

GLOSSARY

Abiotic – Non-living components of the environment such as air, rocks, water, peat and plant litter.

Afforestation – Establishment of trees on an area that has lacked forest cover for a very long time (at least 50 years).

Agroforestry – The practice of integrating trees with agricultural crops and/or livestock.

Bioenergy – Energy produced from renewable biological sources such as plant biomass.

Biotic – Living components of the environment or ecosystem such as plants, animals, insects and fungi.

Buffer strip – A strip of vegetation – usually a mix of trees, shrubs and grasses – planted alongside natural areas, e.g., water-courses, to protect them from surrounding land uses.

Cambium – Single layer of cells between the woody part of the tree and the bark. Division of these cells results in diameter growth of the tree through the formation of wood cells (xylem) and inner bark (phloem).

Carbonates – Free calcium carbonate in the soil profile. Can interfere with nutrient uptake in some species.

Clinometer – A device that is used to measure the slope between two points of land.

Deciduous trees – Trees that shed their leaves at the end of the growing season.

Desiccation – Loss of moisture causing plants to dry out. May result in damage or death.

Drip line – A line on the ground around a tree that follows the outermost edges of the tree's branches.

Evapotranspiration – The process of transferring moisture from the earth to the atmosphere by evaporation of water and the passage of water through plants (transpiration).

Exotic species – Non-native species found in a given area as a direct or indirect result of human activity.

Fragile land – Land that requires special management to avoid loss of productivity due to degradation processes such as erosion or compaction.

Hybridization – The process of breeding plants of different varieties or species with the goal of emphasizing certain traits such as yield or disease resistance.

Income in-kind – Measure of the value of agricultural commodities produced on farms and consumed by individuals living on these farms.

Intercropping – Growing trees or shrubs in a planned fashion in a field growing other crops such as corn.

Invasive species – Highly competitive non-native species whose introduction or spread threatens the environment, human health, and /or the economy.

Marginal land – Land of limited potential productivity, e.g., excessively stony soils.

Meristems – Plant tissue consisting of cells that actively divide to form new tissues resulting in plant growth.

Mottles – Rust-coloured spots in the soil profile that mark the depth of the seasonal water table.

Mycorrhizae – Symbiotic fungi that colonize roots of many crop species, effectively extending the root system and increasing the absorption of nutrients, especially phosphorus.

Offsite planting – Planting of trees or shrubs in locations that are unsuitable due to soil or site conditions.

Photosynthesis – The process by which green plants make carbohydrates from carbon dioxide and water in the presence of chlorophyll. Plants use energy captured from sunlight and release oxygen as a byproduct.

Pioneer species – A tree species that is usually first to grow on a disturbed or open site.

Plantation – Woodland crop established by artificial means, either by sowing or planting.

Porosity – The amount of air space in a cross-sectional view of a windbreak. This air space allows wind to move through the barrier.

Reforestation – Natural or artificial restocking (i.e., planting, seeding) of an area with forest trees following a forest fire or other natural or human disturbances. Under the Kyoto Agreement, reforestation occurs when an area that has not been open for more than 50 years is returned to a forested state.

Regime – A class of physical conditions that can be defined by some particular physical phenomenon, e.g., moisture levels in soil.

Rills – Narrow channels running parallel to the slope of the land caused by the erosion of soil by water.

Riparian zone – The transitional area between surface water and uplands.

Root-to-shoot ratio – The amount of root (below-ground) material of seedlings/transplants compared to the amount of shoot (above-ground) material.

Seasonal water table – The uppermost level of groundwater that can vary in depth from the surface of the ground depending on the weather conditions and season.

Sequestration – Uptake and storage, especially of carbon.

Shade-tolerant – Plant species that are able to thrive and mature under low light conditions.

Sheet flow – The flow of water over a wide area of ground surface, generally of uniform depth. Typically occurs on uniform, gradual slopes.

Shelterbelt – A vegetative barrier that reduces the flow of wind and the associated negative impacts. Has at least six rows of trees or shrubs in open field areas or upwind and adjacent to buildings.

Silviculture – The practice of controlling the establishment, growth, composition, health and quality of forests and woodlands.

Silvipasture – The practice of growing trees with pasturing livestock.

Silvics – Study of the life history and general characteristics of trees.

Soil texture – Percentage of sand, silt and clay found in a particular soil.

Succession – The natural and gradual replacement of one community of trees and plants by another.

Windbreak – A vegetative barrier that reduces the flow of wind and the associated negative impacts. Consists of one or more rows of trees or shrubs in open field areas or upwind and adjacent to buildings.

Windbreak density – A measure of the space occupied by trees. Density is controlled by tree species selection, and in-row and between-row spacing.

Windfirm – A term describing trees with characteristics that make them resistant to damage by wind.

METRIC–IMPERIAL CONVERSION FACTORS

| Convert | To | Metric |
|---------|-------------|------------------|
| % | ▶ kg/1000 L | multiply by 10 |
| % | ▶ kg/tonne | multiply by 10 |
| mg/L | ▶ % | divide by 10,000 |

| Convert | To | Imperial |
|---------|------------------------|------------------|
| % | ▶ lbs per 1000 gallons | multiply by 100 |
| % | ▶ lbs per ton | multiply by 20 |
| ppm | ▶ % | divide by 10,000 |

Note: 1 m³ = 1000 L

UNITS OF MEASURE

While Canada “went metric” over 30 years ago, many commonly used measurements such as land area are still expressed using imperial units. Acres of land are a good example: landowners seldom, if ever, refer to the size of their property in hectares. For your convenience, most of the measurements used in this manual are provided in both metric and imperial units. However, where common usage, common sense, space limitations or regulatory concerns dictate, one or the other may appear exclusively.

| CONVERSION FROM... | FACTOR | EXAMPLE |
|--------------------|----------------------|--|
| METRES TO FEET | 1 metre = 3.281 feet | A 20.6-m tall tree is 67.6 ft (20.6 x 3.281) |
| FEET TO METRES | 1 foot = .3048 | A 100-ft buffer is 30.48 m (100 x .3048) |
| ACRES TO HECTARES | 1 acre = .405 ha | A 35-acre field is 14.16 ha |
| HECTARES TO ACRES | 1 ha = 2.47 ac | A 1.4-ha plot is 3.5 ac |

CONVERSIONS – METRIC AND IMPERIAL

Common Conversions

| | | | | | |
|---------------------|---|-----------------------|-------------|---|----------------------------------|
| 1 gallon | = | 4.546 litres | 1 acre | = | 0.405 hectare |
| 1 gallon | = | 1.201 US gallons | 1 acre | = | 43,560 feet ² |
| 1 gallon | = | 0.161 ft ³ | 1 lb/ac | = | 1.12 kilogram/hectare |
| 1 US gallon | = | 3.785 litres | 1 ton/ac | = | 2.25 tonnes/hectare |
| 1 US gallon | = | 0.833 Imp gallon | 1 gal/ac | = | 11.2 litre/hectare |
| 1 ton | = | 0.907 tonne | 1000 gal/ac | = | 11200 litre/hectare |
| 1 pound | = | 0.454 kilogram | 1000 gal/ac | = | 11.2 metre ³ /hectare |
| 1 tonne | = | 2205 pounds | 1 metre | = | 3.28 feet |
| 1 foot ³ | = | 6.229 gallons | 1 metre | = | 39.4 inches |

Application Rate Conversions

Metric to Imperial (Approximate)

| | | |
|---------------------------------|---|-----------------------|
| Litres per hectare x 0.09 | = | gallons per acre |
| Litres per hectare x 0.36 | = | quarts per acre |
| Litres per hectare x 0.71 | = | pints per acre |
| Millilitres per hectare x 0.015 | = | fluid ounces per acre |
| Grams per hectare x 0.015 | = | ounces per acre |
| Kilograms per hectare x 0.89 | = | pounds per acre |
| Tonnes per hectare x 0.45 | = | tons per acre |
| Kilograms per 1000 L x 10 | = | lbs per 1000 gallons |

Imperial to Metric (Approximate)

| | | |
|----------------------------|---|---------------------------------|
| Gallons per acre x 11.23 | = | litres per hectare (L/ha) |
| Quarts per acre x 2.8 | = | litres per hectare (L/ha) |
| Pints per acre x 1.4 | = | litres per hectare (L/ha) |
| Fluid ounces per acre x 70 | = | millilitres per hectare (mL/ha) |
| Tons per acre x 2.24 | = | tonnes per hectare (t/ha) |
| Pounds per acre x 1.12 | = | kilograms per hectare (kg/ha) |
| Ounces per acre x 70 | = | grams per hectare (g/ha) |
| Pounds per ton x .5 | = | kilograms per tonne (kg/t) |

Agencies and Offices

Christmas Tree Farmers of Ontario
Box 93, Wasaga Beach, ON L9Z 1A2
ph: 705-429-5328
web: <http://www.christmastrees.on.ca>

Conservation Ontario
Box 11, 120 Bayview Parkway
Newmarket, ON L3Y 4W3
ph: 905-895-0716
e-mail: info@conservationontario.ca
web: <http://conservationontario.ca>

Eastern Ontario Model Forest
P.O. Bag 2111
Kemptville, ON K0G 1J0
ph: 613-258-8241
e-mail: modelforest@eomf.on.ca
web: <http://www.eomf.on.ca>

Landowner Resource Centre
Box 599
3889 Rideau Valley Drive
Manotick, ON K4M 1A5
ph: 1-800-267-3504
e-mail: info@lrconline.com
web: <http://www.lrconline.com>

Ontario Ministry of Agriculture, Food and Rural Affairs
Agricultural Information Contact Centre
ph: 1-877-424-1300
e-mail: ag.info.omafra@ontario.ca
web: <http://www.omafra.gov.on.ca>

Ontario Ministry of Natural Resources
Natural Resources Information Centre
ph: 1-800-667-1940
web: <http://www.mnr.gov.on.ca>

Ontario Soil and Crop Improvement Association
1 Stone Road West
Guelph, ON N1G 4Y2
ph: 1-800-265-9751
web: <http://www.ontariosoilcrop.org>

Ontario Stewardship
Ontario Ministry of Natural Resources
300 Water Street, 4th floor, South Tower
Peterborough, ON K9J 8M5
ph: 705-755-3278
web: <http://www.ontariostewardship.org>

Ontario Woodlot Association
275 County Road 44, R.R. #4
Kemptville, ON K0G 1J0
ph: 1-888-791-1103
e-mail: info@ont-woodlot-assoc.org
web: <http://www.ont-woodlot-assoc.org>

Publications

BEST MANAGEMENT PRACTICES SERIES

Buffer Strips, 2004
Fish and Wildlife Habitat Management, 1996
Woodlot Management, 2007

EASTERN ONTARIO MODEL FOREST

A Guide to Improving and Maintaining Sugar Bush Health and Productivity, 2006
A True Picture: Taking Inventory of Your Woodlot, 1997
Choosing the Right Tree: A Landowner's Guide to Putting Down Roots, 2004
Design, Installation and Maintenance of Plastic Tubing Systems for Sap Collection in Sugar Bushes, 2006
Eastern Ontario Model Forest Code of Forestry Practice, 1996

ONTARIO MINISTRY OF NATURAL RESOURCES

Extension Notes Series (approximately 55 titles) – Landowner Resource Centre, Manotick, Ontario
Guide to Stewardship Planning for Natural Areas
Silvicultural Guide to Managing Southern Ontario Forests, Version 1.1, 2000, 648 pages

See <http://www.mnr.gov.on.ca/en/Business/Forests> and click on "Private Forest Stewardship"

MNR also has a series of guide books regarding forest practices to protect and improve wildlife habitat, watersheds, and other values. Please see the Publications section of their website.

ONTARIO SOIL AND CROP IMPROVEMENT ASSOCIATION

Ontario Environmental Farm Plan Workbook, 3rd ed., 2004

ONTARIO WOODLOT ASSOCIATION

A Landowner's Guide to Selling Standing Timber, 2001

DISCLAIMER

This publication reflects the opinions of the contributing writers and/or editors, and is based on information available as of the publication date. It may not reflect the programs and policies of the supporting agencies. References to particular products should not be regarded as endorsements.

Printed 2008

Acknowledgements

FUNDING

Funding for this publication was generously provided by the Greencover Canada Program, Agriculture and Agri-Food Canada, the Ontario Stewardship Council, the Ontario Ministry of Agriculture, Food and Rural Affairs, and Eastern Ontario Model Forest.

CONTRIBUTORS

Task Team and Authors (in alphabetical order by association): Canadian Wildlife Service: Cathy Nielsen; Eastern Ontario Model Forest: Scott Davis, Mark Richardson; Farm Safety Association: Steve Zronik; Forest Gene Conservation Association: Barb Boysen; Grand River Conservation Authority: Anne Loeffler, Martin Neumann; Ontario Federation of Agriculture: Dave Armitage; Ontario Ministry of Agriculture, Food and Rural Affairs: Dave Chapeskie, Johanne Desaulniers-Veilleux, Todd Leuty, Peter Roberts, Nancy Robinson, H.J. Smith, Ted Taylor; Ontario Ministry of Natural Resources: Steve Bowers, John Oatway, Bill Rose, Terry Schwan; Ontario Soil and Crop Improvement Association: Andrew Graham; Ontario Woodlot Association: Jim Ginn, Victor Roland (deceased); Prairie Farm Rehabilitation Association: Gary Bank; Private Consultants: Clarence Coons (deceased), Peter Neave; St. Lawrence River Institute: Brian Hickey; South Nation Conservation Authority: Josée Brizard; University of Guelph: Dr. Andrew Gordon, Jamie Simpson, Dr. Naresh Thevathasan

Task Team Chairperson: Ontario Ministry of Agriculture, Food and Rural Affairs: Dave Chapeskie

Technical Coordinators: Ontario Ministry of Agriculture, Food and Rural Affairs: H.J. Smith, Ted Taylor

Editor: Alison Lane

Photographers (in alphabetical order by association or surname): Canadian Food Inspection Agency: Ken Marchant; Grand River Conservation Authority: Anne Loeffler, Martin Neumann; Kerry Little; Ontario Ministry of Agriculture, Food and Rural Affairs: Dave Chapeskie, Mike Columbus, Clarence Coons, Todd Leuty, Peter Roberts, Jan Schooley, H.J. Smith, Ted Taylor, Dave Trivers; Ontario Ministry of Natural Resources: Steve Bowers, Barbara Boysen, Eric Boysen, Terry Schwan, Larry Watkins; Ontario Soil and Crop Improvement Association: John Benham, Andrew Graham; Peter Williams and Associates: Peter A. Williams; Irene Shelton

Watercolour Illustrator and Sketch Artist: Irene Shelton, Winduncroft Studio, Belwood

Graphic Illustrator: Ontario Ministry of Agriculture, Food and Rural Affairs: David Rouleau

Graphic Design: Neglia Design Inc.

