Silvicultural Terms in Canada

Second Edition

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Introduction

Silvicultural practices in Canada have been developed in response to local or regional needs. Understandably, the terminology used to describe these practices in different parts of the country tends to have local and regional variations. Presentation of a clear picture of silviculture in Canada, based on statistics aggregated from various sources and jurisdictions, requires consistency in the use and meaning of terms describing silvicultural activities. The intent of this publication is to provide a basis for adoption by the Canadian forestry community of a common silvicultural terminology.

Specialized aspects of silviculture, such as tree breeding techniques, are beyond the scope of this publication. This second edition of *Silvicultural Terms in Canada* is not meant to be definitive, nor will it be all-inclusive. Several definitions in the Glossary include reference to regional variations in the meaning and usage of certain terms.

Silvicultural practices and terminology are constantly evolving. Comments and suggestions for improvement to this publication are welcome. Please address them to:

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Part I

Canadian Silvicultural Practices: An Overview

The purpose of Part I is to provide an overview of silvicultural practices in Canada and to explain the context in which silvicultural terms are used. Canadian silvicultural practices should be considered against a background of diminishing virgin forests and the expanding world need for all kinds of forest products and benefits. Three things are evident: first, it is becoming necessary to grow timber rather than find it; second, silviculture needs to be intensified; and third, it is necessary to learn how to accommodate the demands for different uses made of the forest.

A forest stand can be made to increase its timber yield by:

- Changing the stand density and structure.
- Increasing the net balance of photosynthesis to respiration by crop trees and the forest stand as a whole.
- Making genetic improvement in the tree species grown.
- Eliminating forest-floor vegetation that competes with trees and thus detracts from wood production.
- Using new or different species, strains, or races of trees on particular areas to give greater total wood production or improved quality and stem form.

Ways of changing forest site productivity to increase wood yields are:

- Restoring lost productivity of abused sites by protection from fire, grazing, and abnormal erosion and by the use of species adapted to the soil and climate.
- Improving the productivity of the site by cultivation, fertilizing, or irrigation.

These ways of increasing wood yield are stand-level actions, that is, actions taken to change the structure and dynamics of individual forest stands. Forests are composed of many individual stands, usually grouped into a forest management unit for planning purposes. Forest management involves actions at the level of the whole forest management unit: protection; forest renewal and stand tending; determining the size, location, and scheduling of harvests; and multiple-use planning.

Silviculture is not forest management. Silviculture consists of actions taken at the level of individual stands to renew and enhance the forest crop to meet stand management objectives for timber, wildlife, recreation, landscape design, preservation, and water yield.

Historical Development

From 1910 to 1950 Canadian silviculture was primarily concerned with planting trees on prairie farms and abandoned farmland in eastern Canada. Unassisted natural regeneration was relied on in the logging of public forests. In the 1950–1970 period much effort was put into ways to assist the natural regeneration process by modifications to the cutting patterns, scarification, and preparation of ecologically based natural regeneration prescriptions. Some planting and tree-improvement programs were started in this period. Between 1970 and 1980 emphasis was placed on quality planting and dealing with not satisfactorily restocked (NSR) lands, including expanded use of herbicides (Weetman 1982).

The period 1980–1990 has seen further expansion of planting programs to cover over 25% of the approximately 900 000 ha of annual cutover (Kuhnke 1989). The distinction is made in some provinces between basic obligatory regeneration silvicultural practices required of licensees to reach free-from-noncrop-competition (free-to-grow) status and incremental or intensive silvicultural practices to improve and accelerate stand performance.

Initially, most silvicultural programs were implemented by government agencies. During the 1980s the silvicultural contracting industry expanded rapidly as government programs were privatized. Increasing emphasis is now placed on customizing and designing silvicultural and forest management programs to forest age-class structures to ensure continuity of wood flows. By 1990, most surplus allowable cut in the provinces had been taken up by new industrial expansion. Although most logging operations are still cutting, and will continue to cut, old-growth virgin timber, the end of this supply is now approaching. The emphasis of silvicultural practices has shifted from almost total concern over successful regeneration to a more balanced and designed program of regeneration and stand-tending actions, based on preharvest silvicultural prescriptions. This shift in emphasis has focused attention to precommercial thinning, pruning, tree improvement, commercial thinning, and fertilizing to produce quality stands in the time frame imposed by declining old-growth reserves.

As public concern about the appearance and environmental effects of clearcutting (the dominant harvesting practice) mount, increasingly attempts are made in silvicultural prescriptions to use appropriate alternative harvesting systems that meet multiple land-use constraints imposed by public demands, the concerns of wildlife, recreation, and watershed managers, and the mandatory requirement for successful regeneration.

Basic Silvicultural Practices

Ecological Classification

Following early unsuccessful attempts with large-scale applications of modified harvesting systems or of simple planting rules to large, ecologically complex forests, it became evident that the biological guidance for successful regeneration must be based on more detailed study of forest ecology. The approach used has been biophysical classification, that is, the classification of forest land on the basis of ground vegetation in relation to a nutrient and moisture regime matrix. These regimes range from dry to wet and from poor to rich.

The ecosystems or site associations are recognized as operational silvicultural groups in the nutrient–moisture matrix. The matrices are set up for large ecoregions or biogeoclimatic zones representing a recognizable regional relationship between forest cover, climate, and landform. The units recognized are described in terms of typical forest types and associated soil-profile characteristics. Management interpretations, limiting factors, and successional information are also provided; thus, a biological-classification framework, based on natural forest conditions, is the basis for silvicultural practices. Around the classifications are accumulated knowledge and experience on silvicultural successes and failures, and forest-productivity information. This knowledge base is thus called site-specific. It has been found to be an essential framework for silvicultural practice if mistakes are to be avoided and feedback from successes and failures is to be understood and explained.

Securing Natural Regeneration

All of Canada's forests originally developed from natural regeneration without human intervention. Fire, blowdown, and insect attack are the usual agencies for mortality of old timber, and the tree species are adapted to regenerate after these disturbances. Harvesting of timber results in some critical changes to seedbed conditions and seed supply that have no natural precedent.

Observations on the circumstances surrounding successful natural regeneration lead to silvicultural prescriptions designed to provide appropriate seed supply, seedbed, and moisture and vegetative conditions that favor desired tree species.

The combination of cutting method and other treatments by which a stand is established or renewed is a reproduction method (Smith 1986). The planned program of silvicultural treatments during the life

of a stand is a silvicultural system. The following silvicultural systems are used in Canada:

- clearcutting systems, involving the removal of all trees;
- shelterwood systems, involving the retention of an overstory of mature trees while an understory of regeneration becomes established; such an understory is called advance growth and often occurs naturally in old forests;
- seed-tree systems, involving the leaving of a selected number of individual or groups of trees of superior form together with a receptive seedbed;
- selection systems, involving the maintenance of an uneven-aged and uneven-sized stand structure that is self-regenerating and periodically harvested to remove a portion of the growing stock from trees of all size classes;
- coppice systems, involving clearcutting but relying on the vegetative propagation of a new crop of trees from stump sprouts or root suckers.

Each tree and plant species has particular reproduction and growth strategies and characteristics, and this body of knowledge is known as the silvics of the tree species (Fowells 1965; Daniel et al. 1979).

It is not biologically possible to secure both rapid and abundant natural regeneration in many Canadian forest associations, even when silvicultural systems are carefully prescribed. We continue to harvest large areas of very old overmature forest that are often composed of climax species, ill-adapted to rapid establishment and growth on open cutovers. The extreme age and high incidence of decay and disease in old forests often mandate clearcutting. Clearcuts are initially not beautiful and are subject to much public criticism. Planting such areas is usually required for prompt regeneration. Large areas of poorly stocked cutovers of this type have accumulated in the absence of planting. They are known as backlog and are given high priority for artificial regeneration treatments. The mechanical preparation of improved seedbeds, primarily designed to expose mineral soil and remove vegetative competition, is called scarification. Scarification treatment is a common component of natural regeneration prescriptions.

Use of Artificial Regeneration

The decision to use artificial means to regenerate forests is taken where:

- Natural regeneration cannot be reliably secured or is excessively dense, of poor quality, diseased, or of undesirable species.

- Prompt regeneration is needed with simultaneous control of species and density.
- The benefits of tree breeding and tree improvement are available in improved nursery stock.
- Matching species to site and/or planting an exotic species will result in significant gains in production.

Since such circumstances are common, artificial regeneration has expanded greatly in the 1960–1990 period. Approximately one-third of current cutovers are planted (Kuhnke 1989).

Use of artificial regeneration requires the following:

Seed supply

Seed collections must be made either from natural untreated stands, selected natural stands dedicated to seed production (seed production areas), or plantations of families of selected trees planted in orchards and subject to irrigation and fertilizing to induce flower production (first-generation seed orchards). Following cross-pollination between families and progeny, test seed orchards are rogued to leave orchards composed of trees of proven genetically superior performance (second-generation seed orchards).

Tree species vary in their seed production patterns and seed storage and germination requirements (USDA 1974). Forest tree seed is usually labeled by seed zones and location and there are generally rules controlling the use of seed outside its zone or elevation range.

Forest tree seed is usually stored in large central seed banks under refrigeration, with enough storage to provide many years of demand for each species. Some species and seed zones are in short supply. Large amounts of first-generation seed-orchard seed will not generally be available until at least the year 2000.

Some species, notably black spruce and jack pine, produce large quantities of seed in cones stored on trees for many years. Collection of their cones is easy, and this leads to large reserves of inexpensive seed in storage. This seed is used in direct seeding, from aircraft or ground (for example, snowmobiles, all-terrain vehicles), usually on scarified cutovers. Direct seeding relies on large quantities of tree seed, and thus on inexpensive tree seed. For this reason direct seeding is mainly limited to these two species.

Cone collections are often made from trees felled in logging operations. Access to cones in standing trees is gained through tree climbing, ladders, and lifting devices. Cone rakes are sometimes used in difficult terrain.

Seed collected from different parts of the range of a tree species is tested for suitability at different locations in provenance trials. Seed from certain provenances is in short supply. Some provenances of British Columbia seed, notably Douglas-fir, Sitka spruce, grand fir, and lodgepole pine, are famous or infamous in Europe for their superior or inferior characteristics. Historical lack of control over seed supply and subsequent poor plantation performance gave rise to the current tight restrictions and government control on seed collection and storage and allocation on Crown lands in Canada.

Nursery practices

Seedlots of species selected as suitable for specific forested sites are sent to forest nurseries for the production of planting stock. Originally, most planting stock was produced in bare-root nurseries, where the seed was sown on raised beds, covered with protective grit or sand, grown for one or two years, and then either outplanted in the forest, or transplanted in the nursery for a year or two to grow bigger before outplanting.

Currently, most nursery stock is raised in containers in greenhouses under more controlled temperature and moisture conditions and is irrigated with standardized nutrient solutions. Container seedings grow faster, are more uniform, and are often cheaper to produce; however, they are often less able to compete after outplanting than bare-root stock. The stock type is usually ordered and custom grown one to three years in advance of outplanting. Current Canadian production is approaching one billion seedlings per year, grown in government and private nurseries. Much planting stock is held in cold storage following lifting, then trucked various distances to planting sites. Over 95% of the production is conifer, two-thirds pine and spruce species. There is a limited production of poplar raised from cuttings.

Site preparation

Physical disturbance of the forest floor to create improved seedbeds for natural regeneration is called scarification. Site preparation practices are used to make the task of planting easier and to aid plantation survival and growth. The practices consist of the mechanical actions of ploughing, discing, trenching, crushing, and slash piling; the use of chemicals, usually herbicides, to kill or suppress competing vegetation; and prescribed burns to remove slash and woody debris, set back competing vegetation, provide ash as fertilizer, and increase

nutrient mobilization and availability through increased soil temperatures. Such site preparation techniques are often essential for plantation establishment on richer sites, that is, very fertile soils prone to rapid brush and grass invasion. There has been rapid development of a wide variety of mechanized site-preparation equipment, aided by the availability and development of specialized prime movers for logging (wheeled skidders, specialized tracked tractors, and new types of forwarders and backhoes).

The use of prescribed burning has expanded rapidly following the development of fire ignition systems from helicopters and the scientific calculation of burning indices, slash loadings, and rates of fire spread. Site-preparation practices are a particular necessity in Canadian conifer silviculture because of the many unusable small trees, rotten trees, and noncommercial trees in the virgin old-growth forests that are being cut today; the need to improve soil temperatures in northern forests with thick humus layers; vegetative competition on clearcut areas; and the large volumes of slash.

Planting methods

Of all the silvicultural practices, the task of planting approximately a billion trees per year is the least mechanized. Careful planting on the appropriate microsite is very important; this can really only be done well by hand, in spite of many expensive attempts to develop mechanized planting machines. Over a million person days of work per year are required. Manual planting is a major source of annual income to the reforestation contracting industry.

Not only must seedlot and species be custom selected for each planting site, but so must the planting-stock type, that is, its age, size, and whether it is bare-root or container, and if container, of what container size and type and whether the type is compatible with the treatment used.

Planting is usually done in early spring following snowmelt and is subject to rigorous quality checks and inspections. Payment is usually on a piecework basis. The work is physically demanding and is usually carried out by young people using tools such as planting mattocks or shovels for bare-root stock or planting tubes for container stock.

Vegetation management practices

Experience has shown that planting must be followed by tending practices to ensure free-growing trees, that is, trees free enough of

competition and with adequate supply of moisture and nutrients to ensure continued survival and height growth. Achievement of free-from-noncrop-competition status is a mandatory basic silvicultural requirement for licensees on Crown lands in some provinces. Vegetation management practices include those of site preparation before and after planting and also following natural regeneration germination (Walstad and Kuch 1987). Release of trees from competing vegetation (weeds) uses chemical methods (usually selective herbicides with and without fertilizers), manual methods (hand slashing, pulling, and thinning with chain and brush saws), and biological methods (cattle, sheep, goat, and deer grazing).

The objective of free-from-noncrop-competition status is to ensure a new forest crop of reliable and predictable stand development, low in risk and with calculable dimensions, product values, and yields.

Basic silvicultural practices are regarded as the minimal performance needed on public lands to ensure that the productivity of the new crop of trees will be as good as or exceed that of the original stand.

Provincial forest service policies seek to assign to each Canadian generation a limited equity in forest resource property and to pass it undamaged from generation to generation. Basic silvicultural practices are seen to satisfy this ethical responsibility.

Intensive Silvicultural Practices

After a new crop of trees has been established and reaches a free-growing condition, the future timber and other resource values of the forest stand can be further enhanced by intensive silvicultural practices.

Precommercial Thinning (PCT)

Any given stand has a limited capability to produce an annual volume of timber, when the site is fully occupied by trees; precommercial thinning accentuates the volume production on fewer trees and trees of desired species. It is usually done manually using brush and chain saws or mechanically with tractor-mounted flails or saws. PCT homogenizes the stand, increases mean tree size, and lowers the age at which the stand can be harvested. The practice is difficult to mechanize and is very expensive; more than one person-day per hectare is commonly required. In spite of its high cost, this practice is common. Accelerated harvest of younger stands often allows for accelerated harvest of older overmature stands in a forest management unit, thus

yielding more than enough revenue to pay for a PCT program. PCT also reduces logging costs and increases product values. Wildlife habitat and landscape values are often improved. Without PCT treatment, stands on lower-fertility sites may never be operable. Stands may be left at final crop density or may be designed to allow for one or more commercial thinnings.

The practice is called precommercial since it is done shortly after crown closure, the time at which the available crown space has become fully occupied. The trees are relatively small and there is no market for the cut trees.

Commercial Thinning (CT)

Up to 30% of the total volume production in a stand can be lost due to competition-induced mortality (smaller trees in dense stands die because there is not enough growing space for all of them). Commercial thinning attempts to recover this mortality loss and to provide early income from a stand by harvesting trees big enough to have product value. In practice, it is almost impossible to recover all potential loss through mortality because repeated light thinnings are necessary if residual stand volumes sufficient to maintain stand growth rates are left after each thinning.

Because of present Canadian market conditions and the high logging cost of thinnings, most of the repeated light thinnings desired are unmarketable and too expensive; even a single thinning may not be economical. Commercial thinnings are more likely to be economical if the stand has had density control at establishment or by subsequent precommercial thinnings. Currently, very little commercial thinning is done in Canada, primarily due to unsuitable stand densities and species, high logging costs, and low stumpage values.

Pruning and Shearing

After stands have been reduced in density to the point where valuable final crop trees can be identified at an early age, pruning is possible. Pruning increases the value of individual trees by prematurely removing the lower branches so that clear wood, free of knots, is laid down around an unpruned knotty core. Several valuable tree species have branches that do not rot off readily and remain persistently on the tree even after death due to shading.

Dead and live branches are cut off flush with the trunk using manual handsaws; mechanization is very difficult. Repeated prunings

are needed to maintain a cylindrical knotty core and yet not remove too much live crown.

Pruning is very expensive; for it to be economical the increase in stumpage value of clear timber over knotty timber must be great and the stand must have been thinned. Since these conditions are rare in Canada, pruning is little practised. As more and more PCT-treated stands accumulate and as supplies of clear old-growth timber diminish, pruning will become more economically attractive. The practice requires a 20- or 30-year lead time before clear wood in sufficient quantities is produced by a tree. The most common species pruned are white pine and Douglas-fir.

Shearing is the practice used in Christmas tree culture: a shaping of the form of the tree to make it more saleable. It is usually done with sharp knife blades. Pine trees are treated while in candle, that is, while the leaders are growing. Other conifers are treated after bud formation.

Timber Stand Improvement (TSI)

Timber stand improvement — cutting down or poisoning all deformed and unwanted trees within older stands — is usually done in previously untended hardwood stands containing valuable trees mixed with less valuable ones. It is usually a noncommercial practice, in that no revenue is generated, although some fuelwood may be produced. The objective is to concentrate the growing capacity of the site on the most valuable trees, without excessive growing-stock reduction and loss of growth. Eastern Canada has very extensive areas of tolerant hardwood forests, often previously subjected to cuttings that removed the most valuable trees and left the least valuable. Such stands are of low quality and should be treated by TSI practices. Currently, TSI is little practised because of the high cost and lack of immediate return.

Fertilizing and Drainage

The growth rates of individual trees and stands can be increased by providing additional supplies of limiting nutrient elements. In contrast to agricultural crops, forest ecosystems recycle nutrients; however, many forest stands are mainly limited by their nutrient supply, rather than by their climate, temperature, or moisture regime.

Granular fertilizers are spread by helicopter on designated forest stands, an expensive practice. Because of the high cost of the extra

fertilizer-grown wood, the fertilized trees must be final crop (the stand thinned to final crop density) and the stumpage values high. In addition, there may need to be a shortage of stand volumes in certain forest age classes in a management unit. It is essential that the forest stand be known to be responsive to such treatment.

Most stands are fertilized after crown closure, usually at final crop density. Some fertilizing at the time of planting or immediately after planting is also done. To be successful, vegetation management is required, together with accurate diagnostic tests of regeneration nutrient status.

Drainage of forest sites, especially organic soils, has a great potential to improve stand growth. Although it is widely practised in the boreal forests of Finland, where timber and growing sites are in short supply, it is used only experimentally in Canada, usually in black spruce muskeg conditions. The practice requires large forest ploughs or specially designed backhoes. The distance and depth of drainage ditches must be carefully matched to the organic matter classification and hydrological characteristics.

Special Silvicultural Practices

Most of the previous intensive silvicultural practices are used to enhance timber production. In addition, there are cultural practices designed to attain other objectives.

Seed Orchard Management

Designed to maximize cone production, the practices involved in seed orchard management are drainage to control soil moisture; standpipe mist irrigation to delay bud formation until local pollen sources have gone; repeated nitrogen fertilizing and basal scarring to stimulate female flower bud formation; radical top shearing for convenience of cone picking; and cross-pollination breeding and progeny testing followed by roguing.

Nursery Management

The management of forest-tree nurseries is highly specialized and more akin to agriculture than to silviculture. Every nursery has its own special problems that must be worked out by experimentation.

Seedlings that are grown outdoors are usually grown from seed and are bare-root, which means that their roots are separated from the soil when they are transported to the final planting site. However, the reestablisment of contact between roots and soil is so crucial that planting can be done only during those short seasons during which there is rapid root growth. The alternative techniques of growing planting stock from vegetative cuttings or in containers, especially the latter, have known a tremendous increase in recent years.

Recreation and Landscape Silviculture

TSI, PCT, and CT and vegetation management practices are applied to meet the needs of tourist campers, hikers, and motorists in parks, recreation areas, and commercial timber forests. Landscape design criteria often require a major modification of the cut-block layout and influence the choice of silvicultural system and even of species for planting. Pruning of trees along roadsides in forests provides views into stands. Forests stands are deliberately manipulated by silvicultural practices to improve wildlife habitat. Stand-level practices include PCT, CT, and fertilizing to encourage understory forage production; use of selection silvicultural systems along streams and rivers to protect riparian habitat and keep water temperatures cool; and the retention of snags, dead trees, and wolf trees for nesting. Cutovers, forest meadows, and stands are set on fire to create forage and set back succession. Grass seeding is a common practice on cutovers on open-range situations in western Canada where cattle graze.

Silvicultural Surveys and Stand-History Record Keeping

One of the essential features of forestry practice is the planning of silvicultural actions in a way that meets the owners' stand management objectives. Planning requires excellent record keeping and monitoring of stand performance by surveys. Silvicultural survey practices include those of regeneration and backlog assessment surveys, plantation surveys, and free-from-noncrop-competition surveys. All data are entered into stand-history record-keeping systems, which are in turn components of forest inventory and planning systems.

Silvicultural surveys of every cutover area are required during a 10- to 40-year period until the new stand has reached crown closure. This means an annual workload of 1–3 million hectares of silvicultural

surveys in Canada. These surveys involve fieldwork or the use of remote-sensing techniques. Fieldwork varies from field walk-throughs to the sampling of numerous small, temporary and permanent plots established in grid patterns on cutover areas. The plots are measured for species frequency; tree density and height; occurrence of insect, disease, and other damage; and competing brush invasion.

Since most commercial forest land in Canada is under lease for timber harvesting with a legal obligation for successful regeneration or free-from-noncrop-competition status, the silvicultural surveys represent inspections of performance. Such inspections are done by provincially licensed or approved silvicultural surveyors in some provinces.

Stand-history record-keeping practices are usually computer-based storage and retrieval systems on a stand-by-stand basis. These systems are often linked to a geographic information system (GIS) and a broader total forest inventory and planning system. Such systems are maintained and developed by both corporate licensees and provincial governments. Canada has no national system of stand-history record keeping.

Preparation of Silvicultural Prescriptions

The final major field of silvicultural practices, apart from the business and legal components of silvicultural contracting, which are not considered in this discussion, is that of preparing silvicultural prescriptions.

This silvicultural practice involves assessing the stand for growing stock, stand structure, species composition, fertility and moisture regime, amount of regeneration, seedbed and seed supply situation, brush invasion, and landscape, recreation, and wildlife habitat values; planning stand establishment and crop tending; writing a detailed prescription; implementing and monitoring the planned actions at the stand level; and determining the impact on forest-level objectives. Such formal analyses and prescriptions are mandatory in some provinces for every cutover area and must be signed by a professional forester (thousands are required every year). They have become necessary because of controversies over the use of forests for multiple purposes, such as timber, recreation, wildlife, landscape scenery, and nature conservation, and because the biological variation and complexity of forests do not allow for standardized successful treatments.

The stand inventory is related to various feasible stand management alternatives that meet landowners' objectives and are economical.

The best prescription is chosen and a detailed year-by-year plan of implementation is designed with recommendations on costs and details of procedure. The whole procedure is similar to the work done by engineers and architects in design work. The preparation and implementation of a successful silvicultural prescription is the ultimate test of the professionalism and ability of a Canadian silviculturist.

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Part II

Glossary

Terms in the glossary are arranged alphabetically. In some instances, terms within a family (for example, thinning) are grouped together to make it easier for the reader to compare them. In such cases, each member of a family (for example, precommercial thinning) is also listed alphabetically, but the reader is referred to the family name.

Each term appears in boldface letters and is followed by its equivalent term in French in brackets. Terms used as both nouns and verbs are identified as such by n and v, respectively. The generic of the French equivalent term is offered in this edition, and refers to the dominant noun when the equivalent is not a single word.

The number in parentheses following a term refers to the source of the definition. These sources are listed below. In many cases, definitions taken from such sources have been paraphrased and/or edited to agree with house style. This publication is the source of those definitions not followed by numbers in parentheses.

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A

above-ground biomass [biomasse aérienne (n.f.)]
see **biomass**

accessory species [essence auxiliaire (n.f.)]
A species of less commercial value than the principal species but sometimes useful in assisting the latter and liable to influence the method of treatment to some degree. (3)

accessory systems [traitements combinés (n.m.)]
Any silvicultural system derived from one or more of the basic systems and not dependent on any particular method of regeneration. (3)

adjuvant [adjuvant (n.m.)]
An additive used in pesticide spray formulations which enhances adherence to plants.

advance germination [germination physiologique (n.f.)]
see **pregermination**

advance growth [régénération préexistante (n.f.)]
see **advance regeneration**

advance regeneration [régénération préexistante (n.f.)]
Young trees under existing stands capable of becoming the next crop. Regeneration established before logging that has survived the logging operation.

adventitious [adventif(ve) (adj.)]
Of a plant part that develops outside the usual order of time and/or position, e.g., an **adventitious bud** arises from any part of a stem, leaf, or root but lacks vascular connection with the pith; an **adventitious shoot** derives from an **adventitious bud**; an **adventitious root** arises from parts of the plant other than a preexisting root, e.g., from a stem or leaf. (3)

aerial seeding [ensemencement aérien (n.m.)]
see **seeding**

afforestation [boisement (n.m.)]
The establishment of a tree crop on an area from which it has always, or for very long, been absent. Where such establishment fails and is repeated, the latter may properly be termed **reafforestation**. (3)

age [âge (n.m.)]
1. *Of a tree:*

breast height [âge à hauteur de poitrine]: The number of annual growth rings between the bark and the pith, as counted at breast height (1.3 m). (5)

harvest [âge de maturité]: The number of years required to grow from establishment to a specified condition of maturity.

stump [âge à hauteur de souche]: The number of annual growth rings between the bark and the pith, as counted at stump height (0.15 m) (5)

total [âge total]: The number of years elapsed since the germination of the seed, rooting of cuttings, or the budding of the sprout or root sucker.

2. *Of a forest, stand, or forest type:* the average of the trees comprising it.

harvest [âge de récolte]: The number of years between the establishment and the final harvest of a forest crop. (5)

total [âge total]: The average total age of the trees comprising it. (5)

age class [classe d'âge (n.f.)]
A distinct group of trees or portion of growing stock recognized on the basis of age. (1)

age-class distribution [répartition des classes d'âge (n.f.)]
The location and/or proportionate representation of different age classes in a forest. (3)

age-class interval [étendue d'une classe d'âge (n.f.)]
see **age-class period**

age-class period [étendue d'une classe d'âge (n.f.)]
The number of years within the limits of a given age class. (3)

age gradation [sous-classe d'âge (n.f.)]
An age class of one or at the most a few years. (3)

agroforestry [agroforesterie (n.f.)]
The deliberate integration, in space or time, of woody perennials with herbaceous crops and/or animals on the same land management unit. (26)

air layering [marcottage aérien (n.m.)]
Inducing root development on an undetached aerial portion of a plant, commonly by wounding it, treating it with a rooting stimulant, and wrapping it in moist material under a waterproof covering, so that the portion so treated is capable of independent growth after separation from the mother plant. (3)

air pruning [élagage aérien (n.m.)]
Limiting extension of a root system beyond a container by exposure to air.

air seeding [ensemencement aérien (n.m.)]
see **seeding**: aerial

all-aged [de tous âges (n.m)]
Of a forest, crop, or stand that contains trees of all, or almost all, age classes, including those of exploitable age. (3)

all-aged structure [structure équilibrée (n.f.)]
A stand in which trees of most or all age classes, from seedlings to mature trees, are represented. (1)

allelopathy [allélopathie (n.f.)]
The negative influence of a plant, other than a microorganism, upon another plant, through chemical exudate during their metabolism. (3)

allowable cut [possibilité de coupe (n.f.)]
The volume of wood that may be harvested, under management, for a given period. (5)

anchor chains [chaînes d'ancre (n.f.)]
Heavy chains, often with spikes welded to the links, used in drag scarification.

anchor-chain clearing [dragage (n.m.)]
see **chaining**

angle planting [plantation avec bêche (n.f.)]
see **slit planting**

arboriculture [arboriculture (n.f.)]
The cultivation, that is, growing and tending, of trees and shrubs, individually or in small groups, generally for ornament, protection, and instruction rather than direct use or profit. (3)

area ignition [allumage de zone (n.m.)]
The setting of a number of individual fires throughout an area, either simultaneously or in quick succession, and so spaced that they soon coalesce, influence, and support each other to produce a hot, fast-spreading fire throughout the area. (6)

artificial regeneration [régénération artificielle (n.f)]
Renewal of a tree crop by direct seeding or by planting seedlings or cuttings. (1)

asexual reproduction [propagation asexuée (n.f)]
Reproduction without fertilization. New individuals may develop from vegetative parts such as tubers, bulbs, or rooted stems, or from sexual parts such as unfertilized eggs or other cells in the ovule. (25)

associated species [essences associées (n.f.)]
see **accessory species**

auger planting [plantation à la tarière (n.f.)]
Setting plants in loosened soil replaced in or brought to a dug hole using an auger. (3)

average annual stand depletion [épuisement annuel moyen (n.m)]
see **thinning intensity**

B

backlog [arriéré (n.m)]
An administrative term used to classify inadequately stocked forest land that has been denuded (cut over, burned, etc.).

ball planting [plantation en motte (n.f.)]
Setting out trees with their roots left undisturbed in a dug-out clod of soil.

Note: if trees are bare-rooted, and roots are enclosed in a rough ball of soil, they are properly termed balled. (3)

band application [traitement par bande (n.m)]
Applying pesticides and/or fertilizers in a linear strip on or along crop rows rather than over the entire ground area.

band girdling [annélation totale (n.f.)]
Removing a broad band of bark, from several centimetres to a metre wide, all round a living bole with some sapwood or without, so as to kill (with or without the aid of herbicide), or at least weaken, the tree. (3)

banding [cerclage (n.m.)]
Applying a chemical or other substance to the bole of a tree in the form of a band.

band seeding [ensemencement par bandes (n.m)]
Broadcast sowing of seeds along wide strips.

bare-root seedling [semis à racines nues (n.m.)]
see **seedling**

bark stripping [écorçage (n.m.)]
Removing the bark of a tree in narrow strips.

basal area [surface terrière (n.f.)]
1. *Of a tree:* The area in square metres of the cross section at breast height of the stem. (5)

2. *Of a forest, stand, or forest type:* The area in square metres per hectare of the cross section at breast height of all the trees. (5)

basal bark treatment [traitement arboricide cortical (à la base de l'arbre) (n.m.)]
A treatment for killing trees and brush in which a herbicide is applied, by sprayer or brush, to a band of bark encircling the basal portion of the stem. (3)

basal injection [injection à la base de la tige (n.f.)]
A treatment consisting of forcing a liquid or an encapsulated herbicide into the basal portion of a tree.

basic forest management [aménagement de base (n.m.)]
Extensive forest management plus artificial regeneration where necessary.

cf. extensive forest management

basic silviculture [sylviculture de base (n.f.)]
All the silvicultural practices required to achieve free-growing (or established) regeneration of desired species at specified densities and stocking.

basket planting [plantation en panier (n.f.)]
Setting out young trees, etc., in loosely-woven baskets in which they have been raised from seed or to which they have been transferred from the **seed bed**. Closely allied is **box planting** using various types of wooden boxes. (3)

bedding [billonnage (n.m.)]
A site preparation procedure in which the soil is mounded mechanically to provide a well-drained ridge on which seedlings are planted or seeds distributed naturally or directly.

biomass [biomasse (n.f.)]
The total mass of living organisms of one or more species per unit of area, or all the species in a community. It can be divided into **above-ground biomass** and **below-ground biomass**. (3)

blading [préparation du sol par coupe à la cisaille (n.f.)]
Using the straight blade of a crawler tractor or similar equipment to remove coarse woody debris and thick duff off the site to create planting lines or spots.

blank [vide, manque (n.m.)]
Any forest area in a crop or stand that has remained virtually unstocked, more particularly in plantations. A planting point where the tree has failed or is missing. (3)

block cutting [coupe à blanc par blocs (n.f.)]
Removal of the crop in blocks in one or more operations, generally for wildlife management purposes, encouraging regeneration, or protecting fragile sites. (2)

Considered in Ontario to be a variation of clearcutting.

blowdown [chablis (n.m.)]
see **windfall**

box pruning [élagage latéral (des racines) (n.m.)]
Lateral root pruning on four sides of nursery stock in situ. Previous **undercutting** is usually implicit. (23)

breast height [hauteur de poitrine (n.f.)]
The standard height, 1.3 m above ground level, at which the diameter of a standing tree is measured. On sloping ground, breast height is usually measured on the uphill side of the tree. (5)

broadcast application [traitement en plein (n.m.)]
Applying pesticides and/or fertilizers with relative uniformity over the entire ground area. (3)

broadcast burning [brûlage extensif (n.m.)]
Allowing a controlled fire to burn over a designated area within well-defined boundaries, for reduction of fuel hazard, as a silvicultural treatment, or both. (3)

broadcast fertilizing [fertilisation à la volée (n.f.)]
The scattering of fertilizer or other mixture more or less evenly over an area.

broadcast seeding [ensemencement à la volée (n.m.)]
The scattering of seed more or less evenly over a whole area on which a forest stand is to be raised. (3)

brush [broussailles (n.f.)]
Shrubs and stands of short, scrubby tree species that do not reach merchantable size. (5)

Sometimes includes woody and herbaceous plants that impede regeneration or growth of desirable species. Often rated as "brush hazard".

brush blade [lame de râteau (n.f.)]
A blade having scarifier teeth instead of a plain edge, for pushing large objects like tree roots and rocks off a site, leaving smaller stones, soil, etc. in place. (3)

In British Columbia, known as a Beale's blade, specially designed with forks or long teeth protruding from the bottom of the blade for piling and windrowing coarse woody debris. Blade usually has an opening on each end.

brush chopper [broyeuse de rémanents (n.f.)]
An implement with blades mounted on a horizontal power-driven shaft, for reducing the bulk of slash after felling and so facilitating planting. (3)

brush disposal [élimination des rémanents (n.f.)]
see **slash disposal**

brushing [débroussaillement (n.m)]
The removal of undesirable herbaceous and woody vegetation by manual or mechanical means. (3)

brush rake [râteau débroussailleur (n.m.)]
see **raking**

budding [écussonnage (n.m.)]
Grafting by inserting a bud, with a small amount of tissue, into a slit or hole made in the bark of a stock plant. After union has formed, the portion of the stock plant above the bud is removed. (25)

bud pruning [ébourgeonnage (n.m.)]
Removal of lateral buds from a stem to prevent them from developing into branches. (3)

buffer strip [rideau vert (n.m.)]
A band of forest left relatively undisturbed so as to protect some element of the environment, such as a streambank from erosion; in experiments, refers to the strip of untreated area between adjacent treated areas.

bullet planting [plantation en cartouche (n.f.)]
Setting out young trees grown in bullet-shaped rigid plastic tubes, which are injected into the ground by a spring-loaded gun, sometimes into prepared holes. (3)

bush nursery [pépinière volante (n.f.)]
see **field nursery**

C

cabling [dragage au câble (n.m.)]
see **chaining**

cache [cache (n.f.)]
A place for storing seedlings close to the planting site.

canopy [couvert forestier (n.m.)]
The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees. (1)

canopy class [classe de couvert (n.f.)]
syn. canopy cover class, crown class

Any class into which crops or stands may be divided on the basis of the degree of closure. (3)

canopy closure [fermeture du couvert (n.f.)]

1. The progressive reduction of space between crowns as they spread laterally, increasing canopy density. (1)

2. The point in time when crowns in a young stand begin to touch and interact.

canopy density [densité du couvert (n.f.)]

The amount of foliar cover, combining the extent of canopy closure and crown density. (1)

canopy opening [ouverture du couvert (n.f.)]

see **opening up**

careful logging around regeneration [coupe avec protection de la régénération (n.f.)]

Harvesting operation based on shelterwood cutting principles, where advanced regeneration is protected during harvesting.

carrier [support (n.m)]

Any material, e.g. sawdust, that is thoroughly mixed with seed, fertilizer, herbicide, etc., to protect it in transit.

catch crop [culture dérobée (n.f.)]

A short-term, generally agricultural crop introduced into and at the start of a longer-rotation forest crop, mainly to provide early financial returns. (3)

chaining [dragage (n.m.)]

syn. chain clearing, cabling in British Columbia.

A method of reducing or clearing undesirable scrub by dragging through it a heavy chain (generally further weighted by objects such as concrete cylinders or large steel balls) between two appropriately spaced tractors. (3)

check [stagnation (n.f.)]

Stagnation of tree or stand growth. (5)

chemical pruning [élagage chimique (n.m)]

The application of chemicals, e.g. plant-growth regulators, to the living tree so as to kill, suppress, or inhibit lateral shoots. (3)

chevron cuts [coupes par chevrons (n.f.)]

A modification of strip cutting where the strip is angled part way along its length. (28)

chopping [déchiquetage-épandage (n.m.)]
Destruction of plants of sapling size or smaller and their incorporation into the soil with heavy disk plough or rolling brush choppers. (21)

cleaning [dégagement (n.m.)]
syn. brushing

A release treatment made in a stand not past the sapling stage to free the favored trees from less desirable species of the same age that overtop them or are likely to do so. (1)

clearcut [coupe à blanc (n.f.)]
n: An area of forest land from which all merchantable trees have recently been harvested. (5)
syn. clearcutting

v: To harvest all merchantable trees from an area of forest land. (5)

clearcutting method [mode de régénération par coupe à blanc (n.m.)]
A method of regenerating an even-aged forest stand in which new seedlings become established in fully exposed microenvironments after removal of most or all of the existing trees. Regeneration can originate naturally or artificially. Clearcutting may be done in blocks, strips, or patches. (1)

clear-felled area [zone de coupe à blanc (n.f.)]
see **clearcut**

clearfelling [coupe rase, à blanc (n.f.)]
see **clearcut**

clearfelling method [mode de régénération par coupe à blanc (n.m.)]
see **clearcutting method**

clearing [clairière (n.f.)]
1. A considerable open space in a forest, which can be natural or artificial. (3)

2. Removal of standing, usually scrubby, vegetation to prepare a site for reforestation.

clear wood [bois sans défaut (n.m.)]
Knot-free wood formed subsequent to pruning.

clonal test [test clonal (n.m.)]
Evaluation of genotypes by comparing clones in a plantation. (25)

clone [clone (n.m.)]
All plants reproduced asexually from a common ancestor and having identical genotypes. Named clones are given non-Latin names preceded by the abbreviation "cl". (11)

closed canopy [couvert fermé (n.m.)]
see **canopy closure**

clump [cépée (n.f.), bouquet (n.m.)]
The aggregate of stems issuing from the same root, rhizome system, or stool.

An isolated, generally dense, group of trees. (3)

coarse woody debris [débris ligneux grossier (n.m.)]
The standing and downed dead wood in a forest.

codominant crown class [classe de cime codominante (n.f.)]
see **crown class**: codominant

commercial thinning [éclaircie commerciale (n.f.)]
see **thinning**: commercial

compensatory planting [reboisement de compensation (n.m.)]
Creating plantations in one area in order to replace, in part or whole, a loss of growing stock elsewhere. (3)

competition control [lutte contre la concurrence végétale (n.f.)]
A treatment designed to reduce the competitive effect of undesirable vegetation threatening the success of the regeneration of desirable tree species.

cf. brushing, cleaning

composition [composition (n.f.)]
The proportion of each tree species in a stand expressed as a percentage of the total number, basal area, or volume of all tree species in the stand. (1)

compound fertilizer [fertilisant multi-action (n.m.)]
A mixture of chemical nutrients added to the soil, having a broad array of actions.

cone collection [récolte de cônes (n.f.)]
Harvesting of cones after seed maturation but before their dispersal. (10)

cone rake [cueilleur de cônes (n.m.)]
A device for collecting cones from a standing tree; it is lowered from a helicopter, over the crown of a tree. Cones or cone-bearing branches are removed and retrieved by the device.

cone year [bonne année (de production de cônes) (n.f.)]
see **seed year**

contained root [racine contenue (n.f.)]
A root that does not elongate beyond the confines of the original rooting volume within a container, even when **outplanted** with the container removed. (23)

container [récipient (n.m.)]
Portable receptacle (pot, bag, or linked spaces) to hold rooting medium for growing planting stock.

container-grown [récipient, semis en (n.m.)]
syn. containerized

see **seedling**: container

containerized seedling [semis en récipient (n.m.)]
see **seedling**: container

container nursery [pépinière (de plants) en récipients (n.f.)]
A nursery where the stock is raised individually in containers. (3)

container planting [plantation (de plants) en récipients (n.f.)]
Setting out of young trees (generally individually) from, or together with, receptacles containing the soil, etc., in which they have developed, either from seed or less commonly as transplants. (3)

container seedling [semis en récipient (n.m.)]
see **seedling**: container

contour furrow [labour de niveau (n.m.)]
Trench made along a contour (i.e., horizontal) line, for the purpose of checking run-off and soil loss, and conserving moisture, in a hillside plantation. (3)

contour planting [plantation en bandes de niveau (n.f.)]
Setting out of young trees along a contour line.

controlled burning [brûlage dirigé (n.m.)]
see **prescribed burning**

conversion [conversion (n.f.)]
A change from one silvicultural system to another, also called **conversion cut**, or from one stand of trees or ecosystem to another, termed **species conversion**, the silvicultural procedures involved constituting a conversion system.

Note: the change may be spread over most or all of the new rotation adopted; its duration is termed the **conversion period**.

In Newfoundland, the term **stand conversion** is used.

conversion period [durée de la conversion (n.f.)]
see **conversion**

coppice [taillis (n.m.)]
Natural regeneration originating from stump sprouts, stool shoots, or root suckers. (1)

coppice-of-two-rotations method [taillis composés (n.m.)]
A coppice method in which some of the coppice shoots are reserved for the whole of the next rotation, the rest being cut. (3)

coppice method [régime du taillis (n.m.)]
A method of regenerating a forest stand in which the cut trees produce sprouts, suckers, or shoots. (1)

coppice selection method [taillis fureté (n.m.)]
A coppice method in which only selected shoots of merchantable size are cut at each felling, giving uneven-aged stands. (3)

coppice shoot [rejet de taillis (n.m.)]
Any shoot arising from an adventitious or dormant bud near the base of a woody plant that has been cut back. (3)

coppice stand (forest) [taillis (n.m.)]
see **coppice**

coppice system [régime du taillis (n.m.)]
see **coppice method**

coppice with reserves [taillis sous réserves (n.m.)]
see **coppice-with-standards method**

coppice with standards [taillis-sous-futaie (n.m.)]
see **coppice-with-standards method**

coppice-with-standards method [régime du taillis-sous-futaie (n.m.)]
A method of regenerating a forest stand by coppicing whereby selected trees grown from seed are left to grow to larger size than the coppice beneath them, in order to provide seeds for natural regeneration of standards in subsequent rotations.

coppice wood [bois de taillis (n.m.)]
see **coppice**

coppicing [coupe de rajeunissement (n.f.), recépage (n.m.)]
Cutting trees close to ground level with a view to their producing coppice shoots. (3)

copse [bosquet de taillis (n.m.)]
A small woodlot or forest regularly cut over for regrowth. (3)

corridor planting [plantation en ligne (n.f.)]
Setting trees in parallel rows, generally at regular intervals between and in lines, on land either wholly or partially cleared. The form of line planting sometimes known as corridor planting involves setting a line of trees in narrow lanes ("corridors") that cut through undergrowth at more or less regular intervals (sometimes at their final crop spacing); generally a form of improvement planting or enrichment. (3)

corridor thinning [éclaircie en lignes (n.f.)]
see **thinning**: row

cover crop [engrais vert (n.m.)]
Syn. green manure crop

A suitable herbaceous crop, particularly Fabaceae but also Cruciferae and Gramineae, grown to reduce erosion, increase soil fertility, reduce invasion of more competitive vegetation, provide wildlife habitat, or protect site; it can be dug or ploughed in while succulent, with or without supplementary fertilizers.

cover density [densité du couvert (n.f.)]
see **canopy density**

cover type [type forestier, de couvert (n.m.)]
see **forest type**

crop [peuplement forestier (n.m.), récolte (n.f.)]
The harvestable vegetation growing on a forest area, more particularly the major woody growth forming the forest crop. (3)

crop planning [plan parcellaire de régénération (n.m.)]
The process of custom designing the density of regeneration and the timing and intensity of stand-tending treatments to achieve site- and species-specific stand-management objectives as well as to attain forest-level management objectives.

crop tree [arbre du peuplement final (n.m.)]
Any tree selected to become or forming a component of the final crop. (1)

crop-tree thinning [éclaircie par le haut (n.f.)]
see **thinning**: crown

crown [cime (n.f.)]
The part of a tree bearing branches and foliage. (1)

crown class [classe de cime (n.f.)]
Trees in a forest with crowns of similar development and occupying a similar position in the canopy; the term applies to groups of trees. (6)

codominant [codominant (n.m.)]: Trees with crowns forming the general level of the main canopy in even-aged groups of trees, receiving full light from above and comparatively little from the sides. (1)

dominant [dominant (n.m.)]: Trees with crowns extending above the general level of the main canopy of even-aged groups of trees and receiving full light from above and partial light from the sides. (1)

intermediate [intermédiaire (n.m.)]: Trees with crowns extending into the lower portion of the main canopy of even-aged groups of trees, but shorter in height than the codominants; receiving little direct light from above and none from the sides; usually with small crowns that are crowded on the sides. (1)

open grown [en croissance libre (n.f.)]: Trees with crowns receiving full light from all sides due to the openness of the canopy. (5)

predominant [prédominant (n.m.)]: Trees whose crowns have grown above the general level of the upper canopy. (3)

suppressed [dominé (n.m.)]: Trees with crowns entirely below the general level of the canopy of even-aged groups of trees, receiving no direct light either from above or from the sides. (1)
syn. overtopped

crown closure [fermeture du couvert (n.f.)]
The available crown space between trees; 100% crown closure is the time at which all available crown space is fully occupied.

crown closure class [classe de fermeture du couvert (n.f.)]
Any interval into which the range of proportions of ground area covered by the vertically projected tree crown areas of a stand is divided for classification and use.

crown cover [couvert (n.m.)]
The ground area covered by the crowns of trees or woody vegetation as delimited by the vertical projection of crown perimeters and commonly expressed as a percentage of total ground area. (1)

crown density [densité du couvert d'une cime (n.f.)]
The amount, compactness, or depth of foliage of a tree crown. (1)

crown pruning [taille en cime (n.f.)]
1. *Natural:* Removal or decadence of lateral live crown by wind, abrasion, reduced light, etc.

2. *Cultural:* Mechanical removal of branch ends to shape crowns for aesthetic appeal, e.g., for Christmas trees, bonsai, etc. In seed orchards, promoting cone or fruit production nearer the ground to facilitate collection or other operations.

crown thinning [éclaircie par le haut (n.f.)]
see **thinning**: crown

crushing [écrasage (n.m.)]
The compaction of slash and brush by machinery.

In Manitoba, the chopping of slash and provision of microsites are considered important features of this treatment.

cull [rebut (n.m.)]
Trees or logs or portions thereof that are of merchantable size but are rendered unmerchantable by defects. (5)

In nursery practice, a seedling that does not match the grade or specifications.

cultural operations [soins culturaux, sylvicoles (n.m.)]
A general term for operations, as a rule not directly remunerative, undertaken to assist or complete existing tree regeneration, to promote the development of a forest crop, and to minimize damage caused by felling and extraction. (3)

cultural practices [pratiques culturales (n.f.)]
see **cultural operations**

cut-bark application [traitement par entaillage de l'écorce (n.m.)]
see **basal bark treatment**

cutover [aire de coupe (n.f.)]
An area of forest land from which some or all timber has recently been cut. (5)

cut-stump treatment [traitement des souches (n.m.)]
see **stump treatment**

cutting
1. [bouture (n.f.)] A short length cut from a young, living stem, branch, or root, for propagating a whole new plant, in soil or other media. (3)
2. [abattage (n.m.)] The act of cutting down a standing tree.
syn. felling, falling

cutting cycle [rotation (n.f.)]
The planned interval between partial harvests in an uneven-aged stand. (1)

cutting regime [régime d'exploitation (n.m.)]
System of cutting treatments applied to a stand at a defined period.

D

deadwood [bois mort]
Timber produced from dead standing trees. (3)

More commonly, timber in dead standing trees.

debris [débris (n.m.)]
see **slash**

debudding [ébourgeonnage (n.m.)]
see **bud pruning**

deep chiseling [ameublissement profond (n.m.)]
A surface treatment that loosens compacted soils. (18)

In Saskatchewan, termed **decompaction**.

deep ploughing [labourage profond (n.m.)]
see **ploughing**

deep ripping [scarifiage profond (n.m.)]
see **ripping**

deforestation [déboisement (n.m.)]
Permanent removal of forest cover and withdrawal of land from forest use, whether deliberately or circumstantially.

desirable plant species [espèces privilégiées (n.f.)]
Species that contribute to management objectives. (19)

diameter [diamètre (n.m.)]
diameter at breast height (dbh) [diamètre à hauteur de poitrine (dhp)]: The stem diameter of a tree measured at breast height (1.3 m above ground level). Unless otherwise stated, applies to the outside bark dimension. (5)

diameter at stump height (dsh) [diamètre à hauteur de souche (dhs)]: The stem diameter of a tree measured at stump height. Stump height may be the actual height of a cut stump, or some arbitrarily selected standard. (5)

diameter inside bark (dib) [diamètre sans écorce]: The diameter of a tree or log excluding double bark thickness. (5)

diameter outside bark (dob) [diamètre avec écorce]: The diameter of a tree or log including bark. (5)

diameter over stubs (dos) [diamètre du coeur noueux]: The outer diameter of the knotty core in pruned trees.

diameter-limit cutting [coupe au diamètre minimal (n.f.)]
Removal of all merchantable trees above a specified minimum diameter, which in mixed stands may vary with species. (1)

diameter-limit felling [abattage au diamètre minimal (n.m.)]
see **diameter-limit cutting**

dibble planting [plantation au bâton (n.f.)]
Sowing seeds or setting out seedlings in rough holes made with a stick or peg. Also termed dibbling if done with a specially adapted tool such as a dibble. (3)

dibbling [plantation au bâton (n.f.)]
see **dibble planting**

dipping [trempage (n.m.)]
The immersion of seedling roots in a solution or water prior to planting.

direct seeding [ensemencement direct (n.m.)]
see **seeding**: direct

disbudding [ébourgeonnage (n.m.)]
see **bud pruning**

discing [déchaumage (n.m.)]
Scarification technique using disks to break small slash and the organic layer and to cut vegetation, loosening and incorporating these into the soil. (21)

disease [maladie (n.f.)]
Harmful deviation from normal functioning of physiological processes, generally pathogenic or environmental in origin. (3)

dominance potential [potentiel de dominance (n.m.)]
The relative ability of a tree or plant species to dominate a forest ecosystem, given an opportunity equal to that of its associates. (22)

dominant crown class [classe de cime dominante (n.f.)]
see **crown class**: dominant

dominant thinning [éclaircie jardinatoire (n.f.)]
see **thinning**: selection

dominated tree [retardataire (n.m.)]
see **crown class**: intermediate

downed timber [bois gisant (n.m.)]
see **downtree**

downed tree [arbre abattu (n.m.)]
Any tree that is lying on the ground, whether uprooted, stem-broken, or deliberately cut. (3)

drag scarification [scarifiage par traînage (n.m.)]
Towing one or more rows of anchor chains, sharkfin barrels, tractor pads, alone or in various combinations, to break up and possibly spread slash and to loosen the forest floor and topsoil or expose mineral soil.

drainage [drainage (n.m.)]

1. *Hydrology/engineering:* The process of removal of water from soil, particularly by surface runoff and subsurface percolation and artificially by measures for hastening removal, e.g., by ditching. (3)

2. *Pedology:* The frequency and duration of the periods when the soil is free of saturation or partial saturation. A measurable characteristic (including rapidity and extent), but generally assessed from profile morphology, e.g., graying and color, and landform. Commonly described in terms of subjective drainage classes, extending from very poorly drained to excessively drained. (3)

drill [rayon (n.m.)]
see **drill seeder**

drill seeder [semoir en ligne (n.m.)]
A mechanical device for sowing seed in furrowed lines (i.e., in **drills**).

drill seeding [ensemencement en ligne (n.m.)]
see **drill seeder**

drum chopper [déchiqueteuse à tambour (n.f.)]
see **slash chopper**

dry packing [injection à sec]
In tree injection, a method of banding that uses a tight waterproof bandage packed with a chemical, either dry or in paste form. (3)

dry pruning [élagage à sec]
see **pruning**

duff [humus (n.m.), litière (n.f.)]
A general term referring to the litter and humus layers of the forest floor.

dysgenic [dysgénique (adj.)]
Detrimental to the genetic quality of a population and future generations. (25)

cf. eugenic

E

ecological amplitude [amplitude écologique (n.f.)]
see **tolerance**

ecological land classification [classification écologique des zones (n.f.)]
see **forest site classification**

ecosystem [écosystème (n.m.)]
The sum of the plants, animals, environmental influences, and their interactions within a particular habitat.

ecotype [écotype (n.m.)]
A race (provenance) adapted to the selective action of a particular environment. Ecotypes are described in terms of the primary environmental influence, e.g., climatic or edaphic. Ecotypes may only be evident when different provenances are tested in a uniform environment. (25)

effective seedling [semis établi (n.m.)]
Any seedling, whether natural or planted, that has survived in reasonable vigor for some arbitrary time and is so sited that it should make an effective contribution to the crop. All those seedlings in relation to the optimum are considered elements of the **effective stocking**. (3)

effective stocking [matériel relatif efficace (n.m.)]
see **effective seedling**

emergent [émergent (n.m.)]
A tree whose crown at maturity projects well above the level of the highest canopy. (3)

enrichment plantation [plantation d'enrichissement (n.f.)]
see **improvement plantation**

epicormic shoot [pousse adventive (n.f.)]
syn. sprout

A shoot arising from a dormant or adventitious bud on the stem or branch of a woody plant. (1)

establishment [établissement (n.m.)]
The process of developing a crop to the stage at which the young trees may be considered established, i.e., safe from juvenile

mortality and no longer in need of special protection or special tending, but only routine cleaning, thinning, and pruning. (3)

establishment period [période d'implantation (n.f.)]
The time elapsing between the initiation of a new crop and its establishment. (3)

eugenic [eugénique (adj.)]
Favorable to the genetic quality of a population. (11)

cf. dysgenic

even-aged [équienne (adj.)]
Of a forest, stand, or forest type in which relatively small age differences exist between individual trees. The differences in age permitted are usually 10 to 20 years; if the stand will not be harvested until it is 100 to 200 years old, larger differences up to 25% of the rotation age may be allowed. (5)

cf. uneven-aged

even-aged system [régime équienne (n.m.)]
Silvicultural systems in which stands have an even-aged structure, e.g., clearcutting method, coppice method, seed-tree method. (1)

exotic [exotique (adj.)]
An introduced, non-native tree species.

extensive forest management [aménagement extensif (n.m.)]
Protection from fire and insects; reliance on natural regeneration.

F

fertilization [fécondation (n.f.)]
The union of the nucleus and other cellular constituents of a male gamete (sperm, pollen grain) with those of the female gamete (ovum, egg cell) to form a zygote from which may develop a new organism. (3)

fertilizer application [application d'engrais (n.f.)]
see **fertilizing**

fertilizing [fertilisation (n.f.)]
The application of chemical or organic fertilizers with the objective of increasing the unit area soil productivity. (3)

field germination [germination au champ (n.f.)]
Generally, measure of the percentage, by number, of seeds in a given sample that germinate and produce a seedling, irrespective of subsequent seedling survival. (3)

field nursery [pépinière volante (n.f.)]
A nursery, generally not permanent, established in or near the forest rather than near an administrative or executive headquarters. (3)

Also referred to as **satellite nursery** in Ontario and in the Prairies.

filled seed [graine pleine (n.f.)]
see **full seed**

filler [remplissage (n.m.)]
A tree or species of inferior value, retained in thinning or cleaning, in the absence of any better. (3)

fill planting [regarni (n.m.)]
The planting of trees in areas of inadequate stocking to achieve the desired level of stocking, either in plantations or areas of natural regeneration.

cf. interplanting

final cutting [coupe définitive (n.f.)]
The last of a series of progressive regeneration cuts which removes the last of the original seed trees when the regeneration is considered established. (2)

fire hazard reduction [réduction du risque d'incendie (n.f.)]
Any treatment of fuels that reduces the threat of ignition and spread of fire. (3)

forest [forêt (n.f.)]
1. *Ecology:* Generally, an ecosystem characterized by a more or less dense and extensive tree cover. More particularly, a plant community predominantly of trees and other woody vegetation, growing more or less closely together. (3)

2. *Silviculture/forest management:* An area managed for the production of timber and other forest produce, or maintained under woody vegetation for such indirect benefits as the protection of watersheds, the provision of recreation areas, or the preservation of natural habitat. (3)

forestation [création de forêt (n.f.)]
The establishment of forest, naturally or artificially, on an area, whether previously carrying forest or not. (3)

cf. afforestation, deforestation, reforestation

forest cover type [type forestier (n.m.)]
see **forest type**

forest crop [peuplement forestier (n.m.)]
see **crop**

forest genetics [génétique forestière (n.f.)]
The study of heredity in forest trees. (11)

forest hygiene [hygiène sylvicole (n.f.)]
Care for the health of the forest, particularly by sanitation cutting. (3)

forest improvement [amélioration forestière (n.f.)]
see **timber stand improvement**

forest management unit [unité d'aménagement forestier (n.f.)]
An area of forest land managed as a unit for fiber production and other renewable resources. This unit can be the entire province or territory, a provincial forest management subdivision, an industrial timber limit, etc. (5)

forest model [modèle de forêt (n.m.)]
A computer-based simulation that, within definable parameters, forecasts the development of a forest.

forest nursery [pépinière forestière (n.f.)]
see **nursery**

forest planting [plantation forestière (n.f.)]
see **planting**

forest practices [pratiques forestières (n.f.)]
Any activities that enhance or recover forest growth or harvest yield (e.g., site preparation, planting, thinning, fertilizing, harvesting, etc.), and road construction or reconstruction within forest lands for the purpose of facilitating harvest or forest management, and any management of slash resulting from harvesting or improvement of tree species. (24)

forest residue [rémanents (n.m.)]
see **slash**

forestry [foresterie (n.f.)]
Generally, a profession embracing the science, business, and art of creating, conserving, and managing forests and forest lands for the continuing use of their resources, material or other. The profitable exploitation of the resources intrinsic to forest land. "The science, the art and the practices of managing and using for human benefit the natural resources that occur on and in association with forest lands." (3)

cf. sustainable forestry

forest sanitation [hygiène en forêt (n.f.)]
see **forest hygiene**

forest site [type forestier (n.m.)]
see **forest site type**

forest site classification [classification de la station forestière (n.f.)]
Grouping of forest sites using either the composition or the productivity of the vegetation as well as soil and topographic position.

forest site type [type forestier (n.m.)]
Generally, a category of forest or forest land, actual or potential. (3)

forest tree breeding [amélioration génétique des arbres forestiers (n.f.)]
The genetic manipulation of trees, usually involving selection, testing, and controlled mating, to solve some specific problem or to produce a specially desired product.

forest tree improvement [amélioration générale des arbres forestiers (n.f.)]
The control of parentage combined with other silvicultural activities (such as site preparation or fertilizing) to improve the overall yield and quality of products from forest lands. (12)

forest tree nursery [pépinière forestière (n.f.)]
see **nursery**

forest type [type forestier (n.m.)]
A group of forested areas or stands of similar composition; forest types are usually separated and identified by species composition and often by height and crown closure classes. (5)

formation [période d'établissement (n.f.)]
All the operations contributing to the creation of a new forest cover up to the stage where it is considered established. (3)

free-from-noncrop-competition (FNC) [hors compétition (n.f.)]
syn. free-to-grow (FTG)

The condition of a forest stand when it is established and acceptable for entry into the productive timber land base. The stand must meet these criteria (locally defined): minimum stocking, desired species composition, minimum height development, and freedom from competition that impedes growth.

The term **free growing** is used in British Columbia.

free growing [établi (adj.)]
see **free-to-grow**

free thinning [éclaircie libre (n.f.)]
see **thinning**: free

frill girdling [annélation en encoches (n.f.)]
Girdling by making a series of downward, more or less overlapping incisions, generally for the introduction of herbicide. Spaced incisions are termed **frill cuts**. A double series of such incisions is referred to as **double-frill girdling**. (3)

frilling [incision par encoches groupées (n.f.)]
see **frill girdling**

frost heaving (heave, lift) [déchaussement par le gel (n.m.)]
Upward displacement of normal soil level as a result of expansion due to ice formation in frozen soil; in nurseries and plantations, the partial or total extrusion of seedlings or other small plants caused by such soil displacement. (3)

fuel plantation [plantation énergétique (n.f.)]
syn. fuelwood plantation

Setting out young trees to be hogged for burning. (3)

full seed [graine pleine (n.f.)]
Seed showing apparently complete embryo and endosperm or megagametophyte structures, irrespective of actual viability. (3)

full-sibs [pleins germains (n.m.)]
Trees with both parents in common. (11)

Defined in Manitoba as trees where both parents are known.

full stocking [matériel sur pied relatif normal (n.m.)]
see **stocking**

fungicide [fongicide]
Any agent used to kill or inhibit the growth of fungi and their spores. (4)

G

genotype [génotype (n.m)]
An individual hereditary constitution derived from its parents and forming a unique combination of genes; sometimes referring to trees having similar genetic constitutions with regard to certain common, identifiable, genetic characteristics, expressed in the phenotype.

geographic information system (GIS) [système d'information géographique (SIG) (n.m.)]
An information system that uses a spatial database to provide answers to queries of a geographical nature through a variety of manipulations, such as sorting, selective retrieval, calculation, spatial analysis, and modeling. (9)

geometric thinning [éclaircie géométrique (n.f.)]
see **thinning**: mechanical

germinability [viabilité germinative (n.f.)]
see **viability**

germinating energy [vigueur germinative (n.f.)]
see **germinative energy**

germinating quality [viabilité germinative (n.f.)]
see **viability**

germination capacity [faculté germinative (n.f.)]
see **germinative capacity**

germination energy [vigueur germinative (n.f.)]
see **germinative energy**

germination percent (power) [faculté germinative (n.f.)]
see **germinative capacity**

germination quality [viabilité germinative (n.f)]
see **viability**

germination test [essai de germination (n.m.)]
A test made to determine the viability of seeds, spores, or pollen grains in a given sample. (3)

germinative capacity [faculté germinative (n.f.)]
The percentage of seeds, spores, or pollen grains in a given sample that actually germinate, irrespective of time. In any batch of seeds, the percentage that is pure (of the species required) multiplied by the germinative capacity gives the proportion of pure live seeds. (3)

germinative energy [vigueur germinative (n.f.)]
The percentage of seeds, spores, or pollen grains in a given sample germinating within a given period e.g., 7 or 14 days, under optimum or stated conditions. (3)

girdling [annélation (n.f.)]
1. *Silviculture:* Making more or less continuous incisions around a living stem, through at least both bark and cambium, generally with the object of killing the tree. Sometimes termed **mechanical girdling**, to distinguish it from **herbicide girdling** when herbicide is added. (7) Making a series of close downward and upward, i.e., V-shaped, incisions into the sapwood is termed **notch-girdling**.

2. *Forest protection:* Destruction (on the part of agencies other than human, e.g., insects, rodents) of tissue, particularly living tissue, in a rough ring around a stem, branch, or root. (3)

cf. frill girdling, bark stripping

graft [greffe (n.f.)]
n: A plant that has been grafted. (11)

v: To place a detached cutting or branch tip (scion) in close cambial contact with a rooted plant (understock) in such a manner that scion and rootstock unite. (11)

granular application [application sous forme granulaire (n.f.)]
A general process by which fertilizers or herbicides in the form of grains are applied to a given area.

green manuring [application d'engrais vert (n.f)]
Increasing the fertility of soil by raising suitable herbaceous crops on it, particularly Fabaceae, but also Cruciferae and Gramineae, and digging or ploughing them while succulent, with or without supplementary fertilizers. (3)

green pruning [élagage en vert (n.m.)]
see **pruning**

ground clearance [préparation du site (n.f.)]
see **ground preparation**

ground preparation [préparation du terrain (n.f.)]
A general term for removing unwanted vegetation, slash, and even stumps, roots, and stones, from a site. (3)

group cutting [trouée (n.f.)]
see **group method**

group cutting method [système de coupes progressives par trouées (n.m.)]
see **group method**

group felling [trouée (n.f.)]
see **group method**

group method [mode de régénération par coupes progressives par trouée (n.m.)]
A shelterwood system in which the canopy is opened, by **group cutting,** so as to create fairly evenly distributed gaps which are enlarged by subsequent cuttings. Regeneration within gaps is mainly natural, though often supplemented artificially; regeneration interval is fairly short and resultant crop is more or less even-aged and regular. (3)

group planting [plantation par bouquet (n.f.)]
Setting out young trees in groups. (3)

group selection [jardinage par groupes, par bouquets (n.m.)]
see **group-selection method**

group-selection method [jardinage par groupes (n.m.)]
A method of regenerating and maintaining uneven-aged stands in which trees are removed in small groups. (1)

group shelterwood cutting [trouée de régénération (n.f.)]
see **group method**

growing stock [matériel sur pied (n.m.)]
All the trees growing in a forest or in a specified part of it, generally expressed in terms of number or volume. (3)

growth promoter [déclencheur de croissance (n.m.)]
Any agent present or provided as a supplement to the plant or its environment to activate growth.

H

hand weeding [désherbage manuel (n.m.)]
Removing the undesirable species inhibiting the growth of valued species manually.

hardening off [endurcissement (n.m.)]
Preparing seedlings or rooted cuttings for planting by gradually reducing water, nutrients, or day length, or by increasing light intensity and thus inducing changes in shoots that make them more resistant to exposure to full sunlight, desiccation, cold, etc. (1)

hard seed [graine dure (n.f.)]
Seed having coats that resist cracking or breaking and may be more or less impermeable to water.

hard snag [chicot dur (n.m.)]
A snag composed primarily of sound wood, generally merchantable. (13)

hardwood(s) [feuillu(s) (n.m.)]
1. Trees belonging to the botanical group Angiospermae having broad leaves that, in temperate regions, are usually shed annually. Also, stands of such trees and the wood produced by them. (5)
2. A forest type in which 0–25% of the canopy (or of the basal area, in some jurisdictions) is softwood (coniferous). (5)

harrowing [hersage (n.m.)]
see **discing**

harvesting [récolte (n.f.)]
A general term for the removal of produce from the forest for utilization; comprising cutting, sometimes further initial processing (topping and trimming), and extraction.

heeling in [mise en jauge (n.f.)]
Temporary storage of seedlings by burial of root systems in a trench.

herbicide [herbicide (n.m.)]
Any chemical preparation used to kill or inhibit the growth of forbs, grasses, woody plants, and their seeds. (4)

heritability [héritabilité (n.f.)]
That portion of the character variance due to hereditary factors as distinct from factors of environment. Heritability is described in one of two ways, depending on the type of investigation. In progeny tests (based on sexually propagated material) it is described as **narrow sense** and is the ratio of the additive genetic variance to the total (i.e., genetic + environmental = phenotypic) variance of a character; in clonal tests (based on vegetatively propagated material) it is described as **broad sense** and is the ratio of the total genetic variance to the total (i.e., phenotypic) variance of a character. (3)

high forest [futaie (n.f.)]
Crops and stands of trees, generally of seedling origin, that normally develop a high closed canopy. A term originally used to differentiate the natural, essentially seedling forest of long rotation from the artificial, coppice forest of shorter rotation. (3)

high-forest systems [régime de la futaie (n.m.)]
Silvicultural systems in which the crops are normally of seedling origin, natural and/or artificial, and the rotation is, traditionally at least, long. (3)

high-forest-with-reserves system [futaie avec sur-réserves (n.f.)]
An accessory system in which selected trees of the old crop, scattered or in groups, are retained after regeneration is completed, for the whole or a part of the next rotation. (3)

high grading [écrémage (n.m.)]
A partial harvest removing only the most valuable species, or trees of desirable size and quality, without regard for the condition of the residual stand. (1)

high pruning [élagage élevé (n.m.)]
see **pruning**

high thinning [éclaircie par le haut (n.f.)]
see **thinning**: crown thinning

hogging [déchiquetage (n.m.)]
Reducing wood to coarse chips, for fuel or the manufacture of wood pulp and wood chipboard. (3)

holdover [survivant (n.m.)]
see **veteran**

hole planting [plantation sur potets (n.f.)]
Setting plants in loosened soil replaced in or brought to a dug hole or pit. Roots separated on either side of a wedge or saddle of earth left in situ when the hole was dug is termed **saddle planting**. In **side-hole planting**, the trees are set against the side. (3)

humus [humus (n.m.)]
1. A general term for the more or less decomposed (plant and animal) residues in the soil, litter therefore being excluded. **Humus layer** is a general term for the surface layers composed of or dominated by organic material, whether unincorporated or incorporated with mineral soil, or at some intermediate stage. (3)
2. More specifically, the more or less stable fraction of decomposed soil organic material, generally amorphous, colloidal, and dark colored. (3)

hybrid [hybride (n.m.)]
The offspring of genetically different parents (usually refers to crosses between two species). (3)

hydroseeding [ensemencement hydraulique (n.m.)]
Dissemination of seed hydraulically in a water medium. Mulch, lime, and fertilizer can be incorporated into the sprayed mixture. (18)

I

immature [jeune (adj.)]
In even-aged management, those trees or stands that have grown past the regeneration stage but are not yet mature. (5)

In uneven-aged management, established trees too young for commercial harvest.

impeder [inhibiteur (n.m.)]
An individual of any value actually impeding the development of another individual of higher grade. (17)

improvement cutting [coupe d'amélioration (n.f.)]
A cutting made in a stand past the sapling stage, primarily to improve composition and quality through the removal of less desirable trees of any species. (1)

improvement planting [plantation d'enrichissement (n.f.)]
Any planting done to improve the value of a stand, and not to establish a regular plantation. (3)

increment [accroissement (n.m.)]
The increase in diameter, basal area, height, volume, quality, or value of individual trees or stands during a given period. (5)

incremental silviculture [sylviculture supplémentaire (n.f.)]
see **intensive silviculture**

increment felling [éclaircie préparatoire à l'ensemencement (n.f.)]
A heavy thinning near the end of the rotation designed to stimulate growth of the trees left to form the final crop. (3)

infilling [regarni (n.m)]
see **fill planting**

ingrowth [recrutement (n.m)]
The volume or number of trees that have grown past an arbitrary lower limit of measurement during a specified period. (1)

insecticide [insecticide (n.m.)]
Any chemical or biological preparation used to kill or disrupt the development of insects. (4)

integrated pest management [gestion intégrée des ravageurs (n.f.)]
The goal of integrated pest management is to advantageously change the pest–host relationship which is a component of a larger socio-ecological system, while minimizing adverse impacts, of any sort, on the rest of the system. (29)

integrated resource management (IRM) [gestion intégrée des ressources (n.f.)]
Management of natural ressources in order to achieve maximum benefits; integrating forest management to nontimber uses and values not only to produce timber, but also to develop the wildlife and recreational capacities of forested areas.

intensive forest management [aménagement intensif (n.m.)]
Basic forest management plus juvenile-stand improvement plus acceleration of artificial regeneration.

intensive silviculture [sylviculture intensive (n.f.)]
Application of cultural measures which, in addition to simply maintaining the forest cover, will allow an increase in the value or volume of the cut.

The term **incremental silviculture** is defined in the British Columbia Forest Act and thus "intensive silviculture" is no longer used there.

In Ontario, intensive silviculture may be considered to include plantation establishment, e.g., using genetically improved planting stock; intensive site preparation, such as spraying herbicides to reduce competing vegetation before mechanical preparation; and manual weeding of plantations at early stages.

intercropping [culture dérobée (n.f.)]
The raising of a forest crop in conjunction with a temporary agricultural crop. (3)

intermediate crown class [classe de cime intermédiaire (n.f.)]
see **crown class**: intermediate

intermediate cutting [coupe intermédiaire (n.f.)]
see **intermediate treatments**

intermediate treatments [traitement intermédiaire (n.m.)]
Any treatment in a stand during that portion of the rotation not included in the final harvest or regeneration period. (1)

cf. tending

intermediate tree [retardataire, intermédiaire (adj.)]
see **crown class**: intermediate

interplanting [plantation intercalaire (n.f.)]
Planting young trees among existing natural regeneration or previously planted trees of similar age. (1)

This activity is known as **fill-in planting** in Alberta, considered to be the same as **fill planting** in Ontario and British Columbia, and called **gap planting** in Newfoundland.

cf. fill planting

irregular shelterwood system [système des coupes progressives irrégulières (n.m.)]
see **shelterwood cutting**

irregular stocking [matériel relatif irrégulier (n.m.)]
see **stocking**: partially stocked

irregular uneven-aged structure [structure inéquienne irrégulière (n.f.)]
Stands that have three or more distinct age classes which do not occupy approximately equal areas. Distribution of diameters is unbalanced. (1)

Also referred to in Ontario as **multistoried stands**.

cf. regular uneven-aged structure

isolation strip [bande d'isolement (n.f.)]
see **buffer**

J

J-root [racine en J (n.f.)]
A root, especially a seedling tap root, having a sharp bend greater than 90°, shaped like a J. Frequently introduced by inappropriate planting. (23)

juvenile spacing [éclaircie précommerciale (n.f.)]
see **precommercial thinning**

juvenile wood [bois de jeunesse (n.m.)]
An inner layer of xylem surrounding the pith, in which the cells are smaller and/or less structurally developed than those of the outer xylem. The period during which it is formed is termed the **juvenile period**; it varies between individuals and with species and environmental conditions. (3)

K

knotty core [coeur noueux (n.m)]
The central core of wood in a pruned tree that contains knots.

L

lammas shoots [pousse d'été (n.f.)]
Extra leader growth extension late in the growing season. (10)

lateral pruning [élagage des racines latérales (n.m.)]
see **box pruning**

layering [marcottage (n.m.)]
The rooting of an undetached branch, lying on or partially buried in the soil, or surrounded by moist fiber sealed in a plastic wrap (air layering), termed a **layer**, which is capable of independent growth after separation from the parent plant.

layering method [méthode du marcottage (n.f.)]
Regeneration of a forest stand using layerings. (10)

leave strip [rideau d'arbres (n.m.)]
A strip of timber left standing between two clearcut areas. (3)

leave tree [arbre marqué en réserve (n.m.)]
A tree (marked to be) left standing in an area where other trees are felled. (3)

liberation [dégagement (n.m.)]
see **release**

lift [élagage (n.m.)]
A stage in the sawlog pruning regime for a tree; usually three separate lifts are needed to ensure a merchantable length of stem with a cylindrical knotty core without taper.

lifting [arrachage (n.m.)]
Loosening and removing a plant from the ground as typically practised in nurseries. (3)

lifting the canopy [élagage de dégagement (n.m.)]
Removing the lower constituents of a canopy, e.g., the lowest undergrowth, shrubs, and small trees in a multistoried forest, mainly to assist the main crop, particularly for regeneration, but also for readier access. (3)

line planting [plantation en lignes (n.f.)]
see **corridor planting**

line thinning [éclaircie en ligne (n.f.)]
see **thinning**: row

lining out [repiquage en ligne (n.m.)]
Transplanting seedlings or rooted cuttings in rows in a nursery bed. (3)

litter [litière (n.f.)]
The uppermost layer, the L-layer, of organic debris on a forest floor, i.e., essentially the freshly fallen or only slightly decomposed vegetable material, mainly foliate (leaf litter) but also bark fragments, twigs, flowers, fruits, etc. This and the less decomposed humus are together often termed **duff**. (3)

live burning [brûlage immédiat (n.m.)]
The burning of green slash progressively as it is cut. (3)

live-crown ratio [taux de cime vivante (n.m.)]
A rough but convenient index of the ability of a tree's crown to nourish the remaining part of the tree; it is the percentage of length of stem having living branches. (10)

L-notch planting [plantation avec fentes en L (n.f.)]
Special form of slit planting involving two slits at right angles with the seedling placed at the apex of the L.

logged area [aire de coupe (n.f.)]
syn. logged-over area

see **cutover**

logging damage [dommage de coupe (n.m.)]
General term comprising wounds resulting from cutting, breakage, or crushing of trees that resulted from the felling and the removal of trees designated for cutting. (10)

May also include scoring of site and soil leading to exposure of infertile subsoil and soil erosion.

logging debris [déchets de coupe (n.m.)]
see **slash**

lop and top [résidus d'ébranchage-façonnage (n.m.)]
The branches and tops cut from a tree, generally once felled or fallen. (3)

lopping [ébranchage (n.m.)]
Chopping branches, tops, and small trees after felling into lengths such that the resultant slash will lie close to the ground. (3)

lopping and scattering [déchiquetage-épandage (n.m.)]
Lopping the slash created after felling and spreading it more or less evenly over the ground without burning. (3)

low thinning [éclaircie par le bas (n.f.)]
see **thinning**: low

M

machine weeding [désherbage mécanique (n.m.)]
see **mechanical weeding**

main crop [peuplement principal (n.m.)]
In regular crops or stands, that portion of the growing stock retained after an intermediate cutting. (3)

manual weeding [désherbage manuel (n.m.)]
see **weeding**

manure [fumier, lisier (n.m.)]
Commonly the dung of farm animals. Also natural or artificial food material for plants and trees, supplying nitrogen, phosphates, and potash and other essential nutrients. (20)

marking [marquage (n.m.)]
Putting a distinctive, more or less lasting, sign on a tree for purposes of identification. (3)

Note: Marking die must be registered to make a legal mark on wood.

marking gun [pistolet marqueur (n.m.)]
see **paint gun**

marking hammer [marteau forestier (n.m.), étampe (n.f.)]
syn. marking axe, marking cog

A light hammer having a die for stamping letters, figures, or other distinctive devices. (3)

marking rule [règle de marquage (n.f.)]
Means of standardizing marking practice among individuals and for various areas of the same forest type, commonly for thinning purposes. (10)

mature [mûr (adj.)]
In even-aged management, those trees or stands that are sufficiently developed to be harvestable and that are at or near rotation age (includes overmature trees and stands for which an overmature class has not been recognized). (5)

maturity class [classe de maturité (n.f.)]
Trees or stands grouped according to their stage of development, from establishment to suitability for harvest. A maturity class may comprise one or more age classes. (5)

mechanical planting [plantation mécanique (n.f.)]
Setting out young trees by means of a machine specially designed for this operation.

mechanical thinning [éclaircie systématique (n.f.)]
see **thinning**: mechanical

mechanical weeding [désherbage mécanique (n.m.)]
Removal of undesirable vegetation by mechanical means.

mechanized planting [plantation mécanisée (n.f.)]
see **mechanical planting**

mechanized thinning [éclaircie systématique (n.f.)]
see **thinning**: mechanical

mechanized weeding [désherbage mécanisé (n.m.)]
see **weeding**

merchantable [marchand (adj.)]
Of a tree or stand that has attained sufficient size, quality, and/or volume to make it suitable for harvesting. Does not imply accessibility, economic or otherwise. (5)

merchantable snag [chicot marchand (n.m.)]
A snag that is of sufficient quality and/or volume to make it suitable for harvesting.

microsite [niche (écologique) (n.f.)]
The ultimate unit of the habitat, i.e., the specific spot occupied by an individual organism. By extension, the more or less specialized relationships existing between an organism and its environment. (3)

mist forest [forêt de brouillard (n.f.)]
A forest of high elevation that occurs along the foggy windward shores of continents and islands. (10)

mist propagation [brumisation (n.f.)]
An irrigation technique for rooting cuttings where water, with or without fertilizers, is sprayed in minute drops on the plants.

mixed stand [mélangé (adj.)]
A stand composed of two or more species in which less than 80% of trees in the main crown canopy are of a single species. (1)

The threshold in Manitoba and New Brunswick is 75%.

cf. pure stand

mixedwood(s) [mixte (adj.), forêt(s) mixte(s) (n.f.)]
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. (5)

2. A forest type in which 26–75% of the canopy is softwood. (5)

mixing [mélange (n.m.)]
Site preparation technique involving rotating tillers or other devices that mix soil and surface organic material with fine debris. (21)

model forest [forêt modèle (n.f.)]
A forest or designated area including forests and woodlands for which an integrated management plan is created and implemented to achieve multiple objectives on a sustainable basis.

monoculture [monoculture (n.f.)]
1. *General:* Cultivation of a single crop or product without using the land for other purposes. (12)

2. *Biology:* Extensive areas of land occupied or dominated by plant species that are closely related genetically. (12)

mortality [mortalité (n.f.)]
Death or destruction of forest trees as result of competition, disease, insect damage, drought, wind, fire, old age, and other factors, excluding harvesting. (5)

mounding [buttage (n.m.)]
Forming raised planting spots or mounds by the scooping up and inversion of a quantity of organic and mineral soil. (21)

mound planting [buttage (n.m.), plantation sur butte (n.f.)]
Setting out young trees on raised microsites.

mulch [mulch, paillis (n.m.)]
Any loose covering on the surface of the soil, whether natural, like litter, or deliberately applied, like organic residues, crushed gravel, or artificial material like plastic, glass-wool, metal foil, and paper, used to reduce competing vegetation, retain humidity, or protect against frost and mechanical action of rain. (3)

mulching [paillage (n.m.)]
see **mulch**

N

natural pruning [élagage naturel (n.m)]
syn. self-pruning

The freeing of the stem of a standing tree from its branches through natural death, disintegration, and/or fall, resulting from such causes as decay, deficiency of light or water, or snow, ice, and wind breakage. (3)

natural regeneration [régénération naturelle (n.f.)]
Renewal of a tree crop by natural seeding, sprouting, suckering, or layering. (1)

nest planting [plantation en nids (n.f.)]
Setting out a number of seedlings or seeds close together in a prepared hole, pit, or spot. (3)

new forestry [nouvelle foresterie (n.f.)]
A forest management philosophy that attempts to retain characteristics of old-growth stands in managed stands.

non-commercial thinning [éclaircie précommerciale (n.f.)]
see **thinning**: precommercial

notch-girdling [annélation en zigzag (n.f.)]
see **girdling**

NSR [insuffisamment régénéré (adj.)]
see **stocking**: NSR

nurse log [grume abri (n.f.)]
A dead or downed log that fosters tree seedlings by protecting them from such environmental factors as wind, insolation, or frost, or by providing appropriate soil and microclimate. (13)

nursery [pépinière (n.f.)]
An area set aside for the raising of young trees mainly for planting out. Temporary nurseries, particularly those formed beneath a high canopy of large trees, may be termed bush nurseries. (3)

cf. field nursery

nursery bed [planche (n.f.)]
One of the specially prepared plots in a nursery where seed is sown or into which transplants or cuttings are put. (3)

nurse tree (nurse crop) [arbre-abri (n.m.) (culture-abri [n.f.])]
A tree or crop of trees, shrubs, or other plants, either naturally occurring or introduced, used to nurture or improve the form of a more important tree or crop during youth by protecting it from frost, insolation, or wind. (1)

O

occlusion [occlusion (n.f.)]
The process of healing of cut branch stubs by the cambium of the surrounding stem surface.

old field [champ abandonné (n.m.)]
An area of cleared open land no longer used for cultivation or pasture which may be in the process of reverting to forest.

old growth [vieux (adj.), vieux peuplement (n.m.)]
A stand of mature or overmature trees relatively uninfluenced by human activity. (5)

opening up [ouverture du couvert (n.f.)]
Considerable reduction of canopy density, e.g., by lopping, felling, or herbicidal treatment of selected trees, or naturally through pests, disease, or drought mortality. (3)

optimum stocking [matériel relatif optimal (n.m.)]
see **stocking**: optimum

outplant [plant sur le terrain (n.m.)]
A seedling, transplant, or cutting ready to be established on an area.

outplanting [plantation sur le terrain (n.f.)]
see **forest planting**

over-all application [traitement en plein (n.m.)]
see **broadcast application**

overmature [suranné (adj.)]
In even-aged management, those trees or stands past the mature stage. (5)

overplanting [regarnissage (n.m.)]
see **fill planting**

overstocked [de densité relative excessive (n.f.)]
see **stocking**: overstocked

overstory [étage dominant (n.m.)]
see **story**

overstory removal [suppression de l'étage dominant (n.f.)]
A final harvest in which the cutting releases advance regeneration. (1)

overtopped crown class [classe de cime dominée (n.f.)]
see **crown class**: suppressed

overtopped tree [arbre dominé (n.m.)]
see **crown class**: suppressed

P

paint gun [pistolet marqueur (n.m.)]
A low-pressure hand tool for squirting a distinctive mark of paint on trees and timber. (3)

partial cutting [coupe partielle (n.f.)]
see **partial harvest**

partial harvest [coupe partielle (n.f.)]
Any cutting in which only part of the stand is harvested. (1)

partial seeding [ensemencement localisé (n.m.)]
Seeding confined to limited areas, e.g., drills, strips, patches, or nests, generally according to a regular spatial pattern. (3)

patch burning [brûlage par placette (n.m.)]
Burning felling debris, grass, etc. in patches for the purpose of preparing sites for group planting or sowing. (3)

patch cutting [jardinage par bouquets (n.m.)]
see **selection cutting**

patch logging [exploitation par blocs (n.f.)]
A modification of the clearcutting system developed in the Pacific Coast region of North America, whereby patches of about 5 to 200 ha are logged as single units, separated for as long as practicable (preferably until the regeneration is adequately shading the forest floor) by living forest; this secures the optimum dispersal of seed and avoids the high hazard of large continuous areas of slash, particularly with respect to fire. (3)

patch planting [plantation sur placeaux (n.f.)]
see **spot planting**

patch scarifier [scarificateur de placeaux (n.m.)]
A mechanized implement used to expose patches of mineral soil in a systematic pattern. (21)

patch seeding [ensemencement sur placeaux (n.m.)]
see **seeding**: spot

pathogen [pathogène (n.m)]
A microscopic organism or virus directly capable of causing disease. (3)

PCT [éclaircie précommerciale (n.f.)]
see **thinning**: precommercial

peg planting [plantation au bâton (n.f.)]
see **dibble planting**

pelleting [enrobage (n.m.)]
Incorporating seed in a matrix of fungicide, insecticide, repellent, coloring material or inert carrier, or any combination of these, so as to form a small ball termed a seed pellet. (3)

periodic block [affectation de régénération (n.f.)]
The part(s) of forest allocated for regeneration (the regeneration block) or other treatment during a specified period. (3)

pest [ravageur (n.m.)]
Any organism, whether insect, pathogen, mammal, or competing vegetation, capable of causing damage to a forest crop.

pesticide [pesticide (n.m.)]
Any preparation used to control populations of injurious organisms, plant or animal. (3)

phenology [phénologie (n.f.)]
The study of timing of periodic phenomena, such as flowering, growth initiation, growth cessation, etc., especially as related to seasonal changes in temperature, photoperiod, etc. (11)

phenotype [phénotype (n.m.)]
An organism as observed, i.e., as judged by its visually perceptible characters resulting from the interaction of its genotype with the environment. Identical phenotypes do not necessarily breed alike. (3)

piling [mise en andain (n.f.)]
Slash disposal whereby coarse woody debris are gathered into windrows or isolated piles. (21)

piling and burning [empilage-brûlage des rémanents (n.m.)]
Piling slash after lopping, and subsequently burning the individual piles. (3)

pioneer species [essence transitoire (n.f.)]
A species adapted to early stages of natural forest succession or growth on newly available sites.

pit planting [plantation sur trous (n.f)]
Setting out young trees in small depressions, natural or excavated, with a view to collecting and conserving moisture. (3)

plantation [plantation (n.f.)]
A forest crop established artificially, either by sowing or planting. (5)

In British Columbia, a lodgepole pine stand naturally regenerated after drag scarification is called a plantation. Also, a stand that was regenerated naturally after a fire and then spaced and managed may be referred to as a plantation.

plantation forest [plantation forestière (n.f.)]
see **planting**

plantation forestry [foresterie de plantation (n.f.)]
Application of forestry principles to an artificial crop or stand.

planting [plantation (n.f.)]
Establishing a forest by setting out seedlings, transplants, or cuttings in an area. (4)

planting auger [tarière (n.f.)]
A motorized auger used to create planting holes.

planting bar [bêche à planter (n.f.)]
A long-handled, tapered spade used to make narrow, deep holes for young plants of tap-rooted tree species. (3)

planting gun [plantoir à pistolet (n.m.)]
Special devices of varying complexity which make holes by compression and either set or shoot a containerized seedling into the soil. (10)

planting machine [planteuse (n.f.)]
Specially designed machine that cuts a narrow trench through the soil in which seedling roots are inserted and then held in place by closing of the trench. (3)

planting out [plantation sur le terrain (n.f.)]
see **planting**

planting spot [emplacement (n.m.)]
The exact spot where a young tree has been set out. (3)

planting stock [matériel de reproduction (n.m.)]
Seedlings, transplants, cuttings, and occasionally wildlings, for use in planting. (3)

plant lifter [arracheuse (n.f.)]
see **plant lifting machine**

plant lifting machine [arracheuse (n.f.)]
A specially designed machine that loosens and removes plants from the ground.

plant percentage [pourcentage de réussite des semis (n.m.)]
The percentage by number of seeds in a given sample that develop into seedlings at the end of a given period, generally the end of the first growing season. (3)

plant tray [caissette (n.f.)]
A flat, box-type container in which plants are raised. (3)

ploughing [labourage (n.m.)]
Operation designed to loosen compacted soils and/or to pull the roots of unwanted plants out of the ground by means of single- or double-moldboard ploughs or special shaping devices pulled by a tractor, bulldozer, or similar equipment. (21)

plug seedling [semis fiche (n.m.)]
see **seedling**

plug transplant [plant fiche (n.m.)]
A small container seedling which is to be planted and raised as a bare-root seedling.

plus stand [peuplement plus (n.m.)]
A stand containing a preponderance of good phenotypes, but not necessarily plus trees. (3)

plus tree [arbre plus (n.m.)]
A phenotype judged (but not proved by testing) to be unusually superior in some quality or qualities, e.g., exceptional growth rate relative to site, desirable growth habit, high wood quality, exceptional apparent resistance to disease and insect attack or to other adverse local factors. (3)

poison girdling [annélation avec phytocide (n.f.)]
see **girdling**

pole [perche (n.f.)]
A tree between a sapling and small sawtimber size. Size varies by region, e.g., for boreal and eastern forests 12–20 cm dbh. (1)

pole stage [stade de perchis (n.m.)]
see **stand development**

pollard [têtard (n.m.)]
see **pollarding**

pollarding [émondage (n.m.)]
Cutting back, in more or less systematic fashion, the crown of a tree to produce a close head of shoots (a **pollard**) beyond the reach of browsing animals, either for commercial purposes (e.g., fuel, withes for willow and poplar basketwork) or for amenity. (3)

pollard system [taillis sur têtards (n.m)]
The systematic harvest cutting of pollard shoots, with due provision for replacing exhausted or defective pollards. (3)

polyculture [polyculture (n.f.)]
The simultaneous cultivation of a number of crops as opposed to stands composed of a single species. (15)

pot planting [plantation en pot (n.f.)]
Setting out young trees in pot-shaped receptacles having a closed or only perforated end and made of various materials, in which they have been raised from seed or to which they have been transferred from the seed bed; a type of container planting. (3)

prechilling [stratification froide (n.f.)]
see **stratification**

precommercial thinning [éclaircie précommerciale (n.f.)]
see **thinning**: precommercial

predominant [prédominant (n.m.)]
A tree whose crown has grown above the general level of the upper canopy. (3)

pregermination [germination physiologique (n.f.)]
The germination of seed, generally to the stage when the radicle is just emerging, before sowing in the field or nursery. (3)

preparatory cutting [coupe préparatoire (n.f.)]
Removing trees near the end of a rotation so as to permanently open the canopy and enlarge the crowns of seed bearers, with a view to improving conditions for seed production and natural regeneration, as typically in shelterwood systems. (3)

prescribed burning [brûlage dirigé (n.m.)]
The knowledgeable application of fire to a specific land area to accomplish predetermined forest management or other land use objectives. (6)

pricking out [repiquage (n.m.)]
Transplanting seedlings that are too small to be handled by conventional lining-out methods, individually into boxes, flats, containers, etc., or into nursery beds. (3)

principal crop [peuplement principal (n.m.)]
see **main crop**

principal species [essences principales (n.f.)]
The species to which the silviculture of a mixed forest is primarily directed, either for its (or their) economic or protective value. (3)

production nursery [pépinière de production (n.f.)]
see **nursery**

productive capacity [capacité productive (n.f.)]
see **site capability**

productivity [productivité (n.f.)]
The rate of production of wood of given specifications, by volume or weight, for a given area. (5)

cf. site capability

progeny [descendance (n.f.)]
The offspring of a particular tree or a combination of one female and one male tree. (11)

progeny test [test de descendance (n.m.)]
A test in which the genetic constitution of an individual is evaluated from the performance of its progeny produced by some specific mating system. (3)

progeny trial [test de descendance (n.m.)]
see **progeny test**

progressive clear-strip system [mode de régénération par coupes rases en bandes contiguës (n.m.)]
A shelterwood system with clearcutting in strips that are generally not wider than the height of the adjoining trees and are generally laid out against the prevailing wind; regeneration is mainly natural, though sometimes supplemented artificially; the crop is young, even-aged. (3)

provenance [provenance (n.f.)]

1. The geographical area and environment to which the parent trees, etc., are native and within which their genetic constitution has been developed through natural selection. (3)

2. The geographical source, i.e., place of origin, of a given lot of seed, propagules, or pollen. (3)

provenance test [test de provenance (n.m.)]

An experiment, usually replicated, comparing trees grown from seed or cuttings collected from many parts of a species, natural range. (11)

pruning [élagage (n.m.)]

1. The removal of live branches from standing trees, termed **green pruning**; or of dead branches, **dry pruning**.

2. Removal of live or dead branches from ground level to as high as a person's reach (2.0–2.5 m) in a young stand, known as **brashing**; above a person's reach (e.g., with a ladder), **high pruning**. If only crop trees are high pruned, the operation is selective high pruning. Pruning or lopping that increases the clearance under a tree is sometimes termed **lifting the canopy**.

pruning saw [scie à élaguer (n.f.)]

A saw specially designed to prune standing trees.

pure live seed [graine pure vivante (n.f.)]

see **germinative capacity**

pure stand [pur (adj.)]

A stand in which at least 80% of the trees in the main crown canopy are of a single species. (1)

The threshold in Manitoba and New Brunswick is 75%.

cf. mixed stand

Q

quadrat [quadrat (n.m.)]

A small, clearly demarcated sample area of known size on which observations are made. (8)

quincunx planting [plantation en quinconces (n.f.)]
Setting out four young trees to form the corners of a square with a fifth tree at its center. (3)

R

race [race (n.f.)]
A population that exists within a species and exhibits genetic characteristics distinct from those of the other populations. It is usually an interbreeding unit. When the distinguishing characteristics are adaptive, the term is synonymous with ecotype. (25)

raking [râtelage (n.m.)]
Site preparation technique using a bulldozer or similar equipment with a blade having teeth instead of a plain edge, for pushing large, coarse woody debris and rocks off a site and leaving smaller stones, soil, small finer slash, and woody debris in place. (21)

In Nova Scotia, raking corresponds to windrowing.

ramicorns [ramicorne (n.f.)]
Abnormally large branches that project at sharp acute angles from the bole and are persistent (often associated with previous weevil attack). (10)

recruitment [recrutement (n.m.)]
The plants involved in supplementation of a stand; trees that have entered a particular category during a given period, especially stems that have grown to a specified diameter. (3)

refill planting [regarnissage (n.m.)]
see **fill planting**

reforestation [reboisement (n.m.)]
syn. reafforestation

Successful renewal of a forest crop by planting or direct seeding.

regeneration [régénération (n.f.)]
Renewal of a forest crop by natural, artificial, or vegetative (regrowth) means. Also the new crop so obtained. The new crop is generally less than 1.3 m high. (5)

regeneration area [quartier de régénération (n.m.)]
The area selected, normally in a working plan or working scheme, for regeneration generally with a specified period of time in view. (3)

regeneration block [affectation de régénération (n.f.)]
see **periodic block**

regeneration class [classe de régénération (n.f.)]
The area, and the young trees in the area, being managed during the regeneration interval in the shelterwood silvicultural system. In this interval, old and young trees occupy the same area, the young being protected by the old. (5)

regeneration cut [coupe de régénération (n.f.)]
Any removal of trees intended to assist regeneration already present or to make regeneration possible. (3)

regeneration initiation [début de la régénération (n.m.)]
The year in which the new crop is deemed to be started at an acceptable stocking level, whether by planting, natural or artificial seeding, or by vegetative means. (5)

regeneration interval [durée de régénération (n.f.)]
The period between the seed cutting and the final cutting on a particular area under one of the shelterwood systems. (3)

regeneration period [période de régénération (n.f.)]
The time between the initial regeneration cut and the successful reestablishment of a stand by natural or artificial means. (1)

regeneration survey [relevé de la régénération (n.m.)]
An inventory of the quantity and quality of regeneration over a given area.

regrowth [recrû (n.f.)]
A term used in reference to coppice, as well as recovery of vegetation from treatment designed to impede or control its growth.

regular uneven-aged structure (balanced) [structure inéquienne régulière (n.f.)]
A stand in which three or more distinct age classes occupy approximately equal areas and provide a balanced distribution of diameter classes. (1)

cf. irregular uneven-aged structure

reinforcement planting [regarnissage (n.m.)]
see **fill planting**

relative thinning intensity [intensité relative d'éclaircie (n.f.)]
The periodic (annual) yield of a stand from thinnings, expressed as a percentage of its periodic annual increment. (3)

release [dégagement (n.m.)]
Freeing a tree or group of trees from more immediate competition by cutting or otherwise eliminating growth that is overtopping or closely surrounding them. (1)

repair planting [regarni (n.m.)]
see **fill planting**

replacement planting [regarni (n.m.)]
see **fill planting**

reproduction [régénération naturelle (n.f.)]
see **regeneration**

reproduction period [période de reproduction (n.f.)]
The process by which new individuals are produced from parent trees, by either sexual or asexual (vegetative) means.

reserve [réserve (n.f.)]
Any tree or group of trees left unfelled in a stand that is being regenerated, and kept for part or whole of the next rotation. (3)

cf. high-forest-with-reserves system

reserve cutting [coupe à blanc avec réserves (n.f.)]
see **seed-tree method**

reserved tree [arbre marqué en réserve (n.m.)]
see **reserve**

restocking [reboisement (n.m.)]
Renewal by self-sown seed or by vegetative means, or through sowing or planting, that results in a desired number of seedlings for the area concerned. (3)

ridge planting [plantation sur bourrelet (n.f.)]
Setting out young trees on a long, narrow crest of excavated soil, generally on a slice thrown up by a plough. (3)

ring-barking [annélation partielle (n.f.)]
Removing a narrow strip of bark (only), all around (1) a living stem, in order to stimulate flowering or to girdle it; or (2) a felled stem or a log, for under-bark diameter measurement. (3)

ring stripping [annélation partielle (n.f.)]
see **band girdling**

ripper [défonceuse (n.f.)]
A toothed blade or set of heavy tines mounted at the front or rear of a vehicle for breaking up soft rock and hard ground, and tearing out stumps and boulders. Also a vehicle so equipped. (3)

ripper plough [charrue défonceuse (n.f.)]
A V-shaped plough mounted with a ripper blade used for scarification on frozen soil.

ripping [ripage (n.m.)]
The mechanical penetration and shearing of range soils to depths of 3–7 cm for the purpose of breaking hardpan layers to facilitate penetration of plant roots, water, organic matter, and nutrients. (19)

rock blade [lame de râteau (n.f.)]
see **brush blade**

roguing [élimination (n.f.)]
Systematic removal of individuals not desired for the perpetuation of a population, e.g., from a seed orchard or a nursery. (3)

root pruning [élagage des racines (n.m.)]
The act of reducing one or more roots considered to be superfluous, usually at some stage before outplanting, in order to improve the shape and size of a root system and/or induce root proliferation by increasing the number of third- and higher-order roots within the root system when lifted. (23)

root puddling [pralinage des racines (n.m.)]
The act or treatment of immersing, sometimes several times in close succession, the root systems of bare-root planting stock in a clay slurry with the aim of improving outplant performance. (23)

root rake [râteau (n.m.)]
An implement, either mounted on the front of a dozer, skidder or forwarder, or trailed, having tines for collecting stumps and slash. (3)

root raking [râtelage (n.m.)]
see **raking**

rootstock [porte-greffe (n.m.)]
The root-bearing plant or plant part, usually stem or root, onto which another plant is grafted. (25)

cf. budding, graft, scion

root stripping [dépouillement des racines (n.m.)]
1. The accidental removal of roots during lifting, handling, and planting, especially when caused by improper practices.
2. The removal of bark from roots. (23)

root sucker [drageon racinaire (n.m.)]
see **sucker**

root-to-shoot ratio [rapport système racinaire/système foliacé (n.m.)]
The total mass or volume of the plant root system divided by the total mass or volume of the shoot system, usually on an oven-dry basis. (23)

root trimming [taille des racines (n.f.)]
The trimming of roots by a cutting tool after lifting and prior to outplanting. (23)

root wad [motte racinaire (n.f.)]
The mass of roots, soil and rocks that remains intact when a tree, shrub, or stump is uprooted. (13)

rootwood [bois de racine]
The secondary xylem of roots. (23)

root-wrenching [soulevage des plants (n.m.)]
A nursery operation to condition nursery stock by loosening the contact between soil and roots of seedlings in a nursery bed. (23)

rotary tiller [laboureur à lames rotatives (n.m.)]
A site preparation machine using hammers, teeth, tines, or flails mounted on a horizontal drum or horizontal or vertical shaft revolving at high speed. (23)

rotation [révolution (n.f.)]
The planned number of years between the formation or regeneration of a crop or stand and its final cutting at a specified stage or maturity. (1)

rotation burning [brûlage cyclique (n.m.)]
Prescribed burning applied at regular intervals on a specific site as a means of pest control.

row thinning [éclaircie en ligne (n.f.)]
see **thinning**: row

S

saddle planting [plantation sur ensellement (n.f.)]
see **hole planting**

salvage cutting [coupe de récupération (n.f.)]
The exploitation of trees that are dead, dying, or deteriorating (e.g., because overmature or materially damaged by fire, wind, insects, fungi, or other injurious agencies) before their timber becomes economically worthless. (1)

sanitation cutting [coupe d'assainissement (n.f.)]
The removal of dead, damaged, or susceptible trees, essentially to prevent the spread of pests or pathogens and so promote forest hygiene. (1)

sanitation measures [mesures sanitaires (n.f.)]
The removal of dead, damaged, or susceptible trees or their parts, or of vegetation that serves as an alternative host for crop-tree pathogens, to prevent or control the spread of pests or pathogens. (5)

sapling [gaule (n.f.)]
A general term for a young tree no longer a seedling but not yet a pole, about 1–2 m high and 2–4 cm in dbh, typically growing vigorously and without dead bark or more than an occasional dead branch. Also, a young tree having a diameter at breast height greater than 1 cm but less than the smallest merchantable diameter. (3)

satellite nursery [pépinière volante (n.f.)]
see **field nursery**

satisfactorily stocked [de densité relative satisfaisante (n.f.)]
see **stocking**: satisfactorily stocked

sawtimber [bois de sciage (n.m.)]
Trees that will yield logs suitable in size and quality for the production of lumber. (5)

scalping [dégazonnement (n.m.)]
Paring off low and surface vegetation, with most of its roots, to expose a weed-free soil surface, generally preparatory to sowing or planting thereon. If done by chemicals, termed chemical screefing. (3)

scarification
1. [scarifiage (n.m)] Loosening the topsoil of open areas or breaking up the forest floor to assist the germination of natural seed from either standing trees or slash or to promote the occurrence of coppice or sucker growth.
2. [scarification (n.f.)] A chemical treatment applied to seed to enhance germination.

scion [greffon (n.m.)]
An aerial plant part, often a branchlet, that is grafted onto another root-bearing plant (stock, rootstock). (25)

screefing [dégazonnement (n.m.)]
see **scalping**

scribe [rainette (n.f.)]
A tool for marking trees or round timber by scoring the outer surface. (3)

scrub [broussailles (n.f.)]
see **brush**

scrub control [essartage (n.m.)]
see **brushing**

secondary species [essence secondaire (n.f.)]
A species of inferior quality and/or size, and of lesser silvicultural value, associated with the principal species. (3)

cf. accessory species

second growth [seconde venue (n.f.)]
The forest growth that has developed (naturally or artificially) following the removal of the original forest.

seed bank [banque de semences (n.f.)]
A place in which seeds of rare plant or obsolete varieties are stored, usually vacuum-packed and under cold conditions, to prolong their viability. (14)

seed bearer [semencier, porte-graine (n.m.)]

1. Any tree producing seed.
2. Any tree retained to provide seed for natural regeneration, e.g., during seed cuttings. (3)

seedbed [lit de germination (n.m.)]

1. In natural regeneration, the soil or forest floor on which seed falls. (3)
2. In nursery practice, and also in the field, a prepared area over which seed is sown. (3)

seed collection area [zone de récolte de semences (n.f.)]

A forest stand that exhibits good characteristics of growth, form, and vigor and that is not managed for cone production, but from which seed is collected, usually at the time of harvest. (3)

seed cutting [coupe d'ensemencement (n.f.)]

Removing trees in a mature stand so as to effect permanent opening of its canopy (if there was no preparatory cutting to do this) and so provide conditions for securing regeneration from the seed of trees retained for that purpose; the first of the shelterwood cuttings under a shelterwood system. (3)

seeding [ensemencement (n.m.)]

aerial [ensemencement aérien]: Broadcast seeding of seeds or seed pellets from aircraft. (3)

broadcast [ensemencement à la volée]: The sowing of seeds more or less evenly over a whole area on which a forest stand is to be raised. (5)

direct [ensemencement direct]: The artificial systematic sowing of seeds by manual or mechanical means in an area on which a forest stand is to be raised. (5)

drill [ensemencement en ligne]: The sowing of seeds in shallow furrows across a whole area on which a forest stand is to be raised. A practice more common in nurseries. (5)

natural [ensemencement naturel]: The dispersal by natural agents of seeds from standing trees in proximity to a regenerating area or from slash scattered over that area. Seeds may be dispersed by wind, birds, mammals, gravity, or flowing water or be released by fire from serotinous cones.

row [ensemencement en rangée]: The sowing of seed in deep furrows simultaneously with disc trenching for site preparation.

sheltered spot [ensemencement sous abri]: The sowing of seeds under small conical shelters of translucent or opaque, bio- or photo-degradable material as a means of stabilizing the microsite and improving germination.

spot [ensemencement sur placeaux]: The sowing of seeds within small, cultivated, or otherwise-prepared patches, many of which are distributed over a whole area on which a forest stand is to be raised. (5)

seeding felling [coupe d'ensemencement (n.f.)]
see **seed cutting**

seeding lath [planche semoir (n.f.)]
A device, commonly of wood, for obtaining uniformly spaced drills in a seedbed and aiding the even distribution of hand-sown seed in them. (3)

seedling [semis (n.m.)]
A young tree, grown from seed, from the time of germination to the sapling stage, having a diameter at breast height of no more than 1 cm and a height of no more than 1.5 m.

bare-root [semis à racines nues]: A seedling to be planted with its roots bare of soil. (1)

container [semis en récipient]: A seedling grown in a container and that is to be planted with roots still in its growth medium. (1)

plug [semis en douille]: A seedling lifted from its container with roots and rooting medium left undisturbed. (1)

seedling forest [futaie (n.f.)]
see **high forest**

seed orchard [verger à graines (n.m.)]
A plantation of trees, assumed or proven genetically to be superior, that has been isolated so as to reduce pollination from genetically inferior outside sources, and intensively managed to improve the genotype and produce frequent, abundant, and easily harvestable seed crops. A **clonal seed orchard** is established by setting out clones as grafts or cuttings; a **seedling seed orchard** is established from selected seedling progenies. (3)

seed origin [origine des semences (n.f.)]
see **provenance**

seed pellet [semence enrobée (n.f.)]
see **pelleting**

seed production area [peuplement producteur de graines (n.m.)]
A forest stand identified as a good source of seed and in which individual trees are evaluated for desired characteristics. Unwanted trees and competing trees are removed to promote cone production. Seed is collected periodically from standing trees or by felling sections as required.

seed source [origine des graines (n.f.)]
The locality where a seed lot was collected usually defined on an eco-geographic basis by distance, elevation, precipitation, latitude, etc. If the stand from which collections were made was exotic, the place where its seed originated is the original seed source.

cf. provenance

seed spot [placeau (n.m.)]
syn. seedspot

A prepared, limited space, e.g., a small, cultivated patch, within which (tree) seeds are sown. (3)

seed stand [peuplement producteur de graines (n.m.)]
Any stand used as a source of seed. (3)

seed trap [piège à semences (n.m.)]
A device for catching the seeds falling on a small area of ground, from trees or shrubs. Used for determining the amount of seedfall and the time, period, rate, and distance of dissemination. (3)

seed tree [semencier (n.m.)]
A tree selected, and often reserved, for seed collection or provision of seed for natural regeneration. (1)

seed-tree method [mode de régénération avec réserve de semenciers (n.m.)]
A method of 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. If these are retained for increment as well as seed, termed a **reserve cutting**. The objective is to create an even-aged stand. (1)

seed-tree removal [coupe des semenciers (n.f.)]
see **final cutting**

seed-tree system [mode de régénération par coupe rase avec semencier (n.m.)]
see **seed-tree method**

seed year [année semencière (n.f.)]
The year in which a tree species produces, either as an individual or a crop, an adequate amount of seed; applies to any species but particularly to those with irregular or infrequent seed production. Many periodic seeders produce heavy (bumper) seed crops during their seed years. (3)

selection [sélection (n.f.)]
Choosing individuals with desired qualities to serve as parents for the next generation. (12)

selection cutting [coupe de jardinage (n.f.)]
Annual or periodic cutting of trees chosen individually or by groups, in an uneven-aged stand, in order to recover the yield and develop a balanced uneven-aged stand structure, while providing the cultural measures required for tree growth and seedling establishment. The cuts are usually a mix of regeneration cuts and improvement cuts.

Selection cutting is not the same as **selective** cutting.

selection differential [différentiel de sélection (n.m.)]
The average phenotypic value of the selected individuals, expressed as a deviation from the population mean. (12)

selection forest [forêt jardinée (n.f.)]
Forest treated and managed under the selection system. (3)

selection method [jardinage (n.m.)]
A method of regenerating a forest stand and maintaining an uneven-aged structure by removing some trees in all size classes either singly or in small groups or strips. (1)

selection thinning [éclaircie jardinatoire (n.f.)]
see **thinning**: selection

selective cutting [coupe d'écrémage (n.f.)]
see **high grading**

selective harvesting [récolte d'écrémage (n.f.)]
see **high grading**

selective logging [récolte d'écrémage (n.f.)]
see **high grading**

self-pruning [élagage naturel (n.m.)]
The inherent ability of a tree species to shed dead branches at their junction with the live stem.

self-thinning [éclaircie naturelle (n.f.)]
Tree mortality from the effect of the competition arising between trees on the same site.

seral [sérial (n.m.)]
see **succession**

serotinous [sérotinal (adj.)]
Coming late; particularly applied to plant species or individuals with cones that remain on the tree without opening for one or more years (e.g., *Pinus contorta* and *Pinus banksiana*).

severance felling [coupe de préparation de lisière (n.f.)]
A cleared strip cut through a stand so as to develop a wind-firm edge before making any fellings. (3)

shade tolerance [tolérance (n.f.)]
The relative capacity of a species to become established and persist under a canopy. (1)

shark-fin barrel [rouleau nageoire-de-requin (n.m.)]
A mechanical site preparation device consisting of pairs of metal barrels on which are welded steel fins along opposing spiral lines; this conformation causes circular motion and lateral scalping when the barrels are pulled over land to be planted or seeded.

shearing [traitement à la cisaille (n.m.)]
1. A method of harvest using mechanical shears.
2. The shaping of a tree crown, particularly with respect to Christmas trees or ornamentals, by removing part of the leader and/or the ends of live branches to comply with a desired crown form.
3. A method of site preparation in which all standing material is removed at ground level using a shear blade attached to a large tractor. (1)

   Known in Manitoba, Ontario and British Columbia as **shear blading**.

shelterbelt [rideau-abri (n.m.)]
A strip of living trees and/or shrubs maintained mainly to provide shelter for open land from wind, desiccation, snow-drift, etc. (3)

shelterwood [abri (n.m.)]
see **shelterwood cutting**

shelterwood compartment system [mode de régénération par coupes progessives uniformes (n.m.)]
see **shelterwood cutting**: uniform shelterwood system

shelterwood cutting [coupe progressive (n.f.)]
Any regeneration cutting in a more or less regular and mature crop, designed to establish a new crop under the protection (overhead or side) of the old, or where the resultant crop will be more or less regular. (3)

irregular shelterwood system [mode de régénération par coupes progressives irrégulières]: Harvest cutting in which opening of the canopy is irregular and gradual; generally in groups, with the final cutting often in strips; regeneration is natural; regeneration interval is long, often up to half the rotation, and the resultant crop considerably uneven-aged and irregular. (3)

strip shelterwood system [mode de régénération par coupes progressives par bandes]: A shelterwood system in which regeneration cuttings are carried out on fairly wide strips, generally against the prevailing wind, and progress rapidly; regeneration is mainly natural, regeneration interval short, and the resultant crop fairly even-aged and regular. (3)

uniform shelterwood system [mode de régénération par coupes progressives uniformes]: A shelterwood system in which the canopy is opened fairly evenly throughout the regeneration area; regeneration is mainly natural, though it may be supplemented artificially; regeneration interval is fairly short and the resultant crop more or less even-aged and regular. (3)

shoot pruning [élagage des rejets (n.m.)]
Cutting away undesirable shoots to favor survival and growth of selected shoots.

shrub [arbrisseau (n.m.)]
A perennial plant differing from a perennial herb in its persistent and woody stem(s), and less definitely from a tree in its lower stature and the general absence of a well-defined main stem. (3)

side cutting [élagage des racines latérales (n.m.)]
see **box pruning**

side-hole planting [plantation en côté de potet (n.f.)]
see **hole planting**

silvics [écologie forestière (n.f.)]
The study of the life history and general characteristics of forest trees and stands, with particular reference to locality factors as a basis of silviculture. (1)

silvicultural decision model [modèle de décision (n.m.)]
A computer model or system that permits the simulation and possibly prediction of the interaction of such factors as site class, access, managed-stand volume, and logging costs to assist in decision-making regarding silvicultural practices in individual stands.

silvicultural efficacity [efficacité sylvicole (n.f.)]
The capacity of a herbicide indirectly to promote positive growth responses in crop trees. (27)

silvicultural regime [traitement sylvicole (n.m.)]
A series of stand tending (thinning, pruning, etc.) treatments applied after regeneration to achieve a specific stand management objective.

silvicultural rotation [âge d'exploitabilité naturelle (n.m.)]
The rotation through which a species maintains satisfactory growth and reproduction on a given site. (3)

silvicultural system [régime sylvicole (n.m.)]
A process that applies silvicultural practices, including tending (thinning, pruning, etc.), harvesting, and replacement, to a stand in order to produce a crop of timber and other forest products.

Note: the system is named by the cutting method with which the regeneration is established. (1)

silviculture [sylviculture (n.f.)]
The theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve the objectives of management. (3)

silvipasture [système sylvopastorale (n.m.)]
An agroforestry system where trees and livestock are produced together. (28)

simple coppice system [traitement en taillis simple (n.m.)]
A coppice system in which the crop is clearcut and regenerated by stool shoots, stump sprouts, or root suckers, giving even-aged stands; rotation is relatively short. (3)

single-moldboard plough [charrue à versoir simple (n.f.)]
A plough with one moldboard, generally right-hand, turning the whole furrow slice to one side of the furrow. (3)

single-tree selection method [jardinage par arbre (n.m.)]
A method of regenerating uneven-aged stands in which individual trees of any size are removed more or less uniformly throughout the stand. (1)

site [station (n.f.)]
A land area based on its climatic, physiographic, edaphic, and biotic factors that determine its suitability and productivity for particular species and silvicultural alternatives. (1)

site amelioration [amélioration de la station (n.f.)]
see **site improvement**

site capability [potentiel de station (n.m.)]
The mean annual increment in merchantable volume which can be expected for a forest area, assuming it is fully stocked by one or more species best adapted to the site, at or near rotation age. (5)

Expressed in cubic metres per hectare per year.

cf. productivity

site class [classe de station (n.f.)]
Any interval into which the site index range is divided for purposes of classification and use. (5)

site classification [classification de la station (n.f.)]
Application of analytical techniques based on macroclimate, soil, land form, and vegetation, to predict yield.

site factor [facteur de station (n.m.)]
An ecological term referring to a physical or biological parameter used to describe and distinguish sites.

site improvement [amélioration de la station (n.m.)]
Modifications to a given site in order to improve growing conditions for a specific species or mixture of species. (10)

site index [indice de station (n.m.)]
An expression of forest site quality based on the height, at a specified age, of dominant and codominant trees in a stand. (5)

May be grouped into site classes. Expressed in metres. Usually refers to a particular species.

site preparation [préparation de terrain (n.f.)]
A mechanical, fire, chemical, or hand treatment that modifies the site to provide favorable conditions for natural or artificial regeneration. (1)

In Manitoba and Saskatchewan, treatment to promote natural regeneration is termed **scarification**.

site quality [qualité de station (n.f.)]
The productive capacity of a site; usually expressed as volume production of a given species per unit area (cubic metres per hectare) or per unit of time (cubic metres per year). (1)

size classes [classe de dimension (n.f.)]
Ranges in tree sizes representing stages in the development of a tree or stand. (1)

slash [rémanent(s) (n.m.)]
The residue left on the ground after felling and tending and/or accumulating there as a result of storm, fire, girdling, or treatment with herbicide. It includes unutilized logs, uprooted stumps, broken or uprooted stems and the heavier branchwood (heavy slash), lighter tops and branchwood, twigs, leaves, bark, and chips (light slash). (3)

slash chopper [broyeuse de rémanents (n.f.)]
see **brush chopper**

slash disposal [traitement (n.m.), élimination (n.f.) des rémanents]
The treatment or handling of slash, particularly so as to reduce fire or insect hazard. (3)

slashing [débrousaillement (n.m.)]
A form of cleaning. (3)

slash removal [enlèvement des rémanents (n.m.)]
see **slash disposal**

sleeve planting [plantation en tube (n.f.)]
see **tube planting**

slit planting [plantation en fente (n.f.)]
Prying open a cut made by a spade, mattock, or planting bar (termed **bar planting**), inserting a young tree, then closing the cut on the latter by pressure.

Note: Making standing T-shaped cuts, generally with a special tool, is sometimes termed T-notching. (3)

snag [chicot (n.m.)]
A standing dead tree from which the leaves and most of the branches have fallen. (3)

snagging [arasement des chicots (n.m.)]
Removing or cutting away snags, on land or in water. (3)

soft snag [chicot pourri (n.m.)]
A snag composed primarily of wood in advanced stages of decay and deterioration, particularly in the sapwood portion. (13)

softwood(s) [résineux (n.m)]
1. Cone-bearing or aril-bearing trees with needle or scale-like leaves belonging to the botanical group Gymnospermae. Also, stands of such trees and the wood produced by them. (5)

2. A forest type in which 76–100% of the canopy is softwood. (5)

soil scarification [scarifiage (n.m.)]
see **scarification**

somatic embryogenesis [embryogenèse somatique (n.f.)]
A process by which clones are produced by cell growth from a seed embryo.

sowing [ensemencement (n.m.)]
see **seeding**

sowing brick [motte à semis (n.f.)]
A prepared, sometimes fertilized, block or ball of loam, peat, plastic foam, etc., into which one or more seeds are pressed, so that, on planting out, the emergent seedling can have a better start in an unfavorable environment. (3)

spacing [espacement (n.m.)]
n: The distance between trees in a plantation, a thinned stand, or a natural stand.

v: *see* **thinning**: spacing

spot planting [plantation sur placeaux (n.f.)]
Setting out young trees in small, prepared patches. (3)

spot scarifier [scarificateur sur placeaux (n.m.)]
A scarification implement enabling site preparation on patches.

spot seeding [ensemencement localisé (n.m.)]
see **seed spot**

spot weeding [désherbage localisé (n.m.)]
Removing undesirable vegetation from patches.

spray gun [pistolet vaporisateur (n.m.)]
see **paint gun**

spreader [dispersant (n.m.)]
Any substance, solid or liquid, that, when added to a pesticide, herbicide, liquid fertilizer, or fire retardant, enables it to spread better over the surfaces on which it is deposited.

spring-tine cultivator [cultivateur à dents souples (n.m.)]
An implement designed to loosen the soil surface by the action of spring-loaded retractible teeth.

sprout [rejet de taillis (n.m.)]
Generally, any shoot arising from a plant. More particularly, a shoot arising from the base of a plant, from the stool (stool shoot) or from the root (sucker). (3)

spud [bêche à planter (n.f.)]
see **planting bar**

stagnant [stagnant (adj.)]
Describes condition of stands whose growth and development have all but ceased due to poor site and/or excessive stocking. (5)

stand [peuplement (n.m.)]
A community of trees possessing sufficient uniformity in composition, age, arrangement, or condition to be distinguishable from the forest or other growth on adjoining areas, thus forming a silvicultural or management entity. (5)

stand age [âge (du peuplement) (n.m.)]
see **age**

standard [réserve]
A tree selected to remain standing, after the rest of the stand has been felled over a younger or a new crop, for some special purpose, e.g., shelter, seeding, production of a special quality or size of timber. (3)

stand composition [composition d'un peuplement (n.f.)]
see **composition**

stand condition [état d'un peuplement (n.m.)]
The descriptive measurement of a stand by the criteria of composition, health, age, size, volume, or spatial arrangement. (13)

stand density [densité de peuplement (n.f.)]
A quantitative measurement of tree stocking, expressed in terms of number of trees, total basal area, or volume, per unit of area. More precisely, a measure of the degree of crowding of trees within a stand, commonly expressed by various growing-space ratios of crown length to tree height; crown diameter to dbh or crown diameter to tree height; or of stem spacing to tree height. (3)

Expressed on a per hectare basis.

cf. stocking

stand density index [indice de densité de peuplement (n.m.)]
Any index for evaluating stand density such as those of Curtis, Mulloy, Reinecke. (5)

stand density management diagram [diagramme d'aménagement de la densité de peuplement (n.m.)]
A two-dimensional graph showing the logarithmic relationship between declining mean stem frequency and increasing mean tree size, as mean stand diameter and dominant height increase in pure even-aged stands.

stand development [développement d'un peuplement (n.m.)]
The growth of a stand through its various developmental stages – from seedling or coppice through thicket, sapling, and pole to the tree stage, i.e. to maturity, and finally to overmaturity. (3)

stand establishment [établissement d'un peuplement (n.m.)]
see **establishment**

stand improvement [amélioration d'un peuplement (n.f.)]
see **timber stand improvement**

standing crop [peuplement forestier (n.m.)]
see **crop**

stand model [modèle de peuplement (n.m.)]
A mathematical model that forecasts the development of a forest stand, usually in terms of mean stand attributes, e.g., mean diameter, height.

stand table [table de peuplement (n.f.)]
A summary table showing the number of trees per unit area by species and diameter classes, for a stand or type. The data may also be presented in the form of a frequency distribution of diameter classes. (5)

stand type [type de peuplement (n.m.)]
see **forest type**

stocked quadrat [parcelle régénérée (n.f.)]
In regeneration surveys, a quadrat having at least one live tree seedling or regrowth. The criteria for what constitutes a "stocked" area vary with species, site, country, etc.

stocking [densité relative (n.f.)]
A qualitative expression of the adequacy of tree cover on an area, in terms of crown closure, number of trees, basal area, or volume, in relation to a preestablished norm. In this context, "tree cover" includes seedlings and saplings; hence, the concept carries no connotation of a particular age. Stocking may be described in regionally or locally developed classes, or as a percentage of regional or local normal standards, which vary according to site-specific conditions. (5)

cf. stand density

fully stocked [de densité relative adéquate]: Productive forest land stocked with trees of merchantable species. These trees by number and distribution or by average dbh, basal area, or volume are such that at rotation age they will produce a timber stand that occupies the potentially productive ground. They will provide a merchantable timber yield according to the potential of the land. The stocking, number of trees, and distribution required to achieve this will be determined from regional or local yield tables or by some other appropriate method. (5)

ideally stocked [de densité relative idéale]
see **normally stocked**

irregularly stocked [de densité relative irrégulière]
see **partially stocked**

nonstocked [densité relative nulle, de]: Productive forest land that lacks trees completely or that is so deficient in trees, either young or old, that at the end of one rotation, the residual stand of merchantable tree species, if any, will be insufficient to allow utilization in an economic operation. (5)

normally stocked [de densité relative normale]: Productive forest land covered with trees of merchantable species of any age. These trees, by number and distribution, or by average dbh, basal area, or volume, are such that at rotation age they will produce a timber stand of the maximum merchantable timber yield. This yield must satisfy the site potential of the land as reported by the best available regional or local yield tables. For stands of less than rotation age, a range of stocking classes both above and below normal may be predicted to approach and produce a normal stocking at rotation age and may, therefore, be included. This is because greater or lesser mortality rates will occur in over- or understocked stands as compared with those in a normal stand. (5)

NSR (not sufficiently or not satisfactorily restocked or regenerated) [insuffisamment régénéré]: Inadequate stocking. Productive forest land that has been denuded and has failed partially or completely to regenerate naturally or to be artificially regenerated.The regeneration must contain a minimum number of well-established, healthy trees that are free-from-noncrop-competition and sufficient to produce a merchantable timber stand at rotation age. (5)

optimally stocked [de densité relative optimale]
see **normally stocked**

overstocked [de densité relative excessive]: Productive forest land stocked with more trees of merchantable species than normal or full stocking would require. Growth is in some respect retarded and the full number of trees will not reach merchantable size by rotation age according to the regional or local yield or stock tables for the particular site and species. (5)

partially stocked [de densité relative partielle]: Productive forest land stocked with trees of merchantable species insufficient to utilize the complete potential of the land for growth such that they will not occupy the whole site by rotation age without additional stocking. Explicit definition in stems per hectare, crown closure, relative basal area, etc., is locally or regionally defined and is site-specific. (5)

satisfactorily stocked [de densité relative satisfaisante]:
Productive forest land that has been regenerated naturally or artificially to at least a minimum number of well-established, healthy trees of merchantable species that are free-from-noncrop-competition and sufficient to produce a merchantable timber stand at rotation age. (5)

stocking control [surveillance du matériel relatif (n.f.)]
The regulation and, more particularly, the limitation of seedling populations by natural, or direct or indirect artificial factors.

stocking density [proportion de surface occupée (n.f.)]
A measure of the proportion of the area actually occupied by trees. (13)

stocking guide [guide de stocking (n.m.)]
Reference level for the optimum proportion of an area actually occupied by trees, expressed in terms of stocked quadrats or percentage of canopy closure.

stock table [table de stock (n.f.)]
A summary table showing the volume of trees per unit area by species and diameter classes, for a stand or type. (5)

stool [souche-mère (n.f.)]
1. *Silviculture:* A living stump capable of producing sprouts or shoots. (3)
2. *Propagation:* A living stump maintained to produce cuttings, layers, etc. (3)

stool shoot [rejet de souche (n.f.)]
see **sprout**

storied high forest [futaie pluriétagée (n.f.)]
A crop of trees in which the canopy can be differentiated into one or more layers, the dominant species in natural forest generally differing in each layer. (3)

story [étage (n.m.)]
A horizontal stratum or layer in a plant community; in forests, appearing as one or more canopies. (3)

A forest having more than two stories is called **multistoried**. A forest having one story (the main story) is called **single-storied**. A forest having two stories (the **overstory** and the **understory**) is called **two-storied**.

stratification [stratification (n.f.)]
The storage of seeds under defined conditions of environment (temperature, moisture, gas exchange, medium, etc.) for specified periods in order to overcome passive or active inhibition of germination. The term may also apply to physical or chemical treatment of seed designed to achieve the same end.

strip-and-group system [mode de régénération par coupes progressives en placettes et bandes (n.m.)]
A modification of the shelterwood strip system in which, in addition to the normal uniform seed cutting, groups of advance growth are freed both in the strip and closely ahead of it, along with further group cuttings to initiate regeneration; regeneration is mainly natural; regeneration interval is relatively short and the resultant crop fairly even-aged and regular. (3)

strip application [traitement par bandes (n.m.)]
see **band application**

strip cropping [plantation en lisières (n.f.)]
Crop planting in which strips of heavy-rooted plants are alternated with loose-rooted plants which serve as barriers to wind and water erosion. (15)

strip cutting [coupe par bandes (n.f.)]
Removal of the crop in strips in more than one operations, generally for encouraging natural regeneration or protecting fragile sites. (2)

Considered to be a variation of clearcutting.

strip felling [coupe par bandes (n.f.)]
see **strip cutting**

strip planting [plantation en bandes (n.f.)]
Setting trees, generally in two or more parallel lines, in a long narrow area of land that has been wholly or partially cleared. (3)

strip shelterwood [coupes progressives par bandes (n.f.)]
see **shelterwood cutting**

strip spraying [pulvérisation en bandes (n.f.)]
see **band application**

strip thinning [éclaircie en bandes (n.f.)]
see **thinning**: row

structure [structure (n.f.)]
The distribution of trees in a stand or group by age, size, or crown classes (e.g., all-aged, even-aged, uneven-aged, regular, and irregular structures). (1)

stub [chicot de branche (n.m.)]
The broken or cut base of a branch projecting from a tree stem. (3)

stump blade [lame dessoucheuse (n.f.)]
see **brush blade**

stump extraction [dessouchage (n.m.)]
A general term for the process of pulling out stumps by force. (3)

Removal of stumps may be done to facilitate scarification or to prevent infection from diseased root systems.

stump sprout [rejet de souche (n.m.)]
see **sprout**

stump treatment [badigeonnage de souches (n.m.)]
Application of herbicides to or near hardwood stumps to prevent coppicing. (2)

Also, fungicides or paint can be applied to prevent fungal infection.

subdominant [classe de cime subdominante (n.f.)]
see **crown class**: intermediate

subsidiary crop [peuplement secondaire (n.m.)]
see **secondary species**

succession [succession (n.f.)]
The gradual supplanting of one community of plants by another, the sequence of communities being termed a **sere** and each stage **seral**. (3)

sucker [drageon (n.m.)]
A shoot or tree originating from adventitious buds on roots. (1)

sustainable development [développement durable (n.m.)]
Sustainable development in forestry expands the principle of sustained timber yield by including wildlife and fish habitats, watersheds and hydrological cycles, as well as gene pools and species diversity, to ensure that the use of forest today does not damage prospects for its use by future generations.

sustainable forestry [foresterie durable (n.f.)]
Management of forested area in order to provide wood products in perpetuity, soil and watershed integrity, persistence of most native species and maintenance of highly sensitive species or suitable conditions for continued evolution of species.

sustained yield [rendement soutenu (n.m.)]
The yield of defined forest products of specific quality and in projected quantity that a forest can provide continuously at a given intensity of management.

suppressed tree [supprimé (n.m.)]
see **crown class**: suppressed

suppression [élimination (n.f.)]
The process whereby certain trees, shrubs, etc., in a community become weakened, essentially through the competition of the neighbors but also by extension, through human intervention and selective browsing by livestock. (3)

systematic thinning [éclaircie systématique (n.f.)]
see **thinning**: mechanical

T

taungya plantation [plantation en taungya (n.f.)]
The raising of a forest crop in conjunction with a temporary agricultural crop.

tending [soins culturaux (n.m.)]
Generally, any operation carried out for the benefit of a forest crop or an individual thereof, at any stage of its life; covers operations both on the crop itself, e.g., thinnings and improvement cuttings, and on competing vegetation, e.g., weeding, cleaning, and girdling of unwanted growth, but not regeneration cuttings or site preparation. (3)

cf. intermediate treatments

tending felling [coupe d'entretien (n.f.)]
An operation comprising cleanings and thinnings. (3)

thicket [fourré (n.m.)]
A dense growth of small trees or bushes. (3)

thicket stage [stade de fourré (n.m.)]
see **stand development**

thinning [éclaircie (n.f.)]
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. (3)

Defined in Nova Scotia as a spacing operation designed within commercial thinning to recover potential mortality and to improve growth, quality, and percentage of desirable trees.

chemical thinning [éclaircie chimique]: Any thinning in which the unwanted trees are killed by treatment with herbicide. (3)

commercial thinning [éclaircie commercialisable]: A thinning in which harvested trees are removed from the site and used for commercial purposes. (1)

crown thinning [éclaircie par le haut]: The removal of trees from the dominant and codominant crown classes to favor the best trees of those same crown classes. (1)

Defined in Nova Scotia as the removal of trees from the dominant and codominant crown classes to promote the growth of desirable trees and species.

free thinning [éclaircie libre]: The removal of trees to control stand spacing and favor desired trees using a combination of thinning criteria without regard to crown position. (1)

low thinning [éclaircie par le bas]: The removal of trees from the lower crown classes to favor those in the upper crown classes. (1)

mechanical thinning [éclaircie systématique]: Thinning involving removal of trees in rows or strips, or by using fixed spacing intervals. (1)

precommercial thinning (PCT) [éclaircie précommerciale]: A thinning that does not yield trees of commercial value, usually designed to improve crop spacing. (1)

row thinning [éclaircie en rangée]: A thinning generally in plantations in which the trees are cut out in lines or narrow strips at fixed intervals throughout a stand. (5)

selection thinning [éclaircie jardinatoire]: The removal of trees in the dominant crown class in order to favor trees in the lower crown classes. (1)

selective thinning [éclaircie sélective]: A thinning in which trees are removed or retained on their individual merits. (16)

spacing [éclaircie par espacement]: A thinning in which trees at fixed intervals of distance are chosen for retention and all others are cut. (5)

thinning cycle [cycle d'éclaircie (n.m.)]
The time interval between thinnings in the same stand. (1)

thinning frequency [périodicité des éclaircies (n.f.)]
see **thinning cycle**

thinning from above [éclaircie par le haut (n.f.)]
see **thinning**: crown

thinning from below [éclaircie par le bas (n.f.)]
see **thinning**: low

thinning grade [dosage d'éclaircie (n.m.)]
The severity of low thinning based on the crown classes removed, ranging from very light (Grade A) to very heavy (Grade E). (1)

thinning intensity [intensité d'éclaircie (n.f.)]
A measure of the combined effect of thinning weight and thinning frequency, in terms of the volume removed during any succession of thinnings, sometimes expressed as an **average annual stand depletion** by dividing their total thinning weight by the number of years they cover. (3)

thinning interval [cycle d'éclaircies (n.m.)]
see **thinning cycle**

thinning out [dépressage (n.m.)]
Removal of seedling or sapling in excess in a young stand in order to favor residual tree development.

thinning regime [système d'éclaircie (n.m.)]
A term comprising the type, degree, and frequency of thinning for a given area, generally along with the year of commencement and sometimes termination. (3)

thinning schedule (table) [règlement d'éclaircies (n.m.)]
see **thinning regime**

thinning series [groupe d'éclaircies comparées (n.m.)]
Two or more adjacent forest plots that are thinned differently (e.g., to different thinning grades), essentially so as to compare the increment of individual stems. (3)

thinning weight [intensité du passage en éclaircie (n.f.)]
A degree of thinning expressed in terms of the volume removed at any one time. (3)

–3/2 power law of self-thinning [relation à la puissance –3/2 de l'éclaircie naturelle (n.f.)]
Dense populations that have reached a size at which mortality occurs demonstrate a negative relationship between log mean plant weight and log stand density; this generally has a slope of –3/2.

tie ridge [cloisonnement (n.m.)]
In contour furrowing and trenching, a narrow strip of ground left unexcavated so as to break the horizontal continuity of the trenching and thus contain and properly distribute any precipitation. (3)

timber [bois (n.m.)]
A general term for forest crops and stands, and sometimes for any lesser aggregation of such trees. (3)

timber marking [martelage (n.m.)]
see **tree marking**

timber stand [peuplement forestier (n.m.)]
see **timber**

timber stand improvement (TSI) [opération d'amélioration (n.f.)]
A term comprising all intermediate treatments made to improve the composition, structure, condition, and increment of either an even- or uneven-aged stand. (1)

tine cultivator [cultivateur à éperon (n.m.)]
see **tine plough**

tine harrow [herse à éperon (n.f.)]
see **tine plough**

tine plough [charrue à éperon (n.f.)]
A plough in which the leading edge of the landside is extended forward and downward as a tine-bearing replaceable sock. (3)

tissue culture [culture de tissus (n.f.)]
A general term for the cultivation of plant or animal tissues in a controlled artificial environment on defined media under aseptic conditions.

T-notching [bêchage en T (n.m.)]
see **slit planting**

tolerance [tolérance (n.f.)]
The ability of an organism or biological process to subsist under a given set of environmental conditions. The range of these under which it can subsist, representing its **limits of tolerance**, is termed its **ecological amplitude**. For trees, the tolerance of most practical importance is their ability to grow satisfactorily in the shade of and in competition with other trees. (3)

cf. shade tolerance

top dressing [préparation du sol superficiel (n.f.)]
Surface application of fertilizers or organic ameliorants to crops after establishment or onto land after physical preparation for planting.

top pruning [élagage des branches supérieures (n.m.)]
see **pruning**: high

trainer [dominé élagueur (n.m.)]
A tree beneath the main canopy which by its shading and/or abrasive action hastens the natural pruning or improves the form of some other tree. (1)

transplant [plant repiqué (n.m.)]
A seedling that has been replanted one or more times in a nursery to improve its size and growth potential characteristics. Also a tree that is moved from one place to another. (1)

transplanter [repiqueuse (n.f.)]
see **transplanting machine**

transplanting [repiquage (n.m.)]
An operation consisting of moving the nursery stock from one part of a nursery to another, essentially so as to improve its root development before forest planting. (3)

transplanting board [planche à repiquer (n.f.)]
A simple device having regularly spaced slots for the individual plants so as to ensure proper spacing and lining out in the new bed. (3)

transplanting machine [repiqueuse mécanique (n.f.)]
An implement used to line out transplants in a nursery.

transplanting plough [charrue planteuse (n.f.)]
A plough used in the nursery to open trench for the roots of plants being lined out, while simultaneously backfilling it. (3)

tree breeding [amélioration génétique (n.f.)]
see **forest tree breeding**

tree class [classe d'arbres (n.f.)]
Any class into which the trees forming a crop or stand may be divided for a variety of purposes. (3)

tree improvement [amélioration des arbres (n.f.)]
see **forest tree improvement**

tree injection [injection d'arbres (n.f.)]
The deliberate introduction, by pressure or simple absorption of a chemical — generally a water-soluble salt in solution — into the sapstream of a living tree. (3)

tree injector [injecteur (n.m.)]
A specially designed tool used to inject a solution into a living tree.

tree marking [marquage (n.m.)]
Selection and indication, usually by marking with paint on the stem, of trees to be felled or retained.

tree nursery [pépinière (n.f.)]
see **nursery**

tree planter [planteuse d'arbres (n.f.)]
see **planting machine**

tree-planting machine [planteuse d'arbres (n.f.)]
see **planting machine**

tree shaker [secoueuse mécanique (n.f.)]
A machine designed to shake a tree in order to dislodge its fruits for collection from the ground.

tree spade [pelle hydraulique à arbres (n.f.)]
Hydraulic accessory attached to a machine used for transplanting landscape stock.

tree surgery [chirurgie des arbres (n.f.)]
The care and repair of trees valued for amenity. (3)

trencher [soc planteur (n.m.)]
In a planting machine, a metal shoe behind the share, which makes the trench for the plant roots. (3)

trenching [scarifiage par sillons (n.m.)]
Site preparation technique creating a more or less continuous furrow, with surface debris, duff, and low vegetation scattered to one side, using shaping devices pulled or often hydraulically powered by a prime mover. (21)

Commonly referred to as **disc trenching** in eastern Canada.

trench planting [plantation en sillon (n.f.)]
Setting out young trees in a shallow trench or a continuous slit. (3)

trimming [émondage (n.m.)]
Removing the side buds and side shoots from a young plant. Cutting a felled or fallen and sometimes a standing stem clear of branches and stubs. (3)

tubed seedling [semis en tube (n.m.)]
see **seedling**: container

tube planting [plantation de semis en tube (n.f.)]
Setting out young trees in narrow, open-ended cylinders of various materials, in which they have been raised from seed or into which they have been transplanted. (3)

two-aged stand [peuplement à deux classes d'âge (n.m.)]
A stand containing two distinct age classes differing by more than 20% of the rotation age. (1)

two-furrow plough [charrue à deux socs et versoirs simultanés (n.f.)]
A plough with two moldboards turning the furrow slices to the same side. (3)

two-rotation coppice system [taillis composé (n.m.)]
see **coppice-of-two-rotations method**

two-stage cutting (felling) [coupe en deux abattages (n.f.)]
see **shelterwood cutting**

two-storied high-forest system [traitement en futaie à deux étages (n.m.)]
An accessory system in which a crop of a different species is introduced (i.e., artificially) beneath an existing immature crop, the two crops eventually being harvested together, or the upper one before the lower. (3)

two-storied stand [peuplement à deux étages (n.m.)]
A forest stand in which two height classes of considerable difference occur, the overstory and understory. The term is not applicable to a forest in process of reproduction, in which the appearance of two stories is due to a seed tree or shelterwood cut before final cut.

U

underbrush [sous-bois (n.m.)]
Shrubby vegetation and stands of tree species that do not produce commercial timber. (3)

undercutting [cernage (n.m.)]
Root-pruning of nursery stock in situ, particularly by horizontal cut. (3)

undergrowth [sous-bois (n.m.)]
A general term usually comprising both the herbaceous cover and the lower shrubs, and even the lowest trees, under a forest canopy. (3)

underplant [plant de sous-étage (n.m.)]
Young trees used for **underplanting**. (3)

underplanting [plantation en sous-étage (n.f.)]
Planting young trees under the canopy of an existing stand.

understocking [de densité relative déficiente (n.f.)]
see **stocking**: NSR

understory [sous-étage (n.m.)]
see **story**

understory protection [protection du sous-étage (n.f.)]
Removal of mature trees while damage to the understory is kept to a minimum.

undesirable species [essences indésirables (n.f.)]
Species that conflict with or do not contribute to the management objectives. (19)

uneven-aged [inéquienne (adj.)]
Of a forest, stand, or forest type in which intermingling trees differ markedly in age. The differences in age permitted in an uneven-aged stand are usually greater than 10–20 years. (5)

Usually form more than three distinct age classes.

cf. even-aged

uneven-aged system [régime inéquienne (n.m.)]
A silvicultural system in which stands have an uneven-aged structure. (1)

uniform shelterwood [coupes progressives uniformes (n.f.)]
see **shelterwood cutting**

uniform system [mode de régénération par coupes progressives uniformes (n.m.)]
see **shelterwood cutting**: uniform shelterwood system

unmerchantable [non marchand (adj.)]
Of a tree or stand that has not attained sufficient size, quality, and/or volume to make it suitable for harvesting. (5)

V

variety [variété (n.f.)]
1. A taxonomic subdivision of a species based on minor characteristics and often on exclusive geographic range.
2. An assemblage of cultivated individuals distinguished by any useful, reproducible (sexual or asexual) characters. (25)

vegetative propagation [multiplication végétative (n.f.)]
Reproduction by other than sexually produced seed. Includes grafting, budding, rooting of cuttings, and tissue and cell culture, including embryogenesis.

veteran [vétéran (n.m.)]
A tree that has escaped logging, windthrow, or fire, and occupies a dominant position in the stand. (3)

viability [viabilité (n.f.)]
Of a seed, spore, or pollen grain, its capacity to germinate and develop, under given conditions. (3)

vigor class [classe de vigueur (n.f.)]
Assumption of the health of a tree based on observation of the foliage. (10)

virgin forest [forêt vierge (n.f.)]
Natural forest, the development of which has been virtually uninfluenced by modern human activity.

volunteer growth [régénération subséquente]
Natural regeneration following site preparation and seeding or planting that could either supplement or completely obscure the trees being planted or seeded on the area.

W

wedge system [mode de régénération par coupes progressives en coin (n.m.)]
A modification of the strip shelterwood system in which cuttings begin as narrow, interior, wedge-shaped strips with the apex into the prevailing wind, and are then successively enlarged and advanced; regeneration is mainly natural; regeneration interval is short and the young crop fairly even-aged. (3)

weeding [désherbage (n.m.)]
A release treatment in stands during the seedling stage that eliminates or suppresses undesirable vegetation regardless of crown position. (1)

weed tree [indésirable (n.m.)]
Any tree of a species having little or no economic value on the site in question. (3)

whip [fouet (n.m.)]
1. A bare-root hardwood planting stock.
2. Any slender tree that the wind causes to lacerate the crowns of its neighbors. (3)

wildland [friche (n.f.)]
Uncultivated land other than fallow. Land currently little influenced by human activity.

wildling [semis naturel (n.m.)]
syn.: wilding, wild seedling

A naturally grown, in contrast to a nursery-raised, seedling, sometimes used in forest planting when nursery stock is scarce. (3)

wind barrier [brise-vent (n.m.)]
see **windbreak**

wind belt [brise-vent (n.m.)]
see **windbreak**

wind bend [courbé par le vent (adj.)]
Condition of trees having a curved stem as a consequence of wind action or compression due to heavy load on the crown of the tree.

cf. windfirm

windbreak [brise-vent (n.m.)]
A small-scale shelterbelt or other barrier, natural or artificial, maintained against the wind. (3)

windfall [chablis (n.m.)]
1. A tree or trees thrown down or with their stems broken off or other parts blown down by the wind.

2. Any area on which the trees have been thrown down or broken by the wind. (3)

windfirm [stable au vent (adj.)]
Of trees, able to withstand strong winds, i.e., to resist windthrow, windrocking, and major breakage. Such trees may not remain upright but show **wind lean** or **wind bend** or both. (3)

wind lean [couché par le vent (adj.)]
Condition of trees having a leaning stem, result of partial uprooting or wind action.

cf. windfirm

wind rock [balancement au vent (n.m.)]
Movement of tree stems in the wind, which may lead to chafing of the collar and sometimes of the roots, and, in very wet soil, loosening of the ground. (3)

windrow [andain (n.m.)]
Slash, brushwood, etc., concentrated along a line so as to clear the intervening ground between two of them. (2)

windrowing [mettre en andain (v.)]
see **windrow**

windrow planting [plantation sur entrandain (n.f.)]
Planting between the two lanes created in windrowing. (3)

windthrow [déracinement par le vent (n.m.)]
1. Uprooting by the wind.

2. Tree or trees so uprooted. (3)

wolf tree [arbre loup (n.m.)]
A tree, generally overtopping and of poor form, that occupies more growing space than its commercial value warrants. (1)

working group [section d'aménagement (n.f.)]
An aggregate of forest stands, or forest stand and forest sites, which are grouped for the purpose of applying a common set of silvicultural treatments (also called operational group).

wrenching [soulevage]
see **root wrenching**

Y

yearling [semis de l'année (n.m.)]
A one-year-old seedling. (3)

yield table [table de rendement (n.f.)]
Tables and graphs illustrating volumes per hectare of stands at a specific age.

normal yield table [table de rendement normal]: Estimated stand volume per age class at normal stocking.

empirical yield table [table de rendement empirique]: Representation of actual and forecast volumes at different stocking levels per age class.