

LIST OF ACRONYMS & GLOSSARY OF TERMS

LIST OF ACRONYMS

AAC	Annual Allowable Cut
AORP	Annual Operating and Renewal Plan
CAP	Canadians Against Pesticides
CDC	Conservation Data Centre
CCFM	Canadian Council of Forest Ministers
CFS	Canadian Forest Service
CLCC	Crown Land Classification Committee
CMM	Committee for Moose Management
CNR	Canadian National Railway
COSEWIC	Committee on The Status of Endangered Wildlife in Canada
CPPA	Canadian Pulp and Paper Association
CSA	Canadian Standards Association
CTL	Cut-to-Length
CWF	Canadian Woodlands Forum
CWS	Canadian Wildlife Service
DBH	Diameter at Breast Height (at a point 1.5 metres above the ground)
DBMS	Database Management System
DFA	Defined Forest Area
DFO	Department of Fisheries and Oceans Canada
DOP	Departmental Operating Procedure
DU	Ducks Unlimited
EAP	Environmental Audit Program
EBM	Ecosystem Based Management
ECA	Environmental Compliance Audit
EFF	Emergency Fire Fighter
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMWCAC	Eastern Manitoba Woodland Caribou Advisory Committee
ENGO	Environmental Non-government Organizations
FERIC	Forest Engineering Research Institute of Canada
FFMC	Freshwater Fish Marketing Corporation
FEC	Forest Ecosystem Classification
FLITAC	Forest Land Inventory Technical Advisory Committee
FML	Forest Management Licence
FMU	Forest Management Unit
FRI	Forest Resource Inventory
FRM	Forest Resource Management
FSC	Forest Stewardship Council
FSP	Forest Stewardship Plan
FTG	Free to Grow
GHA	Game Hunting Areas
GIS	Geographic Information System
GPS	Global Positioning System
GVW	Gross Vehicle Weight
HSI	Habitat Suitability Index
HU	Habitat Unit
IBP	Internal Biological Program
IFMP	Interim Forest Management Plan

IRM	Integrated Resource Management
IRMT	Integrated Resource Management Team
ISO	International Organization for Standardization
IUCN	International Union for Conservative Nature
IWCMC	Integrated Woodland Caribou Management Committee
IWSA	Integrated Wood Supply Area
KM	Kiiwetino Ma'iiingan, also referred to as the Company
LD	Lethal Dose
LGD	Local Government District
LLI	Local Level Indicators of Sustainable Forest Management
LP	Louisiana-Pacific Canada Limited
LWE	Lake Winnipeg East
MAI	Mean annual Increment
MBMF	Manitoba Model Forest
MC	Manitoba Conservation
ME	Manitoba Environment
MESA	Manitoba Endangered Species Act
MFA	Manitoba Forestry Association
MFWMP	Manitoba Forestry Wildlife Management Project
MMFBM	Million Board Feet
MSDS	Material Safety Data Sheet
MTA	Manitoba Trappers Association
NFIS	National Fire Information System
NGO	Non-government Organization
NRO	Natural Resource Officer
NRTA	Natural Resource Transfer Agreement
NSR	Not Sufficiently Regenerated
NTFP	Non-timber Forest Products
NTMB	Neo- tropical Migrant Birds
OSB	Oriented Strand Board
OTA	Open Trapping Areas
PHA	Pre-harvest Assessment
PLUC	Provincial Land Use Committee of Cabinet
PR	Provincial Roads
PSP	Permanent Sample Plot
PTH	Provincial Trunk Highway
RDAMP	Road Development and Access Management Plan
ROW	Right-of-Way
RTAC	Resource Tracking Assessment Committee
RTD	Registered Trapline District
RTL	Registered Trap Line
SARA	Species at Risk Act
SFM	Sustainable Forest Management
SFMAC	Sustainable Forest Management Advisory Committee
SFMN	Sustainable Forest Management Network
SNOWFUND	Snowmobile Network Opportunities Fund
STE	Special Concern, Threatened or Endangered
SPF	Spruce-pine-fur
STA	Special Trapline Areas
TAC	Technical Advisory Committee
TEK	Traditional Ecological Knowledge
TLE	Treaty Land Entitlement
TMP	Thermo Mechanical Pulp
tpd	Tonne per day
VRL	Variable Retention Logging
WCA	Watercourse Crossing Assessment

WDS - ###	Woodlands (PFPC Departmental Procedures identifiers)
WDS – WI - ###	Woodlands Work Instruction (PFPC Work Instruction identifiers)
WHIMIS	Workplace Hazardous Material Information Systems
WI	Work Instruction
WMA	Wildlife Management Area
WWF	World Wildlife Fund

GLOSSARY OF TERMS

- A -

Abiotic: The nonliving components of the planet, not currently parts of the living organisms, such as soils, rocks, water ,air, light and nutrients.

Aboriginal: “Aboriginal peoples of Canada” [which] includes Indian, Inuit, and Metis peoples of Canada (Constitution Act, 1982, Subsection 35(2)).

Abutment: The structure supporting the ends of a bridge and retaining the approach profiles.

Accreditation: The procedure by which the Standards Council of Canada gives formal recognition that a body organization is deemed to be competent to carry out specific tasks.

Adaptive Management: A learning approach to management that incorporates the experience gained from the results of previous actions into decisions.

Advanced Regeneration: The young or extremely suppressed trees growing under an existing stand before it is logged.

Afforest (Afforestation): The establishment of a forest or stand of trees on an area not previously forested or where forests were cleared long ago and other use patterns have dominated for generations.

Age Class: One of the intervals into which the age range of forest stands is divided for classification and management.

Agricultural Landbase: Land used primarily for the production of plant or animal crops, including arable agriculture, dairying, pasturage, horticulture, floriculture, animal (including poultry) husbandry, and the necessary lands and structures needed for packing, processing and treating, or storing the produce. Agricultural land may be employed in an unimproved state with few, if any, management inputs (extensive rangeland), or in an intensively managed state with annual inputs of fertilizer, pest-control treatments, and tillage (plant crop production or pasturage).

Alignment: The horizontal route of direction of an access road. It is made up of straight line tangent sections and curves.

Angle of Repose: The maximum slope or angle at which a material such as soil or loose rock remains stable.

Annual Allowable Cut (AAC): The volume of timber that can be harvested under sustained-yield management in any one year, as stipulated in the pertinent approved forest management plan. This volume essentially equals the volume of wood that grows from the forest base each year.

Annual Operating and Renewal Plan (AORP): A plan prepared and submitted to Manitoba Natural Resources by the Company each year outlining access development, harvesting and forest renewal activities for the coming year with a projection of activities for the forthcoming additional two years.

Anthropogenic: Pertaining to human modified processes or communities such that original characteristics are changed.

Aquatic: Living or growing in water; pertaining to environments where water is the dominant substrate/influence

Aquatic Invertebrate: Animal species without a backbone; aquatic invertebrate species include insects, crustaceans, shellfish and worms.

ARC/INFO: Geographic Information Systems computer software which contains a powerful set of tools for creating and editing geographic databases and performing spatial analysis, data query, display and management. ARC/INFO was developed by Environmental Systems Research Institute (ESRI), Redlands, California.

Artificial Regeneration: Renewal of a tree crop by direct seeding or by planting seedlings or cuttings.

Apron: Erosion protection placed below the stream bed in an area of high flow velocity, such as downstream of a culvert.

Assessment: The analysis or evaluation of data and information collected through inventory and monitoring programs.

Audit: An independently led review of the adequacy and management practices, controls and processes to ensure that the organization continues to be in control and in compliance with relevant legislation, policies and directives.

Auditor: A person certified to perform sustainable forest management system audits.

- B -

Bedload: Stream transported materials, transported along the stream bed in the lower layers of stream flow.

Berm: A low earth fill constructed in the path of flowing water to divert its direction, or constructed to act as a counter-weight beside the road fill to reduce the risk of foundation failure.

Biodiversity (biological diversity): The variability among living organisms from all sources including inter alia terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; species and of ecosystems (Canadian Biodiversity Strategy, 1995).

Bioengineering: The process of bank and slope stabilization utilizing A combination of plant material (root structure), burying/staking of wood material and hard engineering methods.

Biomass: Weight of organic matter.

Biophysical: The naturally occurring objects and processes in an area. The term implies that everything can be classified as abiotic (non-living) or biotic (living).

Biotic: Any living aspect of the planet, especially population or community characteristics.

Borrow pit: A source of fill material used in road construction.

Boreal Forest: The boreal forest occupies the greatest part of the forested area of the Canada stretching from Newfoundland to the Rocky Mountains. This forest is primarily made up of stands of softwood tree species with mixtures of some of the hardwood species, such as trembling aspen and white birch, as well as areas of open and treed muskeg and bog.

Bracke Moulder: A specific model/manufacture of site preparation equipment which is pulled by a wheeled skidder to produce a patch of mineral soil and associated mound of overturned organic material.

Buck: To cut a felled or downed tree into shorter lengths.

Budworm: A moth, which in its larval stage feeds on buds and shoots early in the season and later feeds on the expanded foliage. Budworms, such as the spruce budworm and jack pine budworm, are important forest defoliators and account for significant losses of timber.

Buffer: An area of vegetated land which may include trees, shrubs and/or other vegetation retained following harvest as a mitigation procedure for non-timber values including water quality, fisheries values, soil protection, wildlife habitat and aesthetics or other important features.

- C -

Canopy: The aerial branches of trees with their complement of leaves.

Carbon Sequestering: To remove atmospheric carbon and store in the elemental form, as in wood.

Carbon Sink: Collectively, the carbon stored in living and dead biomass.

Check Dam: A low head dam structure constructed in a ditch in the path of flowing water to reduce erosion. Water flows over a check dam, so it is provided with a spill-over section that is erosion-resistant.

Clearcut Silviculture System: The clearcut silviculture system involves the harvest of all merchantable trees from the area being harvested prior to regeneration of new seedlings in fully exposed conditions. This method is the commonly utilized harvesting and renewal practice for the even-aged forest stands of the boreal forest. A variety of modifications may be applied to the system at the harvest stage to provide mitigation for non-timber values.

Classification: A means of arranging entities into groups or sets on the basis of their similarities and relationships, or their dissimilarities (e.g. road classification).

Corduroy: Logs placed over a swamp for reinforcement of the natural root mat for the purpose of minimizing the risk of settlement or foundation failure for the road grade placed over top of it.

Committee for Moose Management (CMM): A committee formed under the Manitoba Model Forest and chaired by MC. Participation on the committee is voluntary with representatives from ENGO's, First Nations, Manitoba Model Forest, MC, PFPC and Wildlife Associations. The Eastern Region IRMT seeks input from the committee regarding access management proposals submitted for approval.

Community: An integrated group of species inhabiting a given area and influencing one another's distribution, abundance, and evolution.

Community Contractor Operation: Community contractor operations are independent contractors operating out of communities and First Nation Reserves within or adjacent to FML 01. Their operations are planned and directed by Pine Falls Paper Company with an objective of minimizing travel from the community to the work site. Each contractor is responsible for their own on site supervision of operations. These operations harvest timber volumes under the authority of the Forest Management License Agreement.

Company Operation: Company operations are Pine Falls Paper Company unionized and staff employees engaged in timber harvesting operations. These operations are planned and directed by Pine Falls Paper Company under the authority of the Forest Management License Agreement.

Components: The controls and processes that the registration applicant has put in place in order to achieve the goals and objectives of sustainable forest management in the specific defined forest area.

Composition: see Forest Composition

Cone: A reproductive tree structure having a main axis bearing sporophylls (cones scales) and sometimes, bracts, that forms a detachable unit. Some cones are short-lived, such as male pine cones, while other have a long duration and are often woody, such as female pine cones.

Conifer: A wide range of tree species within the order *Gymnospermae*, typically evergreen, bearing cones, and having needle-shaped or scale-like leaves. Conifer timber is termed softwood.

Conifer Release: The use of either manual methods or application of herbicides to temporarily reduce competing hardwood vegetation from a site which will be regenerated to a softwood covertype.

Conservation: Management of the human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations, and includes the preservation, maintenance, sustainable utilization, restoration and enhancement of the environment. Modern conservation theory incorporates the notion that what is to be conserved is not so much the physical state of an ecological system as the ecological processes by which that state is created and maintained.

Contiguous Cuts: A term used to describe clearcuts that are adjoining or close together.

Contingency Cutblock: Cutblocks included in the planning process at the Annual Operating and Renewal Plan stage to accommodate flexibility for operations to be moved from normally scheduled planned cutblocks to maintain continued operations and wood flow while minimizing potential negative impacts to soil and other values resulting from weather or other operating conditions. Contingency cutblocks also provide flexibility for moving of operations due to fire starts or to increase wood harvest levels to accommodate increases to scheduled mill wood requirements. For weather related contingency cutblocks locations are preferred on upland, well-drained sites in close proximity to all-weather road access to maximize potential use of the contingency cutblock year round.

Corduroy: Logs placed over swamp or other wet ground conditions to reinforce the natural existing root mat to minimize the risk of settlement or ground disturbance during travel or foundation failure of the supported road surface.

Corridor: An area of uniform width bordering both or one side of a lineal feature such as a stream or route.

Covertype: This term is used to describe the general tree species composition of the forest stand to which it is applied.

Criteria: Standards for judging forest sustainability. For each criterion, there may be one or more indicators that demonstrate whether or not the standard is being achieved.

Crown: A road is 'crowned' when the centre of the road surface is higher than its outer edges to create a cross-gradient of about four percent. This enables water on the surface to drain towards the ditches.

Crown land: In Canada, any land deemed to be the property of the Crown. Provincial Crown land is any land owned and under the administration of the Manitoba Provincial Government, which can include municipal lands. The majority of the land within FML01 is Manitoba Provincial Crown land. Federal Crown land includes national parks and national historic parks and sites, Indian reserves and, in general, all public lands held by the several departments of the federal government for various purposes connected with federal administration.

Cross drainage Structures: Culverts or other drainage structures that permit water to move from one side of a road to the other, normally under the road grade.

Criterion (pl. Criteria): A distinguishable characteristic of sustainable forest management; a value that must be considered in setting objectives and in assessing performance.

Cultivation: The act of loosening or breaking up the soil about growing plants to foster growth.

Culvert: Round shaped pipe structure used to convey water under an access road.

Cut and Skid: Cut and skid is the term applied to the method of harvesting whereby trees are cut, delimited and topped by a man using a powersaw. The trees are then pulled (skidded) to the roadside using a skidder.

Cutblock: Cutblock is the term which is used to define specific stands or parts thereof, contained within an operating block, that have been designated to be harvested. Cutblocks are defined in the Annual Operating and Renewal Plan and are submitted, with operating block boundaries, to Manitoba Natural Resources in application of a General Permit.

Cutover: This term is used to describe an area which has been harvested using the clearcut harvest method. The merchantable trees have been removed from the cutover area.

Cut-to-Length: The cut-to-length logging system utilizes processor type equipment within the cutover areas to process the felled trees into shortwood from prior to transporting the shortwood logs to roadside for subsequent delivery to the mill site.

Cutting Class: Cutting Class is a broad maturity classification system within the Manitoba Forest Inventory. It is based on a combination of size, vigour and state of maturity of a forested stand.

- D -

Database: A logical collection of inter-related information, managed and stored as a unit, usually on some form of mass-storage system such as a magnetic disk or tape. A GIS database includes data about the spatial location and shape of geographic features recorded as points, lines or areas, as well as their attributes.

Database Management System (DBMS): A set of computer programs for organizing the information in a database. Typically a DBMS contains routines for structuring a database on a standard format and providing tools for data input, verification, storage, retrieval, query and manipulation.

Decommission: The process of removing a structure/infrastructure from service; may involve removal of structure, recontouring, material re-spread and revegetation.

Defined Forest Area (DFA): A specific area of forest, land, and water delineated for the purposes of registration of a Sustainable Forest Management System.

Depleted Area: Managed forest area on which merchantable volume has been decreased due to harvest, fire, insect, disease, or other causes, and where forest renewal is required.

Disease: Harmful deviation from normal functioning of physiological processes, generally pathogenic or environmental in origin.

Disturbance: any relatively discrete event in time that disrupts ecosystem, community or population structure and changes the physical environment either through natural or anthropogenic causes.

Ditch Blocks: Barriers constructed across ditches to retard water flow, to redirect water from the ditch, or to form a small catch basin.

Dormant: (1) An organism in a state of reduced physiological activity, or an abiotic feature, such as a volcano, that is in between periods of active change. (2) A state in which viable plant seeds exposed to favorable environmental conditions fail to germinate.

Duff: The layer of partially and fully decomposed organic materials lying below the litter and immediately above the mineral soil.

Duration: Referring to the length of time of an activity, event or process; for this document relative duration often considered in light of forest life cycle.

Dwarf mistletoe (*Arceuthobium americanum* Nutt.): A flowering parasitic plant of the Loranthaceae family most commonly found growing on the lodgepole and jack pines.

- E -

Eastern Manitoba Woodland Caribou advisory Committee (EMWCAC): A committee formed through the Manitoba Model Forest and chaired by MC with representatives from ENGO's, First Nations, Manitoba Model Forest, MC, Manitoba Transportation, Manitoba Hydro, Tembec and Wildlife Associations. Management activities related to woodland caribou on the east side of Lake Winnipeg is vetted through this committee.

Ecological Approach: The management of human activities so that ecosystems, their structure, composition and function and the processes that shaped them can continue at appropriate temporal and spatial scales.

Ecological Land Classification (ELC): A hierarchical approach to classifying land which is based on a consistent framework of landscape and site-level ecosystems by combinations of geologic, climatic, vegetative, soil, and landform features.

Ecoregion: An ecological landscape unit (ranging in resolution from hundreds of thousands to tens of thousands of square kilometers) characterized by distinct patterns of responses to climate as expressed by soils, hydrology, vegetation (species ranges and productivity), and fauna.

Ecosite: An ecological landscape unit (ranging in resolution from thousands to hundreds of hectares) comprised of relatively uniform geology, parent materials, soils, topography, and hydrology, occupied by a consistent complex of successional related vegetation conditions.

Ecosystem: The sum of the plants, animals, air, water, soil, environmental influences and their interactions within a particular habitat.

Ecosystem Based Management (EBM): A management practice and philosophy aimed at selecting, maintaining, and/or enhancing the ecological integrity of an ecosystem in order to ensure continued ecosystem health while providing resources, products or non-consumptive values for humans. An integral part of ecosystem management is the maintenance of ecologically significant structure and process within the ecosystem. The actions taken reflect the management goals and range from protection from human influence through to an increasing intensity of interventions to serve human needs.

Ecozones: Large landscapes representing generalized ecological units characterized by interactive and adjusting abiotic and biotic factors.

Effluent: Pulp or paper mill waste material discharge to the environment.

Environment: The surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelations.

Environmental Compliance Audit Program: Process established to review actual results as compared to planned activities in terms of environmental performance; includes examination of planning processes and field implementation in light of stated objectives and targets and regulatory requirements.

Environmental Effect: Any change that a project may cause in the environment, including any effects related to social and economic conditions as well as on the physical environment and land use.

Environmental Impact: The positive or negative effect of an action (e.g. forest management activity) upon a specific component of the natural, economic or social environment.

Environmental Impact Assessment (EIA): An assessment of the environmental effects of a project conducted in accordance with established requirements.

Environmental Impact Statement (EIS): The formal documentation of an environmental impact assessment.

Environmental Management System (EMS): A systematic approach to managing environmental performance. This includes defining broad commitments in an environment policy, defining environmental roles and responsibilities and training of employees and contractors, incorporating environmental requirements in all work activities, adherence to detailed work procedures, dealing with and preventing environmental non-conformances, auditing and reviewing performance, and setting objectives and targets to continually improve environmental performance.

Ephemeral: Pertaining to the seasonal nature of an event or process.

Erosion: Erosion is the movement of soil associated with factors such as water and wind. Increases in soil movement are generally associated with increased exposure of the soil to these factors.

Even-aged: The term even-aged is used to describe stands of trees in which the ages of the trees generally differ by about 20 years or less. Even-aged stands are made up of tree species which have evolved a similar regeneration pattern based upon the need for an open free source of light and no competition from other species.

Even-aged Management: Silvicultural systems in which stands have an even-aged structure (e.g., clearcut and shelterwood systems).

Even-aged stands: Stands where the ages of most of the trees are within 20 years of each other.

Exotic Species: Introduced species not endemic to the area.

Extent: Referring to the geographic area an activity covers and its associated area of influence.

- F -

Fauna: The animal community found in one or more regions.

Felling: The aspect of timber harvesting related to the actual cutting down of trees.

Fire-Origin: Referring to an ecosystem that has naturally developed from a wildfire event.

Fish Habitat: Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.

First Nation: A band as defined in the Indian Act (Canada).

Floodplains: A flat area bordering a watercourse, made up of unconsolidated river-borne sediment, and which is periodically flooded.

Forecast: A prediction of future conditions and occurrences based on the perceived functioning of the system being examined. The accuracy of a forecast depends on a proper understanding of the system; hence the highly variable nature of forecasts involving natural resources, which are typically very complex and seldom fully understood.

Forest Composition: The parts making up a particular forest area; often referring to forest tree species and may include herbaceous and woody plant species.

Forest Dynamics: The natural processes involved in the development of a forest and associated with growth and changes to its structure and composition through time.

Forest Ecosystem: An ecosystem in which trees are or are capable of being a major biological component.

Forest Ecosystem Classification (FEC): A classification system for forest stands based upon overall ecosystem components including forest vegetation and soils.

Forest Estate: That part of forest land under the responsibility of a particular organization; typically a forest license area.

Forest Fragmentation: The loss of connectivity between forests across a landscape.

Forest Hydrology: The study the movement of water as influenced by forest ecosystems

Forest Inventory: A survey of an area to determine such data as area, condition, timber volume, and species, for specific purposes such as planning, purchase, assessment, evaluation management, or harvesting.

Forest Land: Land supporting forest growth or capable of doing, or, if totally lacking forest growth, bearing evidence of former forest growth and not now in other use.

Forest Management: Generally, the practical application of scientific, economic and social principles to the administration and working of a forest for specified objectives; more particularly, that branch of forestry concerned with the overall administrative, economic, legal and social aspects, and with the essentially scientific and technical aspects, especially silviculture, protection and forest regulation.

Forest Management Unit (FMU): Forest Management Unit (FMU) is the term applied to designated areas of the Province of Manitoba by MNR for the administration of the forest resource. Each FMU is identified using a two digit number.

Forest Model: A computer-based simulation that within definable parameters forecasts the development of the forest and the benefits that become available from a forest through time.

Forest Operations: All activities related to harvesting or using a forest resource for a designated purpose or the renewal or maintenance of a forest resource.

Forest Operations Prescription: A specific set of integrated harvest, renewal and maintenance activities for a particular forest site. A prescription is developed before any operations can commence.

Forest Products: Any raw material yielded by trees.

Forest Protection: In this context protection activities against fire, insect and disease events.

Forest Regeneration Survey: A systematic survey designed to assess the establishment, growth and health of regenerating forest trees established either naturally or artificially on a site following a disturbance such as harvesting or fire.

Forest Renewal: Those silvicultural operations that are undertaken to provide forest cover. This normally includes the activities of site preparation and regeneration.

Forest Resources: All resources and values associated with forest ecosystems, whether biotic, abiotic, social, or economic, including animals, trees, other vegetation, land, water, air, and recreational, spiritual, and heritage values.

Forest Section: Forest Section is the term applied to designated areas of the Province of Manitoba by MC for the administration of the forest resource. Each forest section is identified with a name. A forest section is assigned to each group made up of all FMUs with a matching first digit. For example the Interlake Forest Section is made up of all FMUs with the first digit of 4.

Forest Structure: A description of existing vegetative material of a forest as influenced by climate, topography, geology, soil and disturbance; may be described in terms of age-class structure.

Forest Type: A group of forested areas or stands of similar compositions; forest types are usually separated and identified by species composition and often by height and crown closure classes.

Forestry: Generally, a profession embracing the science, business, and art of creating, conserving, and managing forests (i.e., forest management) and forest lands (i.e., forest management units) for the continuing use of their resources, material, or other forest products.

Forwarding: The aspect of timber harvesting operations related to the transportation of the harvested trees from the stump area to the landing at roadside. Forwarding may occur utilizing carrier type vehicles where the trees are loaded onto bunks for the trip to the landing or utilizing skidders where the trees are pulled by the butt end of the logs using a cable/winch mechanism or a grapple system.

Foundation: The foundation for a bridge may include the underlying soil and the lowest levels of any pier or abutment resting on it.

Fragmentation: see **Forest Fragmentation**.

Free to Grow (FTG): A forest stand condition determined through a regeneration survey in which the tree species (usually softwoods) are free from competition and are in a position to grow without being impeded by hardwoods, brush or grasses.

Frequency: The periodicity of an activity.

Fringe Wood: Fringe wood is a term used for a strip of trees adjacent to a non-merchantable stand within a harvest cutblock. Fringe wood is often marginal in terms of merchantability due to the short height and small diameter.

- G -

Genetic Diversity: the genetic variability within a population or a species.

Geographic Information System (GIS): An information system that uses a spatial database to provide answers to queries of a geographic nature through a variety of manipulations, such as sorting, selective retrieval, calculations, spatial analysis, and modeling.

Geotextile: A recently-developed product used as a soil reinforcement agent and as a filter medium. It is made of synthetic fibers manufactured in a woven or loose non-woven manner to form a blanket-like product. It is normally supplied in rolls that would cover four metres wide by 100 metres long (15 by 300 feet).

Global Positioning System (GPS): A satellite-base device that records x, y, z coordinates and other data. GPS devices can be taken into the field to record data while driving, flying, or hiking. Ground locations are calculated by signals from satellites orbiting the Earth.

Goal: A broad, general statement that describes a desired state or condition related to one or more forest values.

Grade: The elevation of the top of the finished road is called the grade. The longitudinal cross-section of a road showing the elevation at various points along the length of a road is called the road profile.

Gravel, Pit-Run: The name given to naturally occurring graded material deposited by the retreating glaciers in flowing water (kams, eskers, spillways). Gravel is a granular material ranging in size from fine sand to about 50 millimeters (two inches) in diameter.

Gross Merchantable Volume (GMV): Volume of the main stem, excluding stump and top but including defective and decayed wood, of trees or stands.

Gross Total Volume (GTV): Volume of the main stem, including stump and top as well as defective and decayed wood, of trees or stands.

Grubbing: Phase of road construction following right-of-way clearing to prepare the roadbed for subgrade construction through removal of any remaining duff and organic matter and debris that would otherwise result in weak points in the road grade. Includes clearing of remaining non-merchantable trees from the right-of-way and stripping of duff and organic matter (stumps, large roots, branches, root mat, etc.) from the roadbed location.

Guilds: A set of species that shares a common habitats (such as old-growth forests), that use the same resources (such as floods), or that use resources in the same manner (such as mode or foraging). A group of organisms having similar ecological niches and/or life forms.

- H -

Habitat: An area with the combination of resources (food, cover, water) and environmental conditions (temperature, precipitation, presence or absence of predators and competitors) that promotes occupancy by individuals of a given species (or population) and allows those individuals to survive and reproduce.

Habitat Unit (HU): A Habitat Unit (HU) is the HSI value for a given stand polygon multiplied by its area. For example, a 100 hectare forest stand with an HSI value of 1.0 has 100 Habitat Units (HUs).

Hardwood: Hardwood is a term used to describe tree species with the typical broad-leafed appearance. These tree species lose their foliage during winter months. Species included in this group are trembling aspen, white birch, balsam poplar, Manitoba maple, etc.

Harvest Prescriptions: The strategy and technique that will be used to harvest timber.

Herbicide: Chemical substance used to control competing vegetation. The application of the herbicide glyphosate (trade name Vision^R) on established areas of softwood forest renewal to inhibit growth of competing vegetation may be used as part of an overall forest renewal program.

Hibernacula: Resting and overwintering areas used by bat and snake species; typically caves and underground crevices.

High - Water Mark (Unvegetated Channel): Stream course water levels corresponding to the top of the unvegetated channel or lake shore.

Hydrology: see **Forest Hydrology**.

- I -

Impact: A consequence or outcome, either positive or negative, resulting from an event; in this context an outcome resulting from an activity.

Improved Stock: Renewal stock (seedlings) whose seed source has come from an above average forest stand or from seed orchards using genetic improvement techniques.

Indicator: A selected measurable variable that relates to a specific forest sustainability criterion. Indicators are used in the determination and assessment of forest sustainability and to report on progress made towards achieving targets.

Infrastructure: Roads, watercourse crossings, camps, timber and fuel storage sites and designated waste sites put into place to support harvesting and forest renewal activities.

Insecticide: Any chemical or biological preparation used to kill or disrupt the development of insects.

Insignificant: An assessment of an impact considering; magnitude, extent, duration and frequency of the activity; the outcome of which is minor or negligible in the reviewed context.

Integrated Directors Group (IDG): The Integrated Directors Group of MNR is made up of the Directors of the following branches of the MNR; Forestry, Wildlife, Regional Operations, Lands, Fisheries, Water Resources, and Parks of Natural Areas, and is organized to review natural resources issues from a provincial perspectives.

Integrated Resource Management (IRM): The management of forest resources in an area to meet the management objectives of an integrated resource plan.

Integrated Resource Management Teams (IRMT): The regional Integrated Resource Management Teams of Manitoba Natural Resources, located in the Eastern Region (Lac du Bonnet), and the Central Region (Gimli), and composed of members of the following branches of the Department: Forestry, Wildlife, Regional Operations, Lands, Fisheries, Water Resources, and Parks and Natural Areas, is organized to review regional natural resource issues.

Interim Forest Management Plan (IFMP): The planning document prepared and submitted to the Manitoba Government for approval which outlines the planned forest management activities for FML 01 to be conducted in the interim period while Manitoba is completing a wide area land use study for the East side of Lake Winnipeg (3 year period).

In-Block Road Closure: Closure includes blocking the entrance to a cutblock or spreading logging debris across the in-block road. May not apply in all cases.

Integrated Wood Supply Area (IWSA): The Pine Falls Paper Company formerly held certain specified timber harvesting rights to two IWSA areas of the landbase. One located in the Interlake Forest Section and the other located in the Lake Winnipeg East Forest Section. These areas are now contained within the boundaries of FML 01.

- J -

Joint Planning: A process specifically developed to focus attention on the recognition of timber and non-timber values in the development and implementation of forest management plans for the area surrounding a specific community. The process includes active participation of First Nations with the Company in the development of such plans affecting the area around their community.

Juvenile Spacing: Is a means of reducing tree density on naturally regenerated sites to allow for optimal growth of the trees retained in the site.

- **K** -

Kiln: Lumber that has been dried a kiln with the use of heat to improve its serviceability, in particular to minimize, warping.

- **L** -

Landing: An area where harvested timber is piled before slashing and / or delivery to the mill or intermediate stockpiling site.

Landscape: A heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout.

Landscape Ecology: The study of the response of species or communities to patterns across more than one patch. A patch refers to an area which has more or less homogeneous environmental conditions.

Landscape Processes: Those dynamics which serve to control and/or modify the structure, composition and function of ecosystem on the landscape.

Larvae: (1) In zoology, the immature form of animals that go through metamorphosis. (2) In entomology, any insect species that undergoes complete metamorphosis. The larva emerges from the egg and is fundamentally different in form from the egg and then subsequent pupal and adult forms.

LD50: The median lethal dose, measured in mg/kg of body weight, sufficient to kill 50 percent of the animals in a test population. The lower the LD50, the more toxic is the substance.

Leachate: Wood extractives expelled from stored logs; the extractive may become toxic to some organisms when concentrated on the soil surface.

Limbing and Topping: Process of removing limbs and tops from harvested trees prior to delivery to the mill. Forestry Branch Regulation requires the limbs and tops of harvested trees to be removed at the stump.

Line-of-Sight Distance: The distance at which an object can be identified.

Logfill Crossings: Stream crossings constructed with logs placed in a streambed parallel to the flow of the water.

Logging Method: A term which indicates the process used to move wood products from stump to roadside during a harvesting operation. The choice of process has nutrient cycling implications.

- **M** -

Magnitude: The severity of impact at the site, landscape and trans-boundary level, considering cumulative effects.

Management Alternative: A set of specific management objectives, each with quantified targets, and management strategies which aim to achieve those objectives.

MFBM: One thousand foot board measures (board feet).

MMFBM: One million foot board measures (board feet).

Manitoba Environment (ME): Manitoba Department of Environment.

Manitoba Conservation (MC): Manitoba Conservation (MC) is the department of the Government of the Province of Manitoba which is responsible for the administration and overseeing of the management of the environment and of natural resources on the Crown lands. MC includes several branches, each of which is responsible for the administration of a particular segment of the environment or natural resource. Related to Crown forest lands these branches include Forestry, Wildlife, Water Resources, Fisheries, Parks and Natural Areas, Lands and Regional Operations.

Manitoba Timber Quota System: System established by MNR in 1965 for the allocation of specified volumes of timber to “quota holders”. These individual third parties hold separate timber volume commitments within FML 01 with the Province of Manitoba, independent of PFPC. Timber volumes harvested by these operators are regulated through their respective timber sale agreement with Manitoba.

Mean Annual Increment (MAI): The increase in a tree or stand dimension (usually volume), as an average annual increase; **Current Annual Increment** is that increase measured over a one year period.

Mechanical Logging Method: A mechanical logging method is one which employs the use of mechanical equipment such as a feller-buncher and a delimeter or harvester –processor to cut, fell and delimit trees instead of a man with a powersaw.

Mensuration: The measurement of volume, growth and development of individual trees and stands, and the various products obtained from them.

Merchantable Timber: Trees of suitable size, quality and species such that the harvested bole section will meet the minimum specifications established by the mill for utilization.

Microsites: In terms of forest renewal treatments, a microsite refers to the immediate area in close proximity to the location in which the tree seedling or seed is to be placed. For establishment and early growth of the seedling or seed it is desirable for the area encompassed by the microsite to provide a suitable planting spot of mineral or decomposed humus soil for rooting with suitable moisture conditions and free of immediate competition from adjacent hardwood trees, shrubs and grasses.

Mitigable (Mitigation): Ability to prevent or make less severe or intense; in this context the proactive practice to abate the potential negative consequences of an anticipated impact.

Mixedwood(s): (1) Trees belonging to either of the botanical groups Gymnospermae or Angiospermae and which are substantially intermingled in stands. Also, the wood of such trees mixed together in substantial quantities. (2) A forest type in which 26-75% of the canopy is softwood.

Monitoring: The collection and analysis of data over extended periods of time. It provides information on past and present ecological, social, cultural, and economic trends, and a basis for predictions about future conditions.

- N -

Natural Disturbance: any relatively discrete natural event in time that disrupts ecosystem, community or population structure and changes the physical environment; generally through fire, weather, insect and disease events.

Natural Regeneration: The renewal of a forest stand by natural rather than artificial means, such as seeding-in from adjacent stands, with the seed being deposited by wind, birds, or animals, or from seed from cones originating on the site. Regeneration may also originate from sprouting and suckering in the case of hardwoods, or layering in the case of softwoods.

Neo-tropical Migrant Birds: Bird species that migrate long distances each autumn wintering in tropical forests of Central and South America and the Caribbean Islands.

Netdown: In this context the process of preparing the forest inventory database for use in sustainability modeling through identification of areas of the landbase not considered as productive or available for timber harvesting. Includes deletion of areas to meet non-timber objectives and targets such as buffers and special management areas.

Non-Merchantable Timber: Trees of size, quality and species such that the harvested bole section will not meet the minimum specifications established by the mill for utilization.

Non-Mitigable: Relates to impacts that cannot be made less severe or prevented; usually resulting from permanent development works and structures associated with all-weather roads.

Non-operable Trees: Includes trees which may otherwise be merchantable, as well as unmerchantable trees, that are not operable due to their location on steep slopes, rocky terrain, wet ground or other ground conditions that make harvesting operations unsafe and/or unsuitable in terms of potential environmental affects.

Non-Sufficiently Regenerated (NSR): Areas which through a regeneration survey are revealed to have less than the required number of regenerating trees, either softwoods, hardwoods or both to grow into an adequately stocked forest stand at maturity.

Non-timber Use: Use of forest resources for all purposes other than utilization for timber or wood by-products.

- O -

Off-take Ditch: A ditch excavated to carry roadside drainage away from the roadway to a point downstream and off the right-of-way to which water will flow. In flat terrain an off-take ditch may extend into the bush outside the right-of-way.

Operating Area: Operating area is the term which is used to define a forest area containing timber of a suitable age and species composition to permit harvesting operations for a designated time period. Operating areas are used in the Sustainable Forest Management Plan to provide a geographic boundary within which Annual Operating and Renewal Plans will be developed.

Operating Block: Operating block is the term which is used to define a forest area contained within an operating area. Operating blocks are designated in the Annual Operating and Renewal Plan and are used to define the geographic boundary submitted to Manitoba Natural Resources in application of a General Permit.

Oriented Strand Board (OSB): OSB is a reconstructed timber-based structural panel that uses hardwoods like poplar as its principle raw material. The product is used primarily in the construction and packaging industries as a substitute for softwood plywood.

Overstory: That part of the forest structure comprising the canopy of the forest.

- P -

Patch: An area which has more or less homogenous environmental conditions.

Permanent Reserve: An area permanently excluded from harvesting.

Permanent Roads: Roads that will be in use for more than two years.

Permanent Sample Plots (PSPs): Plots established in forest stands of varying ages from immediately following forest renewal treatment to mature forest stands. These plots and the trees within them are permanently marked and are re-measured at periodic intervals to monitor such factors as survival, ingress, health, and growth.

Pier: On bridges of more than one span, the intermediate supports between abutments are called piers.

Planning: The organized process of identifying procedures and activities to be undertaken to achieve specific goals.

Prescribed Burn: A fire managed for the purpose of reducing logging slash or for silvicultural site preparation.

Pre-harvest Assessment (PHA): The survey process undertaken to investigate areas being proposed for harvesting and subsequent forest renewal activities. The process can include aerial reconnaissance, but in particular, will include on-the-ground field investigation of the proposed area in terms of timber volumes and condition, operating ground conditions, wildlife habitat and other non-timber features present and implications for forest renewal. Information collected is utilized to develop plans and mitigation procedures for operating the area.

Principle: A formal statement that provides a basis for sustainable forest management policy and that serves as a fundamental guide to action.

Productive Forest Land: Based upon the MNR Forest Inventory, productive forest land includes all forest land capable of producing timber of merchantable size regardless of its current stage of productivity.

Protection: Forest management operations which carried out to prevent, control or manage the spread of, and /or damage caused by, insects and diseases. Protection may involve the use of insecticides or manual treatments.

Productivity: The natural ability of a forest ecosystem to capture energy, support life forms, and produce forest resources.

Push-out: Areas where slash debris, stumps and organic material are deposited in piles off the right-of-way.

- Q -

Quota Holder Operations: Quota holder operations have their own separate, renewable long term volume agreements with Manitoba which are tied to specific Forest Management Units. These operations are planned by Pine Falls Paper Company but do not fall under the supervisory direction of Pine Falls Paper Company in terms of operation. They operate under the authority of their Quota Agreement with Manitoba and the Sustainable Forest Management Plan.

- R -

Recreation / Tourism Sites: Sites with recreation and tourism developments that are managed for recreation.

Reforestation: The natural or artificial restocking of an area with forest trees.

Regeneration: The establishment phase of softwood or hardwood species on burned-over or cutover areas. Regeneration is a component of forest renewal. It may also refer to the young crop itself.

Rhizome: A root like stem growing horizontally below the ground surface. A rhizome can produce adventitious roots and shoots.

Right-of-Way (ROW): The cleared area along the road alignment which contains the roadbed, ditches, road slopes and back slopes.

Riparian: Pertaining to anything connected with or immediately adjacent to the banks of a stream or other body of water.

Rip Rap: A layer of boulders or shot rock fragments placed over a soil to protect it from the erosive forces of flowing water.

Road Development and Access Management Plan (RDAMP): Individualized plan developed for each new major road system, and for those existing roads for which such plans are deemed necessary, to integrate access management up-front in road development planning. The RDAMP will incorporate public interests for the area concerned utilizing workshops and meet all MC submission requirements.

Road Maintenance: Those day to day activities necessary to maintain a road for the traffic using it.

Rollback: Strippings and debris returned to distributed areas for reclamation purposes.

Roundwood: Roundwood is the term applied to timber has been harvested and the limbs and tops have been removed. The timber is then delivered as a whole log.

Rutting: Shearing of the organic duff layer and underlying mineral soil layers causing deep ground depressions and pooling of surface water.

- S -

S-Type: In the Forest Ecosystem Classification for Manitoba this refers to soil types.

Salvage: the recovery or harvesting of timber that had been killed or damaged by natural causes, such as fire, wood, flood, insects, and disease.

Safety: Personal protective equipment including hard hat, eye, ear and foot protection. Additional Workplace Health and Safety Requirements.

Scarification: The treatment of a cutover by mechanical means (e.g. drag chains) to create suitable microsites (seedbeds) and distribute seed sources (cones) for natural regeneration by naturally occurring seed sources.

Scour: This is the term used to describe soil erosion when it occurs under water, as in the case of a stream bed or river bottom.

Seed Bank (Soil Seed Bank): The dormant seed reserve existing in the soil.

Seed Collection Area: An area established in a large, relatively pure, uniform stand of mature or semi-mature trees, average or above in form and vigour. Such an area provides an interim source of identified seed for use in an artificial regeneration program. The area will be assigned a seed source number; any seed collected should be identified by that number. These areas receive minimal treatment as the trees are normally cut for seed collection.

Seed Orchard: A relatively small area, established with superior stock derived from selected parent material, and intensively managed to provide a sustained supply of genetically improved seed for use in an artificial regeneration program. The orchard will be assigned a seed source number; any seed collected should be identified by that number.

Seed Production Area: A relatively small area, that medium-aged, sexually mature, and above average in form and vigour. Seed production areas are managed specifically for the production of seed. Such an area provides an interim supply of source identified seed for the use in an artificial regeneration program. Seed is usually collected from standing trees using non-destructive collection techniques. The area will be assigned a seed source number; any seed collected should be identified by that number.

Seed-Tree: A method of harvesting and regenerating a forest stand in which all trees are removed from the area except for a small number of seed-bearing trees that are left singly or in small groups. The objective is to create an even-aged stand.

Seed Zone: Within the Province of Manitoba, MNR has established 13 seed zones based on regional ecological conditions. Seedlings grown from seed collected from a specific seed zone can be planted anywhere within that specific seed zone.

Seeding: A silvicultural treatment that utilizes that placement of seed in site prepared or unprepared areas.

Selected Management Alternative: The management alternative which achieves a realistic set of benefits (timber and non-timber) and achieves a sustainable future forest condition over time.

Selection Harvest: An uneven-aged silvicultural system in which selected trees are harvested individually or in small groups at periodic intervals throughout a rotation; the objective is to improve the timber condition, composition, structure and value.

Sequester: see **Carbon Sequestering**

Seral Stages: Also called successional stages. In a forestry context, the series of plant community conditions that develop during ecological succession from bare ground (or major disturbances) to the climax stage.

Serotinous: Particularly applied to cones that remain in the tree for more than one year without opening.

Shear-blading: The operation of cutting off trees and brush at ground level by pushing a bulldozer blade along the frozen surface in winter. The stems and trunks are sheared off at ground level.

Shelterwood Cut: A method of harvesting in which mature trees are removed in a series of two or more cuts whether by cutting uniformly over the entire stand, in strips or in groups. This harvest method is designed to establish a new stand under the protection of the old, as typified in shelterwood systems, or where the resultant stand will be more or less regular. The seeding cut is considered a regeneration and harvest activity.

Shortwood: Shortwood is the term used to describe timber which has been felled, limbed, topped and then cut into specific lengths for the purpose of transporting it to the mill site.

Significant: An assessment of an impact considering; magnitude, extent, duration and frequency of the activity; the outcome of which is considerable or serious in the reviewed context.

Siltation: The deposition of soil particles into a watercourse as a result of movement through water erosion from surrounding sites.

Silvics: The study of the life history, requirements, and general characteristics of forest trees and stands in relation to the environment and the practice of silviculture.

Silvicultural Systems: A process that applies silvicultural practices, including harvesting, forest stand establishment, monitoring and tending, to a stand in order to produce a new forest. Note: the system is generally named by the harvest method with which the regeneration is established.

Silviculture: The science and art of growing and tending forests based on the knowledge of the forest species requirements.

Silviculture Treatment Prescriptions: A prescription of one or more types of silviculture treatments that in combination are proposed for the renewal of a harvested area.

Site: An area considered in term of environment, particularly as this determines the type and quality of the vegetation the area can carry.

Site Preparation: The treatment of a cutover by mechanical means (e.g. disk trencher, Bracke) to create suitable microsites for forest stand establishment by tree planting or seeding.

Skid Trail: An unimproved temporary forest trail suitable for use by equipment such as bulldozers and skidders in bringing trees or logs to a landing.

Slash (ing): (1) In terms of logging methods, slashing is the activity whereby treelength timber is cut and sorted into shortwood logs. (2) In terms of the forest renewal process, slash is the term used to describe the limbs, tops and any other unmerchantable timber residue remaining in the cutover after logging operations are complete.

Snag: A dead standing tree that may provide roosting or cavity nesting/denning opportunities for wildlife.

Snow Cache: A tree seedling storage method to allow winter delivery and storage of frozen seedling stock with storage of the boxes of seedlings under a blanket of snow at the planting site for later thawing and planting in the spring planting season.

Softwood: Softwood is a term used to describe conifer tress species with the typical “evergreen” appearance. Species included in this group are black spruce, white spruce, jack pine, balsam fur and tamarack.

Spatial Diversity: The distribution of different plants, animals, and microorganisms over the landscape.

Special Allocation Holder Operations: Special allocation holder operations have their own separate, time period defined volume agreements with Manitoba which are tied to specific Forest Management Units. These operations are planned by Pine Falls Paper Company but do not fall under the supervisory direction of Pine Falls Paper Company in terms of operation. They operate under the authority of their Special Allocation Agreement with Manitoba and the Sustainable Forest Management Plan.

Special Concern, Threatened or Endangered (STE): Refers to wildlife and vegetation species listed as special concern, threatened or endangered by the Committee On the Status of Endangered Wildlife In Canada (COSEWIC) and/or the Manitoba Endangered Species Act (MESA).

Species Composition: see **Forest Composition**.

Species Diversity: the number of species present, their relative abundance in an area and a distribution of individuals among the species.

Spruce beetle (*Dendroctonus rufipennis*): A bark borer that generally attacks spruce and may kill mature stands during heavy infestations.

Spur: Spur is a term used to describe an area adjacent to an established railway line in which wood is downpiled from some operations for subsequent loading and delivery via railcar to the mill site.

Spur Roads: Class III (dry summer seasonal) and Class IV (winter) Roads utilized within operating blocks and associated cutblocks to provide access from the main road network for harvesting, timber delivery and forest renewal activities. Minimal road grade depth and surface width is utilized on these roads reflecting the limited level of traffic required.

Stand: A community of trees sufficiently uniform in species, age, arrangement or condition so as to be distinguishable as a group in the forest or other growth in the area.

Stand Structure: Structure of a forest at the stand level; in this context, generally refers to the presence or absence of elements of vertical structure related to various levels of forest vegetation (i.e. overstory tree canopy, understory shrubs, grasses and herbaceous layer, etc.).

Stand Tending: Activities such as mechanical thinning, spacing, removal of mistletoe-infected trees, and chemical weed or brush control, carried out in already established stands.

Stocking: A measure of the proportion of an area occupied by trees/seedlings, expressed in terms of a percentage of occupied fixed area sample plots.

Strategy: The means or steps to achieving an objective.

Stream: A flowing, channelized body of water of any size.

Strippings: Layers of humus-bearing topsoil and fine woody material above mineral soil.

Stumpage: The price charged for the right to harvest timber from publicly owned forest land.

Stump height: Lowest point, above the adjacent ground, of tree utilization

Stumping: The aspect of construction of roads, landings and campsites related to removal of tree stumps from the area in preparation for leveling and/or the application of the road grade.

Subgrade: In a vertical cross-section of a road, the subgrade is the surface of the earth cut or earth fill before the placement of selected imported material to construct a sand cushion or gravel surface.

Succession: Changes in species composition in an ecosystem over time, often in a predictable order.

Suckering: Vegetative reproduction of hardwood tree species originating from adventitious buds on either roots or stumps.

Sustainability: The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Sustainability Analysis: Analysis, using forest models, of the long-term sustainability of a forest ecosystem based upon various inputs including present forest inventory, expected growth and yield and non-timber constraints.

Sustainability Criteria: Standards by which forest sustainability are judged. For each criterion, there may be one or more indicators which demonstrate whether or not a standard is being attained.

Sustainability Model: see **Forest Model**

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Forest Management: Management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations.

Sustainable Forest Management Performance: The assessable results of sustainable forest management as measured by the achievement, or lack thereof, of established objectives for a defined forest area.

Sustainable Forest Management Plan (SFMP): The long-term planning document prepared and submitted to the Manitoba Government for approval which outlines the planned forest management activities for FML 01 for an extended period of time (currently 10 years).

Sustainable Forest Management System: The structure, responsibilities, practices, procedures, processes, and time frames set by a registration applicant for implementing, maintaining, and improving sustainable forest management.

Sustainable Harvest Level: Timber volume determined to be available for harvest through sustainability modeling based upon given modeling parameters.

Sustainable Yield Management: 1. The quantity of a resource that can be produced continuously under a given management regime (i.e. the rate of harvest equals the rate of production). 2. In timber management, a theoretical calculation of the yields of wood fibre possible in a continuing basis from a forest under a specified management regime. The calculations are based on data about the age-class composition; species; site productivity; the extent of the land base available now and in the future; the past, present, and predicted management and growth rates; and the likely extent of losses due to fire, pests, and diseases.

- T -

Target: A clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. A target is commonly stated as a desired level of an indicator.

Tending: Forest Management operations which are carried out to improve the growth or quality of a forest. Tending may involve cleaning, thinning, stand improvement or pruning.

Tenure: The condition, specified in terms of time and a defined forest area, by which a forest manager or owner holds rights to use, harvest, or manage one or more forest resources.

Ten-year Flood: The maximum quantity of water flow per second expected at a particular water crossing, on average, once every ten years. It has a ten percent probability of occurring in any given year. Other return frequencies are defined in a similar manner.

Terminal Buds: The bud at the apex of a stem or branch.

Terrestrial: Pertaining to land where the water table is rarely or briefly above the substrate surface.

Third Party Operation: Third party operations are independent contractors which are planned and directed by Pine Falls Paper Company. Their operations may occur considerable distance from their base of operations and would therefore require the establishment of a mobile camp. Each contractor is responsible for their own on site supervision of operations. These operations harvest timber volumes under the authority of the Forest Management License Agreement.

Thinning: A cutting made in an immature crop or stand primarily to accelerate diameter increment but also, by suitable selection, to improve the average form of the trees that remain. The removal of trees may be from the dominant and co-dominant crown classes to favour the best trees of those same crown classes, or the removal of trees may be to control stand spacing and favour desired trees using a combination of thinning criteria without regard to crown position.

Traditional Ecological Knowledge (TEK): Long standing, deep seated familiarity with, and understanding of, the natural environment that permits members of a society, through the medium of their culture, to procure and productively utilize those resources available within the environment to the benefit of their survival and well-being. (Petch and Larcombe 1998)

Transboundary Effects: Impacts which are able to cross the boundary of the study area in this case FML 01; typically include surface and ground water, air and wildlife.

Tree Improvement: The control of parentage combined with other silvicultural activities to improve the overall yield and quality of products from forest lands.

Treelength: Treelength is the term used to describe timber which has been felled, limbed and topped but not yet been processed into any particular log length.

Trim Allowance: An allowance applied to a bucked log to permit trimming and squaring of limber in the sawmill.

Trophic: Feeding levels in the food chain.

Two-pass Harvest: A harvest pattern in which all the merchantable timber in an area is harvested in two harvest passes. Normally, the harvest is done over approximately equal areas and in equal volumes.

- U -

Understory: The trees and other vegetative species growing under the canopies of larger adjacent trees and other woody objects.

Uneven-aged: The term uneven-aged is used to describe stands of trees in which the ages of the tree generally differ by more than 20 years. These forest stands are made up of tree species which have evolved a regeneration pattern which is tolerant of lower light conditions and competition from other species.

Utilization Standards: Standards established for bole diameters, stump height and merchantable length to meet mill requirements and wise use of timber resource.

- V -

V-type: A V-type (vegetation type) is a designation assigned to a specific grouping of vegetation within the Forest Ecosystem Classification based upon the presence and/or abundance of overstory and major or characteristic understory species.

Value: A principle, standard, or quality considered worthwhile or desirable.

Viewscape (Viewshed): The visible area, as it appears from one or more viewpoints.

Volume: The amount of wood in a tree, stand, or specified area, according to some unit of measurement or some standard of use.

Variable Retention Logging (VRL): Maintenance of elements of original forest components during logging operations, in the form of wildlife trees and understory vegetation, to retain components of original stand structure to meet wildlife, aesthetic and other targets.

- W -

Watercourse: Refers to the bed, bank or shore of a river, stream, creek or lake or other natural body of water, whether it contains or conveys water continuously or intermittently.

Watershed: An area of land that collects and discharges water into a single creek or river through a series of smaller tributaries.

Water Bars: Transverse ditches excavated in the surface of an abandoned road to divert surface flow towards the roadside ditches.

Wetted Stream Width: That width of a stream which includes the high water mark; usually denoted by permanent terrestrial vegetation.

Wetland: Land that is seasonally or permanently covered by shallow water, as well as land where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and had favoured the dominance of either hydrophytic or water-tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens.

Wildlife: Any vertebrate species found in a forest environment, excluding domestic animals.

Wildlife Trees: Includes live, partially dead and dead softwood and hardwood trees retained standing in the cutblocks following harvesting for the purpose of retaining elements of stand structure within the context of approximating natural disturbance. Criteria for retention include:

- Poor form trees, non-merchantable trees, dead and trees with signs of decay
- Merchantable trees in fringe wood, non-operable areas and regenerating areas
- Trees located in areas difficult to operate including steep slopes, gullies and rocky terrain
- Singles and clumps of trees are acceptable
- Generally minimize knocking down trees that are not going to the mill

Windfirm Boundaries: Cutblock boundaries established at locations that are stable and minimize the potential for timber losses from wind.

Windrow: A longitudinal pile of material. For example “a windrow of gravel” is a pile of gravel formed by a grader along the length of the road.

Woodstock™ Model: The Woodstock™ Model is a model used to forecast the available wood supply, and the effect on the state of the forest, over time. Use of the model is based upon a given starting forest inventory and certain assumptions.

Wood Supply Modeling: see **Woodstock™**.

Woody Debris: In a forest stand woody debris can include fallen trees, branches and logs resulting from the death of trees or shrubs. In association with harvesting and/or site clearing woody debris may include the non-merchantable trees and logs, branches and stumps and roots being cleared from the area.

Working Group: An aggregate of stands, including potential forest area assigned to this category, having the same predominant species, and managed under the same broad silvicultural system.

Work Permit: A work permit application must be submitted to MNR and approved prior to commencement of each planned operation. The work permit, which follows after the Sustainable Forest Management Plan and the Annual Operating and Renewal Plan (AORP), is utilized to notify MNR of the commencement of operations approved in the AORP and to outline any additional site specific details or required mitigation pertaining to the operation.

- Y -

Yield: The actual or estimated harvest of forest products over a given period of time.