state of Alaska Department of Fish and Game and the National Marine Fisheries Service.

In order to develop growth data and feed conversion ratios we compared published results of the National Marine Fisheries Service salmon farming research projects at Little Port Walter and Auke Bay to those of a recent broodstock management program in British Columbia.

C. COSTS OF PRODUCTION IN CURRENTLY PRODUCING REGIONS

A summary of unit costs for farmed salmon in each major supply region is shown in Exhibit 3.13. In all cases, product is assumed to be sold in a head-on, dressed form. In

the exhibit, a yield factor is applied to the unit costs previously calculated on a round weight basis. Yield factors range between 85% and 90%. Yields are highest with larger fish.

EXHIBIT A: COMPARATIVE DRESSED-WEIGHT UNIT COSTS IN US DOLLARS

	Norway	Scotland	B.C.	Chile	Japan
Unit Costs Per kg Round Wt. Basis	$5.05	$5.46	$3.32	$3.20	$5.67
Average Size	4 kg	2.5 kg	3.4 kg	2.5 kg	2.0 kg
Processing Yield	.90	.87	.89	.87	.85
Unit Costs Per kg Dressed Wt. Basis	$5.61	$6,28	$3.73	$3.68	$6.67
Unit Costs Per lb	$2.55	$2.85	$1.70	$1.67	$3.03

Exchange rates to US dollars are 1987 year-end rates:
NOK: 6.2325; UK pound: 1.8715; CDN$: 0.7693; Yen: 0.0081.

Source: As in Exhibit 3.12.

Chile and British Columbia have the lowest unit costs. Japan has the highest. However, the lower unit costs of the Chilean and British Columbian industries do not necessarily mean that higher returns are being earned in these regions. Freight costs to major markets are a significant factor. Pricing is based on numerous factors including size, species, and grade. Generally larger sizes and high quality are preferred attributes. Preferences for particular species will generally vary by area. Time of harvests and level of marketing effort will also influence net returns.

Large areas of southcentral and southeast Alaska are not suitable for salmon culture due to the presence of ice, icebergs and large river systems. Salinities are generally more consistent throughout the year in areas away from mainland waters, where blooms are also less likely to occur.

Smolt production capacity in both southcentral and southeast Alaska is likely adequate to meet potential demand from a salmon farming industry. Some fish feed production capability exists in southcentral, however fish feed would most likely be imported from Washington State or British Columbia because of more specialized production in these regions.

The following areas would be favoured for development in terms of their proximity to population centers, airports and processing plants:

- along the eastern half of southeast Alaska near Juneau, Ketchikan and Petersburg/Wrangell;
- along the western side of Baranof Island near Sitka;
- in southcentral Alaska near Kodiak, Homer, Seward, Cordova, Valdez and Whittier.

Netpen operations in these areas would also be less likely to be affected by phytoplankton blooms. However, all areas are likely to be affected by predators.

D. COSTS OF PRODUCTION IN ALASKA

The area around Ketchikan is probably the best area for development of pen rearing of salmon in Alaska because of warmer summer and winter temperatures. This area also has more constant salinities throughout the year. Chinook could be expected to reach a harvestable size of two kilograms during the second winter in saltwater. However, the Ketchikan area would have lower growth rates and higher conversion rates than in most areas of British Columbia where salmon farming occurs because of seasonally lower water temperatures.

The cost profile of a farm assumed to be located in the Ketchikan area is summarized below.

Capital Investment

Capital investment is assumed to be similar to that of British Columbia. However, cage systems and equipment are assumed to be imported and slightly more expensive. The estimated total capital investment for the farm is shown below.

	U.S. $
Sea cage system and equipment	$380,000
Facility on floating barge with equipment	250,000
	$630,000

The total capital investment is $2,520 per tonne. Like British Columbia accommodation and other facilities are assumed to be on a floating barge due to the lack of extensive road systems in the south central portion of southeast Alaska.

Unit Costs

Unit costs are shown in Exhibit B. Unit costs are $4.49 per kilogram.

EXHIBIT B: ESTIMATED UNIT COSTS PER KG FOR CHINOOK SALMON IN ALASKA

	Unit Costs (US Dollars)	%
Variable Costs		
Smolts	0.40	9
Feed	2.00	45
Stock Insurance	0.07	2
Processing	0.52	11
Interest on Working Capital	0.27	6
Total Variable Costs	**3.26**	**73**
Fixed Production Costs		
Wages	0.32	7
Overhead	0.24	5
Depreciation	0.49	11
Interest	0.18	4
Total Fixed Costs	**1.23**	**27**
Unit Costs per Kilogram	**4.49**	**100%**

Source: The DPA Group Inc.

Assuming a yield factor of about 85%, unit costs on a dressed weight basis would be $5.28/kg or $2.40/lb.

E. SUMMARY

The landed costs of farmed salmon from each major supply region and from Alaska in three major markets are shown in Exhibit C.

EXHIBIT C: COMPARISON OF LANDED COSTS PER LB IN MAJOR MARKETS (U.S. DOLLARS)

	Supply Region					
Market	Norway	Scotland	B.C.	Chile	Japan	Alaska
Los Angeles	3.80	4.17	2.06	2.63	N/A	2.77
New York	3.46	3.83	2.44	2.63	N/A	3.18
Tokyo	4.25	4.62	2.89	3.85	3.21	3.36

As indicated in the exhibit, Alaska is competitive from a cost standpoint in all markets.

However, costs at an industry level are only well known for Norway. As a result, the cost comparisons should be viewed with caution. Alaska would be selling farmed salmon in smaller sizes than Norway, Scotland and British Columbia and would compete more directly with Chile. British Columbia and Chile have cost advantages over Alaska in both Los Angeles and New York.

Alaska would also likely have a short window period in which to sell. This would also likely result in more direct competition with the Chileans.

Landed costs in major markets are sensitive to exchange rates. Fluctuating exchange rates could make Alaskan farmed salmon more or less competitive in all markets. However, the U.S. and Canadian currencies are closely linked and generally shift from each other only slowly. As a result, British Columbia would likely have cost advantages over Alaska in all major markets.

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1.0 PURPOSE AND SCOPE OF STUDY

Purpose of Study

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In order to develop growth data and feed conversion ratios we compared published results of the National Marine Fisheries Service salmon farming research projects at Little Port Walter and Auke Bay to those of a recent broodstock management program in British Columbia.

In the following section of the report we present an overview of worldwide farmed salmon production. In Section 3.0 we analyze and compare costs of production in each major supply region. In Section 4.0 we estimate costs of production in areas suitable for pen-rearing salmon in Alaska. In Section

5.0 we summarize Alaska's potential cost advantages and disadvantages.

2.0 OVERVIEW OF WORLDWIDE FARMED SALMON PRODUCTION

2.1 Introduction

Aquaculture is defined as the culturing of finfish, shellfish and aquatic plants. Species currently being cultured commercially include shrimp, oysters, carp, tilapia, catfish and salmon. Worldwide production from aquaculture has grown rapidly from about 2.6 million tonnes in 1970 to about 10 million tonnes in 1986, accounting for 10-12% of total fisheries output worldwide. China and Japan account for 35 percent of world aquaculture production. The United States produces two percent of the world total. Production is mostly catfish.

Aquaculture production can be classified as either extensive, semi-intensive or intensive. The extensive method is the simplest. Aquatic environments such as oceans and lakes are stocked at low densities with little management of the species and little or no supplemental feeding. The semi-intensive method involves higher stocking densities in smaller culture units, more intensive management and some supplemental feeding. The intensive method employs still higher stocking densities in a controlled environment.

Salmon ranching, roe on kelp and scallop spat collection in Alaska can be classified as extensive forms of aquaculture. Pond rearing of catfish and trout in several other states and seapen rearing of salmon in Washington and Maine are classified as semi-intensive production.

Intensive forms of aquaculture for the most part have only been successful with some tropical species although rearing of trout in Idaho could possibly be classified as such. Intensive rearing of Atlantic salmon in land-based tank farms has been attempted but has generally not been successful. Much greater success with rearing salmon has been achieved with netpen rearing of Atlantic salmon in Norway. Production has increased from 1,500 tonnes in 1975 to over 45,000 tonnes in 1986. Along with growing demand for fresh seafood in major markets, this industry has spurred the development of netpen rearing of salmon around the world.

The first phase of the production cycle is in a freshwater hatchery. Fertilized salmon eggs reach the smoltification stage anywhere between six and 18 months. Juveniles are then placed in netpens supported by floating cages situated in marine locations. The growout period in saltwater can take up to three years.

Supplemental feeding exists through most of the freshwater phase and virtually all of the saltwater phase. Pen-reared fish are typically fed commercially-produced pelleted feed.

World production of farmed salmon in 1986 is shown in Exhibit 2.1.

EXHIBIT 2.1: WORLDWIDE PRODUCTION OF FARMED SALMON IN 1986 (Metric Tonnes)

	Atlantic	Chinook	Coho	Total
Norway	45,675	-	-	45,675
Scotland	10,300	-	-	10,300
Ireland	650	-	-	650
Faroes	600	-	-	600
Iceland	100	-	-	100
Sweden	150	-	-	150
Finland	40	-	-	40
Spain	150	-	-	150
France	-	-	180	180
Italy	50	-	-	150
Eastern Canada	297	-	-	297
B.C.	-	89	400	489
Washington State	-	-	1,400	1,400
Chile	-	-	1,000	1,000
New Zealand	-	500	-	500
Japan	-	21	7,200	7,221
	58,012	610	10,180	68,802

Source: The DPA Group Inc. Worldwide Farmed Salmon Production Forecasts to Year 2000, Department of Fisheries and Oceans, 1988.

As indicated in the exhibit, Norway was the world's largest producer of farmed salmon in 1986, producing about two thirds of the world supply (or about 8% of the 1986 total supply of farmed and wild salmon). The other supply region with considerable Atlantic salmon production in 1986 was Scotland.

The culturing of Pacific species has been more recent and Japan was the only significant producer in 1986. In Washington State, pan-sized Coho production is well established but relatively static.

The production figures in 1986 significantly understate the production potential of British Columbia and Chile, where rapid expansions in the number and size of farms has occurred during the last three years. In British Columbia, emphasis has been with production of Chinook and Coho, with more limited production of trout and Atlantic salmon.

In a recent study conducted by the DPA Group Inc., we estimated that due to economic and biological factors, Norway, Scotland, B.C., Chile and Japan would emerge as the leading producers of farmed salmon, producing nearly 82% of the world's supply of farmed salmon by the year 2000.

A summary of actual farmed salmon production in 1986 and projections for 1990 and 2000 by major producing regions is shown in Exhibit 2.2.

EXHIBIT 2.2: PRODUCTION OF FARMED SALMON TO 2000 (tonnes)

	1990	(%)	1995	(%)	2000	(%)
Norway	100,000	63	150,000	56	200,000	51
Scotland	25,000	16	37,500	14	50,000	13
British Columbia	15,600	10	25,500	9	33,000	8
Chile	5,500	4	14,370	5	23,000	6
Japan	10,000	6	15,100	6	15,100	4
Other	2,260	1	27,590	10	72,860	18
Total	158,460	100	270,060	100	393,960	100

Source: The DPA Group Inc. Worldwide Farmed Salmon Production Forecasts to the Year 2000, Department of Fisheries and Oceans, 1988.

Norway and Scotland are projected to continue as world leaders in farmed salmon production to the end of the century because there is still significant opportunities for both industries to become more efficient and new cage technologies should allow them to continue with new site development in more exposed marine environments.

British Columbia and Chile have considerable areas with undeveloped coastlines and are generally believed to have better growing conditions than their European counterparts. To a large extent the salmon farming industries in these regions are less mature and opportunities to reduce costs are greater.

Japan on the other hand is affected by lethal water temperatures in summer which prevents long growout periods and requires harvesting within a short time period. Production is expected to continue to increase substantially however because farmed salmon can reach market size in less than one year.

The four largest supply regions are all expected to export most of their production. Japan is expected to consume all of its production to the end of the century. The major markets for farmed salmon are in the U.S., Japan and Europe. As indicated in Exhibit 2.2, the total production of farmed salmon in the year 2000 is projected to be about 0.4 million tonnes. The five major producing countries are expected to produce 0.32 million tonnes. Competition in these markets is therefore expected to increase, particularly in the U.S. where all of the major exporters currently compete.

In order to determine the viability of production in Alaska, the costs of producing pen-reared salmon in these supply regions should be compared to estimated costs of production in the state.

In the following section of the report we describe the costs of production in each major supply region.

3.0 COMPARATIVE COSTS OF PRODUCTION

3.1 Introduction

Costs of production of farmed salmon are largely determined from biological, environmental and technological factors. Industrial structure and political factors also influence costs. Industrial structure refers to the number and size of farms and their degree of vertical integration. Political factors include government support and restrictions.

However, there are several important factors to consider in the analysis. Firstly, the economics of salmon farming in most supply regions is not well understood. Industry-wide cost of production surveys in Norway, for example, have often overstated costs because many farms surveyed were in their development phases (Bjorndal, 1987). Surveys similar to those periodically undertaken in Norway have also yet to occur in British Columbia and Chile. Even if they had, the surveys would also likely not be very representative of the future cost structure of these industries since most farms established since 1984 first began production at small (pilot) scales and have yet to complete their second production cycle at larger scales.

Secondly, particularly with Pacific species, there is a considerable amount of experimentation being undertaken with genetic selection, sex manipulation, size and time of entry of smolts into saltwater, and stocking densities. The impacts of rapid improvements in broodstock and husbandry on costs of production are difficult to measure.

Empirical data from Norway suggests that there are modest economies of scale in production at the farm site level (Salvanes, 1986). However, the size of farms in Norway is restricted for the most part to small and medium-sized farms, yet in Scotland, B.C. and Chile hoirzontal integration, i.e. multi-site farms, is common. The level of vertical integration in these industries is also higher. Assessing how these structural differences and political constraints impact on costs of production are beyond the scope of this study. Structural aspects of each major supply region can however be described.

The approach adopted in the study is to develop unit costs for an efficient, industrial-scale growout site in each major supply region. This makes sense from several perspectives:

- there is a general trend worldwide towards larger, industrial scale production units;
- even though some industries have salmon farms with production capacities in excess of 1,000 tonnes annually, these tend to be spread over several

sites, in order to reduce risk; a typical site has a production capacity ranging between 100 and 400 tonnes;

- it requires an assumption as to the location of the site which simplifies estimations of freight costs for inputs and shipments of production to market;

- with increased competition for markets worldwide only the more efficient producers will likely survive.

Another factor to consider is how farms in each supply region are financed. The debt to equity ratio of farms in all regions is highly variable. To some extent they are dependent on the amount of government financial support available to farms in each region. However, as will be explained, government financial support in all regions is becoming less important. The rate of return therefore can be expected to equate to a firm's long run cost of capital. In the analysis a real rate of interest of 7% is assumed for all regions. Also land costs are disregarded.

A related factor is the tax structure to pay for the level of government support. However, only in Scotland is there a direct tax on production, although Norway may soon introduce an application fee for licences.

Also disregarded are general taxes. General tax rates vary considerably from region to region. In addition to income taxes, there are sales taxes, tax allowances and depreciation rates to consider. Comparative analyses of these by region would be very complex and are beyond the scope of the study.

Two final considerations are worthy of mention. While costs of production in various industries have been described in previous studies, they are not all in the same year and are not expressed in the same currencies. The approach taken is to first discuss costs of production in their local currencies. This should allow an easier comparison of costs in future years should exchange rates fluctuate. Costs of production from each major supply region are however translated to US dollars in the summary of this section.

The metric system is the recognized system of measurement in most countries. As a result, unit costs of production are first presented in this fashion and are also later converted to the U.S. system.

3.2 Norway

Structural Aspects

Norway is projected to continue as the world's largest producer of farmed salmon to the end of the century.

Production of Atlantic salmon in the year 2000 is forecasted to be 200,000 tonnes.

In 1985, there were about 559 growout farms with total growout capacity of about 3.4 million m^3. Also there were about 150 new licences issued in 1985 (Bjorndal, 1987). By 1987, there were also 611 smolt producers with a total capacity of about 183 million smolts (Hempel, 1988).

The most important structural aspect is the presence of the large number of small farms because both pen volume and ownership of multiple site farms are restricted. These restrictions reflect the regional development policies of the Norwegian government. With the exception of some of the earliest farms, the size of farms is limited to a maximum of 8000 m^3 of netpen capacity.

The Norwegian government is considering a proposal from the Fish Farmers Association to allow a 50% increase in the maximum size of each farm, to 12,000 m^3. Smolt production capacity is limited to one million smolts annually per unit although multiple unit ownership is permitted. Sea Farm A/S was the largest producer in 1985 and produced 9% of total output (Bjorndal, 1987).

The distribution of farms surveyed in the profitability survey in 1984 by size category is shown in Exhibit 3.2. Except for new entrants, the distribution is considered representative of the total population of farms. Most farms in the >7000 m^3 category are between 7000 m^3 and 8000 m^3. A summary of the profitability study itself is shown in Appendix B.

EXHIBIT 3.2: DISTRIBUTION OF FARMS BY SIZE CATEGORY IN NORWAY IN 1984

	<3000m^3	3000-4999m^3	5000-6999m^3	>7000m^3	Total
No. of farms	19	31	20	27	97
Percent of Total	19%	32%	21%	28%	100%

Source: Profitability Study of Fish Farms, Directorate of Fisheries, 1984.

A regional breakdown of farms in 1985 is shown in Exhibit 3.3

EXHIBIT 3.3: DISTRIBUTION OF FARMS BY REGION IN NORWAY IN 1985

	Finnmark, Troms and Nordland	Nord- and Sor-Trondelag, More and Romsdal	Sogn og Fjordane, Hordaland	Rogaland, Skagerakkyst
No. of Farms	161	183	156	59
Percent of Total Production	22%	34%	38%	6%

Source: T.Bjorndal, Fiskeoppdretts - økonomi (Economics of Aquaculture) Oslo: Cappelen, 1987.

The area with the largest amount of production includes the counties of Sogn og Fjordane and Hordaland which are located in the south. The city of Bergen is located in Hordaland. Profitability of farms in this area is also highest (see Appendix B).

The industry is supported by a strong marketing organization which negotiates with exporters minimum prices for producers and manages promotion campaigns for the industry. A levy of 1.25% of sales is assessed to both producers and purchasers/ exporters to support these activities.

Government Support

Considerable government support has been provided to the industry since its inception. Financial assistance is provided mostly through the Regional Development Fund, in the form of loans, loan guarantees and grants to new business establishments in the regions. Financial support provided by the Regional Development during the period 1961-1986 totalled 1,279.3 million kroner as shown in Exhibit 3.4. However, in 1986, the Norwegian government made a decision to reduce financial support to farms. Further, it eliminated financial support programs for smolt producers.

EXHIBIT 3.4: NORWEGIAN GOVERNMENT FINANCIAL SUPPORT TO SALMON FARMING 1961-1986 (MILLION NOK)

Year	Loans	Guarantees	Grant	Total
Total	388.0	678.9	212.4	1,279.3

Source: The Royal Norwegian Ministry of Fisheries

Significant public funds for scientific research and development are also allocated to the industry. Funding provided to government research institutions, universities, and research councils increased from 52.2 in 1984 to 152.1 million NOK in 1987 (Hempel, 1988).

The government does not provide any direct marketing support. However, two special marketing programs were recently introduced to increase exports of Norwegian seafood products to Japan and the U.S. No subsidies for export credit or transportation exists. However, between 1978 and 1980, Scandinavian Airline Systems (SAS), cooperated with major exporters in developing a transport and distribution system for fresh fish. During this period, SAS did offer preferential rates, but no longer does so. The government does not levy special taxes against the industry. However, it is considering charging an application fee for new licences.

Production Plan

Scale and Location

The analysis is undertaken for a fish farm raising Atlantic salmon in 8000 m^3 of pen volume. The farm is assumed to be relatively efficient and can support stocking densities as high as 25 kg/m^3 and therefore produce about 200 tonnes annually.

The farm is assumed to be located in an area between Bergen and Trondheim with nearby access to road connections.

Capital Investment

The total capital investment for the farmer is shown below.

	NOK (000's)
Sea cage system with equipment	1,835
Facility on land with equipment	1,765
	3,600

Source: Bjorndal, 1987.

The total capital investment is 3.6 million NOK or 1,800 NOK per tonne.

Operating Expenses

The estimated operating costs are based on the following assumptions:

- 60,000 salmon smolts are set out every year in May;
- The smolt price is 14 kr;
- The feed price is 6 kr per kilogram;
- The feed conversion ratio is 1.7:1;
- Mortalities are:
  - 7% in the first month after release
  - 4% during the next four months
  - 2% per half year for the balance of the production cycle;
- Processing costs are 5 kr per kilogram;
- Stock insurance is 3% of the average carrying value of inventory;
- Labour: 4 person years;
- Wages including benefits are:
  - 250,000 kr for a farm manager
  - 200,000 kr for three farm labourers;

- Overhead costs include insurance on fixed assets, electricity, fuel, repair and maintenance, medicine, and administration;

- Harvesting begins about 20 months after the release of smolts and continues at the same rate over the year;

- Average weight of fish is 4 kg at harvest.

With these assumptions this farm will be capable of producing about 50,000 fish for a total production of 200 tonnes per year after the third year from startup.

Fixed assets are depreciated on a straight line basis over the following periods:

	Years
Buildings	20
Seapen system and equipment	6
Site investments	50

The investment in buildings includes a processing facility. The seapen system is depreciated over a 6-year life. However the economic life of newer steel cage systems used in Norway is not yet well known. Technological obsolescence may also become a factor beyond a certain period.

Unit Costs

Unit costs are shown in Exhibit 3.5. They are derived from 1986 cost data. Unit costs per kilogram are 31.45 kroner (14.30 kr/lb).

EXHIBIT 3.5: UNIT COSTS PER KG FOR ATLANTIC SALMON PRODUCTION IN NORWAY

	Unit Costs (kr)	%
Variable Costs		
Smolts	4.20	13
Feed	10.70	35
Stock Insurance	0.85	3
Processing	4.40	14
Interest on working capital	2.00	6
Total Variable Costs	**22.20**	**71**
Fixed[1] Costs		
Wages	4.25	14
Overhead	2.00	6
Depreciation	1.70	5
Interest on capital	1.30	4
Total Fixed Costs	**9.25**	**29**
Unit costs per kilogram	**31.45**	**100**

Source: Bjorndal, 1987.

1 includes some semi-variable costs such as wages.

3.3 Scotland

Structural Aspects

Scotland is projected to produce 50,000 tonnes of farmed salmon in the year 2000 and remain the world's second largest producer of farmed salmon to the end of the century. Like Norway, Scotland will continue to produce Atlantic salmon.

No restrictions on size or ownership exist in Scotland. In 1987, 126 companies operated 196 cage sites and 11 tank sites. There were also 72 smolt production companies who operated 80 tank and 51 cage sites.

Groupings of sea farm sites by their scale of production in 1987 is shown in Exhibit 3.6. As indicated in the exhibit, the largest concentration of farms are in the 101-200 to 201-300 tonne range.

In contrast to Norway, there is more concentration of production and more vertical integration. In 1987, 45% of production was from the largest 20 farms.

EXHIBIT 3.6: DISTRIBUTION OF SEA FARM SITES IN SCOTLAND BY SCALE OF PRODUCTION IN 1987

Production (tonnes)	Number of Sites	% Share of Production
0	49	0
<10	21	0.9
10-25	41	5.5
26-50	15	4.4
51-100	24	13.9
101-200	26	30.5
201-300	13	24.2
300-400	5	12.9
400-500	1	3.4
>500	1	4.3
Total Sites	**196**	**100**

Source: Department of Agriculture and Fisheries for Scotland.

Salmon and smolt production in various regions of Scotland are shown in Exhibit 3.7.

EXHIBIT 3.7: SALMON AND SMOLT PRODUCTION IN VARIOUS REGIONS OF SCOTLAND

	Western Isles	Northern Isles	Rest of Scotland	Totals
1987 salmon (tonnes)	1,830	2,211	8,680	12,721
1987 smolts (numbers '000)	2,059	112.8	11,122.6	13,294.4

Source: Department of Agriculture and Fisheries for Scotland.

Most production is off the mainland of Scotland, particularly on its western shores.

The Scottish Salmon Growers Association provides marketing support to the industry through advertising campaigns. The Association charges a levy on smolts in inventory to pay for the costs of promotion.

Government Support

The Highlands and Islands Development Board has been central in channelling UK government financial support to the industry. Most farms are sited within the area covered by its jurisdiction. Between 1965 and the end of 1987 the Board itself had provided a total of 50.7 million pounds in financing to the industry. Most of this was in the form of grants which after a qualifying period, are non-repayable, but part constituted loans and equity participation. During the same period, about 4.1 million pounds have gone to scientific research and development. Two EEC programs, FEOGA and IDP, have also provided funding to the industry. However, like HIDB, funds have not increased with the growth in the industry.

A royalty is now being collected by the government on output. A royalty of 50 pounds per metric tonne applies to farms with production in excess of 50 tonnes. For those with less than 50 metric tonnes of production, a royalty of 45 pounds per metric tonne applies. Royalties in 1987 could have represented as much as 15% of the research and development funds provided to the industry through HIDB.

Production Plan

Scale and Location

The analysis is undertaken for a fish farm raising Atlantic salmon at annual production levels of 200 tonnes.

The farm is assumed to be located on the Scotland's west coast.

Capital Investment

The total capital investment for the farms is shown below.

	Pounds Sterling (000's)
Sea cage system and equipment	220.0
Facility on land with equipment	146.3
	366.3

Source: Shaw and Muir, 1987.

The capital investment is 0.366 million pounds or 1,831.5 pounds per tonne.

Operating Expenses

The estimated operating costs are based on similar assumptions to those of Norway except for the following:

- smolt prices are slightly lower at 1.25 pounds
- smolt to harvest survival rate is 80%
- wages are also lower:

Farm Manager	25,000 pounds
Labour	7,500 pounds

The average size of fish at harvest is also lower at 2.5 kg. As a result, about 100,000 smolts are initially required to reach production of 200 tonnes.

Unit Costs

Unit costs are shown in Exhibit 3.8. They are derived from 1986 cost data. Unit costs per kilogram are 2.92 pounds (1.33 pounds/lb).

EXHIBIT 3.8: UNIT COSTS PER KG FOR ATLANTIC SALMON PRODUCTION IN SCOTLAND

	Unit Costs (Pounds)	%
Variable Costs		
Smolts	0.65	22
Feed	1.00	34
Stock Insurance	0.10	3
Processing and Packaging	0.20	7
Interest on working capital	0.12	4
Total Variable Costs	**2.07**	**72**
Fixed Costs		
Wages	0.28	9
Overhead	0.27	9
Depreciation	0.17	6
Interest on capital	0.13	4
Total Fixed Costs	**0.85**	**28**
Unit Costs per Kilogram	**2.92**	**100%**

Source: S.A. Shaw and J.F. Muir, Salmon: Economics and Marketing, Croom Helm, 1987.

3.4 British Columbia

Structural Aspects

British Columbia is projected to be the world's third largest producer of farmed salmon by the end of the century. Production is forecast to be 33,000 tonnes in 2000, 75% of which is projected to be comprised of chinook salmon.

No restrictions on size or ownership exist in British Columbia. In 1987, 85 farms operated 115 sites. Smolt production is concentrated to a few producers. Eight smolt producers produced about 90% of production in 1987. Total production capacity was about 30 million smolts. (B.C. Salmon Farmers Association).

No breakdown by production size or geographic area was available for 1987. However, DPA conducted a study in 1986 which projected the number and size of farms for 1987 through to 1990 (the projected number of farms for 1987 was 82 farms operating 113 sites). The study projected a trend towards increased concentration of production: 60% of the production in 1990 would be from 12% of the farms. The area projected to have the largest amount of production through to 1990 was the Sunshine Coast.

The study also projected a trend towards more vertical integration, including backward integration by fish processing companies through the provision of working capital financing to farms.

Technologies employed are similar to those of Norway and Scotland. However, stocking densities, particularly with chinook, are much lower than in the Norwegian or Scottish industries. Stocking densities are generally less than 8 kg/m^3, significantly lower than in Norway.

The B.C. Salmon Farmers Association (BCSFA) provides marketing support to the industry. The BCSFA began a generic promotion campaign in 1987. A levy was previously charged on wild salmon eggs distributed to producers. In 1988, the levy is being shifted to smolt sales, since increasingly the industry is becoming self sufficient in egg supplies.

Government Support

Direct financial assistance to the industry has been mostly loans provided by a joint federal/provincial program for industrial development and an agricultural credit program of the provincial Ministry of Agriculture and Fisheries. The total outstanding loans at the end of 1987 from these programs were $3.8 million (57 loans) and $0.3 million (11 loans) respectively. The joint federal/provincial program expires in 1988.

Aquaculture is also a qualifying industry for a provincial venture capital corporation (VCC) program in which investors can qualify for a credit of up to 30% of their investment. A total of five aquaculture VCC's have been formed.

Support for scientific research and development is also being provided by the provincial Ministry of Agriculture and Fisheries and the federal Department of Fisheries and Oceans. Total support in 1987 was about $3 million.

There are no special taxes or royalties levied against the industry. Annual lease costs for aquatic land are ususally less than $2,000.

Production Plan

Scale and Location

The analysis is undertaken for a fish farm raising chinook salmon at an annual production level of 250 tonnes.

The farm is assumed to be located in the Sunshine Coast area.

Capital Investment

The total capital investment for the farm is shown below.

	$Cdn (000s)
Sea cage system and equipment	442
Facility on floating barge with equipment	308
	750

Accommodation and storage facilities are assumed to be on a floating barge. The total capital investment is $3,000 per tonne.

Operating Expenses

The estimated operating costs are based on the following assumptions:

- 104,000 salmon smolts are set out every year in June;
- the smolt price is $.75 which includes a BCSFA levy of $.08;
- the feed price is $1.00 per kg;
- the feed conversion ratio ranges between 1.3 and 1.9;

- Mortalities range between 1% and 3% per month;
- Processing costs are $0.77 per kg;
- Stock insurance is calculated as 4% of the average carrying value of inventory;
- Labour - 4 person years;
- Wages including benefits are:

General Manager	$35,000
Farm Manager	25,000
Labourer 1	17,500
Labourer 2	17,500
	$95,000

- Fixed costs include insurance on buildings and equipment, electricity, fuel, repair and maintenance, medicine and administration;
- Harvesting occurs between 16 and 24 months in saltwater;
- Average weight of fish is 3.4 kg at harvest.

With these assumptions the farm will be capable of producing about 73,500 fish for a total production of 250 tonnes per year. The harvest weight of 3.4 kg reflects the current production strategies of most farms. However, the average size of chinook harvested to date has been less than 3 kg (B.C. Salmon Farmers Association).

Fixed assets are depreciated on a straight line basis over the following periods:

	Years
Buildings	20
Seapen system and miscellaneous equipment	6
Site investments	50

The economic life of fixed assets in British Columbia is assumed to be the same as Norway's and Scotland's because similar technologies are employed in each industry.

Unit Costs

Unit costs are shown in Exhibit 3.9. They are derived from 1987 cost data. Unit costs are $4.32 per kilogram ($1.96/lb).

EXHIBIT 3.9: UNIT COSTS PER KG FOR CHINOOK SALMON IN BRITISH COLUMBIA

	Unit Costs $Cdn	%
Variable Costs		
Smolts	0.26	6
Feed	1.47	34
Stock insurance	0.09	2
Processing and packaging	0.77	18
Interest on working capital	0.29	7
Total Variable Costs	**2.88**	**67%**
Fixed Costs		
Wages	0.38	9
Overhead	0.30	7
Depreciation	0.56	13
Interest on capital	0.20	5
Total Fixed Costs	**1.44**	**33%**
Unit Costs per Kilogram	**4.32**	**100%**

Source: The DPA Group Inc., 1988

3.5 Chile

Structural Aspects

Chile is projected to be the world's fourth largest producer of farmed salmon by the end of the century. Production by the year 2000 is forecast to be 23,000 tonnes, about 60% of which is expected to be coho salmon. The balance is expected to be mostly Atlantic salmon, with only limited production of chinook salmon. Chinook production is mostly limited by shortages of eggs available for import.

In 1986, 22 farms producing salmon and/or trout were in operation.

No restrictions on size or ownership exists. Groupings of farms by their installed capacity in 1986 is shown in Exhibit 3.10. The data includes an unspecified amount of trout production capacity.

EXHIBIT 3.10: DISTRIBUTION OF FARMS IN CHILE BY SCALE OF OPERATION IN 1986

Production Range	No. of Farms	Total
1-10	3	14
11-100	3	14
101-300	6	27
301-500	6	27
501-1000	2	9
>1000	2	9
	22	100%

Source: Ricardo Mendez Zamorano Desorrollo Y Estado De Situacian Actual De La Salmoniculture En Chile, Fundacion Chile, 1987.

Salmon production in Chile is concentrated in an area south of Puerto Montt.

The industry is characterised by sizeable companies rather than small family operations. A number of the companies also own seafood processing plants in southern Chile.

Growing conditions in Chile are generally considered to be slightly better than British Columbia. To date the industry has been mostly reliant on imports of coho salmon from the states of Washington and Oregon. Typically, juveniles are placed in saltwater after 10 months in freshwater which is

usually in December when they have reached 35 grams. The reliance on wild coho eggs has meant that production has been mostly harvested after 12 to 16 months in saltwater in sizes ranging from 1.5 to 2.5 kilos. If fish are not harvested in this time period, early maturation usually occurs and they cannot be held over until the following fall and winter.

Government Support

No direct financial assistance is provided to the industry. There are also no export credits or transportation subsidies. Some support for research and development is provided through Fundacion Chile, CORFO and some state universities. Some marketing support is also provided through PROCHILE (Mendez (1988).

Production Plan

Scale and Location

The analysis is undertaken for a fish farm raising coho salmon at annual production levels of 200 tonnes.

The farm is assumed to be located in an area south of Puerto Montt.

Capital Investment

The total capital investment for the farm is shown below (prices in Chile are usually quoted in U.S dollars):

Sea cage system and equipment	$124,000
Facility on land with equipment	83,000
Total	**$207,000**

Source: Mendez, 1987.

The total capital investment is about $1,000 per tonne.

Operating Expenses

The estimated operating costs are based on the following assumptions:

- 93,000 salmon smolts are set out every year in December;
- the smolt price is $0.40;
- the smolt size is 35 grams;

- the feed price is $0.65 per kg;

- the average feed conversion ratio is 2:1;
- Mortalities are:

  . 7.5% in the first quarter;
  . 4.5% in the second quarter;
  . 1.5% in subsequent quarters;

- Labour:

. Farm General Manager	14,400
. Operations Manager	12,000
. Technical Support (2 Advisors)	24,000
. Labourers (17)	20,400
	70,800

- Fixed costs include annual lease costs, insurance, electricity, fuel, repair and maintenance, medicine, and administration;

- Harvesting begins in mid December, 12 months after the release of smolts and continues until the end of March;

- Average weight of fish is 2.5 kg at harvest.

With these assumptions the farm will be capable of producing about 80,000 fish for a total production of 200 tonnes per year.

Fixed assets are depreciated on a straight-line basis over the following periods:

	Years
Building	10
Seapen system and miscellaneous equipment	3
Site investments	25

Fixed assets are depreciated over fewer years than in Europe or British Columbia because lower quality designs, i.e. wooden cages, are typically used.

Unit Costs

Unit costs are shown in Exhibit 3.11. They are derived from 1987 cost data. Total unit costs are $3.20 per kilogram ($1.45/lb).

EXHIBIT 3.11: UNIT COSTS PER KG FOR COHO SALMON PRODUCTION IN CHILE

	Unit Costs USD	%
Variable Costs		
Smolts	0.19	6
Feed	1.21	38
Stock insurance	0.10	3
Processing	0.50	16
Interest on working capital	0.18	6
Total Variable Costs	**2.18**	**69**
Fixed Production Costs		
Wages	0.60	18
Overhead	0.26	8
Depreciation	0.09	3
Interest on capital	0.07	2
Total Fixed Costs	**1.02**	**31**
Unit Costs per Kilogram	**3.20**	**100%**

Sources: Hatfield Consultants Ltd. (1987), Mendez (1987), Wurmann (1987).

3.6 Japan

Japan is projected to be the world's fifth largest producer of farmed salmon by the end of the century. Production by the year 2000 is projected to be 15,000 tonnes and almost entirely comprised of coho salmon. Virtually all production in 1986 was coho salmon. About 20-25 tonnes of chinook was reportedly produced. Experimentation with Atlantic salmon rearing is also being undertaken.

Production is largely at small scales and organized through cooperatives. In 1986, a total of 19 organizations operated 264 sites. Average production per site in 1986 was 28 tonnes, indicating small scale production. Bjorndal confirmed this in a visit in 1987. Further he indicate low level technologies for cage design and feeding systems are employed.

Eighty seven percent of the sites were located around Miyagi, near the northeast end of Honshu. In 1986 these sites produced 81% of the total production.

Although the scale of growout sites is very small compared to other industries, processing and marketing is concentrated to three large processing companies, most notably Nichero Fisheries.

Since the industry began in 1973, it has relied on imports of coho salmon eggs from Washington and Oregon.

Feed production is also not undertaken at a large scale. Supplies of mackerel, sardine and mysid shrimps are available year around for feed production from local parts.

Government Support

No direct financial assistance has been provided to the industry.

Production Plan

Coho smolts are usually one year olds (SI's) when they are placed in saltwater at average sizes of 150 grams from mid-October to early November. The fish are then raised in net pens for about 7-9 months at stocking densities of 1[illegible] to 15 kg/m^3.

The coho can grow to 2.5 kilograms by July and are harvested between 1.5 kg and 2.5 kg. Coho must be harvested before August because lethal temperatures are reached.

Unit Costs

Unit cost data for Japan is not available in the public domain. However, the production cost of farmed salmon in 1986 was reportedly about 700 yen/kilo (318 yen/lb) (Sato, 1987). Prices for eggs were six yen per egg. Prices for smolts weighing between 100 grams and 250 grams were 1,000-1,500 yen per tonne. Feed consists of moist pellets manufactured from mostly raw fish (sardine, mackerel and filefish) with some formulated feed added.

3.7 Summary

A summary of capital investment per tonne is shown in Exhibit 3.12.

EXHIBIT 3.12: COMPARATIVE CAPITAL INVESTMENT PER TONNE IN U.S. DOLLARS

	Norway	Scotland	B.C.	Chile	Japan
Capital Investment per tonne (local currency)	18,000	1,832	3,000	238,140	N/A
Capital Investment per tonne					
1987	2,888	3,428	2,308	860	-
1986	2,432	2,701	2,173	1,000	-

Conversion to U.S. dollars are at 1987 (1986) year-end rates:[1]
NOK: 6.2325 (7.400); U.K. pound: 0.5343 (0.6782); Cdn $ 1.2998 (1.3805); Peso: 238.14 (204.73).

1 International Financial Statistics, Vol. XLI No. 1, January, 1988. International Monetary Fund, Washington, D.C.

Scotland has the highest capital investment per tonne. The significant difference in capital costs between Scotland and Norway in 1987 is largely due to exchange rate fluctuations. However, sites are generally more costly to develop in Scotland because they are located in areas more remote from population centres. Also, sites with greater exposure are more common in Scotland. In addition, cage systems tend to be imported from Norway. British Columbia has lower investment costs than Norway because facilities are assumed to be on floating barges and they do not conclude processing facilities.

The economic life of fixed assets in the regions is assumed to be the same since similar technologies in cage design are employed in each area. Chile has the lowest capital investment cost per tonne because of the use of lower quality cage systems and lower building costs. However the economic life of fixed assets is assumed to be half that of other regions. The capital investment per tonne in Japan is not known but is assumed to be similar to Chile's.

A summary of unit costs for farmed salmon in each major supply region is shown in Exhibit 3.13. In all cases, product is assumed to be sold in a head-on, dressed form. In the exhibit, a yield factor is applied to the unit costs previously calculated on a round weight basis. Yield factors range between 85% and 90%. Yields are highest with larger fish.

EXHIBIT 3.13: COMPARATIVE DRESSED-WEIGHT UNIT COSTS IN US DOLLARS

	Norway	Scotland	B.C.	Chile	Japan
Unit Costs Per kg Round Wt. Basis	$5.05	$5.46	$3.32	$3.20	$5.67
Average Size	4 kg	2.5 kg	3.4 kg	2.5 kg	2.0 kg
Processing Yield	.90	.87	.89	.87	.85
Unit Costs Per kg Dressed Wt. Basis	$5.61	$6,28	$3.73	$3.68	$6.67
Unit Costs Per lb	**$2.55**	**$2.85**	**$1.70**	**$1.67**	**$3.03**

Exchange rates to US dollars are 1987 year-end rates:
NOK: 6.2325; UK pound: 1.8715; CDN$: 0.7693; Yen: 0.0081.

Source: As in Exhibit 3.12.

Unit costs in local currencies are not all expressed for the same years. As previously indicated they are not converted to US dollars in the year collected because the impact of fluctuations in exchanges rates would then be difficult to gauge. In addition a domestic inflation factor for each country since the year the data is collected is also not applied because for the most part input costs do not correlate directly with general price indices. For example, the cost of feed is largely dependent on the world price of fish meal and fish oil which can fluctuate significantly due to biological factors such as El Nino's in South America.

As indicated in the exhibit, Chile and British Columbia have the lowest unit costs. Japan has the highest. However, the lower unit costs of the Chilean and British Columbian industries do not necessarily mean that higher returns are being earned in these regions. Freight costs to major markets are a significant factor (these are discussed in Section 5.0). Pricing is based on numerous factors including size, species, and grade. Generally larger sizes and high

quality are preferred attributes. Preferences for particular species will generally vary by area. Time of harvests and level of marketing effort will also influence net returns.

Exchange rates can affect costs significantly, particularly since the largest producers (except Japan) export most of their production. Exhibit 3.14 compares the same unit costs translated at average rates in 1986.

EXHIBIT 3.14: IMPACT OF EXCHANGE RATES ON UNIT COSTS PER LB

	Norway	Scotland	B.C.	Chile	Japan
Unit Costs/lb 1987	2.55	2.85	1.70	1.67	3.03
Unit Costs/lb 1986	2.18	2.25	1.60	1.44	2.35
% Change	7%	27%	6%	6%	29%

Exchange rates to U.S. dollars are at 1987 (1986) year-end rates:
NOK: 6.2325 (7.400); U.K. pound: 0.5343 (0.6782);
Cdn $ 1.2998 (1.3805); Peso: 238.14 (204.73); Yen: 0.0081 (0.0063)

Source: As in Exhibit 3.12

The exhibit indicates that all unit costs expressed in US dollars were lower in 1986. The impact was most dramatic with the change in value of the pound sterling. The analysis partially explains some trends in the industry, including less than anticipated sales by Norway in the US in 1987. Norway did however place more emphasis on penetrating the Japanese market. In 1987 Chile also began selling to Japan.

4.0 COST OF PRODUCTION MODEL FOR ALASKA

4.1 Introduction

Development of likely costs of production in Alaska requires an analysis of conditions for rearing. British Columbia is considered the best model for analysis of Alaska's potential for three important reasons:

- British Columbia more closely parallels Alaska socio-economically and environmentally than other regions;
- the predominant species reared in British Columbia are Pacific species and these would also be the predominant species reared in Alaska because of restrictions on imports of exotic species into the state;
- British Columbia and Alaska would likely serve similar markets.

In this section we summarize the following analysis described in a technical appendix prepared by Hatfield Consultants Ltd.:

- general environmental and logistic conditions for pen-rearing salmon in Alaska;
- differences in growth and feed conversion rates between British Columbia and Alaska.

We then develop likely unit costs of production for Alaska from these for the area with the best development potential.

4.2 Environmental and Logistic Conditions

Conditions which are important in considering the location of a netpen site can be classified under environmental or logistic categories.

Environmental factors include water quality characteristics and potential problems with plankton blooms and predators. Logistic factors include access to critical inputs such as smolts, feed, labour and transportation routes.

These conditions are discussed for southcentral and southeast Alaska, the two areas which according to state fisheries officials contacted, development of net-pen rearing of salmon would most likely occur.

4.2.1 Physical Marine Conditions

An overview of ice formation and iceberg conditions, temperatures and salinities in southcentral and southeast Alaska is presented. The information is then used to develop assumptions about growing conditions, growth rates and feed conversions.

Southcentral Alaska

Ice Formations and Icebergs

Ice formation and the presence of icebergs in embayments and low winter air temperatures impose constraints on development of netpen sites in southcentral Alaska; in particular, these are:

- the presence of pack ice and fast ice in Cook Inlet;
- the presence of ice and icebergs in embayments connected to Prince William Sound and near Seward; and
- the potential for ice formation on floating structures.

Apart from the presence of sea ice and glacier ice in embayments in southcentral Alaska, the air temperature and wind conditions in that area make it generally susceptible for ice formation on floating structures (La Belle et. al. 1983).

Water Temperatures

Studies have shown that growth of salmon fed normal rations is highest at approximately 15°C (Brett, 1982). Below 5°C, conversion drops off appreciably. Mean winter surface temperatures in South Central can be expected to be between 2.5 and 5.0°C and mean summer surface temperatures can be expected to range between 7°C and 13°C.

Salinity

Lower and fluctuating salinities can affect the physiological condition of the salmon (i.e. in relation to the osmoregulatory adaptation to ambient salinity levels) and can influence outbreaks of harmful phytoplankton. In other words sudden variation in salinity levels can cause stress in fish. Generally growth is best under conditions of moderate salinity.

Xiong and Royer (1984) state that average surface salinities in summer are 27.3‰ and in winter are 31.2‰, based on intensive studies near Seward. At greater depths (i.e. 250 m), salinities are approximately 33‰ year round. Colonell (1980) and Muench and Nebert (1973) describe the presence of relatively fresh water lying in a thin surface layer in Valdez Arm and Port Valdez during summer and autumn. Muench and Nebert (1973) indicate that minimum mean surface

October period, though salinities in the upper 20 m were, at times, less than 1% near the head of Port Valdez (in late July/early August). Lower surface salinities over the summer period are attributed to freshwater runoff from land areas and high precipitation.

Southeast Alaska

Icebergs

Icebergs are present in several bays and straits in northern and eastern Southeastern Alaska (LaBelle et al, 1983):

- Cross Sound, Icy Strait and Glacier Bay;
- Taku Inlet;
- Tracy Arm and Endicott Arms; and
- the end of Frederick Sound.

The presence of icebergs suggests a potential for damage to floating structures and, in general, these areas would be avoided. Also, the icebergs apparently can greatly reduce summer temperatures in surface waters (Pickard, 1967).

Water Temperatures

Mean monthly surface temperatures for the coastal waters along southeast Alaska (Brower et al, 1977) and five lighthouse installations (Jones, 1978) in southeast Alaska and in Auke Bay near Juneau (Bruce et al, 1977) were analyzed.

These data show mean high temperatures in summer to range between 9.0^{C} and 14.6^{o}C. Mean low temperatures in winter range between 2.3^{o}C and 5.2^{o}C. The mean low temperature for the general coastal area (Brown et al, 1977) is slightly higher than these values at 6.0^{o}C.

Salinities

Larger rivers along the mainland shoreline can produce lower and fluctuating salinities (Pickard, 1967) and consequently make nearby areas unsuitable for locating netpens for adult growout. These areas include the mouths of the Stikine River, Taku River, Unuk River, Chilkat River and Speel River.

4.2.2 Phytoplankton and Marine Mammals

Phytoplankton

Two phytoplankton species, Chaetoceros convolutus and Heterosigma akashiwo, have caused serious mortalities amongst salmon cultured in marine netpens in British Columbia. Chaetoceros convolutus causes asphyxiation through physical damage of the gills by silicate processes projecting from the diatom. Heterosigma akashiwo can also lead to asphyxiation because they are toxic to salmon and cause irritation and

mucus buildup in gills. Conditions appear suitable for both species in southcentral and southeast Alaska (Gaines and Taylor, 1986). Chaetoceros diatoms have been responsible for chinook salmon mortalities in seapens at Little Port Walter (National Marine Fisheries Service, unpublished). Chaetoceros convolutus has also been collected during surveys near Valdez in Prince William Sound (Horner et al 1973.) The occurrence and intensity of phytoplankton blooms vary greatly both geographically and temporally and prediction is difficult (Gaines and Taylor, 1987). In general, Heterosigma blooms tend to occur in early summer, often in association with lower salinities resulting from increasing river flow, while Chaetoceros blooms tend to occur in the late summer or fall.

Harmful phytoplankton could affect sites in both southcentral and southeast Alaska. As in British Columbia, the effects on production could be direct mortalities or reduced growth when oxygen depletion occurs and rations are restricted.

Marine Mammals

Marine mammals such as otters and sea lions have affected production at sites in British Columbia by killing fish in pens, by damaging netpens allowing fish to escape, and by causing high stress levels in the fish thereby reducing growth rates. A National Marine Fisheries Service report (unpublished) indicates that otters, seals and possibly sea lions have killed fish at the experimental facilities near Little Port Walter. Steller's sea lions and harbour seals occur essentially along the entire Gulf of Alaska coastline (U.S. Department of the Interior, 1984).

Predation from marine mammals will likely be a similar problem in southcentral and southeast Alaska waters to that which occurs in British Columbia. This will require investment in predator control measures such as predator nets. Again, density levels would likely be kept low so that if stress develops when predators are nearby (but do not necessarily attack fish in the pens), it would not compound stress already resulting from high densities.

4.2.3 Smolt Production Capabilities

Southeast Alaska

Four state hatcheries in southeast Alaska produce chinook salmon and three hatcheries produce coho salmon (Hansen, 1987). In addition, 10 private non-profit hatcheries operated by regional aquaculture associations and other non-profit groups raise chinook or coho or are permitted to raise these species.

In 1986, nearly 5 million chinook eggs were collected from these facilities and more than 2.7 million juvenile chinook

were released. Similarly, slightly more than 4 million coho eggs were collected and 1.5 juvenile coho were released.

In 1986, private non-profit hatcheries in southeast Alaska had total permitted chinook egg capacities of 6.73 million and total permitted coho egg capacities of 15.47 million eggs. Most fry production of both species is in the Whitman Lake and Neets Bay hatcheries operated by the Southern Southeast Regional Aquaculture Association.

Southcentral Alaska

Five state hatcheries in southcentral Alaska produce chinook salmon and five hatcheries produce coho salmon. In 1986, 1.5 million chinook eggs were collected and 1.5 million juvenile chinook were released. Slightly more than 6.5 million coho eggs were collected and 7 million coho juveniles were released.

Three private non-profit hatcheries operated by regional aquaculture associations and other non-profit groups raise chinook or coho salmon or are permitted to raise these species. In 1986, the private non-profit hatcheries had total permitted chinook egg capacities of 1.15 million and total permitted coho egg capacities of 3.1 million.

Clearly, a large smolt production capability exists in both southcentral and southeast Alaska and this production is spread throughout each region. Hansen (1987) indicates that a number of hatcheries are constructed below lakes and water intakes in the lakes are placed at different depths so temperatures can be adjusted. This means juvenile growth rates and smolt timing can be manipulated to achieve release objectives.

4.2.4. Fish Feed

Currently there is fish feed production capacity in southcentral. However, capacity is limited and technologies employed in production are not as advanced as those in Europe, British Columbia or Washington State.

The main ingredients in commercial fish feeds are fish meal and fish oil. These are manufactured in the reduction process from whole fish or fish waste from the processing sector. Alaska's reduction industry is not well developed, despite the availability of significant quantities of fish waste. In addition the reduction plants in Alaska produce fish meal and fish oil which is unsuitable for fish feed. According to representatives of a fish feed manufacturer in Washington State, if a new feed plant were to be constructed, it would likely be constructed in tandem with a new reduction plant, both of which would require significant capital investment. Alaska would more likely be supplied by fish feed manufacturers in Washington State or British Columbia since transport by barge to Alaska is not a significant cost.

4.2.5 Potential Development Areas

Initial development could be expected to occur in suitable bays or shoreline areas (protected from high winds or waves) away from areas affected by water ice cover, icebergs and large river systems and as close to transportation centers and processing/packing facilities as possible.

Small to medium-sized communities having airport and port facilities are distributed throughout both southcentral and southeast Alaska. Apart from the major airport in Anchorage, smaller airfields and port facilities are located throughout the area (e.g., Homer and Seward).

Larger airports and port facilities are situated along eastern southeast Alaska (Juneau, Petersburg, Wrangell and Ketchikan) and Sitka. These are also the major population centers. Ideally, fish farms would locate within three to four hours by boat from logistic centers to minimize the amount of time that harvested fish are in transit prior to boarding flights to market areas.

The following areas would be favoured for development in terms of their proximity to population centers, airports and processing plants:

- along the eastern half of southeast Alaska near Juneau, Ketchikan and Petersburg/Wrangell;
- along the western side of Baranof Island near Sitka;
- in southcentral Alaska near Kodiak, Homer, Seward, Cordova, Valdez and Whittier.

4.3 Growth and Conversion Rates

4.3.1 Generalized Temperature Regimes

The temperature data reviewed for South Central and southeast were used to develop four generalized temperature regimes in which salmon culture might take place:

- relatively cool winter temperatures and warm summer temperatures (that might occur in bays in southcentral Alaska and near Juneau);
- relatively warm winter temperatures and warm summer temperatures (that might occur in bays near Ketchikan);
- relatively warm winter temperatures and cooler summer temperatures (that might occur in the Frederick Sound/Petersburg area); and
- relatively cool winter temperatures and cool summer temperatures (that might occur in the northern inlets of southeast Alaska close to iceberg areas).

Clearly, general good-case and poor-case growing conditions would be, respectively, warm winter/warm summer conditions and cool winter/cool summer conditions. Since specific conditions can vary from site to site and from year to year, extreme best case and worst case conditions would likely lie outside these general scenarios.

Probable monthly growth rates for chinook were developed for a scenario of relatively warm winter temperatures and warm summer temperatures that might occur in the south central portion of southeast Alaska. Chinook would likely be preferable to coho for net pen rearing in Alaska since they have shown greater survival rates than coho during longer growout periods in British Columbia (B.C. Salmon Farmers Association). The fish sizes and growth rates obtained for chinook salmon at Little Port Walter and at five locations in British Columbia, together with unpublished growth rate data from the Pacific Biological Station in Nanaimo, B.C., have been used to develop the growth profile. These are shown in Exhibit 4.1.

Juvenile chinook are assumed to be placed into saltwater in June at 7 grams. In the warm winter, warm summer temperature regime, they are projected to reach a harvestable size of at least 2 kilograms after 21 months and are projected to grow to 2.5 kilograms after 24 months in saltwater.

In the cool winter/cool summer temperature regime, chinook are projected to reach only about 1 kilogram after 24 months in saltwater. If chinook were held over a third summer and harvested in October they would still be less than 2 kilograms.

4.3.2 Feed Conversion

Feed conversion rates are influenced by environmental variables (such as temperature, salinity, photoperiod, oxygen concentration) and operational variables (such as fish size, ration, food quality). Food conversion efficiency is normally greater for smaller fish sizes, decreasing as the fish grow (Brett and Groves, 1979). Over a given temperature range, on the other hand, food conversion efficiency usually reaches a maximum at a particular temperature and is lower at both lower and higher temperatures. Similarly, the optimum ration amount for maximum food conversion is normally lower than the maximum ration that the fish will consume. In turn, maximum conversion efficiency occurs at a lower ration quantity, as temperature is reduced below the optimum. Generally, optimum feed conversion efficiency for salmon appears to occur at temperatures between 10°C and 15°C at ration levels at 60-90% of maximum.

EXHIBIT 4.1: ESTIMATED GROWTH RATES FOR CHINOOK SALMON GROWN UNDER TWO GENERALIZED MEAN MONTHLY TEMPERATURES REGIMES IN SOUTHEAST ALASKA

	WARM WINTER/WARM SUMMER				COOL WINTER/COOL SUMMER			
	Temp.	Approx. Size (grams)	Daily Growth Rate (%)	Food Conversion	Temp.	Approx. Size (grams)	Daily Growth Rate (%)	Food Conversion
June	10.0	13	2.2	1.5	8.0	12	2.0	1.7
July	11.0	25	2.1	1.5	9.5	24	2.1	1.7
August	12.0	49	2.2	1.5	9.5	45	2.1	1.7
September	10.5	92	2.1	1.5	8.5	79	1.9	1.7
October	7.5	125	1.0	1.7	7.5	108	1.0	1.9
November	5.0	149	0.6	1.7	5.0	125	0.5	1.9
December	3.5	174	0.5	1.7	3.5	133	0.2	1.9
January	5.0	197	0.4	1.7	3.5	142	0.2	1.9
February	5.0	222	0.4	1.6	3.0	146	0.1	1.8
March	4.5	243	0.3	1.6	5.0	165	0.3	1.8
April	5.0	266	0.3	1.6	5.0	165	0.3	1.8
May	6.0	301	0.4	1.6	6.0	187	0.4	1.8
June	10.0	406	1.0	1.7	8.0	237	0.8	1.9
July	11.0	570	1.1	1.7	9.5	323	1.0	1.9
August	12.0	851	1.3	1.7	9.5	439	1.0	1.9
September	10.5	1181	1.1	1.7	8.5	575	0.9	1.9
October	7.5	1512	0.8	1.9	7.5	736	0.8	2.0
November	6.0	1704	0.4	1.9	5.0	805	0.3	2.0
December	5.5	1870	0.3	1.9	3.5	830	0.1	2.0
January	5.0	1990	0.2	1.9	3.5	856	0.1	2.0
February	5.0	2104	0.2	3.0	3.0	881	0.0	2.1
March	4.5	2170	0.1	2.0	3.0	908	0.0	2.1
April	5.0	2236	0.1	2.0	5.0	936	0.1	2.1
May	6.0	2454	0.3	2.0	6.0	1027	0.3	2.1

For potential sites in Alaska having similar temperatures and salinities to those in British Columbia (e.g., the north B.C. coast site), similar conversion rates could be expected. However, potential locations in southeast Alaska will likely have winter temperatures lower than those experienced in British Columbia (i.e., less than $5^{o}C$). Food conversion rates under these conditions will be slightly poorer than for comparably sized fish grown at higher temperatures.

Also the feed conversions obtained from dry feeds at British Columbia sites were mainly under conditions of moderate salinity. Similar conditions can be expected in areas of southeastern Alaska, particularly along the mainland side. However, along the western side, salinities could, on average, be higher. The feed conversion efficiency of dry feeds could be reduced at high salinities (greater than 25%) given higher energy requirements for osmoregulatory functions (Shaw et al, 1975; Brett, 1979).

Probable feed conversions for dry feeds utilized in southeastern Alaska for the two temperature regimes are also shown in Exhibit 4.1. These feed conversions have been adjusted to reflect a decrease in feed conversion efficiency as the fish increase in size, and decreases that might occur at seasonally lower temperatures.

4.3.3. Summary

Large areas of southcentral and southeast Alaska are not suitable for salmon culture due to the presence of ice, icebergs and large river systems. Salinities are generally more consistent throughout the year in areas away from mainland waters, where blooms are also less likely to occur.

Smolt production capacity in both southcentral and southeast Alaska is likely adequate to meet potential demand from a salmon farming industry.. Some fish feed production capability exists in southcentral, however fish feed would most likely be imported from Washington State or British Columbia because of more specialized production in these regions.

The following areas would be favoured for development in terms of their proximity to population centers, airports and processing plants:

- along the eastern half of southeast Alaska near Juneau, Ketchikan and Petersburg/Wrangell;
- along the western side of Baranof Island near Sitka;
- in southcentral Alaska near Kodiak, Homer, Seward, Cordova, Valdez and Whittier.

Netpen operations in these areas would also be less likely to be affected by phytoplankton blooms. However, all areas are likely to be affected by predators.

The area around Ketchikan is probably the best area for development of pen rearing of salmon in Alaska because of warmer summer and winter temperatures. This area also has more constant salinities throughout the year. Chinook could be expected to reach a harvestable size of two kilograms during the second winter in saltwater. However, the Ketchikan area would have lower growth rates and higher conversion rates than in most areas of British Columbia where salmon farming occurs because of seasonally lower water temperatures.

A profile of a salmon farm can now be developed to allow comparison to costs in other supply regions by assuming that the growth of chinook in this area would approximate that of the warm winter/warm summer condition shown in Exhibit 4.1. Costs for major inputs such as smolts, feed and labour will be estimated for this area.

4.4 Estimated Costs of Production

4.4.1 Production Plan

Scale and Location

The analysis is undertaken for a fish farm raising chinook salmon at an annual production level of 250 tonnes, or the same at British Columbia.

The farm is assumed to be located in the Ketchikan area.

Capital Investment

Capital investment is assumed to be similar to that of British Columbia. However, cage systems and equipment are assumed to be imported and slightly more expensive. The estimated total capital investment for the farm is shown below.

	U.S. $
Sea cage system and equipment	$380,000
Facility on floating barge with equipment	250,000
	$630,000

The total capital investment is $2,520 per tonne. Like British Columbia accommodation and other facilities are assumed to be on a floating barge due to the lack of extensive road systems in the south central portion of southeast Alaska.

Operating Expenses

The estimated operating costs are based on the following assumptions:

- 140,000 salmon smolts at 7 grams are set out every year in June
- smolts are assumed to be supplied from Alaskan hatcheries
- the smolt price of $0.54 is the same at that of British Columbia except without the BCSFA levy
- feed is imported from Washington State by barge and the feed standard price is $1.01 per kg
- the feed conversion ratio is slightly higher than British Columbia and ranges between 1.5:1 and 2.0:1
- processing costs of $0.52 per kg are slightly lower than British Columbia because of lower labour rates in the processing sector
- stock insurance, farm wages and fixed costs are comparable to British Columbia
- harvesting occurs after 20 to 24 months in saltwater
- average weight of fish is 2.5 kg at harvest (this assumes slightly better growth than that shown in Exhibit 4.1).

With these assumptions, the farm will be capable of producing about 73,500 fish for a total production of 250 tonnes per year.

Depreciation is based on the following assumptions:

Buildings	20
Seapen system and equipment	6
Site investments	50

The economic life of fixed assets is assumed to be similar to that of British Columbia, Norway and Scotland.

Unit Costs

Unit costs are shown in Exhibit 4.2. Unit costs are $4.49 per kilogram.

EXHIBIT 4.2: ESTIMATED UNIT COSTS PER KG FOR CHINOOK SALMON IN ALASKA

	Unit Costs (US Dollars)	%
Variable Costs		
Smolts	0.40	9
Feed	2.00	45
Stock Insurance	0.07	2
Processing	0.52	11
Interest on Working Capital	0.27	6
Total Variable Costs	**3.26**	**73**
Fixed Production Costs		
Wages	0.32	7
Overhead	0.24	5
Depreciation	0.49	11
Interest	0.18	4
Total Fixed Costs	**1.23**	**27**
Unit Costs per Kilogram	**4.49**	**100%**

Source: The DPA Group Inc.

Assuming a yield factor of about 85%, unit costs on a dressed weight basis would be $5.28/kg or $2.40/lb.

5.0 SUMMARY

In order to assess Alaska's potential competitiveness with other supply regions, the landed costs of production in major markets must be compared. In order to do so, we first determine selling and freight costs per unit. These are shown in Exhibit 5.1.

EXHIBIT 5.1: SHIPPING AND SELLING COSTS PER LB TO MAJOR MARKETS[a] (U.S. DOLLARS)

	Supply Region					
	Norway	Scotland	B.C.	Chile	Japan	Alaska
Selling Costs	0.06	0.11	0.14	0.14	0.14	0.14
Freight to shipping point	0.05	0.07	0.10	0.09	0.04	0.09
	0.11	**0.18**	**0.24**	**0.23**	**0.18**	**0.23**
Additional Freight[b] to:						
Los Angeles	1.14	1.14	0.12	0.73	N/A	0.14
New York	0.80	0.80	0.50	0.73	N/A	0.55
Tokyo	1.59	1.59	0.95	1.45	as above	0.73

[a] Shipping and selling costs are current to March, 1988.
[b] All shipments were assumed to be air freighted to their destinations, except for shipments from B.C. to L.A. which were assumed to be trucked. The bulk rate for fresh fish or an LD3 container rate from current tariff sheets were used for shipments by air. No allowances were made for ice in containers since the increased costs associated with ice can often be offset by volume discounts.

Selling costs in Norway are less than other regions because of the participation of the Fish Farmers Sales Organization. Scotland's selling costs are also less because of a higher level of vertical integration.

With regard to the major exporters, freight costs from Norway and Scotland to major markets are comparable. British Columbia has the best freight cost advantage to Los Angeles and New York. However, Alaska has the lowest freight cost to Japan.

The landed costs of farmed salmon from each major supply region and from Alaska in three major markets is shown in Exhibit 5.2.

EXHIBIT 5.2: COMPARISON OF LANDED COSTS PER LB IN MAJOR MARKETS (U.S. DOLLARS)

Market	Supply Region					
	Norway	Scotland	B.C.	Chile	Japan	Alaska
Los Angeles	3.80	4.17	2.06	2.63	N/A	2.77
New York	3.46	3.83	2.44	2.63	N/A	3.18
Tokyo	4.25	4.62	2.89	3.85	3.21	3.36

As indicated in the exhibit, Alaska is competitive from a cost standpoint in all markets.

However, as previously indicated, costs at an industry level are only known for Norway. As a result, the cost comparisons should be viewed with caution. Alaska would be selling farmed salmon in smaller sizes than Norway, Scotland and British Columbia and would compete more directly with Chile. British Columbia and Chile have cost advantages over Alaska in both Los Angeles and New York.

Alaska would also likely have a short window period in which to sell. This would also likely result in more direct competition with the Chileans.

As discussed in Section 3.7, landed costs in major markets are sensitive to exchange rates. Fluctuating exchange rates could make Alaskan farmed salmon more or less competitive in all markets. However, the U.S. and Canadian currencies are closely linked and generally shift from each other only slowly. As a result, British Columbia would likely have cost advantages over Alaska in all major markets.

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APPENDIX A

METRIC CONVERSION RATES

APPENDIX A

Metric Conversion Rates

1 kilogram = 2.2046 pounds

1 Kilogram = 1,000 grams

454 grams = 1 pound

1 metric tonne = 2204.6 pounds

1 metric tonne = 1,000 kilograms

1 metric tonne = 1.1 ton

1 metre = 1.1 yards

1 kilometre = 1,000 metres

1 kilometre = 0.62 miles

APPENDIX B

PROFITABILITY STUDY OF FISH FARMS IN NORWAY, 1984

Production cost per kilo farmed salmon, 1984. Figures in 1984 kroner.

	Size of facility			
	Under 3.000 m^3	3.000-4.999 m^3	5.000-6.999 m^3	7.000 m^3 & over
Smolt	7.93	5.45	6.82	5.97
Feed	10.99	9.97	10.98	10.57
Other variable cost	0.60	0.69	0.62	0.58
Wages	6.51	5.06	4.82	4.80
Total variable costs	26.03	21.17	23.24	21.87
Fixed operating costs	3.77	3.38	4.37	4.16
Depreciation	1.42	1.40	1.43	1.61
Interest[a)]	2.65	3.03	3.18	3.10
Total	33.87	28.98	32.22	30.74
Production (tonnes)	28.30	69.80	101.20	141.10
Man-years per farm	1.59	2.50	3.98	5.07
Sample size	19	31	20	27

a) Interest includes interest on debt and calculated interest on equity.

Source: Directorate of Fisheries: Profitability Study of Fish Farms, 1984.

APPENDIX C

POTENTIAL DEVELOPMENT AREAS FOR SALMON FARMING IN ALASKA:

TECHNICAL SUMMARY

Prepared for:
State of Alaska
Department of Commerce
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Juneau, Alaska

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Vancouver, B.C.

March, 1988

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this study is to determine the feasibility of pen-rearing salmon in Alaska. The approach is to develop likely costs of production for pen-rearing of salmon in Alaska and compare these costs to those of existing supply regions.

Development of likely costs of production in Alaska requires an analysis of conditions for rearing. British Columbia is emerging as a major supply region and is considered the best model for analysis of Alaska's potential.

This technical report summarizes the following:

- general environmental and logistic conditions for pen-rearing salmon in Alaska;
- differences in growth and feed conversion rates between British Columbia and Alaska.

In order to assess conditions for pen rearing salmon in Alaska we conducted reviews of previous environmental studies in Alaska. We also held telephone interviews with several fisheries officials in the state of Alaska Department of Fish and Game and the National Marine Fisheries Service.

In order to develop growth data and feed conversion ratios we compared published results of the National Marine Fisheries Service salmon farming research projects at Little Port Walter and Auke Bay to those of a recent broodstock management program in British Columbia.

In the following section of the report we determine areas suitable for pen-rearing salmon in Alaska. In section 3.0 we estimate growth and conversion rates. Also, in this section we describe how the analysis of the potential for pen-rearing salmon in Alaska from a biophysical standpoint will be used to determine its economic viability.

2.0 ENVIRONMENTAL AND LOGISTIC CONDITIONS

2.1 Introduction

Conditions which are important in considering the location of a netpen site can be classified under environmental or logistic categories.

Environmental factors include water quality characteristics and potential problems with plankton blooms and predators. Logistic factors include access to critical inputs such as smolts, feed, labour and transportation routes.

These conditions are discussed below.

2.2 Physical Marine Conditions

This section contains an overview of ice formation and iceberg conditions, temperatures and salinities in southcentral and southeast Alaska. According to fisheries officials contacted, these are the two areas where development of net pen-rearing would most likely occur. The information is then used to develop assumptions about growing conditions, growth rates and feed conversions.

Southcentral Alaska

Ice Formations and Icebergs

Ice formation and the presence of icebergs in embayments and low winter air temperatures impose constraints on development of netpen sites in southcentral Alaska; in particular, these are:

- the presence of pack ice and fast ice in Cook Inlet;
- the presence of ice and icebergs in embayments connected to Prince William Sound and near Seward; and
- the potential for ice formation on floating structures.

LaBelle et al (1983) indicate that during late December open pack ice can normally be expected along Cook Inlet between the head of the inlet and a line approximately between Cape Douglas and a point just south of Ninilchik. At times, close pack ice can extend further to a line approximately between Cape Douglas and Homer. Within Prince William Sound, LaBelle et al (1983) indicate that icebergs from glaciers can normally be encountered in the vicinity of Glacier Island (at the mouth of Valdez Arm), in Unakwik Inlet and Port Wells (between Valdez Arm and Whittier), in Blackstone Bay (to the south of Whittier), in the head of Port Nellie Juan and in Knight Island Pass (to the south of Port Nellie Juan). Near Seward they indicate icebergs are present in Aialik Bay and Harris Bay (southwest of Seward) and in the East Arm of Nuka Bay.

Apart from the presence of sea ice and glacier ice in embayments in southcentral Alaska, the air temperature and wind conditions in that area make it generally susceptible for ice formation on floating structures (La Belle et. al. 1983).

Water Temperatures

Mean monthly sea surface water temperatures are summarized in Exhibit 2.1. These data suggest that, in general, mean winter surface temperatures can be expected to be approximately 2.5 - 5.0°C and mean summer surface temperatures can be expected to be approximately 0 - 13°C.

Surface temperatures are often recorded as routine measurements because they are easier to measure than temperatures at greater depths. However, salmon are suspended in structures that place them below the surface, but in the upper 6-10 m of the water column (depending on the net depth selected by individual operators). Therefore, subsurface temperatures (between 0 and 10 m) are usually more appropriate for determining the growing conditions for salmon. Temperatures recorded at 10 m near Seward are also shown in Exhibit 2.1. These data indicate that at that depth mean spring and early summer temperatures are slightly lower than the surface temperatures, while mean fall and winter temperatures are approximately the same.

EXHIBIT 2.1: SUMMARY OF MONTHLY SEA SURFACE TEMPERATURE IN SOUTHCENTRAL ALASKA

	Coastal[1]		Seward[2]	
Month	Kodiak-Cook Inlet	Prince William Sound	0 Meters	10 Meters
January	4.0	4.5	4.0	4.0
February	3.0	5.0	4.0	4.0
March	4.0	4.0	2.8	2.8
April	4.0	5.0	3.3	3.3
May	5.0	6.0	6.0	5.4
June	7.0	9.0	9.2	7.0
July	9.0	11.5	12.9	10.8
August	11.5	12.5	12.8	12.8
September	10.5	12.0	11.4	11.7
October	9.0	9.0	7.6	8.2
November	7.0	8.0	7.0	7.1
December	5.5	6.0	5.0	6.0

1 Estimates based on isopleths and cumulative percent frequency graphs

2 Based on graphed monthly means, 1979-1983.

Source: Brower et. al. 1977; Xiong and Royer 1984.

Salinity

Xiong and Royer (1984) state that average surface salinities in summer are 27.3‰ and in winter are 3.12‰ based on intensive studies near Seward. At greater depths (i.e. 250 m), salinities are approximately 33‰ year round. Colonell (1980) and Muench and Nebert (1973) describe the presence of relatively fresh water lying in a thin surface layer in Valdez Arm and Port Valdez during summer and autumn. Muench and Nebert (1973) indicate that minimum mean surface salinities (0-125 m) were approximately 3‰ over the July - October period, though salinities in the upper 20 m were, at times, less than 1‰ near the head of Port Valdez (in late July/early August). Lower surface salinities over the summer period are attributed to freshwater runoff from land areas and high precipitation.

Southeast Alaska

Icebergs

Icebergs are present in several bays and straits in northern and eastern Southeastern Alaska (LaBelle et al, 1983).

- Cross Sound, Icy Strait and Glacier Bay;
- Taku Inlet;
- Tracy Arm and Endicott Arms; and
- the end of Frederick Sound.

The presence of icebergs suggests a potential for damage to floating structures and, in general, these areas should be avoided. Also, the icebergs apparently can greatly reduce summer temperatures in surface waters (Pickard, 1967).

Water Temperatures

Mean monthly surface temperatures for the coastal waters along southeast Alaska (Brower et al, 1977) are presented in Exhibit 2.2. Mean surface temperatures recorded at five lighthouse installations (Jones, 1978) in southeast Alaska and in Auke Bay near Juneau (Bruce et al, 1977) are also summarized.

These data show mean high temperatures in summer (August) to range between 9.0°C (Decision Rock) and 14.6°C (Guard Island). Mean low temperatures in winter (February/March) range between 2.3°C (February at Point Retreat) and 5.2°C (February at Lincoln Rock). The mean low temperature for the general coastal area (Brown et al, 1977) is slightly higher than these values at 6.0°C. The Five Fingers location is at the junction of Stephens Passage and Frederick Sound. The cooler summer temperatures at the Five Fingers location (and possibly further westward at Decision Rock) could reflect the cooling influence of glaciers in Stephens Passage and Frederick Sound. Pickard (1967) notes that Stephens Passage appears to receive considerable freshwater from the Taku River and Juneau Icefield and that flow from Stephens Passage

could influence water property features at its junction with Frederick Sound. He also notes that water in the eastern portion of Frederick Sound is cool in summer as a result of nearby glaciers. Pickard (1967) reported average temperatures of 6.7°C for Stephens Passage and 8.0°C for Frederick Sound in the upper 10 m of water during August, 1965. Average temperatures in other locations range from approximately 4.0°C (in inlets containing icebergs, for example, Tracy and Endicott Arms along Stephens Passage and Glacier Bay) to approximately 12-14°C in other locations (such as Lynn Canal, near Juneau and Boca de Quadra, near Ketchikan).

EXHIBIT 2.2: **SUMMARY OF MEAN MONTHLY SEA SURFACE TEMPERATURE IN SOUTHEAST ALASKA**

Month	Coastal[1]	Guard Island	Lincoln Rock	Decision Light	Five Finger Light	Point Retreat	Auke Bay
January	6.5	5.2	4.4	3.9	3.6	2.6	3.2
February	6.5	4.9	5.2	4.2	3.0	2.3	2.5
March	6.0	5.2	5.3	4.5	3.4	2.9	3.0
April	6.5	6.2	6.2	5.1	4.3	3.6	4.8
May	8.0	8.3	8.1	6.0	5.4	4.9	8.0
June	10.0	12.4	11.4	7.1	7.8	8.5	12.0
July	12.5	14.5	12.8	9.2	9.6	11.4	13.2
August	13.0	14.6	13.6	9.0	9.6	12.3	13.5
September	12.5	12.9	11.5	8.7	8.1	10.2	11.0
October	10.5	10.4	9.3	7.5	6.5	7.3	7.2
November	9.0	7.8	6.7	5.6	5.5	5.3	5.0
December	7.5	5.9	5.1	4.0	4.2	3.7	4.5

[1] Estimates based on isoplaths and cumulative percent frequency graphs

Source: Brower et. al. 1977; Bruce et al. 1977; Jones 1978.

In general, winter temperatures are lower, as expected, and show less variation amongst locations (compared to summer values); with a trend from south to north of approximately 4.5 - 5.0°C in southern locations (i.e., near Ketchikan) to 2.5 - 3.0°C in more northern locations (i.e., near Juneau).

As described previously, surface temperatures are commonly recorded as routine measurements because they are easier than temperatures taken at greater depths. Temperatures can differ between surface and greater depths in southeast Alaska, particularly over the summer (Bruce et al. 1977; Pickard, 1967). Bruce et al (1977) show little difference over the fall, winter and spring period between the surface and 5 m but show water at a 5 m depth to be 2.0 - 3.0°C cooler in summer (July). Pickard (1967) shows a similar

trend amongst vertical depth profiles developed for inlet site samples in August, 1965. Data recorded by the National Marine Fisheries Service for several years at facilities in Auke Bay near Juneau and Little Port Walter on Baranof Island are summarized in Exhibit 2.3. These data suggest winter temperatures at 4 - 5 m are similar to surface measurements near those locations (see Exhibit 2.2). However, the summer temperatures at the greater depth appear to be several degrees cooler than surface temperatures in Auke Bay (as noted above). The temperatures at Little Port Walter appear to be similar to surface measurements recorded nearby (e.g. Decision Light shown in Exhibit 2.2). The August data in Pickard (1967) indicate lower surface temperatures (9°C) in portions of Chatham Sound (where little Port Walter is located) south of its junction with Frederick Sound, compared to locations further north (e.g., near Angoon) where surface temperatures were approximately 12°C.

EXHIBIT 2.3: SUMMARY OF AVERAGE MEAN MONTHLY TEMPERATURES RECORDED AT 4-5 M DEPTHS AT AUKE BAY AND LITTLE PORT WALTER

Month	Auke Bay[1]	Little Port Walter[2]
January	4.5	5.2
February	3.0	5.0
March	3.0	5.4
April	4.0	4.8
May	6.5	5.6
June	10.0	8.1
July	12.0	9.6
August	12.0	9.4
September	11.0	8.4
October	9.5	7.3
November	6.0	5.8
December	3.5	5.4

[1] Approximations based on averaged graphical data, 1960-68.
[2] Average mean monthly temperatures, 1984-1987.

Sources: Bruce et al. 1977, Thrower pers. comm.

Salinities

Larger rivers along the mainland shoreline can produce lower and fluctuating salinities (Pickard, 1967) and consequently make nearby areas unsuitable for locating netpens for adult growout. These areas include the mouths of the Stikine River, Taku River, Unuk River, Chilkat River and Speel River.

Lower and fluctuating salinities can affect the physiological condition of the salmon (i.e. in relation to the osmoregulatory adaptation to ambient salinity levels) and could influence outbreaks of harmful phytoplankton.

Pickard (1976) shows that most larger rivers in southeast Alaska (e.g. Stikine, Taku, and Chilkat) have peak flows over the summer period from melting glaciers and snow packs. Smaller rivers either have high flows in both summer and fall/early winter (from precipitation) or high flows primarily in fall/early winter. Low flows for all systems generally occur over late winter and early spring.

As a result, one would expect:

- generally higher surface salinities during late winter and early spring; and
- generally lower surface salinities and greater fluctuation in salinities, in waters closer to the mainland (where most large and moderate-sized river systems are located) relative to seaward coastal areas.

In general, Pickard (1967) found surface salinities over the summer in inlets without icebergs were lower at the head ends (range 1-11% compared to the inlet mouths (range of 17-32%). Salinities in deeper waters during summer ranged from 31.2 to 34%, which are similar to surface values recorded at ocean recording stations off the western shore of southeast Alaska.

Bruce et al (1977) indicate that in Auke Bay, surface salinities are typically much lower (16-17%) in summer (July) than in winter and early spring (30% January and April), and in winter/early spring are similar to deep water values (30-31%). They also show that at depths of 5 m, the summer values (20-21%) are typically more saline than surface values. Lower summer surface salinities are attributed to peak runoff from nearby large, glacial-fed streams. At Little Port Walter (which is located further from the mainland streams), mean monthly salinities at 4 m depth are generally higher ranging from 26-30% in summer/early fall to 31-33% in winter. Pickard (1967) shows high surface salinities (greater than 30%) in southern Chatham Sound (near Little Port Walter), Sumner Sound and Clarence Strait, recorded during June and August.

2.3 Phytoplankton and Marine Mammals

Phytoplankton

Two phytoplankton species, Chaetoceros convolutus and Heterosigma akashiwo, have caused serious mortalities amongst salmon cultured in marine netpens in British Columbia. Conditions appear suitable for both species in southcentral and southeast Alaska (Gaines and Taylor, 1986). Chaetoceros

diatoms have been responsible for chinook salmon mortalities in seapens at Little Port Walter (National Marine Fisheries Service, unpublished). Chaetoceros convolutus has also been collected during surveys near Valdez in Prince William Sound (Horner et al 1973.) The occurrence and intensity of phytoplankton blooms vary greatly both geographically and temporally and prediction is difficult (Gaines and Taylor, 1987). In general, Heterosigma blooms tend to occur in early summer, often in association with lower salinities resulting from increasing river flow, while Chaetoceros blooms tend to occur in the late summer or fall.

Harmful phytoplankton could affect sites in both southcentral and southeast Alaska. As in British Columbia, the effects on production could be direct mortalities or reduced growth when oxygen depletion occurs and rations are restricted. In British Columbia, the strategy in stocking is to maintain densities at low levels (e.g., less than 8 kg/m3) to minimize losses should bloom conditions occur.

Marine Mammals

Marine mammals such as otters and sea lions have affected production at sites in British Columbia by killing fish in pens, by damaging netpens allowing fish to escape, and by causing high stress levels in the fish thereby reducing growth rates. National Marine Fisheries Service (unpublished) indicate otters, seals and possibly sea lions have killed fish at the experimental facilities near Little Port Walter. Steller's sea lions and harbour seals occur essentially along the entire Gulf of Alaska coastline (U.S. Department of the Interior, 1984).

Predation from marine mammals will likely be a similar problem in southcentral and southeast Alaska waters to that which occurs in British Columbia. This would likely require investment in predator control measures such as predator nets. Again, density levels would be kept low so that if stress develops when predators are nearby (but do not necessarily attack fish in the pens) it will not compound stress already resulting from high densities.

2.4 Smolt Production Capabilities

Southeast Alaska

Four state hatcheries in southeast Alaska produce chinook salmon and three hatcheries produce coho salmon (Hansen, 1987):

Hatchery	Location	Species Reared
Snettisham	near Juneau	chinook, coho
Hidden Falls	northeastern Baranof Island	chinook
Crystal Lake	near Petersberg	chinook, coho
Deer Mountain	near Ketchikan	chinook
Klawock	near Craig	coho

In 1986, nearly 5 million chinook eggs were collected from these facilities and more than 2.7 million juvenile chinook were released. Similarly, slightly more than 4 million coho eggs were collected and 1.5 juvenile coho were released.

In addition, 10 private non-profit hatcheries operated by regional aquaculture associations and other non-profit groups raise chinook or coho or are permitted to raise these species:

Hatchery	Location
Whitman Lake, Neets Bay, Meyers Chuck and Burrard Inlet	near Ketchikan
Gunuk Creek	near Petersburg
Medvejie Creek, Sheldon Jackson College and Port Armstrong	near Sitka
Salmon Creek and Sheep Creek	near Juneau

In 1986, private non-profit hatcheries in southeast Alaska had total permitted chinook egg capacities of 6.73 million and total permitted coho egg capacities of 15.47 million eggs. Most fry production of both species is in the Whitman Lake and Neets Bay hatcheries operated by the Southern Southeast Regional Aquaculture Association.

Southcentral Alaska

Five state hatcheries in southcentral Alaska produce chinook salmon and five hatcheries produce coho salmon:

Hatchery	Location	Species Reared
Big Lake	near Anchorage	coho
Fort Richardson	near Anchorage	coho, chinook
Elmendorf	near Anchorage	coho, chinook
Trail Lake	near Seward	coho, chinook
Kitoi Hatchery	near Kodiak	chinook, coho.

In 1986, 1.5 million chinook eggs were collected and 1.5 million juvenile chinook were released. Slightly more than 6.5 million coho eggs were collected and 7 million coho juveniles were released.

Three private non-profit hatcheries operated by regional aquaculture associations and other non-profit groups raise chinook or coho salmon or are permitted to raise these species:

Hatchery	Location
Eklutna	near Anchorage
Esther Lake	near Whittier
Solomon Gulch	near Valdez

In 1986, the private non-profit hatcheries had total permitted chinook egg capacities of 1.15 million and total permitted coho egg capacities of 3.1 million. Clearly, a large smolt production capability exists in both southcentral and southeast Alaska and this production is spread throughout each region. Hansen (1987) indicates that a number of hatcheries are constructed below lakes and water intakes in the lakes are placed at different depths so temperatures can be adjusted. This means juvenile growth rates and smolt timing can be manipulated to achieve release objectives.

2.5 Fish Feed

Currently there is fish feed production capacity in southcentral. However, capacity is limited and technologies employed in production are not as advanced as those in Europe, British Columbia or Washington State.

The main ingredients in commercial fish feeds are fish meal and fish oil. These are manufactured in the reduction process from whole fish or fish waste from the processing sector. Alaska's reduction industry is not well developed, despite the availability of significant quantities of fish waste. In addition the reduction plants in Alaska produce fish meal and fish oil which is unsuitable for fish feed. According to representatives of a fish feed manufacturer in Washington State, if a new feed plant were to be constructed, it would likely be constructed in tandem with a new reduction plant, both of which require significant capital investment. Alaska would more likely be supplied by fish feed manufacturers in Washington State or British Columbia since transport by barge to Alaska is not a significant cost.

2.6 Potential Development Areas

As discussed previously, certain areas of southcentral and southeast Alaska are not suitable for salmon culture given the presence of ice, icebergs and large river systems. Therefore, initial development would be expected to occur in suitable bays or shoreline areas (protected from high winds or waves) away from these areas and as close to transportation centers and processing/packing facilities as possible.

Small to medium-sized communities having airport and port facilities are distributed throughout both southcentral and southeast Alaska. The population sizes of coastal communities in the lower Cook Inlet, Kodiak Island and Prince William Sound areas are shown in Exhibit 2.4. Apart from the major airport in Anchorage, smaller airfields and port facilities are located throughout the area (e.g., Homer and Seward).

Larger airports and port facilities are situated along eastern southeast Alaska (Juneau, Petersburg, Wrangell and Ketchikan) and Sitka. As shown in Exhibit 2.4, these are also the major population centers. Ideally, new fish farms would want to locate within three to four hours by boat from logistic centers to minimize the amount of time that harvested fish are in transit prior to boarding flights to market areas. This would tend to create development in physically suitable areas along the eastern half of southeast Alaska (near Juneau, Ketchikan and Petersburg/Wrangell) and along the western side of Baranof Island (near Sitka), and in southcentral Alaska (near Kodiak, Homer, Seward, Cordova, Valdez and Whittier).

2.7 Summary

Large areas of southcentral and southeast Alaska are not suitable for salmon culture due to the presence of ice, icebergs and large river systems. Salinities are generally more consistent throughout the year in areas away from mainland waters, where blooms are also less likely to occur.

Smolt production capacity in both southcentral and southeast Alaska is likely adequate to meet potential demand from a salmon farming industry. Some fish feed production capability exists in southcentral, however fish feed would most likely be imported from Washington State or British Columbia because of more specialized production in these regions.

The following areas would be favoured for development in terms of their proximity to population centers, airports and processing plants:

- along the eastern half of southeast Alaska near Juneau, Ketchikan and Petersburg/Wrangell;
- along the western side of Baranof Island near Sitka;
- in southcentral Alaska near Kodiak, Homer, Seward, Cordova, Valdez and Whittier.

Netpen operations in these areas would also be less likely to be affected by phytoplankton blooms. However, all areas are likely to be affected by predators.

EXHIBIT 2.4: POPULATIONS OF COMMUNITIES IN SOUTHCENTRAL AND SOUTHEAST ALASKA (1980)

Southcentral		Southeast	
Keani/Cook Inlet		Juneau	19,528
		Sitka	7,803
Kenai	4,324	Ketchikan	,198
Soldotna	2,320	Petersburg	2,821
Homer	2,209	Wrangell	2,184
Seldovia	479	Metlakatla	1,056
Ninilchik	341	Haines	993
Port Graham	161	Skagway	768
English Bay	124	Hoonah	680
		Kake	555
Kodiak Island/Shelikof Strait		Craig	527
		Angoon	35
Kodiak	4,756	Klawock	18
Old Harbor	340	Hydaburg	298
Port Lions	215	Saxman	273
Ouizinkie	173	Pelican	180
Larsen Bay	141	Tenakee Springs	138
Akiak	105	Klukwan	135
Karluk	96	Meyers Chuck	50
		Kupreanof	47
Prince William Sound		Kasaan	25
Valdez	3,079		
Cordova	1,879		
Seward	1,834		
Whittier	198		
Tatitlek	68		

Source: U.S. Census Population 1981 and 1982, cited in U.S. Department of the Interior 1984.

3.0 GROWTH AND CONVERSION RATES

3.1 Generalized Temperature Regimes

The temperature data reviewed in Section 2.1 (Physical Marine Conditions) have been used to develop four generalized temperature regimes (Exhibit 3.1) in which salmon culture might take place:

- relatively cool winter temperatures and warm summer temperatures (that might occur in bays in southcentral Alaska and near Juneau);
- relatively warm winter temperatures and warm summer temperatures (that might occur in bays near Ketchikan);
- relatively warm winter temperatures and cooler summer temperatures (that might occur in the Frederick Sound/Petersburg area); and
- relatively cool winter temperatures and cool summer temperatures (that might occur in the northern inlets of southeast Alaska close to iceberg areas).

Clearly, general good-case and poor-case growing conditions would be, respectively, warm winter/warm summer conditions and cool winter/cool summer conditions. Since specific conditions can vary from site to site and from year to year, extreme best case and worst case conditions would likely lie outside these general scenarios.

EXHIBIT 3.1: GENERALIZED MEAN MONTHLY TEMPERATURES AT 4 M DEPTHS

Month	Cool Winter/ Warm Summer	Warm Winter/ Warm Summer	Warm Winter/ Cool Summer	Cool Winter/ Cool Summer
January	.5	5.0	5.0	3.5
February	3.0	5.0	5.0	3.0
March	3.0	4.5	4.5	3.0
April	5.0	4.5	4.5	3.0
May	6.0	6.0	6.0	6.0
June	10.0	10.0	8.0	8.0
July	11.0	11.0	9.5	9.5
August	12.0	12.0	9.5	9.5
September	10.5	10.5	8.5	8.5
October	7.5	7.5	7.5	7.5
November	5.0	6.0	6.0	5.0
December	3.5	5.5	5.5	3.5

3.2 Growth Rates

Chinook would likely be preferable for net pen rearing in Alaska since they have shown greater survival rates than coho during the longer growout periods in British Columbia needed to attain market size (B.C. Salmon Farmers Association).

The fish sizes and growth rates obtained for chinook salmon at Little Port Walter and at five locations in British Columbia are summarized in Exhibit 3.2. These data have been used together with unpublished growth rate data from the Pacific Biological Station, Nanaimo, B.C. (R. Brett, H. Kreiberg, pers. comm.) and the mean monthly temperatures shown in Exhibit 3.1 to develop probable monthly growth rates for the south central portion of southeast Alaska. Estimated maximum growth rates for different fish sizes and the temperature range expected for marine growout sites in Alaska are shown in Exhibit 3.3. Seasonal growth scenarios for the generalized good growing temperatures and poor growing temperatures (Exhibit 3.1) are shown in Exhibit 3.4. As indicated in Exhibit 3.4, the approximate size of chinook after 26 months in saltwater is 3.5 kg under good growing temperatures and 2.5 kg under poor growing temperatures. With good growing temperatures, chinook could be expected to reach a harvestable size of two kilograms during the second winter in saltwater. Most farmed salmon is sold between October and April, during the off-season of the wild fishery. With poor growing temperatures, chinook would likely have to be held over until the following fall.

EXHIBIT 3.3: ESTIMATED MAXIMUM GROWTH RATES[1] FOR CHINOOK AT DIFFERENT WEIGHTS AND TEMPERATURES

WEIGHT (g)	TEMPERATURE (°C) 2	4	6	8	10	12	14
5	0.4	0.9	1.3	1.8	2.2	2.7	3.1
10	0.3	0.7	1.0	1.4	1.8	2.2	2.5
50	0.2	0.3	0.5	0.6	0.8	1.0	1.2
100	0.2	0.3	0.5	0.6	0.8	1.0	1.2
500	0.2	0.2	0.3	0.4	0.5	0.6	0.7
1000	0.1	0.2	0.2	0.3	0.3	0.4	0.5
2000	0.1	0.1	0.2	0.2	0.3	0.3	0.4
3000	0.1	0.1	0.1	0.2	0.2	0.2	0.3

[1] Percent body weight per day.

Sources: Brett, pers. comm.; Kreiberg, 1981a; 1987b; National Marine Fisheries Service, unpublished.

EXHIBIT 3.2: MEAN MONTHLY TEMPERATURES AND GROWTH RATES FOR CHINOOK SALMON AT LITTLE PORT WATER, ALASKA AND FIVE LOCATIONS IN BRITISH COLUMBIA

	LITTLE PORT WALTER			LITTLE PORT WALTER			NORTH B.C. COAST			SOUTH B.C. COAST (Gulf Islands)			SOUTH B.C. COAST (Sunshine Coast)			SOUTH B.C. COAST (Pacific Biological Station)			SOUTH B.C. COAST (West Coast of Vancouver Island)		
	1982 BROOD STOCK			1984 BROOD STOCK																	
MONTH	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate
JUNE	-	-	-	7.3	5.0	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JULY	-	-	-	9.2	-	1.7	12.1	4.5	2.7	-	4.5	2.5	18.8	4.5	3.3	18.0	4.5	2.4	-	4.5	3.2
AUGUST	-	-	-	8.8	-	1.7	12.0	-	2.7	13.8	-	2.5	16.8	-	3.3	16.8	-	2.4	16.1	-	3.2
SEPTEMBER	-	-	-	7.7	-	1.7	8.8	-	2.7	12.6	-	2.5	15.1	-	3.3	14.4	-	2.4	13.2	-	3.2
OCTOBER	-	82	0.5	6.0	-	1.7	8.8	59	2.7	11.3	50	2.5	11.9	84.0	3.3	11.3	40	2.4	11.4	129	3.2
NOVEMBER	-	-	0.5	4.4	-	0.3	6.5	-	0.6	9.6	-	0.6	9.7	-	0.6	8.0	-	0.8	9.7	-	0.6
DECEMBER	-	-	0.5	5.2	-	0.3	5.0	-	0.6	-	-	0.6	6.7	-	0.6	6.7	-	0.8	6.9	-	0.6
JANUARY	-	-	0.5	4.8	-	0.3	5.5	-	0.6	-	-	0.6	6.7	-	0.6	7.8	-	0.8	7.2	-	0.6
FEBRUARY	-	-	0.5	-	-	0.3	5.1	-	0.6	7.3	-	0.6	7.6	-	0.6	7.1	-	0.8	7.5	-	0.6
MARCH	-	-	0.5	-	-	0.3	6.0	166	0.6	-	180	0.6	7.9	208	0.8	9.0	180	0.6	8.7	286	0.7
APRIL	-	-	0.5	4.7	150	0.3	8.0	-	0.6	8.5	-	0.5	9.0	-	0.8	10.2	-	0.6	8.6	-	0.7
MAY	-	276	0.5	5.8	-	1.0	8.3	232	0.6	-	246	0.6	11.8	391	0.8	12.0	250	0.6	10.0	442	0.7
JUNE	9.0	-	0.9	7.7	-	1.0	10.9	-	0.7	12.3	-	0.9	14.9	-	1.0	15.5	-	0.7	13.2	-	0.8
JULY	10.1	636	0.9	8.7	273	1.0	12.5	-	0.7	13.4	-	0.9	16.6	-	1.0	16.8	-	0.7	16.2	-	0.8
AUGUST	10.1	-	0.9	8.3	-	1.0	13.1	-	0.7	14.7	-	0.9	16.7	-	1.0	19.0	-	0.7	16.2	-	0.8
SEPTEMBER	9.3	-	0.9	8.1	591	1.0	11.5	-	0.7	13.8	-	0.9	15.8	-	1.0	15.9	-	0.7	14.5	-	0.8
OCTOBER	8.8	946	0.9	6.8	-	-	10.2	537	0.7	11.2	931	0.9	12.1	1302	1.0	13.2	630	0.7	11.9	1317	0.8
NOVEMBER	6.5	-	0.3	6.4	-	-	8.6	-	-	10.4	-	-	9.4	-	-	10.5	-	-	11.7	-	-
DECEMBER	5.2	-	0.3	5.8	-	-	7.0	-	-	9.0	-	-	7.7	-	-	9.3	-	-	8.7	-	-

EXHIBIT 3.2: (Cont'd)

MONTH	1982 BROOD STOCK			LITTLE PORT WALTER 1984 BROOD STOCK			NORTH B.C. COAST			SOUTH B.C. COAST (Gulf Islands)			SOUTH B.C. COAST (Sunshine Coast)			SOUTH B.C. COAST (Pacific Biological Station)			SOUTH B.C. COAST (West Coast of Vancouver Island)		
	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate	Temp.	Size	Rate
JANUARY	4.9	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FEBRUARY	5.0	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MARCH	4.6	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
APRIL	4.8	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAY	5.4	1814	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNE	7.3	2198	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JULY	9.2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AUGUST	8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPTEMBER	7.7	3776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(ASF-313/5264P)

EXHIBIT 3.4: ESTIMATED GROWTH RATES FOR CHINOOK SALMON GROWN UNDER TWO GENERALIZED MEAN MONTHLY TEMPERATURES REGIMES IN SOUTHEAST ALASKA

	WARM WINTER/WARM SUMMER				COOL WINTER/COOL SUMMER			
	Temp.	Approx. Size (grams)	Daily Growth Rate (%)	Food Conversion	Temp.	Approx. Size (grams)	Daily Growth Rate (%)	Food Conversion
June	10.0	13	2.2	1.5	8.0	12	2.0	1.7
July	11.0	25	2.1	1.5	9.5	24	2.1	1.7
August	12.0	49	2.2	1.5	9.5	45	2.1	1.7
September	10.5	92	2.1	1.5	8.5	79	1.9	1.7
October	7.5	125	1.0	1.7	7.5	108	1.0	1.9
November	5.0	149	0.6	1.7	5.0	125	0.5	1.9
December	3.5	174	0.5	1.7	3.5	133	0.2	1.9
January	5.0	197	0.4	1.7	3.5	142	0.2	1.9
February	5.0	222	0.4	1.6	3.0	146	0.1	1.8
March	4.5	243	0.3	1.6	5.0	165	0.3	1.8
April	5.0	266	0.3	1.6	5.0	165	0.3	1.8
May	6.0	301	0.4	1.6	6.0	187	0.4	1.8
June	10.0	406	1.0	1.7	8.0	237	0.8	1.9
July	11.0	570	1.1	1.7	9.5	323	1.0	1.9
August	12.0	851	1.3	1.7	9.5	439	1.0	1.9
September	10.5	1181	1.1	1.7	8.5	575	0.9	1.9
October	7.5	1512	0.8	1.9	7.5	736	0.8	2.0
November	6.0	1704	0.4	1.9	5.0	805	0.3	2.0
December	5.5	1870	0.3	1.9	3.5	830	0.1	2.0
January	5.0	1990	0.2	1.9	3.5	856	0.1	2.0
February	5.0	2104	0.2	3.0	3.0	881	0.0	2.1
March	4.5	2170	0.1	2.0	3.0	908	0.0	2.1
April	5.0	2236	0.1	2.0	5.0	936	0.1	2.1
May	6.0	2454	0.3	2.0	6.0	1027	0.3	2.1

Growth rates normally decrease as fish increase in size and maximum growth rates occur at a temperature optimum and are therefore lower at lower temperatures and at higher temperatures (Brett, 1979). Brett et al (1982) estimated the optimum temperature for juvenile chinook salmon fed a maximum ration to be 19°C and fish fed a 60% ration to be 15°C.

In addition to temperature, growth rates can be affected by other factors including the presence of stressing factors (e.g., densities, handling, and the presence of predators), feed quality and ration level. Consequently, under commercial production conditions, maximum growth rates are often not achieved. In fact ration levels are usually reduced deliberately to obtain more cost-effective feed utilization (e.g., at 70 - 90% of maximum rations). In general, if other factors were the same in British Columbia and Alaska, the mean winter growing temperatures expected for Alaskan waters indicate winter growth rates could be substantially lower than those occurring in British Columbia cf. temperatures in Exhibit 3.2). Rates of digestion and feed consumption are highly reduced at low temperatures (1-5°C) resulting in growth rates that could be 20-40% of the maximum achievable at optimum temperatures (Brett, 1979).

3.3 Feed Conversion

Feed conversion rates are influenced by environmental variables (such as temperature, salinity, photoperiod, oxygen concentration) and operational variables (such as fish size, ration, food quality). Food conversion efficiency is normally greater for smaller fish sizes, decreasing as the fish grow (Brett and Groves, 1979). Over a given temperature range, on the other hand, food conversion efficiency usually reaches a maximum at a particular temperature and is lower at both lower and higher temperatures. Similarly, the optimum ration amount for maximum food conversion is normally lower than the maximum ration that the fish will consume. In turn, maximum conversion efficiency occurs at a lower ration quantity, as temperature is reduced below the optimum. Generally, optimum feed conversion efficiency for salmon appears to occur at temperatures between 10°C and 15°C at ration levels at 60-90% of maximum. Brett et al. (1982) found the temperature for maximum food conversion for juvenile chinook salmon fed a maximum ration to occur approximately 20-21°C but for salmon consuming 60% of the maximum ration appeared to occur at approximately 15°C.

Feed conversion rates for dry diets obtained at five farm locations in British Columbia are shown in Exhibit 3.5. For sites having similar temperatures and salinities to those in Alaska (e.g., the north B.C. coast site) similar conversion rates would be expected.

EXHIBIT 3.5: FEED CONVERSION RATES AT FIVE MARINE SITES GROWING CHINOOK SALMON IN BRITISH COLUMBIA

TIME PERIOD	NORTH B.C. COAST (5)			SOUTH B.C. COAST (Gulf Islands) (2)			SOUTH B.C. COAST (Sunshine Coast) (3)			SOUTH B.C. COAST (Pacific Biological Station) (1)			SOUTH B.C. COAST (West Coast of Vancouver Island) (4)		
	Size		F.C.R.	Size		F.C.R.	Size		F.C.R.	Size		F.C.R.	Size		F.C.R.
	St.	End		St.	End		St.	End		St.	End		St.	End	
JULY - OCT. 1985	4.5	59	1.3	4.5	50	-	4.5	84	-	4.5	40	2.1	4.5	129	1.3
OCT. 1985 - MAR. 1986	59	166	1.4	50	180	1.8	84.0	208	2.1	40	180	1.6	129	286	2.3
MAR. - OCT. - 1986	166	537	1.0	180	931	-	208	1302	1.6	180	630	1.9	286	1317	1.7

Sources: Kreiberg 1987a; Kreiberg 1987b.

However, as previously described, potential locations in southeast Alaska will likely have winter temperatures lower than those experienced in British Columbia (i.e., less than 5°C). Food conversion rates under these conditions will be slightly poorer than for comparably sized fish grown at higher temperatures. Brett (1979) suggests that conversion efficiencies at relatively low temperatures (1-5°C) are 50% of the maximum efficiencies which, as discussed above, occur at higher temperatures (e.g., between 10°C and 20°C). Therefore, for lower mean winter temperatures (3-5°C) that might occur in Alaska growout waters, slightly poorer conversions can be assumed compared to fish grown in British Columbia.

The feed conversions obtained for dry feeds at British Columbia sites were mainly under conditions of moderate salinity (Exhibit 3.6). As previously discussed, similar conditions can be expected in areas of southeastern Alaska, particularly along the mainland side. However, along the western side, salinities could, on average, be higher. The feed conversion efficiency of dry feeds could be reduced at high salinities (greater than 25‰) given higher energy requirements for osmoregulatory functions (Shaw et al, 1975; Brett, 1979).

EXHIBIT 3.6: RANGE OF MEAN MONTHLY SALINITIES RECORDED AT FIVE CHINOOK SALMON CULTURE SITES IN BRITISH COLUMBIA; JULY 1985 - DECEMBER 1986.

LOCATION	MEAN MONTHLY SALINITY RANGE
1	24.8 - 29.9
2	21.6 - 27.7
3	19.5 - 26.4
4	19.1 - 32.0
5	19.9 - 25.1

Sources: Kreiberg 1987a; Kreiberg 1987b.

Probable feed conversions for dry feeds utilized in southeastern Alaska for the two temperature regimes described in Section 3.1 are shown in Exhibit 3.4. These feed conversions have been adjusted to reflect a decrease in feed conversion efficiency as the fish increase in size, and decreases that might occur at seasonally lower temperatures.

Near surface salinities (4 m depth) at the Little Port Walter Research facility ranged from 26.8 to 32.6%; these are similar to but, in general, slightly higher than the salinities occurring at sites in B.C. (Exhibit 3.6). Experiments at Little Port Walter suggest that fish grow at similar rates using a dry pellet (Icicle Seafoods, Seward) and a semi-moist diet (Biodiet). Semi-moist and moist diets are preferred by some growers when salinities are high because they produce less physiological demand on the fish for osmoregulatory functions (Brett and Groves, 1979), compared to dry diets. However, dry diets are often preferred over moister diets, particularly in remote locations, because they are less expensive to transport and have longer storage times.

Summary

The area around Ketchikan is probably the best area for development of pen rearing of salmon in Alaska because of warmer summer and winter temperatures. Chinook could be expected to reach a harvestable size of two kilograms during the second winter in saltwater. However, the Ketchikan area would have lower growth rates and higher conversion rates

than in most areas of British Columbia where salmon farming occurs because of seasonally lower water temperatures.

We will assume that the growth of chinook in this area would approximate that of the warm winter/warm summer condition shown in Exhibit 3.4. In other words, a profile of a salmon farm can now be developed to allow comparison to costs in other supply regions. Costs for major inputs such as smolts, feed and labour will be estimated for this area.

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Susitna/Tyonek Proposal

Basis

Susitna River Basin Study	1981
Willow Sub-basin Area Plan	1982
Matanuska-Susitna Borough CMP	1984
Forestry Element Susitna Area	1984
Susitna Area Plan	1985

These documents assisted in the framework for allocation of resources by the planning process.

Forestry as a Primary and Secondary Use (Susitna Area Plan)
- 900,000 acres (60% are remote forest lands)
  - 465,000 acres (Primary)
  - 435,000 acres (Secondary)

All these lands to be managed for multiple use.

Implementation of planning process.

Example:

Recreation River Corridors	(240,000 acres)
Chijuk Creek	(25,000 acres Borough)
Hatcher Pass Ski Area	(212,000 acres)

This proposal step in implementation of planning process

General Area	500,000 acres all lands 215,000 acres commercial forest potential
Project Range	61,000 acres - 101,000 acres harvested/20 years
Volume:	75-126 million cubic feet (14% of annual allowable cut)

Objectives of Proposal

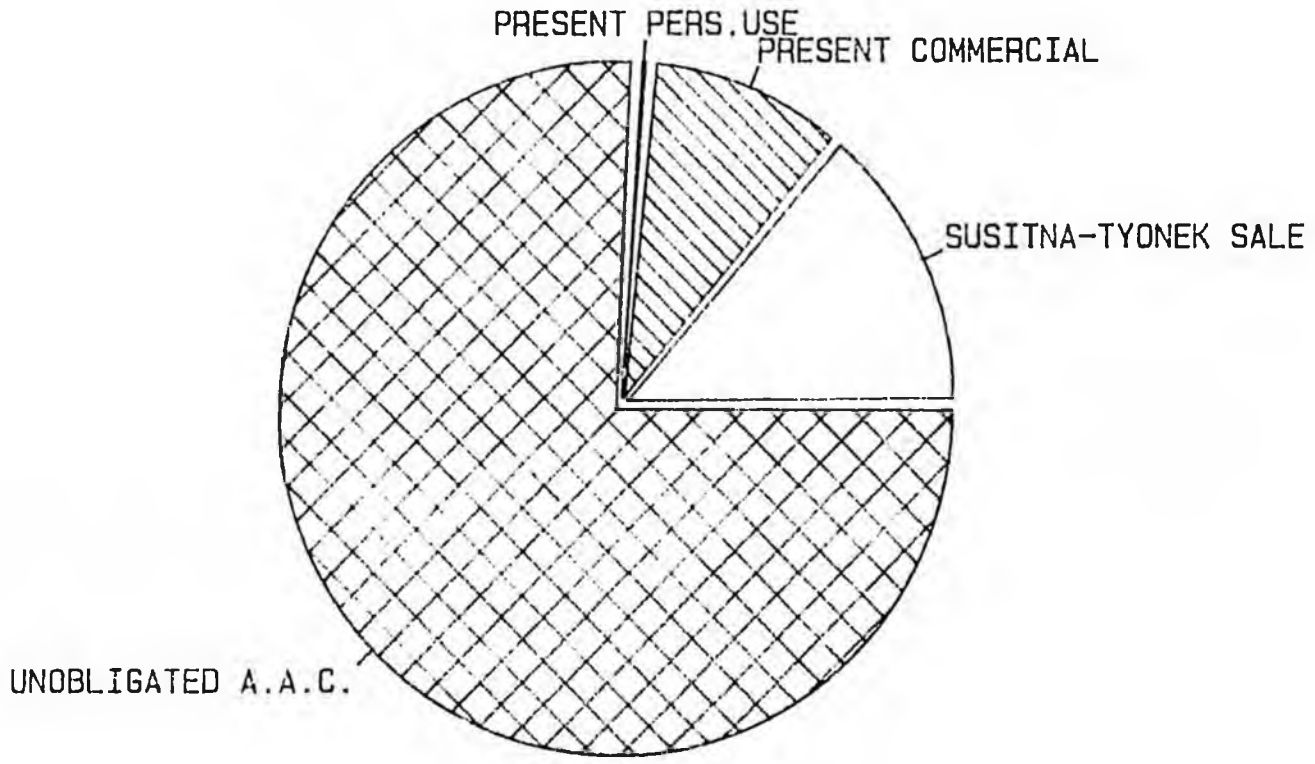
1. Diversify the state's economy through long term private investment in developing the forest resources.
2. Bring the declining hardwood forests of Valley under management.
3. Provide access to remote forest lands within Valley.
4. Provide for additional jobs within Valley.

Proposal would have successful bidder;
1. Develop the management plan, five year operating and annual operating plans.
2. Layout the transportation and harvest unit systems.
3. Plan and implement the reforestation activities on harvest units.

The state will approve and administer all these actions and have appropriate bonding for activities.

Presently we are working to evaluate and respond to public and agency comment on this proposal. After evaluating comments, the Division will, in conjunction with other resource agency representatives, determine the type and scope of the project which will be presented to the public for review in the future.

ANCHORAGE/MAT-SU AREA
ANNUAL ALLOWABLE HARVEST
In Thousands Of Cubic Feet



SUSITNA--TYONEK CUT EXCLUDES AG SALVAGE
FIGURES EXCLUDE WILLOW SUB-BASIN VOLUMES
DATA BASED ON SUSITNA AREA PLAN INVENTORY

SUSITNA-TYONEK	2,765	PRESENT PER.USE	127
PRESENT COMMERCIAL	1,942		
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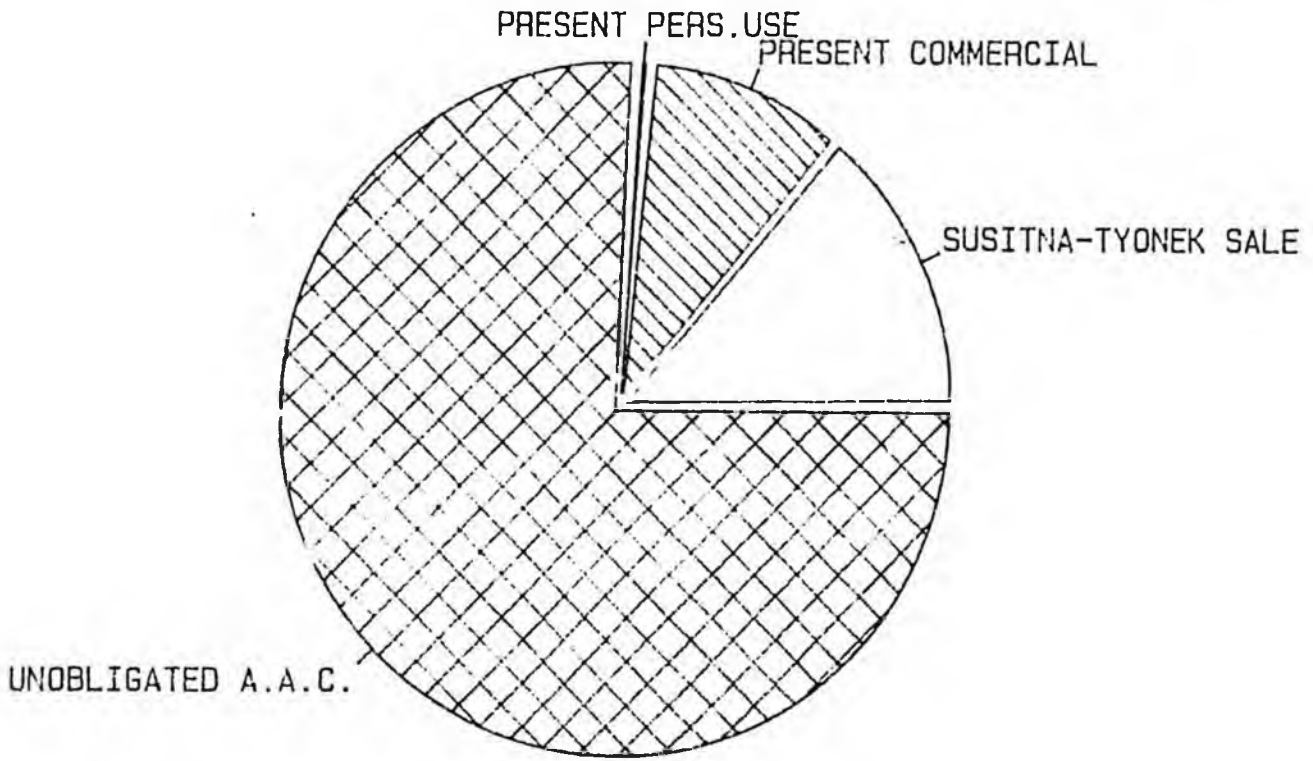

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WHY FOREST MANAGEMENT AGREEMENTS

John Galea
State Forester
State of Alaska
Department of Natural Resources
Division of Forestry

* Alaska State Forest lands are estimated to be at 10.2 million acres. The annual allowable harvest on a sustained basis for these forest lands is at 300 million board feet per year. The average annual harvest on State lands is presently about 24 MMBF, or less than 10 percent of the potential annual allowable harvest.

* The varied terrain, lack of infrastructure, distance to ready markets, and lack of instate markets for low end material have been major reasons why Alaska's interior forest lands have not been developed.

* Today State forest lands available for forest management and timber development have been reduced to an area of approximately 3 million acres. The balance of the commercial forest lands has been disposed of for private ownership, public municipal expansion, set aside for parks, game habitat or other recreational purposes.

* It has long been recognized that management of virgin forest lands requires large investments in the form of planning and inventory efforts. In addition are capital improvements relating to the development of a transportation network and costs associated with reforestation once a timber stand is harvested. Investments in forest lands have resulted in positive returns in the form of stumpage payments, development of multi-purpose access roads, improved recreation access opportunities, wildlife habitat improvement, and most important, provided significant local employment, payrolls and long term community economic stability.

* Investments for the management of State forest lands can originate from two sources. Either the State or the purchaser of the timber resource. It is apparent that our State economy has been such where only little investments have been made towards long term forest management on State lands. This lack of investment in State forest lands has resulted in an area of over 15,000 acres that have been harvested or burned by wildfire that lack forest growth and require reforestation attention. In addition, over mature timber stands have reversed growth trends, resulting in annual incremental losses.

* The introduction of forest management agreements, such as is used in Canada, may be the answer to encouraging the needed investments to be made on remote State lands. These agreements (concessions, or stewardship contracts) whereby private industry undertakes forest management practices, such as timber harvest, road construction and reforestation on State lands. All the included agreement terms and conditions are subject to State and federal laws with State administration of the agreement documents.

* Expenses incurred by the private industry in performing what are basically State responsibilities, such as road construction and regeneration are either reimbursable or treated by the State as another form of revenue. Most important, the State is relieved of the necessity of providing upfront funding needed to manage our forest resource.

* Besides the need for access roads to reach available State commercial forest lands, there is a need to develop end product values that would bring back greater returns than products that are presently being manufactured in our interior.

* Recent new technology has been introduced that will allow the utilization of low value and small diameter tree species so common in our state's interior. Conversion to high value products such as veneer, laminated lumber, and flute material from presently unutilized forest will require relatively large investments for a plant possessing the latest wood conversion technology.

* The State will of necessity have to provide some form of incentives in order to encourage private enterprise to make the necessary investments to introduce this new technology to Alaska.

* Incentives to the private sector that would encourage their investments in plant facilities would include the assurance of a long term timber base that would allow amortization for the recovery of any investments.

* Incentives in the form of purchaser credits where a purchaser would have stumpage payments reduced in exchange for constructing capital improvements for the benefit or the state.

* Opportunities for the purchaser to have the agreement period extended in return for timber betterment work or for added private investments that would result in additional state benefit.

* Extending the purchases sale area through negotiations for added employment opportunities in harvest of submarginal areas through introduction of new technology.

* The State of Alaska can form a partnership with the private sector in growing the best forests and doing it with maximum efficiency. This objective c n be met without any degradation of the envir ment. The concept of forest management agreements ap ars to provide that opportunity.

A Message from the
The Honourable Vincent G. Kerrio
Minister of Natural Resources

You've probably heard a lot about Forest Management Agreements lately – the new way of managing Ontario's forest estate which makes industry responsible for regenerating the areas they harvest.

You've probably heard how a recent five-year review of these agreements indicates that they are working.

Fully 63 per cent of all harvested lands can be rightfully classified as regenerated by forest companies – an increase of 12 per cent over the amount regenerated by the ministry in the five years before the inception of FMAs. The remaining 37 per cent, which is growing back naturally, will be assessed when the trees are big enough to survey properly.

Perhaps you also read the news that the amount of timber management activity has doubled since the companies became involved. On FMA lands, regeneration has increased 43 per cent, tending by 285 per cent and site preparation by 30 per cent.

Then there was the news about how the companies successfully fulfilled all their other FMA obligations.

But here's something you may not have heard – one of the reasons why this is happening.

It's really quite simple. Under the FMA program, Ontario has harnessed the skills of some very tough-minded, competitive business people in the forest industry.

They are specialists in innovation, cost cutting, operations streamlining and getting projects moving. They live by those skills, because the marketplace can be an unforgiving world – and good business managers love that challenge.

Ontario has a forestry partnership that unites ministry people and industry people who both care about growing the best forests, and doing it with maximum efficiency.

We think that's good for Ontario's forest estate, its future and the hundreds of businesses that depend directly and indirectly on forests.

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Mary Mogford
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Ontario

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Mary Mogford
Deputy Minister

SEP 22 '87 15:27

FOREST MANAGEMENT REPORT

AND

PRELIMINARY DECISION

FOR THE

SUSITNA VALLEY/TYONEK

SALE

SC1306M

September 23, 1987

Prepared by:
Bill Beebe
Area Forester

INTRODUCTION:

The purpose of this report is to describe the specific conditions concerning the proposed Susitna Valley/Tyonek Sale, and to make the preliminary decision as to whether or not to offer this sale. A timber sale team consisting of Bill Latocha from the South Central Region, Jim Peterson from the Kenai Area Office, Jim Page and Bill Beebe (team leader) from the Anchorage/Mat-Su Area Office has been assigned to this proposed sale. The identification numbers assigned to this proposed activity are as follows:

Sale Number - SC-1306M
ADL Number - 223812

This proposed sale includes approximately 200.0 million cubic feet of timber presently standing on about 215.0 thousand acres.

OFFICE RECON AND PREPARATION

SECTION I. LOCATION

This proposed sale is located in two units, one containing one block near Tyonek and the other containing five blocks in the Susitna Valley. The unit and block names are as follows:

Susitna Valley	Tyonek
Susitna-Alexander	Tyonek II
Kahiltna River	
Kashwitna	
Peters Creek	
Fish Creek	

1. Legal Description - The legal description for these blocks are included in Attachment #1.

2. Nearest Community and Direction - The Susitna Valley unit lies generally west and northwest of Wasilla. The Fish Creek block, approximately 24 air miles west of Wasilla, is closest, while the Peters Creek unit located about 40 air miles northwest, is furtherest from Wasilla. The community of Willow has blocks located to the south, east, west and northwest. The closest block to Willow is the Delta Islands, a portion of the Susitna-Alexander block which is located about 6 miles west of Willow.

   The Tyonek unit is located approximately 38 miles west of Anchorage, just north of Tyonek. The entire unit boundary lies between the Beluga River (to the north) and the Chulitna River (to the south). Tyonek is about 4 miles southeast of the nearest portion of this unit.

3. Adjacent Lardowners - Landowners with lands either adjacent to or within holdings in this sale are:

   a. The Matanuska-Susitna Borough

   b. University of Alaska

   c. Cook Inlet Region, Inc.

   d. Kenai Peninsula Borough

   e. Tyonek Native Corporation

   f. The Mental Health Trust

In addition to these major landowners, several smaller privately owned tracts are either adjacent to or are completely surrounded by this proposed sale.

SECTION II. TITLE AND CLASSIFICATION

1. Title Status - All lands involved in this proposed sale are either General State Lands or are Mental Health Trust Lands. All lands located in the Tyonek unit are Mental Health Trust Lands while the lands in the Susitna Valley unit are General State Lands.

2. Land Classification - The Tyonek unit is classified Resource Management. The lands in the Susitna Valley unit are classified Forestry, Resource Management, Wildlife Habitat, Public Recreation, Private Recreation and Agriculture.

3. Restrictions on Timber Harvest - There are no known restrictions within the planned cutting units other than those imposed by good silvicultural prescriptions and the guidelines on buffers contained within the Susitna Area Plan.

SECTION III. LAND MANAGEMENT PLAN/COOPERATIVE AGREEMENT

1. Land Management Plan Use Designated for Sale Area - Most of the proposed sale is located on lands covered by the Susitna Area Plan and is designated for Forestry, Wildlife Habitat, Resource Management, Recreation and Agriculture or a combination of these uses. The remaining area is located within the Willow Sub-Basin Planning area and is designated Forestry and Wildlife Habitat or a combination of these uses.

2. Restrictions or Conditions on Harvest by Designated Land Use - The Fish Creek block is covered by the Fish Creek Plan. This plan was recently amended by both the State and the Borough to allow harvesting of the wood separately from the sale of the agriculture rights. No other restrictions or conditions except buffering requirements contained in both the Susitna Area Plan and the Willow Sub-Basin Plan are known.

SECTION IV. LEGAL ACCESS

1. Proposed Access to Timber Sale - Proposed access to and within the timber sale are on valid existing rights-of-way and section line easements. There are two proposed undeveloped transfer sites for the Tyonek block. These are the Granite Point site, south of the unit and the Ladd Landing site, east of the unit. Use of either of these sites will require development by the operator and may require right-of-way applications.

   Proposed access to the Susitna Valley unit will utilize the Chulitna/Goose Bay Road, Oilwell Road, Fish Creek access and the Kashwitna/Willow Creek bridge. Transportation of raw material and of equipment to and from the Tyonek unit and the Susitna Valley unit may occur over the Chulitna/Goose Bay Road or over the ice road along the gas pipeline.

2. Rights-of-Way Easement Needed - A mainline through the Kashwitna block will be needed by 1989 while at least one possibly two mainlines will be needed through the Kahiltna River block by 1990 or 1991. The Mat-Su Area Office of the Division of Land and Water has already been contacted about these proposals. All of these proposed mainlines will tie into existing valid rights-of-way.

FIELD RECON AND SALE DESIGN

SECTION I. IMPACTS AND EFFECTS

1. Wildlife Habitat - Wildlife habitat, especially moose habitat, would be enhanced by this sale. In the Susitna Valley unit, small clear cuts, not exceeding 160 acres, each designed using the Matanuska Valley Moose Range Specifications concerning buffers, meanders and maximum widths, would create ideal moose habitat as well as habitat for other animals and plants that utilize forest edges and/or new growth. Bear and forest dwelling birds would benefit from the increased populations of moose and insects resulting after the young forests are established in the clear cuts. The buffers surrounding the clearings would provide adequate cover for moose and bear as well as for other species requiring such cover. Forest dwelling birds would also find adequate nesting sites in these buffers. Strip clear cuts in the Tyonek unit would also provide significantly increased browse for moose while ensuring adequate cover by buffering. The significant bear populations would be protected by these buffers, as well as by the increasing moose herd. Numerous eagles frequent the rivers near both units especially the Chulitna and Beluga River during the summer. However, these rivers will be well buffered from the logging operations and each nest tree will be protected by the Forest Resources and Practices Act requirements.

2. Fisheries Habitats/Water Resources - Sale layout, buffers and road construction would be designed to meet the requirements of the Forest Practices Act. No Adverse impacts to either the fisheries habitat or the water resources will occur as a result of activities connected to this sale.

3. Soils - Most of the logging will occur in winter when soils are frozen. Summer logging units will be carefully designed and selected to prevent both excessive compaction and erosion. Scarification will occur either as a product of logging or as a special project. This is necessary to induce regeneration. However, scarification will be designed to preclude erosion. Water bars and diversion ditches will be used as necessary. Some benefit to soils will result from introduction of organic materials through deterioration of slash and chipping piles and by mixing during scarification. Soil profiles will not be impacted which makes the sale amenable to future agricultural site developments.

4. Recreation: Both consumptive and non-consumptive recreational uses will be enhanced by this sale. Access constructed during harvesting operations will provide additional access for hunters, fishermen, hikers, campers, berry pickers and cross country skiers as well as horse riders, snowmachines and other off road vehicle users. The cutting units well be used by hunters and berry pickers for several years. They will also result in excellent places for photography, especially wildlife and wild flower pictures.

5. Visual Impact: The variety of colors created in the landscape from the new vegetation resulting in the clearings will create a pleasing view from both the ground and the air. View sheds will be enhanced for hikers, campers and other recreation users as a result of the clearings. There will be a period immediately after logging and prior to vegetative regeneration which will last for four to six weeks which some persons may consider as a negative usual impact. This will be a very short transition which will be eliminated by vegetative regeneration. Well designed cutting units will appear as natural openings when viewed from the air after regeneration.

SECTION II. SILVICULTURAL PRESCRIPTION

1. Type of Harvest System - Harvesting will be accomplished primarily by clear cutting, however other methods including shelterbelts, seed tree harvest, single tree selection and group selection may be used where necessary to ensure adequate regeneration. Clear cutting in the Susitna Valley unit will typically be patch clear cuts not exceeding 160 acres in size. They will be designed along the guidelines found in the Matanuska Valley Moose Range Plan to ensure utilization of regeneration by moose.

   Clear cutting in the Tyonek unit will be strip cutting using strips approximately 300 feet wide. This is necessary to ensure spruce regeneration. Strips will meander and will typically not exceed 160 acres in size. Buffers between strips will be wide enough to ensure wind firmness an adequate seed source as well as a wildlife migration corridor.

2. Type of Cutting Scheme - Typically clear cuts of up to 160 acres in size with a minimum buffer of 100 feet between all units. A typical year would result in about 3000 acres harvested. Single tree selection may be allowed in the buffers if visual integrity is not compromised. Operator will provide an annual operating plan and lay out all units after approval of plan.

   Approval of unit layout will precede actual harvest.

3. Silvicultural Intent - All cutting in the Tyonek unit will be designed to regenerate principally white spruce. Some regeneration of hardwoods is also anticipated.

   Cutting in the Susitna Valley will be designed to regenerate a mixed forest of birch, white spruce, aspen and cottonwood. Principal species will be determined by on site evaluations prior to harvesting.

4. Regeneration - Regeneration will generally be accomplished naturally. Scarification by the operator will be required as necessary. Planting will be required when natural regeneration fails. Planting of lodgepole and/or Scotts pine may be authorized in some locations.

5. Cost of Artificial Regeneration - Estimated cost of any artificial regeneration requires is as follows:

   Scarification - $75.00 - $100.00/acre

   Seedlings at $60.00/acre - $152.00/acre

   Labor for planting - $150.00/acre

   Total cost - $377.00 - $402.00 per acre

SECTION IV. ECONOMIC ANALYSIS/SUPPLY AND DEMAND

1. Benefit/Cost - The estimated stumpage which would be a direct payment to the State is about 90.0 thousand dollars annually for the duration of the contract. It is estimated to cost approximately $20,000 to prepare this sale and about $30,000 annually to administer it. The benefit/cost ratio for the State is about 2.87:1

   The economic analysis of Forestry for the Susitna Area Plan indicates that the the total economic benefit from a sale such as this may reach $2.83 million per year with from 31-64 people employed. It should be understood that the Susitna Area Plan - Forestry Element only analyzed fuelwood and sawtimber harvest. Harvesting biomass is likely to cause the cost/benefit ratio to improve due to better utilization.

2. Supply and Demand - The current demand for timber within the Anchorage/Mat-Su Area is about 4.0 million board feet a year for all species and products produced by the Alaskan Forest. The demand for products produced Outside, plus lumber, plywood and particle board, is considerably higher. Several parties have contacted the Division of Forestry requesting a sale such as proposed here. Anticipated markets are the local market for energy, plywood, of kiln dried lumber, as well as the export markets, being counted by the State at this time. Major investments in new milling facilities will not occur unless a dependable supply of wood is obtained. This sale should provide the raw material for a variety of operations. Dr. Marty Welborn, in the Susitna Area Plan - Forestry Element, estimated the annual yield for all State and Borough lands available for harvesting in the area covered by the Susitna Area Plan as about 93.0 million board feet (approximately 17.145 million cubic feet/year).

The Borough owns about 20% of the lands, assuming relatively even distribution. The annual harvest from State lands would be about 74.4 million board feet at approximately 13.716 million cubic feet per year. The Susitna Area Plan - Forestry Element does not include the wood in the Kashwitna block nor the wood in those portions of the Susitna-Alexander block known as the Susitna Corridor and the Delta Islands. Considering these areas, the yield could be as high as about 14.0 million cubic feet per year without violating the sustained yield method of forest management. Considering the existing harvest of about 4.0 million board feet (1.00 million cubic feet) the harvest for this sale should be held to no more than 13.0 million cubic feet per year of commercial timber. Utilization of tops and saplings will be encouraged, therefore, actual total volume removed could be as high as 28.18 million cubic feet per year without violating allowable harvest limits. Expansion of the existing operations will be encourage from efforts on Matanuska-Susitna Borough Forest lands, as well as privately owned lands.

SECTION III. TRANSPORTATION

1. Proposed Access in Relation to Ground Conditions - Although mainline access will be tentatively identified on the maps, actual location may vary somewhat due to ground conditions and multiple use requirements. Mainlines well be located primarily on the ridges to insure good bases, with grades being kept at or below 6%. All low water crossings of anadromous streams, for heavy equipment, will meet Title 16 Permit stipulations. Culverts and bridges will be used as necessary.

Winter roads will be located to maximize efficiency, while protecting areas of warm springs or other places in which the ice may not hold the average loads. Snow berms will be broken to allow recreational use, snow machine and dog teams, while logging is in progress, when it poses no safety hazard. These breaks will also allow egress and ingress areas for moose.

SEP 22 '87 15:35

MATANUSKA-SUSITNA BOROUGH

COASTAL ZONE MANAGEMNET PLAN

PRELIMINARY CONSISTENCY REPORT

Pursuant to Paragraph 1, page 7-7 of the Matanuska-Susitna Borough Coastal Zone Management Plan, and considering Chapter 5 of that plan and 6 AAC 80.100 of the Alaska Administrative Codes, I find that the proposed action; the Susitna Valley/Tyonek Sale, SC-1306M:

[ ] is consistent with the State of Alaska and the Matanuska-Susitna Borough Coastal Zone Plans.

[ ] is not consistent with the State of Alaska and the Matanuska-Susitna Borough Coastal Zone Plans.

_____ _____

Area Forester Date

PRELIMINARY DECISION

[ ] I find that the proposed action is not in the public interest and is hereby rejected because _____

_____

_____

[ ] I find that the proposed action is in the public interest and is hereby approved to proceed.

_____ _____

Area Forester Date

LOCATION

1. LEGAL DESCRIPTION:

SUSITNA VALLEY UNIT, LEGAL LOCATION BY BLOCK

SUSITNA-ALEXANDER BLOCK

QUADS: TYONEK B-1, B-2, C-1, C-2, D-2 S.M.

T15N R7W	Sec 4,5 Between Susitna R, Alexander Cr
	Sec 6 E of Alexander Cr
T16N R5W	Sec 6-8, 18, 19, 30, 31
T16N R6W	Sec 1-36
T16N R7W	Sec 9, 15, 23, 27 E of Susitna R
	Sec 8, 16, 17, 21, 28 W of Susitna R
	Sec 6, 7, 18, 19, 30, 31 E of Alexander Cr
	Sec 1-5, 10-14, 20, 24-26, 29, 32-36
T17N R5W	Sec 7, 8, 17-20, 29-32
T17N R6W	Sec 4, 7, 8, 18 E of Susitna R
	Sec 1-3, 9-17, 19-36
T17N R7W	Sec 2, 11 W of Yentna R
	Sec 19, 30, 31 E of Alexander Cr
	Sec 3-10, 15-18, 20-29, 32-36
T17N R8W	Sec 1, 12, 13 E of Alexander Cr
T18N R5W	Sec 5-8
T18N R6W	Sec 11, 14, 15 E of Susitna R
	Sec 1, 12, 13, 22-27, 34-36
T18N R7W	Sec 7, 18, 20, 28, 34 W of Yentna R
	Sec 19, 29-33
T18N R8W	Sec 15, 23, 26, 35 E of Alexander Cr
	Sec 1-3, 10-14, 24, 25, 36
T19N R5W	Sec 3, 4, 16 W of Susitna R
	Sec 19 E of Susitna R
	Sec 5-8, 17, 18, 20-22, 27-34
T19N R6W	Sec 12, 13, 24, 25, 36 E of Susitna R
	Sec 1
T21N R4W	Sec 6, 7 W of Susitna R
T21N R5W	Sec 12, 13, 24, 25, 36 W of Susitna R
	Sec 1-3, 10, 11, 14, 15, 22, 23, 26, 27, 33-35
T22N R4W	Sec 30, 31 W of Susitna R
T22N R5W	Sec 24 W of Susitna R
	Sec 22, 23, 25-27, 34-36
T20N R5W	Sec 2, 11, 14, 22, 27, 34 W of Susitna R
	Sec 4, 7-10, 15-21, 28-33
T20N R6W	Sec 24, 25, 36

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SUSITNA VALLEY UNIT, LEGAL LOCATION BY BLOCK

KASHWITNA BLOCK

QUADS: ANC D-7; TKA MTS A-5, A-6 S.M.

T20N R3W	Sec 3-6, 7-10, 15-18, 19-22
T21N R3W	Sec 2-10, 15-22, 27-34
T22N R1E	Sec 6, 7
T22N R1W	Sec 1-12
T22N R2W	Sec 1-12, 18
T22N R3W	Sec 1-22, 27-36
T23N R1E	Sec 31
T23N R1W	Sec 31-36
T23N R2W	Sec 19-36
T23N R3W	Sec 1-36

SUSITNA VALLEY UNIT, LEGAL LOCATION BY BLOCK

PETERS CR BLOCK

QUADS: TALKEETNA A-2, B-2 S.M.

T24N R7W	Sec 6, 7, 17, 18	W of Kroto Cr
	Sec 19, 20, 29-32	
T24N R8W	Sec 1-16, 18, 24, 23, 36	
T24N R9W	Sec 2, 3, 11, 14	E of Kahiltna R
	Sec 1, 12, 13	
T25N R7W	Sec 31	W of Kroto Cr
T25N R8W	Sec 1-36	
T25N R9W	Sec 1, 2, 11-13, 24, 25, 36	
T26N R8W	Sec 3, 10, 14, 15, 22, 23	W of Peters Cr
	Sec 4-9, 16-21, 24-36	
T27N R8W	Sec 8, 9, 16-21, 28-30, 32, 33	

LOCATION

1. LEGAL DESCRIPTION:

TYONEK UNIT

T13N, R10W, S.M. That portion of township south of Beluga River in Sections 7-9, 16-21, 28-33.

T13N, R11W, S.M. That portion of township south of Beluga River in Sections 4-10, 14-36, excluding USS 3964.

T13N, R12W, S.M Sections 32-36.

T12N, R12W, S.M. That portion of township north of Chuitna River in Sections 1-15, 23, and 24.

T12N, R11W, S.M. That portion of township north of Chuitna River in Sections 3-10, 15-22, 27-29, excluding USS 4547.

STATE OF ALASKA

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

DIVISION OF BUSINESS DEVELOPMENT

STEVE COWPER, GOVERNOR

P.O. BOX EE
JUNEAU, ALASKA 99811-0800
PHONE: (907) 465-2017

December 31, 1987

Mr. Jesse B. Nichols
Wood Dynamics Corp.
P.O. Box 473
Woodstock, VT 05091

Copy

Dear Mr. Nichols:

On my recent return to my desk in the Juneau office of the Division of Business Development, I was both surprised and sorry to read your letter of December 22 to the Matanuska-Susitna Borough in which you advised them of your decision not to follow through with your intended initial fact-gathering trip to Alaska. I was also surprised and disappointed when I read further into your letter and encountered such strong negative statements and expressions of opinion on several major Alaskan issues.

During the course of our letter and telephone exchange dating back over a six-month period, I tried to make sure you were aware of the limited status of the current "forest products industry" in the railbelt area of Alaska. At the same time, I explained to you that the timber information base and the development resources of the State of Alaska were both limited due to historical circumstance and political decision made the past few years. I stated in my October 16 letter to you (copy enclosed):

> "I trust you will understand that this office wants to do all we can to assist and encourage potential investors and processors such as you represent. Our current problem is a vast natural resource spread over millions of acres, inadequate inventory information, new landowners and managers, sophisticated markets and competitors and very limited development resources available."

Despite our shortage of time and money, this office made a preliminary decision in mid-December that we would exercise a special effort and make my time available to meet with you and travel and assist you the second week in January in reviewing the potential timber resource and development potential in the Kenai, Mat-Su and Fairbanks regions. Our final decision on my participation and direct assistance to you and your

project concept in this proposed fact-gathering trip was neld in abeyance, waiting to receive from you the base line information about your development plan and your business credential references, as requested in my October 16 letter. As of today, we have not received your response to our request for the development plan information or your business references.

In our earlier correspondence, your conversation and comments regarding wood supply had led me to believe that your experience and expertise in the forest products industry were such that you could recognize the variables and difficulties in analyzing production cost and perceived market potential in the forest products industry. Professional developers recognize that, where little or no industry exists, the potential investor has no accurate economic benchmarks from actual local experience. As a result, the application of economic analysis is difficult, takes more time and is more expensive. A basic business principle is that the first developer to move into a new region or produce a new product expends extra time on research and development and takes the greatest risk. Later, if all goes well, that "first into the fray" business expects to reap the greatest profit. Preliminary investigation is normally carried out by the entrepreneur himself, usually in secret. A mandatory part of that investigation is, or at least should be, a personal on-site review of the standing timber supply, labor supply, utility and transportation costs and a few other basics. In addition, all potential market opportunities are normally investigated in the preliminary phase, and, again, in the later full feasibility study phase of the project.

Your procedure has been to review some of the written material mailed to you on the timber supply, which we advised you was not very extensive, and then you made inquiries by telephone. Based on that "research," you first made an announcement that you are going ahead and develop final plans for a new wood processing facility, and then a few short weeks later, without visiting Alaska or conducting any in-depth research, you announce that you are cancelling your planned new plant. All of this you did from Vermont.

I find it difficult to believe that a professional forest products industry person could express a rational business opinion on the potential of the development of the timber resources of a large undeveloped timbered region without the benefit of at least one on-site review of the timber. I recognize that you have visited Alaska, but, as you stated on the telephone, you have not visited commercial timber stands or visited Alaska with a business purpose.

In essence, Mr. Nichols, I am suggesting that your announcement on October 28, 1987 of your proposed new wood processing facility in Alaska and now your cancelling of that proposed new facility 55 days later were

both a bit premature. Your investigation was thin and your facts were sparse and manipulated on a desk 4,500 miles from the resource and 7,000 miles from several of the major potential markets. After 23 years in private development activity and three years as a public development person, I respectfully suggest many professional development people would describe your development style as strong on promotion and short in the qualities of proper procedure and prudence. Your actions would also lead one to suspect that you and/or your associates have a hidden agenda and goals that may not be consistent with your publicly stated purpose.

The need for your first business trip to Alaska is even more evident when I read in your letter of December 22 your comments of "locked up" and "take a financial blood bath" and "hope of creating jobs" in reference to your opposition to a substantial state acreage timber sale that is in the planning stage in the Mat-Su region. This proposed sale is in the planning stage and informed public comments are welcomed. The emotional flavor and totally negative comments in your letter reflect the inadequate and incorrect information base from you, sitting in Woodstock, Vermont, have elected to pontificate your opinions to the citizens of the State of Alaska.

Alaskan citizens are confronted on a day-to-day basis with a real need to diversify our economy and generate new and permanent year-round employment. Our tax base and government revenues, other than our rapidly depleting oil revenues, are thin and our economy much too dependent on government controlled expenditures. The vast majority of the people that commit to living and making a living in Alaska believe we deserve the right to use a reasonable portion of our land for the production of natural resources including the renewable timber resource. We have extensive federal, state and local laws and procedures that assure us we can use that land and that it will be used wisely. The constant interjection of poorly informed non-Alaskan experts' opinions, however well-intended, add difficulty and confusion to our decision burden. We, here in Alaska, frequently receive unsolicited advice and directives from Washington, D.C. and other east coast "experts," so I guess it is not to be unexpected that we occasionally receive some from Woodstock, Vermont.

Mr. Nichols, I understand that the accurate information you require to help substantiate the forest products industry opportunities in Alaska is not available in reliable reports, inventory and other printed formats. This shortcoming can be offset somewhat by personal exposure and in-depth private analysis and applied market expertise. I believe that several of your assumptions in your last letter are incorrect due, I suspect, to your inadequate information base. However, I agree with you that the infrastructure in the railbelt area of Alaska is inadequate and that development of a viable and permanent forest products industry in the railbelt will take several years and we will want to avoid being dominated by one large operator. At the same time, we need one or more users of the lower quality timber in the area before the industry can move into a reasonable-sized industry supporting, hopefully, several small or medium-sized businesses, such as the one you proposed.

Users of low grade timber must be large enough to utilize the benefits of economy of scale in harvesting and processing the low grade logs. This requires substantial investment capital which, in turn, requires a sufficient supply of timber to amortize that investment. A man with your apparent experience in the business on the east coast certainly recognizes this basic fact. Indeed, we discussed that same principle on the phone when we were reviewing the prospects of your investing in Alaska.

All of this office's preliminary review of the proposed sale of state timber in the Mat-Su region indicates that your fear of economic and/or environmental disaster is not well founded. The volume that the state is considering selling in that sale represents about 25% of the total volume of commercial forest in that region. May I suggest you take the time to personally review the area and the issues in greater depth, then submit to the Alaska State Division of Forestry your specific recommendations on how you believe the state timber should be offered in order to cause the orderly development of the forest products industry.

I find it necessary to add at this point that your comments in the December 22 letter regarding the Tongass National Forest are also, in my considered opinion, not correct. Your comments reflect a complete lack of knowledge of that industry, the history and the status of the land that is being harvested and the significant contribution of the forest products industry (about 30% of the Southeast Alaska economy) to the life style and livelihood of 10,000 women, men and children in Southeast Alaska. With the exception of government, this industry provides the only year-round employment for that region of Alaska. That may not be important to you in Vermont but it is very important to all the people of Alaska.

Mr. Nichols, over 50% of the land in Alaska has been set aside by federal, state and local government as wilderness, game refuges and other land reserves. In these extensive areas, many times the size of your home state, environmental considerations are given the highest priority. We also protect, with stringent environmental law, the remaining portion; however, Alaskans do require some of the remaining land on which to reside, harvest resources and provide improved opportunities to make a living by future generations. I trust you folks who live in Vermont will eventually rise up to our Alaskan standards for dedicating land and conserving the environment for our future citizens' benefit and use.

I hope you will accept this letter as a positive constructive response to your recent letter announcing the cancelling of your proposed processing facility in Alaska. I, perhaps better than most, can understand your frustration in trying to locate a handle on how you might go about accomplishing the development you have in your mind. Alaska, the past several years, has not been organized and receptive to any type of natural resource development, with the noticeable and successful exception of the fishing industry. We are now beginning to feel the economic

pinch for that short-sighted policy. A policy generated and supported by a complacent constituency. We have begun to see some change in direction and adjustment in our dealing with development, but we still have a long, long way to go!

This office is prepared to be of further assistance to you if we can as you venture forth into the Alaska forest products industry. I must, of necessity, state once again that our staff resources and project funding are very limited and we still would like to receive your credential references for our use and files.

Sincerely,

F. A. Seymour
Senior Marketing Specialist

FAS/dg10567D
123187a
Enclosures: October 16 Letter from F. A. Seymour
December 22 Letter from Jesse Nichols

cc: John Galea, State Forester
Becky Gay, RDC
Larry Merculieff, Director, DBD
D. L. Finney, ALA
Mat-Su Borough, c/o Ric Davidge
Thyes Shaub, Project Manager, DBD
Terry Brady, Forestry Consultant
Tony Gasbarro, University of Alaska - Fairbanks
John Williams, Deputy Commissioner, DCED
Kelley Hegarty, Assistant Commissioner, DCED
Joe Henri, Southcentral Timber
Al Pagh, Four-Star Lumber

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

DIVISION OF BUSINESS DEVELOPMENT

P.O. BOX EE
JUNEAU, ALASKA 99811-0800
PHONE: (907) 465-2017

COPY

DATE: October 16, 1987

TO: Jesse B. Nichols, President
Wood Dynamics Corp.

FROM: Frank A. Seymour
Senior Marketing Specialist
Division of Business Development

SUBJECT: Your Interest in Establishing a Wood Processing Facility in Alaska

Your correspondence of September 30 and prior material we have received are very interesting and I have discussed your communications with some of my superiors in the department. As I explained to you on the telephone, we have very limited resources at this time that can be made available for specific and direct assistance to individual firms. However, because the concepts and scope of your potential activity appear to fit into our general development goals so well and because your firm appears to offer the production and marketing expertise that we need so desperately in Alaska, it has been suggested by my supervisor that I should investigate further your interest and intentions. If after reviewing additional information from you that I am requesting in this communication, I will be better informed to make recommendations to my superiors regarding how much direct effort this division can and/or should expend of our limited staff resource to assist you in your preliminary investigation activity.

To assist this office in determining what your highest and best options might be and how we may be of assistance to your effort, I request you please provide the following information on a proposed wood processing facility that you believe might be successfully located in the rail belt area of southcentral/interior Alaska. You do not need to go into a great deal of detail. What we are interested in is trying to understand the general scope and basic requirement of a project, such as you and I have discussed on the telephone. Naturally, basic background information about the prime movers of such a project will also be helpful as this office considers the amount of time and effort we can provide at this point in time.

To the best of your ability and as your time and information base will permit, briefly respond to as many of the following questions as you can:

1. What is the required annual volume of log supply (in Scribner long log scale if possible)? Give initial minimum annual volume requirement and potential annual volume desired with a later facility expansion. How many years of committed wood supply are necessary to justify the investment?

2. What timber species are preferred or required? What species can be used?

3. What are the log supply specifications? Please indicate preferred log and wood fiber characteristics.

4. Describe the primary basic wood processing activity and related equipment that are involved (such as debarking, heating, sawing, peeling, slicing, chipping, drying, pressing, stamping and/or other).

5. What is the basic product or products produced?

6. Is there any significant or potential by-product?

7. What wood waste and other processing residue remain to be disposed of after your product processing is completed? Do you have a suggested or proposed use or disposal technique for any product residue, including bark and waste wood fiber?

8. How much land will be required for an initial and for an expanded processing facility including all buildings, parking, supply yards, inventory storage and related activity? How much heated building space is required for processing and for administration use?

9. What is the projected utility requirement?

   - o Fresh Water
   - o Electrical Power
   - o Sewer
   - o Telephone
   - o Oil, natural gas and/or coal

10. What is the essential annual volume by gross weight of the product to be shipped to market? Is rail and/or highway transportation of the product possible?

11. What is the anticipated number of full-time employees that will be employed in the processing facility including management and marketing positions? What is the estimated annual payroll? Do you anticipate in normal operations working more than one shift per day?

12. Excluding the cost of land, buildings and acquiring control of the required timber supply, what is the anticipated investment capital necessary for this project? Does your corporation intend to invest or provide from non-Alaska sources all or a portion of the equity investment necessary for this project?

13. What is the general geographic area(s) of your intended market?

14. Please provide three or more business references (address and telephone number), including a financial institution with which your firm is currently doing business.

I trust you will understand that this office wants to do all we can to assist and encourage potential investors and processors such as you represent. Our current problem is a vast natural resource spread over millions of acres, inadequate inventory information, new land owners and managers, sophisticated markets and competitors and very limited development resources available.

Most of the week of October 18, I will be traveling. I should be able to review your response to this inquiry as early as the first of the following week, and then get back to you on the subject before the end of the month. I feel confident we will be able to offer additional assistance but just how much and when will require a little more evaluation of how our priorities should be lined up.

FAS/dg10024D
101687a

WOOD DYNAMICS

Wood Dynamics Corporation
P.O. Box 473 • 5 The Green
Woodstock, Vermont 05091
802/457-3970

COPY

December 22, 1987

Matanuska-Susitna Borough
P.O. Box 1608
Palmer, Alaska 99645

Attn: Ric Davidge
Director, Development Services

Re: **Wood Products Project**

Dear Ric,

After considerable research, investigation and economic review, we have decided to cancel our plans for a hardwood products plant in the interior.

We have concluded that the necessary infrastructure needed for a plant of the type we have in mind does not yet exist and may not for several more years. In our opinion, large scale timber using operations in the Matsu Valley are neither practical or feasible at this time.

Our decision to withdraw is based on the fact that no logging or timber supply infrastructure now exists that could supply our proposed plant the 4 to 6 million board feet of logs we would require on an annual basis. Our research indicates it would be almost impossible to secure even 1 million board feet annually of the type of birch logs we require.

Until the port at Point MacKenzie has actually been built and is in operation, we do not see how our company or any other large scale forest products enterprise can operate a viable business in the Matsu Valley.

While it is essential that adequate timber supplies be made available to forest products producers considering locating in the Matsu Borough, we must go on record as being opposed to the proposed Tyonek/Susitna Valley Timber Sale in it's current structure.

We believe that this state timber sale is neither economically or environmentally sound, nor in the best interests of the state, the people in the Matsu Valley, or forest products companies considering locating in this region.

There never has been large scale timber harvesting in the interior. Removing between 600 and 800 million board feet of timber from the region under consideration could have disastrous environmental, ecological and economic consequences.

The immense size of this sale borders on lunacy. There is no need or justification for selling such a gigantic volume of timber at one time, especially when there presently is no market for such a vast quantity of wood.

Also the idea of selling such an incredibly large volume of wood to a single buyer who would have 20 years to harvest it reflects a total lack of judgement and business experience on the part of the state officials and bureaucrats who authorized this sale.

In this present scenerio the total state timber resource in the Matsu Valley can be "locked up" by a single bidder. The smaller local loggers and mills are completely squeezed out of the bidding process by the magnitude and financial requirements of this huge sale. Wood products companies, wanting to locate in the Valley, would have to think twice since almost the total log supply would be in the hands of a single contractor who controlled the resource and therefore could "call all the shots".

Plain and simple, this is not good business and creates an environment more likely to discourage rather than encourage industrial development and new business.

From what I read in the papers and hear, the state plans to take a financial blood bath on this sale in the hope of "creating jobs". Relinquishing control and management of this 20 year sale to the successful bidder, is, in my opinion, a reckless and irresponsible decision that the state (and the Matsu Borough) is sure to regret at a later date.

It is my hope that the state will cancel the proposed Tyonek/Susitna Valley Timber Sale in it's present form and instead offer a comprehensive program of smaller sales on a regularly scheduled basis over the next 10 years. This, in my judgement, would be a more practical, effective, and acceptable way to utilize the important and valuable timber resource of the Matsu Borough, both immediate and long term.

A conservative approach, especially in a land like Alaska has a greater chance for success than grandiose, untested large scale schemes that inherently carry a far greater risk. Anyone questioning this logic as it applies to forest products need look no further than southeast Alaska where the once magnificent Tongass National Forest, a national treasure, is being plundered and systematically destroyed by political edict and at taxpayer expense with little benefit to the local economy.

While we are cancelling our plans for a manufacturing plant, Wood Dynamics plans to become increasingly active in the marketing of wood products produced at existing mills in the Anchorage area, the Matsu Borough and the Fairbanks-North Star Borough. This program is now underway and trial shipments have been made in the past 30 days.

We appreciate the fine cooperation we have received from your office along with the support and interest that we have received from many others in the Matsu Borough. We wish you the best, especially in the development of the port at Point MacKenzie. This is a key element in attracting industry and maintaining a stable and growing economy in the Valley.

Because of our decision, I will not be coming up to Palmer and Wasilla in January, but expect to be visiting the area later in the year. Look forward to seeing you at that time.

Sincerely,

Jesse B. Nichols

Second thoughts on timber

Officials to rewrite Su Valley lease plan

By DAVID HULEN
Daily News reporter

State forestry officials, bombarded with complaints about their plan to open forests in the Susitna River Valley to large-scale timber harvesting, said Friday that they've decided to "take a fresh look" and rewrite the proposal in an attempt to satisfy critics.

The new plan will likely include a more detailed explanation of where cutting would be allowed, with an effort to stay away from rivers and streams, officials said.

But the officials stressed that they have no intention of dropping the idea of opening large blocks of land in the valley to a long-term timber lease, and said they were still hopeful it could be put up for bid sometime this spring.

The decision to redo the proposal was made after state offices in Juneau and Anchorage received undreds of letters and telephone calls over the past month, the bulk of them opposing the plan.

See Back Page, TIMBER

TIMBER: Flurry of complaints sends officials back to try it again

Continued from Page A-1

"We're going to take a fresh look at the proposal," said Tom Hawkins, assistant commissioner in the Department of Natural Resources. "We'll take that pile of public comments, all the concerns that people have raised ... then sit down and see what can be learned from what people have told us." Once a new plan is written, another set of public hearings will be held before it is made final, he said.

Opponents of the plan, who multiplied quickly once word of the project spread among sport fishermen, homesteaders, lodge owners and others in recent weeks, are happy about the delay. But many of them remain skeptical that any large-scale timber harvesting can occur in the area without causing a variety of serious problems.

Critics fear clear-cutting forests and building access roads and bridges to get the wood out would spoil an area that's now mostly wilderness, and could threaten the region's booming sport-fish industry.

"There's a lot of things coexisting in that area now just fine," said Lois Reeder, an Anchorage woman with a summer cabin in the area who is acting president of the Susitna Valley Association, a group formed to fight the plan.

"I don't see how you can have timber harvesting in there without hurting the others. In small areas close to roads maybe, but not out there."

The delay was announced by Lennie Gorsuch, the deputy commissioner who took charge of the project after DNR Commissioner Judy Brady removed herself because of a potential conflict of interest. Her former husband, Terry Brady, has been financially involved with several companies who could profit from the sale.

Gorsuch, who earlier said she wanted to move as quickly as possible with the sale in order to "kick-start" the Southcentral timber industry, said rewriting the plan "will be worth it if we can develop a self-sustaining timber industry which can operate side by side with other facets of the valley economy."

As the state plan now reads, it would be the largest sale of timber ever in south-central Alaska, opening as much as 101,000 acres of land to harvest over a 20-year period.

The contract, known as a "forest management agreement," would be the first of its kind in Alaska. It would allow one company to choose the land it would harvest from a half-million-acre block of state forest stretching from Tyonek to Trapper Creek. Companies would be invited to bid for the contract.

The region under consideration — mostly forest, swamp and rivers — has virtually no road access, and has become the most popular salmon-fishing area in Alaska not accessible by road.

The original plan was spelled out in a 14-page report, with many pages mostly blank and only six paragraphs devoted to the effects of timber cutting on wildlife, fish, soil, recreation and "visual impact." Hawkins and Joe Wehrman, an official in the state Division of Forestry, said they expected the new plan would be more extensive and said there has been talk of tougher standards that would keep harvest areas and roads away from popular waterways or wildlife habitats.

State foresters maintain that clear-cutting blocks of forest and increasing access would be good for wildlife, but biologists in the Department of Fish and Game have been critical of the plan, saying it wasn't specific enough to know what the effect would be.

No environmental impact statement is required because the land is not federally-owned and doesn't involve federal agencies.

The new plan will be written by a "team" with representatives of DNR, Fish and Wildlife and the Department of Environmental Conservation, Hawkins said.

Questions also have been raised about the economics of the plan, although officials said Friday there are no plans for additional economic analysis. Under the old plan, the state would receive only about $90,000 a year in revenue from the lease of the land.

State officials hope the sale will lure a large-scale wood processor who would want to build a plant in the region, establishing timber as a new industry in this part of the state. Several companies have shown interest in buying birch in the area, but none have definite plans and it's unclear whether any companies will bid on the land if it is eventually offered.

"The premise (in state government) is that we have a resource," said Hawkins. "We'll invite the industry in and say, 'Under these constraints with this opportunity, can you make a business here?' They're probably better judges of (whether cutting the wood makes economic sense) than the government."

"It seems like if you're in the business of attracting proposals to take advantage of that resource, it ought to be on real sound footing. We're going to take advantage of this public reaction we got," Hawkins said.

Last month, the head of a Vermont company that had been interested in building a birch processing plant in Southcentral wrote a letter describing the state plan as "bordering on lunacy," blasting its size and the fact that one company would get all the land in the sale.

Meanwhile, four officials from the Matanuska-Susitna Borough left for Finland this week, where they are to meet with executives of two Finnish-based multi-national wood processors that have been scoping the region for plants. They're accompanied on the trip by Terry Brady, whom the borough has hired as a consultant, and by a Wasilla-based sawmill operator. The trip is costing the borough $14,000.

Despite widespread opposition among residents in the Susitna Valley, borough officials have been enthusiastic about the state plan, and say, if anything, it is not large enough. They think timber is a logical way to improve the economy in the borough, where unemployment stands at about 17 percent.

Letters to the Editor

The pros and cons

Dear Editor:

Generally I am in favor of more timber harvesting in the Mat-Su Valley. I'd like to see more state land here put into the multiple-use system of source management already used elsewhere in America.

Part of multiple-use includes forest and/or timber management. I can see both short-and long-term economic and biological benefits.

These "benefits" will not only come in the form of board feet or cubic feet of timber volume harvested. Nor will the attending economic ripple effects, brought on by the timber industry, be due just to wood products. Spin-off benefits due to an active forest management scheme the Division of Forestry has tried and again is trying to initiate here include the following: Wildlife habitat diversification, rejuvenation and regeneration of slow-growing, low-value forests for future greater timber products yield and wildlife habitat, increased recreational opportunities due to road construction, potentially higher populations of moose and other wildlife through habitat creation.

Wildlife such as the snowshoe hare, beaver, mice, spruce grouse and moose will generally benefit from properly managed and monitored timber harvesting. Such an effect can be believed by the active forest management policy the Division of Forestry is trying to initiate. Other wildlife such as fox, coyote, birds of prey and black bear will probably also increase indirectly timber harvest by the increase in prey species that should be the direct result of habitat created during and after a timber harvest.

Here in the Skwentna area, the moose are already (this early) having a very tough go of it. Some judiciously placed clearcuts that foster vigorous birch and cottonwood regeneration could be a factor in monitoring the moose through heavy snow in years such as this one.

As a resident of the Skwentna area, I am one of the very few in favor of even limited and restricted cutting in the proposed areas that affect us. I am totally opposed to any all-season road or permanent bridges that would span the Big Susitna, Yetna and Kahiltna Rivers and Lake Creek.

This is still the Bush. We have a stable sportfishing and Bush lodge industry out here worth millions of dollars a year already in place. Most of us don't want roads. Better access would severely harm our Bush industry and lifestyle.

LOUSY NEIGHBORHOOD

The saddest part of all this is the vague and sweeping presentation of this timber sale proposal. This essentially good idea may be killed because of its size and scale and its attendant lack of any description of public relations work or public education. It is very curious that the Mat-Su Borough Assembly is so suddenly in favor of forest management after they killed the state-proposed Susitna Forest that provided for multiple-use in the same area. What are you clones up to?

Fish and Game, disturbed by this from their deep tasks of sorting moose pellets and aging fish scales, are still talking out both sides of their face. And now we come to the Posey People (the Greenie Menace), those defenders of truth and little old ladies with bird books; authors of the court injunction and of chicken little "action alerts." Most of those bearded wonders wouldn't know a white spruce from a white pine if it fell on them, but they're gonna save our forests.

Nice job fellas, one and all, nice job.

Glen Holt
Skwentna

Timber sale lunacy

Dear Editor:

We are among the "lodge owners and air taxi services" mentioned in a recent Anchorage Times editorial who are vehemently protesting the proposed clear cut of the Susitna Valley. There are many very good reasons for our protest, not the least of which is our economic livelihood. We, too, are talking about the creation and maintenance of jobs — not only pilot's jobs, but guides, lodge employees, boat operators and a multitude of hotel employees, waitresses, sporting goods and airline employees, virtually anyone who is affected by the spin-off from sportfishing and tourism.

What does the state of Alaska get from this sale? $90,000 per year — of which a measley $30,000 is budgeted for the management of this project! This fact alone demonstrates how ill-managed this proposal has been. The $30,000 won't pay for one manager and one desk at Juneau rates. Preposterous!

"Lunacy" describes this proposed sale succinctly. The obscure little notice in the newspaper, scheduling cursory hearings at Christmastime, obvious efforts to hurry it along as well as the complete failure to analyze environmental and economic aftershocks tells a sad tale of management. For those people not immediately affected by the sale, future plans will probably include the construction of a pulp mill at Point Mackenzie. Whew! Wake up, Anchorage. The next odor from this project may come on the gentle breeze from Point MacKenzie.

Hank Rust, President
Rust's Flying Service
Anchorage

Equal to the best

Dear Editor:

As the state meat grader, I found your article on Dec. 29, "Corrections' beef meets wholesale buyer resistance," of particular interest.

I was disappointed that your article did not point out that the Department of Corrections plans to sell a variety of grades of meat which range from grain-fed "Premium or Choice," to "Utility" or hamburger-type meats. Each grade fills a special niche.

By way of perspective, I also think it important that Alaska has in place a certified grading program based on national standards. This program identifies the full quality range of meats, all of which are produced in Alaska. The fact is Alaska, like other states, can and does produce high-quality meat.

In short, as a meat grader and also as a former Missouri livestock producer, I state without hesitation that Alaska can produce a meat equal to that produced in the Lower 48. Isn't the best test of this issue to present Alaska meat in an unbiased manner, and let the consumer decide?

Doug Warner
State Meat Grader
Palmer

Drop timber sale

We own a cabin within the proposed Susitna Valley Timber Sale area, and are quite dismayed at the state's unresponsive attitude toward involved private property which individuals purchased from the state in previous state land dispositions. These properties include remote parcels, homesites, homestead tracts, etc.

The Department of Natural Resources was well aware of the desirability of a wilderness setting when it sold the properties, and we had every reason to believe the wilderness setting would be retained. If we had thought there was any real possibility of the state authorizing a timber sale that would result in clear cutting right up to our property or subdivision lines, we certainly would not have purchased the property. A massive timber sale such as this could hardly be considered a compatible use of adjacent land. If the sale proceeds as proposed, with no consideration for the hundreds of parcels of private land which the state itself has sold to individuals, we question who would want to invest in any future state land sales. The state will have severely damaged its own credibility.

According to DNR, the state is looking at potentially 1.4 million acres for local, future timber sales. The following sales would be to the west of the present proposal, around Mt. Susitna, and south along the west side of Cook Inlet, impacting many more state land dispositions.

The private property issue is only one of numerous concerns. This entire sale proposal is inappropriate and should be dropped.

— *John and Lois Reeder*

Stop timber proposal

I am appalled at the proposal by the Matanuska-Susitna Borough and Judy Brady, Department of Natural Resources commissioner, to clear cut large portions of the Susitna Valley. I feel in the long run this will be very detrimental to most residents and businesses. The Susitna Valley is a goldmine in the sense that the tourism industry relies heavily on it for sight-seeing, fishing, hunting, photography, rafting, etc., and contributes millions of dollars to local economies. The traditional uses such as hunting, fishing, sight-seeing, flight-seeing, photography, boating as well as some of the most important salmon spawning grounds that support the commercial fishing industry of the area will be destroyed in this lopsided trade off is allowed to take place.

I am going to donate 110 percent of my time to see that we defeat this insane idea. If politicians take a look throughout the state they will see that there is no viable market for timber. The figures I have seen show that the state will receive a $60,000 net income a year for timber that is clear cut in Anchorage's front yard. This area will have in the initial phase, as I have been told, approximately 215,000 acres of clear cut. The clear cut will come within 100 feet of the major rivers such as: Alexander, Lake Creek, Kahlitna, Kashwitna, Yenta, Deshka and the Susitna which are all very important to sport fishing and recreational industries including tourism and commercial fishing. The plan seems to pit the Mat-Su Borough against Anchorage, which is self defeating, since most residents of the valley work in Anchorage.

This process must be stopped dead in it's tracks, and the most effective way is for you the public to get involved and voice your opposition to this ludicrous idea. I urge you to review the maps, the minuscule environmental impact study, Senate Bill 112 and most importantly, call Mr. Rod Swope, Gov. Cowper's special assistant, and express your concerns regarding this matter. Please get involved!

News Jan. 8, 1988 — *Dane K. Wagner*

Timber sale a fiasco

"The Last Frontier" — Alaska's appeal to tourists! Does anyone in the Alaska government hear it anymore?

Alaska's biggest industry is tourism, fishing, hunting, our beautiful mountain ranges, the novelty of roadless communities, our grand forests and the wilderness experience.

The Tongass fiasco has the federal government dumping $57 million into it to help pay for the losses. If it won't work with the good timber in the Tongass, it won't work with the bad timber in the Mat-Su Borough.

We hear of the 42 to 100 jobs this timber sale will create. What they don't say is that many times that figure will be put out of work with this same plan. In all areas of Alaska timber sales have failed and yet we are now told that we are going to do it again. There are millions of acres of timber away from the people, tourism, and communities that can be clear-cut. Leave the terrain intact for all to enjoy and retain the beauty for years to come. Clear-cutting will mar the area for a hundred years. Trees just don't grow quickly this far north! Alaska's greatest value is the wild wilderness as you fly over, boat through, and snowmachine in the winter. Many people from the Anchorage and Mat-Su Borough know what a great escape it is to come out and visit with us.

Don't be sold that this is a great plan. Once the trees are cut, roads and development will be put in and there will be no escape for anyone. Even the timber industry can be quoted as saying it is "pure lunacy!"

We are "The Last Frontier!"

— *Norma Della*

Timber sale information lack

I am very concerned about the state proposed Susitna Valley timber sale m management plan. The plan is simple: (Transfer nearly one-quarter of a million acr from state ownership to private contractor (2) Clear-cut a significant portion of th acreage as soon as possible.

How many local residents are informe about this sale? I would suggest that very fe people (with the exception of a few vest interest groups) know anything about There is a woeful lack of information on t sale as there has been no economic or enviro mental assessment done.

How will this timber sale and clear-cutti affect the quality of life in the Valley? Wi little research available it is difficult speculate, but one can assume that removi large tracts of timber within prime moo habitat and adjacent to major salmon reari streams will certainly impact such things tourism, hunting, sports fishing, and comme cial fisheries.

No one will argue about the need f employment opportunities in the Valley. appears, however, that the Susitna Vall timber sale has the potential to kill ma long-term jobs (e.g., charter operators, lod owners, hunting guides, etc.), in exchange f a handful of low-paying temporary jobs. (Th major lumber contractor is a foreign compa and it is unlikely that local residents wi receive any of the high paying jobs.)

I think we all need to know more befo this sale occurs. This project has had t shortest public hearing process ever for a sta land sa of this magnitude, and as a resu some say that it reeks of political expediency

— *Joseph Nolti*
Palm

News Jan 7, 1988

SB 112: A Bill for an Act Entitled "An Act relating to forest management agreements"

A review and Recommendations
for the House Resources Committee
Rep. Sam Cotten
Rep. Adelheid Herrmann
Co-Chairs

by
Theodore G. Smith
Box 1026
Willow, Ak. 99688

January 8, 1988

SUMMARY OF RECOMMENDATIONS

SB 112 as it passed the Senate is a flawed container for a good idea. It aroused a great deal of opposition in its present form and should be rewritten so that the good idea can be implemented. The good idea is the Forest Management Agreement and the Act to implement it should contain the following elements.

1. It should authorize the Commissioner of Natural Resources to enter into long term, end-result, stewardship contracts with private parties for cooperative management of the States' forest resources.

2. A method of operator selection other than high bid for volume removed should be authorized. A bid based on multiple variables is currently being developed by the Division of Forestry and may be the optimum method. Consideration should be given to the option of negotiations by the DNR subject to review and approval by an independent third party such as the Board of Forestry.

3. The Act should authorize price adjustments as an incentive for intensive forest management practices.

4. The use of the so called "Evergreen Clause" should be authorized. This clause requires a review each 5 years of a contract's duration. At that review, the contract is either cancelled for noncompliance or extended for another 5 years.

5. The Act should direct a public review process for five year management plans, the 5 year review, and amendments to the plans or stewardship agreement.

6. Because of the evergreen clause and the planning process, a new procedure should be adopted for ensuring public participation in the decision-making process leading to the award of an FMA. The procedure should parallel the process used in granting concession contracts rather than the land disposal procedures in order to emphasize the fact that the FMA is directed toward mutually beneficial management of a continuing resource rather than termination of the States' interest in that resource.

7. Since the stewardship contract would be essentially a trusteeship relation between the State and the operator, there should be substantial bonding requirements as well as penalties for malfeasance.

BACKGROUND

One of the earliest proposals for Forest Management legislation was made by Paula Easley, then Executive Director of the Resource Development Council in a speech to the Council of Western State Foresters at Girdwood, Alaska on June 25, 1985. She suggested adoption of an FMA system such as the one in effect in Ontario, citing as benefits the generation of revenue through taxes and the reduction of expenses by transferring management costs to the private sector.

SB 112 was introduced by Senator Lloyd Jones of Ketchikan in the 1987 session of the Legislature. The bill stated that an FMA "shall be used to foster the development of the states' forest products industry". Testimony by James Clark on behalf of the Alaska Loggers Association said that the bill "would increase the sale of timber in the Interior of Alaska" and that such an increase "could increase the size of the industry and thus increase the number of jobs associated with timber harvesting." He summarized by saying "The overall effect of this legislation then is to take the lid off the industry in the Interior and give it the opportunity to produce more jobs.

The costs of providing these jobs will not be a cost to the State but be borne by the industry."

The bill was passed by the Senate and arrived in the House as **CSSB 112 (RES)am.** It authorized the Commissioner of Natural Resources to **"enter into an agreement . . . for the sale of timber from state land"** without regard to A.S. 38.05.110-.120, (all the current statutes dealing with sale of timber) and A.S. 38.05.300 (requiring classification before sale of land or re_ources.) It authorized adoption of regulations governing harvest and regeneration of timber. It authorized the Commissioner to provide for a number of contract items in any agreement including **"timber harvest to be at a volume in excess of that permissible under the nondeclining even-flow method of calculating sustained yield".** It listed several items to be considered by the Commissioner in entering into an agreement, and required consultation with other state or federal agencies. It required that the Commissioner request proposals under the bill within one year of the effective date of the Act.

The DNR provided the House with a zero fiscal note on the grounds that **"An agreement with a timber operator could provide savings to the State and reduce manpower needs, while at the same time providing a long term commitment of timber to private enterprise."**

The bill aroused a great deal of opposition on a variety of grounds. A major one was that although it was touted as a revolutionary management approach for state forest lands, the permissive language made it nothing more than authorization for long term negotiated timber sales. Waiving the existing laws and regulations granted the Commissioner unprecedented authority to negotiate for sale of state resources. The requirement that the Commissioner only **"consult"** with other agencies bothered many - they wished for a more positive

recognition of other agencies authority. The authorization to harvest in excess of the nondeclining even-flow method of calculating sustained-yield was seen by many as unconstitutional. Personnel of the Division of Forestry and others protested that the zero fiscal note coupled with the one year time-line for RFP's was totally unrealistic. Lack of protection for independent loggers was also a problem for many. After teleconference hearing on May 6, 1987, House Resources Co-Chairman Sam Cotten announced his intention to hold the bill over to the next session in order to do some work on it during the interim. This report is the result of some of that work, conducted by the author under contract to the House Resources Committee.

METHOD OF STUDY

The author, the first Director of both the Division of Forestry and the Division of Parks, conducted a number of interviews with parties who had expressed interest in the bill through prior comments or other means. The following is a synthesis of those interviews, information from research, and knowledge gained from over twenty-five years of Alaskan experience.

ISSUES AND RECOMMENDATIONS

One of the first questions is whether the bill is necessary. Clearly it is not, because other long term timber sales have been made and the State is currently advertising a twenty year, three hundred million board foot sale in the Susitna Basin. Parenthetically, that advertisement has made it difficult to discuss the benefits or drawbacks of the FMA idea - respondents reply on the merits of the sale rather than the merits of the FMA concept.

The corollary question of whether FMA authority is desirable hinges on two issues - will it help the economy by providing

added jobs and economic activity, and will it reduce state expenditures for forest management. Obviously, any answer to these questions involves a lot of guess work - following, for example:

1. The economic activity issue: There is currently a very large portion of the allowable annual cut of timber on state lands that is unutilized. What logging is done provides basically house logs, rough green lumber, and firewood. All of these are fairly low value products. In order to maximize benefits of the harvest, value should be added to the product by local manufacturing. Previous state efforts to require primary manufacture of timber harvested in Alaska were found unconstitutional by the U.S. Supreme Court. Careful construction of an FMA might avoid the constitutional problem while still assuring plant investment. For the proposed sale, the state feels that the problem will be overcome by making plant construction one of the number of variables in the bid process. The existence of a long term assured supply of timber should also have a beneficial effect on the financing of a manufacturing facility. The Alaska market for wood products is very small because of the small population. Therefore a plant sized for efficient production of products such as plywood, oriented-strand board, chip board and similar items, will have to look to export for the bulk of the market. The existence of an assured supply of raw material may be a factor in developing that market, but it is not the key. The real question is whether or not such items can be produced at a price that will be competitive on the world market. Cost and market studies will have to be conducted for any plant proposed, but the existence of the authority for an FMA will remove one possible constraint.

2. The management issue: Most state forest lands in the Interior are over-mature, i.e. they are decaying faster than they are growing. Intensive management of the forest would

undoubtedly increase their volume and the allowable annual cut, and probably improve the quality. State timber sale contracts have routinely included provisions such as slash reduction and scarification intended to assist regeneration. The State Division of Forestry has maintained a nursery - primarily with Federal assistance - and has done some replanting. Even though A.S. 41.17.300 establishes a State Land Reforestation Fund and authorizes appropriating 25% of the receipts from timber sales for activities such as planting, fertilizing, spraying, etc., no appropriations have been made to the fund, nor have any direct appropriations been made for those purposes. Because of a lack of those "tending" activities, many state timber sales have been taken over by grass and/or brush. Requiring those activities as part of an FMA would ensure a healthier forest and help to comply with the State Constitution mandate for sustained yield management of renewable resources. There would of necessity be contract administrators on the state payroll to ensure that contract provisions were followed. There would probably be little if any reduction in direct state expenditures, but the benefits received for those expenditures would be substantially increased.

RECOMMENDATION:

While FMA authority may not be required in order to make long term timber sales, there are enough potential benefits to make the idea worth trying.

Under current law, timber is basically sold by high bid. The value of the standing timber is estimated by either comparing it with other sales in the area or by working back from the end value of the product. This value becomes the minimum bid. In a competitive situation, an operator may bid more than the value of the sale, which makes him tend to cut corners on the road building, stream protection and other cost items. At the other end, an appraisal that is too high results in no bids

and the loss of the time and effort put into the sale by state personnel. In sales with a low end product value (such as firewood), the appraisal process may indicate a loss. This may tend to be more true if the appraisal is for an FMA because of the expensive long term management requirements. The Province of Ontario solves this problem by saying those expenses are government responsibility and paying the operator for them. Their stumpage price to the operator is relatively high. Nevertheless, the ratio of government payments to receipts is about 5:1. Alberta takes the opposite approach, requiring the cost of management activities to be borne by the operator, and receiving very little for stumpage. Both provinces have a provision for legislative review of negotiated FMA's. British Columbia relied on an after the fact audit, one of which resulted in a minister of forest being found guilty of accepting a bribe in connection with an award of a tree farm license. Negotiation is generally not utilized in Alaska where sale of public assets is involved, and any negotiation authorized in connection with FMA legislation would probably have to be severely limited in order to achieve public acceptance. The proposed Susitna Basin sale anticipates a bid system based on multiple variables. Potential purchasers will be asked to bid on price per thousand board feet, dollar amount of plant investment, number of jobs created, volume of timber used, and other items.

RECOMMENDATION:

Award of an FMA should be based on factors other than or in addition to the amount paid for timber removal. The multiple variable system under development may prove to the optimum method of purchaser selection. If negotiation is authorized, it should be subject to review by an independent third party such as the Board of Forestry or the legislature, or both.

As noted above, methods of valuing standing timber can differ widely in their application. The Alberta example would seem to have the most merit for Alaska, given the historic reluctance to make investments in forest management. This would result in little direct income to the state, but the state would benefit from increased economic activity and better management of its resources. Other financial incentives may prove to be necessary, ranging from tax breaks to state investment in infrastructure. Such incentives should probably be considered separately from the FMA authorization, except for pricing of the stumpage. The management activities of the operator will result in an increase in the allowable annual cut. He should be permitted to utilize that increase and a reduction in the stumpage for the increase could be an incentive for more intensive management activities.

RECOMMENDATION:
FMA legislation should authorize price adjustments as an incentive for intensive forest management practices.

A key feature of an FMA is the "evergreen clause". This provides that, while the agreement is for a specified term, (usually 15-20 years) it is subject to review every 5 years. If the operator is performing satisfactorily at that time, the agreement can be extended for another 5 years. If he is in noncompliance with the terms, the agreement can be cancelled. This provision has little or no opposition.

RECOMMENDATION:
FMA legislation should include a requirement for a planning process and public and agency review of the plans and amendments thereto.

Most of the procedures under which the state land and resources are disposed of arose from the frenzy of land sale activity in the late 1970's and early 1980's and are designed

to deal with the permanent alienation of state interest in the land. The preliminary decision and final finding which precede the notice of sale seem to be redundant if the planning and classification process precede a decision to enter into a management agreement. In addition, the continuing involvement of the State and the public thought the evergreen clause and the planning process means that the decision can be changed much easier than can a sale of fee title.

RECOMMENDATION:
A new method of incorporating public input into the decision-making process should be adopted for forest management agreements. This process would recognize that the states' interest in the land and resource is not being alienated, but that the stewardship responsibilities are being assigned to a private operator.

The success of an FMA will depend on the operators ability to make a profit. If the profit margin declines, the management activities will be the first to suffer. If the margin declines enough, bankruptcy will ensue and the management activities will cease. The state could very well be left with substantial work undone and the need for action to prevent erosion, windthrow, or other loss of resources.

RECOMMENDATION:
An FMA agreement should carry a fairly high bond conditioned on the faithful performance of the operators stewardship functions, as well as penalties for his mis or malfeasance.

Several other issues were mentioned during interviews as requiring legislative attention. These included the need for road-building authority in the Department of Natural Resources; the need for authority for forestry field employees to be able to issue citations for theft of timber; and the need for an accepted log and lumber grading system for Alaska. While these are issues deserving of attention, they seem to

lie outside the issue of Forest Management Agreements and should be considered separately.

Addendum: List of interviews and meetings.

Addendum to Report on SB 112: List of Meetings and Interviews

DATE	MEETING/PERSON	COMMENTS
Oct 2	Mat-Su Loggers	Adopted a position opposing use of Forest Management Agreements in the Matanuska-Susitna Valley. Suggested several items to be included in any legislation if FMA's were to be used elsewhere. (See written position paper.)
Oct. 12	John Dede, Ex. Dir. WEDCOR	Wasilla Economic Development Corporation (WEDCOR) had adopted a resolution favoring SB 112. Dede indicated their support was "generic" - in favor of anything that promoted more jobs and diversification.
Oct. 12	Becky Gay, Ex. Dir., RDC	Disclaimed expertise on the subject of FMA's, but felt that the Evergreen Clause was important for financing.
Oct. 14	WEDCOR w/ John Galea, State Forester	Stated that two essentials in SB 112 were the Evergreen Clause and negotiating authority. SB 112 not on priority legislation list submitted to Commissioner.
Oct.15	Randy Rogers, Exec. Director Northern Alaska Environmental Center	Any FMA legislation must 1. have clear benefits for existing local industry, 2. must protect public use and define required management activities, 3. must require reforestation, and 4. must provide for bonding to ensure management activities.
Oct. 15	North Star Borough Forest Management Task Force, including Rep. Mike Davis	FMA's not a major issue in Fairbanks area, might be of use in Stony River area. Concerns were for access to rest of Tanana State Forest, need for certified grading, better inventory, and co-operative management agreements with native corporations.
Oct. 20	Commissioner Judy Brady, DNR	"Not wedded" to FMA's, but would espouse any bill promoting forest development. Will not continue current "junk sales".
Oct. 20	Steve Kallic, Ex. Director, S. E. Alaska Conservation Council	Acceptable FMA bill must have 5 year review provision, competetive rather than negotiated sale, public planning process, compatible public use of sale

		area, size limitation or other provision for independent operators.
Oct. 21	Gov. Cowper	Supports compromise efforts.
Oct. 21	John Dunker, Session Asst. to Rep. Koponen	Discussed Canadian experience with FMA's. Rep. Koponen is interested in co-ops as a means of developing wood products manufacturing facilities.
Oct. 22	Alaska Loggers Association Legislative Committee, inc. Sen. Lloyd Jones	Will not continue to push for SB 112 in face of continued opposition from Interior but would support an acceptable substitute.
Oct. 24	Rep. Koponen	Feels bill is unnecessary. Concerned about small operators being frozen out.
Oct. 24	Al Pagh, Four Star Lumber Co. Les Fortune, DNR	Suggested contingency provision in FMA which would provide alternate areas in case of loss to fire or insects. Noted problems of theft of logs.
Oct. 28	Cliff Eames Alaska Center for the Environment	Reaffirmed written position, i.e. bill is not necessary; fails to control length of FMA; fails to control size of area; could affect existing reserves; fails to consider competing uses; fails to require public participation in decision making.
Nov. 9	Mat-Su Loggers Assoc. w/ John Galea, State Forester, Rep. Ron Larson, Rep. Curt Menard, Rep. Sam Cotten	Galea said that the essential provisions for an FMA were the Evergreen Clause and roadbuilding authority for DNR.
Nov. 17	Carroll Minium Mgr., NBA Wasilla Branch	Indicated that a state timber sale contract has no collateral value because it calls for payment rather than receipt of funds and there is a substantial degree of expertise required to comply with its provisions, making it unconveyable except to a qualified person.
Nov. 18	Bill Beebe, Big Lake Dist. Forester, DNR	Discussed award method for proposed Susitna Valley/Tyonek sale. Will have multiple variable system developed. Only provision in planned sale contract relating to FMA's is inclusion of

		Evergreen Clause as one of the renewal options.
Dec. 3-4	RDC Education Foundation Seminar "Management of the Boreal Forest". Speakers included Sen. Jones, Reps. Cotten, Koponen, Zawacki, & Sund	Complete proceedings are available from the RDC Education Foundation, Inc., 807 G Street, Anchorage, AK. 99501. Speakers from Finland, On ırio, British Columbia, Alberta, Colorado, and Alaska discussed FMA's as a management tool for the boreal forest.
Dec.	RDC Forestry Committee	Suggested a revised procedure for authorizing an FMA.