



## **APPENDIX II**

### **TREE FARM LICENCE No. 47**

### **MANAGEMENT PLAN No. 2**

## **STATEMENT OF MANAGEMENT OBJECTIVES, OPTIONS AND PROCEDURES**

### **1.0 MANAGEMENT OBJECTIVES**

#### **1.1 Manufacturing**

TimberWest Forest Limited, a subsidiary of Fletcher Challenge Canada Limited is in the business of manufacturing and marketing high quality lumber and panel products for industrial, residential and architectural segments of the North American, Pacific Rim, and European markets. Fletcher Challenge Canada Limited is also a major producer of quality pulp and paper products marketed around the world. The Group's goal is to lead the industry in providing customer satisfaction in our selected market segments. The Group's objectives to attain the goal are to:

- Build quality into products and services.
- Constantly innovate to improve performance
- Utilize the expertise of its people

#### **1.2 Timber Management**

The Timber Management goals are to manage the Tree Farm Licence forest lands using integrated Forest Management Practices to:

- Maintain an economically viable forest products company
- Protect the environment and ensure the sustainable development of the forest resource
- Provide community stability



To accomplish these goals, the Timber Management objectives will be to:

- Provide a basic forest management program to reforest harvested areas to a free-growing state.
- Manage four Management Units: Johnstone Strait, Courtenay/Nanaimo Lakes, Bonanza Lake and Moresby for the production of pulp and sawlogs.
- Maintain harvest volume at the status quo level of 1,052,950 cubic metres net of the 5% Allowable Annual Cut reduction by area deletion for the Small Business Forest Enterprise Program.
- Provide a basic Forest Management program to reforest harvested areas to a free growing state.
- Manage four management units - Johnstone Strait, Courtenay/Nanaimo Lakes, Bonanza Lake and Moresby for the production of pulp and sawlogs.
- Operate in a manner which will maintain the productivity capacity of fish streams and marine areas and cooperate in local stream enhancement or restoration with fisheries agencies.
- Minimize environmental impacts of logging by utilizing appropriate equipment and techniques in consultation with resource agencies and the company's Resource Planning Group.
- Protect the forest from loss or damage due to fire, insects and disease.
- Follow the conditions and procedures of the Letter of Understanding, Implementation Plan and 5-Year Development Plan Guidelines.
- Integrate other resources such as fish, wildlife, recreation and archaeological sites into development plans.



- Continue local information presentations to agencies, employees and public groups on management methods, challenges and plans.
- Maintain our operable timber base employing special harvest measures to log steep slopes and marginal timber stands.
- Follow the Coastal Fisheries Forestry Guidelines and use the watershed sensitivity analysis handbook.

### **1.3 Range Management**

Range forage opportunities are not available in the biogeoclimatic subzones of the licence area.

### **1.4 Recreation Management**

The recreation management objectives are to:

- Consider recreation values in timber management decisions in accordance with principles of integrated resource management.
- Meet or exceed agreed to visual quality objectives in visually sensitive areas utilizing landscape management techniques in forest management planning and operations.
- Maintain the existing recreation inventory and update periodically to reflect changes or new information.
- Maintain current recreation opportunities, carry out recreation use surveys and recreation analysis.
- Inventory the location of Bonanza Lake Management Unit Karst/Cave features and ensure entrances to significant features are protected by careful planning at the 5-Year Development Plan stage.



## **2.0 MANAGEMENT ISSUES**

### **2.1 Timber and Other Resources**

#### **2.11 Moresby Management Unit**

Logging on unstable slopes, landscape values, salvage of insect damaged timber, wind firmness and rate of watershed harvest guidelines are issues to be addressed during the Management Working Plan period.

Logging timber on steep slopes involving unstable ground and gullies is an issue to be resolved when detailed engineering and appropriate equipment selection are completed in 1990. Joint agency review will then determine if the annual cut level can be maintained.

Negative public opinion of logging practices is an issue to be addressed by continuing the public information centre and providing logging and forestry tours.

Insect issues such as the western blackheaded budworm and hemlock sawfly infestations of mature timber will be monitored and harvest plans will be modified to salvage affected stands where an appraisal of damage justifies logging.

Rate of cut restrictions on old growth harvesting within watershed units which could result in reduced harvest and lower employment levels in the Sandspit area is also an issue.

#### **2.12 Bonanza Lake Management Unit**

Harvesting of accessible old growth timber will decrease during the next Management Working Plan period. The cut reduction at Beaver Cove will be balanced by increasing the second growth harvest in the Courtenay unit. Port McNeill community stability will be maintained by employing the Beaver Cove crew in Kyuquot tenures.



The issue of timber in wildlife areas designated for deer and elk will be reviewed by Fish and Wildlife to determine winter and spring habitat requirements based on wildlife habitat capability evaluations. Factors such as snow accumulation, snow interception capability and provision of forage and cover areas will be evaluated to determine present suitability of adjacent second growth. In areas less than 600 metres elevation, managed second growth may replace old growth as winter habitat when it provides similar form and function.

### **2.13 Johnstone Strait Management Unit**

The rapid development of fish farming has become an issue because of increased water quality maintenance requirements and reduced options for development of roads, log dumps and storage sites. Growth of this industry can be integrated with harvest plans if fish farm proposals continue to be referred to the company for review and comment.

The issue of recreational anchorage has prompted the use of seasonal constraints for log dumping and sorting and this will continue where flexibility permits.

In addition, the issue of visual impact of rock cuts and sidecasting during road construction will be considered on all roads, but particularly those within view of cruise ship routes or popular fishing and anchoring locations. Landscape analysis will be carried out for visually sensitive areas and the results incorporated into five year plans. The use of computer assists such as perspective plot programs will continue to be used as a planning tool to minimize the visual impact of harvested areas and achieve the visual quality objective.

Concern has been expressed by the public over the extent of harvest activities. Therefore, we will identify anticipated percentage of the land base to be logged for Blocks 1-12 in the Management and Working Plan 20 Year Plan.

The issue of operations within the rural/forestry interface of Block 12, Quadra Island will be addressed by presenting a 20 year logging plan to the public for discussion and comment during 1990.



The islands of Johnstone Strait have high nesting populations of bald eagles particularly along shorelines. These nests in snags or old vets will be left standing following logging.

Alder utilization continues to be an issue and the company is committed to finding an economic means of harvesting alder sites and converting those sites to coniferous production where feasible.

## **2.14 Courtenay/Nanaimo Lakes Management Unit**

Second growth harvesting of Douglas fir will be carried out on Blocks 13 and 14 of the Courtenay areas as approved by the amendment to Management and Working Plan No. 1.

Priority will be given to harvesting stands infected with root rot, understocked stands and managed stands. Harvesting second growth will assist in the issue of maintaining the Tree Farm Licence cut by offsetting the Bonanza Lake unit harvest reduction.

Second growth stands will be harvested at entry ages 45-55 years. This tree size appears to be within the technical limits of harvesting, milling and marketing capabilities. The use of feller buncher, grapple yarder and log processor technology proven in the Johnstone Strait will allow a successful transition to second growth logging.

The issue of maintaining Comox Lake water quality will be given high priority during road, dump and bridge construction by building during low water to minimize siltation. Measures will be provided at the Comox Lake load-out to dispose of wood and bark debris and dewater logs without silting the lake and to prevent wood waste from interfering with the B.C. Hydro dam. The following table summarizes the management issues to be analyzed in the long run sustained yield analysis.



Table 1 Management Issues

	Utilization		Harvesting Methods			Forest Management Level		Other Resources				
	Inventory	Utilif. Stnd.	2nd Growth	OG Operability	Environmental	Basic Forestry	Increm. Forestry	Wildlife	Fisheries	Recreation & Landscape Values	Other Uses	Forest Protection
MANAGEMENT UNIT												
Courtenay/ Nanaimo			X			X	X					X
Bonanza Lake	X	X		X		X	X	X		X		
Moresby Island	X	X		X	X	X	X		X	X		X
Johnstone Straits		X	X	X		X	X		X	X	X	



### **3.0 INTEGRATED RESOURCE USE OPTIONS**

The management objective of the long run sustained yield analysis is to maintain the harvest at the status quo level.

The analysis will consider the effects of the new utilization policy, non-conventional harvesting techniques, basic versus incremental forest management practices, forest pests and other resource values for appropriate management units as outlined in Table 1. Specific options to be analyzed are outlined below.

#### **3.1 Utilization**

- Analyze the effect of an apparent overestimate of timber volumes at Bonanza Lake.
- Analyze the effect of the new utilization policy on Timber Licence and Schedule "B" inventories.
- Analyze the impact of rate of cut guidelines on harvestable inventory.
- Evaluate the wood quality and volume of low lying Cedar stands to determine harvest viability.

#### **3.2 Harvest Methods**

- Analyze the effects of second growth harvesting on balancing management unit cut levels.
- Analyze the effects of special measure such as long-line yarding systems and low ground pressure systems on operability improvement.

#### **3.3 Forest Management**

- Analyze basic and incremental forest management practices simulations to identify activity level required to improve timber profiles and maintain status quo harvest levels.

#### **3.4 Other Resources**

- Analyze the effect of elk habitat reserves at Bonanza Lake, fisheries concerns at Moresby Island and fish farm interaction at Johnstone Strait Management Units.





### **3.5 Protection**

- Analyze the effects of insect damage in the Moresby Island unit and root rot at Courtenay to consider impact of yield.

### **3.6 Recreation/Landscape**

- Analyze the need for increased recreation opportunities following the completion of recreational use surveys and analysis.
- Analyze the implications of adapting forest management procedures to meet visual



## **4.0 PLANNING PROCEDURES**

Management and Working Plan No. 2 will be prepared in accordance with chapter four of the Ministry of Forests Resource Planning Manual, Planning Guidelines for Tree Farm Licence Management and Working Plans and other appropriate planning procedures/guidelines.

### **4.1 Planning Model**

The Timber Increment and Management Evaluation (TIME) simulation model developed for Management and Working Plan No. 1 will be used. The critical phases of the planning process will be application of management and harvesting prescriptions to planning areas within each unit. The four management units will be analyzed to deal with age class imbalances and inventory distribution and other integrate resource use options.

The objective of the yield analysis will be to examine strategies to sustain the harvest level at the status quo position less an adjustment for grade code "Y" logs.

### **4.2 Timber Supply Analysis**

#### **4.21 Analysis Units**

Analysis units will be comprised of area by stratum for old growth and area by site by 10 year age class species group for second growth.

Some aggregation of relatively small units on a weighted average by area does occur.

All second growth units use approved yield curves.



## **4.22 Data Synthesis and Aggregation Procedures**

### Environmentally Sensitive Areas (E.S.A.'s)

E.S.A.'s have been mapped at Bonanza Lake and Moresby Island management units. A first approximation of E.S.A.'s was developed for the Johnstone Strait unit. These areas have been excluded from the gross productive land base to arrive at the net productive land base. Also excluded are physically inaccessible areas and all Site VI.

No rehabilitation of deciduous alder and alder/coniferous types is simulated and these areas are excluded from the net productive land base.

There is an area reduction for undeveloped areas at the time of harvesting to account for roads and gravel pits.

### Watershed Concerns

The harvest schedule pattern imposed by watershed depletion constraints in the Moresby Island Unit as simulated in Management and Working Plan No. 1, does not restrict the rate of harvest. As in Management and Working Plan. 1, this issue is addressed in the 5-Year Development Plan process.

### Inventory Update

The inventory is updated as of January 1, 1988 with respect to logging, planting, spacing and all other treatments. Second growth stand parameters are updated from the date of the original inventory to January 1, 1988 using the approved yield tables.



### Growth and Yield

The yield model uses the approved yield tables of Management and Working Plan No. 1. The localized volume over age curves, use the Chapman-Richards growth function as the model for yield prediction. These yields curves have been supplemented with additional height and volume per tree estimates derived from operational cruise statistics.

### Incremental Forestry

The TIME planning model deals with yield enhancements as additional volume "added on" to natural stand volumes.

Estimate of gains from plantation establishment are handled as reductions in regeneration delays. No estimates for genetic gains are made. Juvenile spacing gains are developed as "add on" effects to existing volume-age curves. The information source is internally developed managed stand yield tables and apply to Douglas fir stands only.

The managed stand yield model forms the basis for estimating the long term effect of fertilization, the results of which are documented.

### Waste and Breakage

All old growth and second growth inventories use Ministry of Forests approved zonal and local loss factors for decay, waste and breakage.

## **4.3 Public and Agency Input**

Public notification of the preparation of the Draft Management Working Plan was advertised in local newspapers at Queen Charlotte City, Port Hardy, Campbell River, Nanaimo and Ladysmith for two editions during June, July and August 1988. Public response has been answered and copies of our correspondence were forwarded to the Ministry of Forests.



The draft Management and Working Plan will be forwarded to the Ministry of Forests for review and circulated to other resource agencies. Following that review, the draft Management and Working Plan will be available for review by the public in local communities and comments considered in the final plan.

#### **4.4 Recreation Analysis**

A recreation inventory has been completed on the licence area according to Forest and Range Resource Manual, Appendix 3-13. User surveys will be carried out to determine recreation demand and the results will be analyzed to assess demand in relation to supply. The analysis will present a variety of options to consider, including recreation opportunities, recreation facilities and landscape values. The options would then be used as a basis for recreation planning and would be considered in the development plan process. However, before user surveys and a recreation analysis are carried out, a training program for field foresters must be made available to understand the terminology and interpret the implications of inventory data already gathered by specialists. We would participate in Ministry of Forests courses, workshops, etc. which we feel should be an integral part of the "greater emphasis on recreation management".