



Agroforestry News from the Atlantic and Quebec

From the editor

The first two issues of *Agroforestry News from the Atlantic and Quebec*, published as a pilot project in 2008 and 2009, were very well received. A survey published in the April 2009 issue revealed that readers were very satisfied with both the content and format.

The newsletter will therefore be back in 2010 to keep you informed on current projects, events, and advances in agroforestry and to support networking between those who want to see the field develop further. We would like to thank everyone who has contributed to the current newsletter. The next issue is already being prepared. Please send us any articles or news you would like to share with the agroforestry community.

Enjoy!

Stéphane Gariépy

Richard Hardin

John Kort

Reader comments

"It's very informative. I consider it a work tool because I share the information it provides with any interested producers." (Reader from New Brunswick)

"I love reading this newsletter and keeping up on what's happening in the sector because it lets me draw connections with some of the projects we get from rural promoters." (Reader from Quebec)

"The length of article is just right! I also like that contact information is available at the end of the article." (Reader from Saskatchewan)

"Great content... The layout is great and I enjoyed the upcoming events section." (Reader from Ontario)

"I love this newsletter and it's a very useful guide for my current and upcoming projects." (Reader from Quebec)

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Sugar shack in Sainte-Christine-d'Auvergne (Quebec). Photo: www.auchaletenboisrond.com (with permission)

Feature article

Indicators and guidelines for landscape assessment and planning for agroforestry

Agroforestry practices can produce numerous environmental benefits that become significant only through multiple installations over a large area. These environmental benefits include greater diversity of wildlife, healthier aquatic ecosystems, and cleaner stream water. Through landscape-level assessment and planning, a limited number of agroforestry installations can deliver significant improvements if designed and placed in critical locations.

INDICATORS AND GUIDELINES

Agroforestry produces environmental benefits by altering landscape structure and modifying the flow of resources across the landscape. Since you normally can't see these processes, you need to look for indicators of them in the patterns of land cover and land form that comprise landscape structure. An assessment of existing patterns can reveal potential resource problems. Guidelines, then, can be used to select locations and designs for agroforestry that will modify existing patterns and produce desired environmental benefits. The following sections provide some useful indicators and guidelines.

TERRESTRIAL WILDLIFE

Indicators:

Look at the pattern of permanent vegetation and water sources among agricultural and other developed areas. Large patches of permanent vegetation that include water sources are viable habitat for many



Rows of elderberries bordered by two forage intercrops. Photo: Bertrand Anel.

species and can produce more wildlife for migrating to other patches. Forest patches favor forest species and grassland patches favor grassland species. Edges of patches and corridors favor edge species and habitat generalists. Small, unconnected fragments of permanent vegetation may lack sufficient water, food, or cover for maintaining wildlife populations.

Look for corridors that enable wildlife to move among patches of suitable habitat. Corridors that connect small patches to large patches provide conduits for wildlife to re-colonize unpopulated patches and provide access to habitat needs that may be lacking in the small patches. Wide breaks in the continuity of vegetative cover, including tilled or mowed areas, roads, and other developments, create gaps that can act as barriers and hazards for wildlife movement.

GUIDELINES FOR ENHANCING WILDLIFE HABITAT:

- Locate agroforestry practices close to streams, ponds, and wetlands.
- Locate agroforestry practices next to existing forest patches or other suitable habitat, including field borders and riparian buffers, to enlarge existing habitat areas and to connect patches.
- Locate and shape agroforestry areas so that when combined with adjacent habitat it creates block-shaped patches for promoting interior forest species, elongated patches for promoting edge species, or corridors for connecting habitat patches across the landscape.
- Select the agroforestry type and tree species that can create the appropriate forest structure for enhancing desired species of wildlife.
- Locate agroforestry away from important grassland habitat.

WATER QUALITY

Indicators:

Look at the pattern of areas disturbed by cultivation, livestock, and urban development, natural and man-made waterways, and permanent vegetation among the disturbed areas and waterways. More pollutants are generated from areas disturbed by tillage and fertilization, livestock confinement, and urban construction, particularly where they occur on steeper land and in frequently-flooded areas. Water runoff from disturbed land flows downslope into natural channels, but constructed waterways such as ditches, terraces, subsurface drainage tiles, and culverts, concentrate

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Feature article

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runoff flow and often divert it across natural slopes. Infiltration moves soluble nutrients and pesticides into soil and shallow aquifers.

Large patches of permanent vegetation that cover entire watersheds can protect stream networks and underlying aquifers by stabilizing soil and minimizing chemical and manure inputs. Smaller patches of permanent vegetation that lay in the path of runoff flow before it enters a stream channel or drainageway can filter some pollutants from runoff water. Groundwater that flows within a few feet of the ground surface can be filtered among roots of vegetation. Groundwater is often shallowest in riparian areas and floodplains. Patches on low floodplains can also trap pollutants in floodwater. Greater impact is produced where runoff flow is slow and dispersed throughout a patch of permanent vegetation. Larger patches can filter larger runoff loads.

GUIDELINES FOR REDUCING WATER POLLUTION:

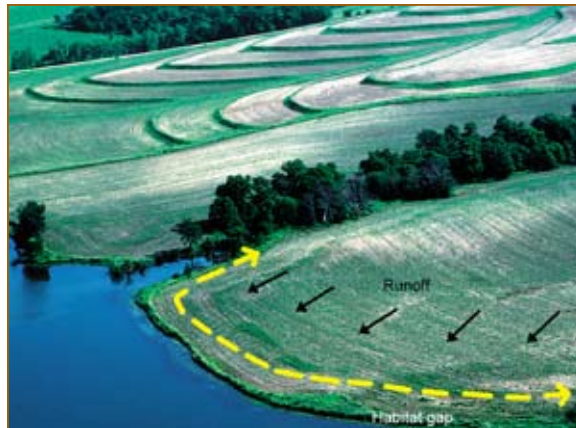
- Locate agroforestry practices in disturbed areas that generate greater pollutant runoff loads, such as cultivated areas and livestock confinements on steeper slopes and in floodplains.
- Locate agroforestry practices immediately downhill from major source areas and in other areas where runoff water tends to concentrate prior to entering a channel or drainageway.
- Orient row or strip-type agroforestry plantings along topographic contours.
- Locate agroforestry practices in floodplains and riparian areas to filter shallow groundwater.
- Size agroforestry practices to be larger/wider on sites that intercept greater runoff load.

AQUATIC WILDLIFE

Indicators:

Look at the pattern of stream channels and land cover along them. A long straight channel through agricultural land can indicate that the stream has been intentionally straightened, cleared, and cleaned of debris. Extensive agricultural and urban development can increase storm flows that erode banks and scour debris from channels. Lack of riparian forest exposes the channel to sunlight and high summer air temperatures which increase water temperature. Dams and drop structures can block fish migration to and from reaches that have suitable habitat.

Large patches of permanent vegetation that cover entire watersheds protect aquatic systems and maintain natural flow regimes. Riparian forest provides temperature-moderating shade during summer and



In this landscape, small widely-spaced forest patches among cultivated fields near the lake indicate an exceptional opportunity for improving wildlife and water resources. Guidelines suggest that an agroforestry practice will enhance forest habitat to a greater degree when placed close to the lake and connects existing woody corridors and patches. Water quality improvement also will be gained from locating it downhill from a cultivated area. Photo: USDA NRCS.

contributes debris to channels that provide habitat structure and food for aquatic organisms. Meandering channels are more resistant to channel scour and have more-diverse pool and riffle structure. Free-flowing streams enable fish to migrate between suitable habitats.

GUIDELINES FOR ENHANCING AQUATIC WILDLIFE:

- Locate agroforestry practices along streams and shores (riparian zones), especially where they maximize shade to streams during summer months.
- Riparian corridors should be wide enough to provide adequate debris and shade to the stream.
- Locate agroforestry practices where they connect to existing riparian forest and fill gaps that will create longer reaches of continuous forest vegetation.
- Select fast-growing, tall tree species that will quickly produce dense shade.
- Select flood-tolerant trees along streams where frequent flooding is expected.

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Waves From the Atlantic

Creating a Riparian Forest Buffer for Sustainable Pasture Management and Water Quality

Prior to 1997, pasturing cattle had free access to a tributary of Farnham Brook running through the Nova Scotia Agricultural College's Marple Farm near Truro, Nova Scotia. Cattle trampling and overgrazing had degraded 280 m of riparian zone running through the pasture. The cattle had damaged riparian soils and vegetation causing streambank instability, erosion, and stream sedimentation. Stream water quality had declined due to nutrient and bacterial contamination from cattle entering the watercourse. Algae blooms proliferated and habitat for fish and other wildlife had deteriorated.

A project was initiated at the Marple Farm in 1998 to create a riparian forest buffer that would rehabilitate the damaged riparian zone, improve stream water quality, enhance wildlife habitat, and protect the watercourse from further cattle damage. Research at the site is currently focussed at the establishment of riparian forest buffers in pastures and assessing the performance of a range of woody species both indigenous and exotic. The effectiveness of riparian forest buffers in removing nutrients in pasture runoff is also under study.

The project was initiated by Agriculture and Agri-Food Canada (AAFC) in collaboration with the Nova Scotia Agricultural College (NSAC), and the Nova Scotia departments of Natural Resources (NSDNR), Agriculture and Marketing (NSDAM), and Environment (NSDOE). Funding for fencing materials, a culvert, and nose pumps to provide drinking water for the cattle was provided by Ducks Unlimited through the Eastern Habitat Joint Venture program.



Installation of the culvert crossing and stream bank-stabilizing rip-rap. Photo: Ken Webb.



Developing riparian forest buffer five years after planting. Photo: Ken Webb.

Armour rock (i.e. rip-rap) was used to stabilize eroding stream banks and control slumping. A culvert crossing was installed to allow cattle and equipment to move between fields. The cost of placing the rip-rap and culvert was shared by the NSAC and the NSDOE. Fencing was installed by the farm crew up to 15 m from each bank to exclude cattle from the stream and protect planted seedlings. Within the fenced riparian zone, approximately 800 trees and shrubs were planted between 1998 and 2009 at 2.4 m spacing between and within rows. More than half of the total plantings occurred in 1998.

Planted trees and shrubs include white spruce, red spruce, black spruce, white birch, yellow birch, red oak, white ash, larch, balsam poplar, hybrid poplar, white pine, red maple, sugar maple, willow, sea buckthorn, and ground hemlock.

The plantings in 1998 consisted of indigenous hardwoods and softwoods donated by the local NSDNR tree nursery. The seedlings ranged in age and rearing methods and included bare root, 1-year Multi-pot, 2-year Jiffy-pot, and 3-year 2-litre potted planting stock. Some rooted balsam and hybrid poplar cuttings and transplanted white ash whips were also planted in 1998. Ground hemlock and Sea buckthorn seedling, donated by Kimberley-Clarke and the Indian Head Shelterbelt Centre respectively, were planted at the buffer site in 2001. Hybrid poplar, white ash, yellow birch, and red oak whips were purchased and planted in 2002 to replace seedlings girdled and killed in the winter by mice. Hybrid poplars were purchased in 2009 to infill gaps in the developing riparian forest.

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Creating a Riparian Forest Buffer

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Preliminary results indicate that with the exception of hybrid poplar, the conifers have higher initial growth and survival rates than the hardwoods. Relative yearly growth rates from 2002 to 2005 were: hybrid poplar > larch > white pine > black spruce > white spruce > red spruce > white ash > red oak > ground hemlock > yellow birch. Yellow birch actually lost height due to dieback and was poorly adapted for survival in the pasture environment.



Seven year old hybrid poplar (*Populus charkowiensis x caudina*) in 11 year old riparian forest. Photo: Ken Webb.

Fencing the cattle out has allowed re-vegetation and stabilization of the eroding stream banks. The shade cast by the hybrid poplars has reduced weed populations, lowered stream temperatures, and improved fish habitat. Wildlife sightings within the buffer site have increased and include rainbow trout, ring tail pheasant, rough grouse, groundhog, and white tail deer.

Runoff passing through the buffer is sampled and analyzed for nitrogen and phosphorus to evaluate water quality changes as the buffer develops and matures. Preliminary nitrate and soluble phosphorus levels in subsurface flow from the pasture through the buffer to the stream are quite variable and may be linked to contrasting soil conditions found over the length of the buffer. No consistent reduction pattern is indicated at the early stages of riparian forest development. However it is anticipated that nitrate and soluble phosphorus levels will start to show a decrease through the buffer as root systems expand and occupy more of the rooting zone within the buffer.



Cattle and water trough beside the developing forest buffer. Photo: Ken Webb.

For more information about the project, please contact the author: Ken Webb, AAFC, Truro, NS: ken.webb@agr.gc.ca

Launch of the “From Our Atlantic Woods” online directory

The Atlantic Canada and Maine’s directory to non-timber forest product (NTFP) businesses and organizations is now online. NTFPs are generally defined as forest plant, tree and mushroom resources other than timber. They include unprocessed resources like fiddleheads and fir pitch as well as value-added products like bent willow furniture and blueberry jam. The directory also includes ecotourism opportunities like bird-watching tours.

To access the website:

<http://www.fromouratlanticwoods.com/>



Maple syrup bottles. Photo: INFOR inc.

Winds From Quebec

MAMROT Rural Agroforestry Labs

Rural lab experiments are pilot projects lasting up to six years financed by Quebec's Ministère des Affaires municipales, Régions et Occupation du territoire (MAMROT). Such projects deal with topics worth exploring for the future for Quebec's rural communities. They are led by community organizations.

The call for projects for rural labs lasted three years and ended in March 2009. In all, 252 projects were considered, and 33 rural labs got off the ground in 2007, 2008, and 2009. A number of these initiatives are related to agroforestry.

In the Regional County Municipality (RCM) of Maria-Chapdelaine, Coopérative forestière Girardville has taken an interest in promoting non-timber forest products by developing and marketing value-added products.

In the Matapédia Valley, Coopérative forestière de la Matapédia has begun a project to develop the use of forest residues to heat institutional buildings.

In Saint-Roch-de-l'Achigan, an integrated project based on growing and using willow has been set up to decontaminate municipal wastewater, convert sewage sludge, and produce biomass to heat a school.

Meanwhile, in the RCM of Rocher-Percé, thoughts have turned to developing rural areas using systems that combine intercropping and growing noble tree species at a time when a decline in agriculture is leading to more land being left fallow and increasingly reforested using spruce only.



A tree hedge planted in an open field in Saint-Godefroi in the Gaspésie region serving wood production and fruit tree and berry bush production needs. Photo: Bertrand Anel.

These projects are just a few examples of the work being carried out by rural labs across Quebec. A full list of projects is available on the MAMROT website at:

www.mamrot.gouv.qc.ca/regions/regi_rura_lab0.asp



Maxime Tardif, team leader at Biopterre, during his talk on NTFPs. Photo: Manon Leblanc.

Preparing the Future: a Successful Conference

On February 26, 2009, a seminar on "Preparing the Future" was held in Notre-Dame-du-Bon-Conseil. It attracted over 30 forestry and farming representatives from across the region. Thanks to an initiative by Regroupement agroforestier centricois (RAC), the activity took a look at what the future holds for agroforestry in the Centre-du-Québec region, particularly with regard to non-timber forest products (NTFPs).

Among the speakers, Maxime Tardif, team leader at Biopterre, told participants about the important role NTFPs play in rural economic development. The RAC chair then gave a brief history of the organization over the past two years, highlighting the heritage and environmental aspects of the agroforestry practices that give added value to our forests. Next, RAC forestry technician Louis-Alexis Thérberge used various examples to outline RAC field operations for members and looked at a number of benefits such as field knowledge gained by characterizing environments and producing our own plant material. Project manager Éric Perreault and biologist Andréane Blais, both members of Conseil régional de l'environnement for the Centre-du-Québec region, raised a number of ethical issues relating to forestry operations. Advocating a code of

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Preparing the Future Conference

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ethics and structured information on how to preserve the biodiversity of our forests as we harvest them, they highlighted the need for closer cooperation with organizations such as RAC.

The conference also served as a springboard for the creation of an edible nut tree orchard in the Centre-du-Québec region.

RAC is a regional, non-profit organization dedicated to developing agroforestry, particularly the production of non-timber forest products (NTFPs).

Source: Gilles Théberge
Regroupement agroforestier centricois (RAC)
gilles.theberge@tlb.sympatico.ca

Non-timber forest product (NTFP) enhancement project in the La Mauricie region

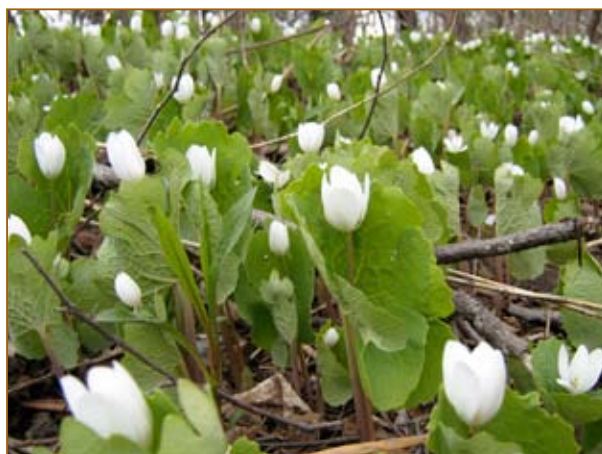
Last September, Syndicat des producteurs de bois de la Mauricie and the Honourable Denis Lebel, Minister of State for the Economic Development Agency of Canada for the Regions of Quebec (CED-Q), announced a major project to develop the NTFP sector in the La Mauricie region.

The project involves the following 14 regional development organizations: CED-Q; Conférence régionale des élus de la Mauricie; MAPAQ (ministère de l'Agriculture, des Pêcheries et de l'Alimentation); the SADCs (Sociétés d'aide au développement des collectivités) in Maskinongé, Haut Saint-Maurice, Centre de la Mauricie, and Vallée de la Batiscan; the Regional County Municipalities (MRCs) of Mékinac and des Chenaux; the Local Development Centers (CLDs) in Shawinigan, Maskinongé, and Haut-Saint-Maurice; the Trois-Rivières SDE (Société de développement); and Syndicat des producteurs de bois de la Mauricie.

The consortium will invest over \$123,000, including a \$49,800 contribution from CED-Q through the Community Economic Diversification Initiative – Vitality program. The project is already well underway and will end in spring 2010. To complete the project, the Syndicat team joined forces with experienced

consultants from the NTFP sector, notably the Biopterre college technology transfer center and Clé des Champs de Saint-Camille, a cooperative specialized in cultivating medicinal plants in forests.

The project is divided into three parts: 1) identifying the human resources available in the NTFP sector in the La Mauricie region, 2) taking inventory of the resources in the field to gauge the potential of 22 plants selected in private forests in the La Mauricie region, and 3) establishing ways to market these products.



Bloodroot. Photo: COOP La clé des champs, Saint-Camille.

Over the last five years, Syndicat des producteurs de bois de la Mauricie has developed a number of innovative approaches to forest management, particularly for hardwood and mixed-wood forests. In addition, the creation of an agroforestry department in 2007 allowed the organization to carry out activities connected to the role of trees in an agricultural setting. This renewed partnership with the agricultural community has made it possible to address issues like water quality and carry out projects like this one.

Source: Patrick Lupien, Forest Engineer
Syndicat des producteurs de bois de la Mauricie; plupien@spbois.qc.ca

Echoes From Around the Planet

The Wisdom of Samaké – Agroforestry in Mali

Although agroforestry may be something of an unknown science in Quebec, for farmers in West Africa, it's a practice handed down from generation to generation. From the moment the first team of Université Laval interns arrived as part of the project "Des arbres et des champs contre la pauvreté au Mali" (Trees and Fields Against Poverty in Mali), it was clear that the partnership with Institut Polytechnique Rural wasn't starting from scratch. Kalifa Samaké, a farmer from the village of Katibougou, may not be able to read or write, but he knows that leaving a field bare means exposing it to the elements.

Through a short documentary film, *La sagesse du paysan Samaké – Un regard sur l'agroforesterie au Mali* (The Wisdom of Samaké – Agroforestry in Mali), the project interns sought to give voice to farmers in Mali and let them explain the many uses they find for trees. Whether a welcome source of shade, a hedge, or a source of revenue, trees are right at home among the crops of millet and sorghum. The film is also a means of showcasing traditional Mali knowledge at a time when many in Quebec are seeking ways to make farming more environmentally friendly. Because cooperation not only lets us share knowledge, it is also a great opportunity to re-examine our own practices.

To watch the documentary online, look for *La sagesse du paysan Samaké* on YouTube (www.youtube.com). The video is in two parts.

Source: Catherine Berger
Master's Candidate in International Development, HEI, Université Laval
catherine.berger@gmail.com



Trees are an integral component of the Malian countryside.
Photo: Catherine Berger.

New BC Agroforestry Strategic Plan Now Online

In British Columbia, a new Agroforestry Sector Strategic Plan has been completed with the support of the Federation of BC Woodlot Associations, the Woodlot Product Development Council, the Investment Agriculture Foundation of BC, Agriculture and Agri-Food Canada, the BC Ministry of Agriculture and Lands, and individual producers.

The plan details the strategic priorities and actions needed to support agroforestry development and adoption in BC for 2009 to 2013. The goal of this support is the creation of profitable, sustainable agroforestry opportunities for BC, which contribute to the viability, diversity, and stability of the agriculture and forestry sectors, to the benefit of the individuals, families, and communities that depend on them.

For more information please visit the Federation of BC Woodlot Associations website, where you can download a full copy of the strategic plan:
www.woodlot.bc.ca/partnerships.html#aidi

Agroforestry in the News

Two agroforestry articles were published by the international media in response to the 2nd World Congress of Agroforestry, held last August in Nairobi. The first article, dated August 25 and entitled "Cultiver à l'ombre des arbres" (Farming in the Shade of the Trees), was posted on http://tempsreel.nouvelobs.com/actualites/sciences/20090825.OBS8793/cultiver_a_l_ombre_des_arbres.html. It reports the findings of CGIAR (Consultative Group on International Agricultural Research), which show that far from being a secondary issue, agroforestry may even have a part to play in the fight against climate change. The second article, "As Farmland Grows, the Trees Fight Back," was posted the same day on www.time.com/time/health/article/0,8599,1918315,00.html?xid=rss-health.

The next issue of our electronic newsletter will feature an article that takes a closer look at the 2nd World Congress of Agroforestry. In the meantime, you can find out more about the congress and the World Agroforestry Center in Nairobi, which hosted the event, by visiting: www.worldagroforestry.org and www.worldagroforestry.org/WCA2009/

Publications and Resources

Launch of the National NTFP Newsletter

The Canadian Non-Timber Forest Products Network is pleased to announce the launch of a new electronic newsletter focused on NTFP-related news, research, projects and events, from across Canada.

The newsletter is a joint effort of Natural Resources Canada and the Centre for Non-Timber Resources at Royal Roads University in Victoria, and was funded through Natural Resources Canada. The newsletter will be published four times per year.

The Canadian Non-Timber Forest Products Network looks forward to your comments and contributions for future newsletters.

To access the newsletter:

www.ntfpnetwork.ca

Source: Caroline Rochon, Canadian Forest Service and Tim Brigham, Centre for Non-Timber Resources

tim.brigham@royalroads.ca



Chanterelles.
Photo: Wendy
Cocksedge.

Cost-Benefit Analysis for Wooded Riparian Strips

This technical leaflet is designed for agricultural advisors and producers intending to set up wooded riparian strips along waterways in rural environments. Using ten model wooded riparian strips, it helps readers determine whether the net economic benefits are positive and, if so, calculate payback periods.

The document was prepared by André Vézina, a professor at Institut de technologie agroalimentaire in

La Pocatière; Frédérick Lebel, a rural economist; and Christian Rivest, an agroenvironment technician at Centre d'expertise sur les produits agroforestiers (CEPAF) in La Pocatière.

This document can be downloaded from the Agri-Réseau website:

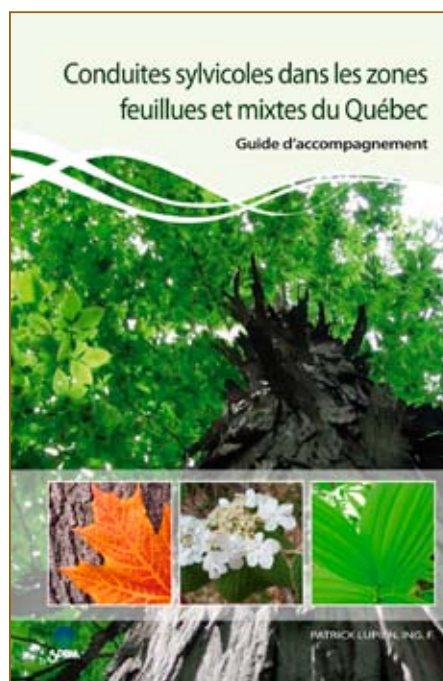
www.agrireseau.qc.ca/Agroforesterie/

Guide: Sylvicultural Guidelines for Hardwood and Mixed Forests in Quebec

Syndicat des producteurs de bois de la Mauricie has issued a guide on sylvicultural guidelines for stands in hardwood and mixed forests in Quebec. It deals with topics like the features of plant communities, species ecology, the status and structure of stand development, ecosystem-based design, and maintaining the functions of forest cover for landscapes.

To obtain a copy of the guide, call Syndicat des producteurs de bois de la Mauricie at 819-370-8368 or contact Association forestière des Cantons-de-l'Est at 819-562-3388.

Source : Patrick Lupien, Forest Engineer
Syndicat des producteurs de bois de la Mauricie; plupien@spbois.qc.ca



Report on the Rural Development Project in the RCM of Rocher-Percé

This document outlines the main data and findings gathered as part of a development project in the RCM of Rocher-Percé. Headed up by CLD du Rocher-Percé, the project ran from February 2005 to August 2009. There were two phases:

Phase I: Recognizing the multifunctional nature of agriculture in the RCM;

Phase II: Developing multifunctional agroforestry systems in the region.

The project was put in place by twelve leading partners before being implemented with the help of other organizations.

The document can be downloaded from the Agri-Réseau website:

<http://www.agrireseau.qc.ca/agroforesterie/>

Source : Bertrand Anel, CRÉ-GIM and CLD du Rocher-Percé; bertrandanel@cre-gim.net



Rehabilitated wild land for an agroforestral system in the Gaspésie region. Photo: Bertrand Anel.

AGROOF Website

The AGROOF website provides visitors with a host of agroforestry tools and resources (fact-finding reports, a photo library, useful links, and more). The French-based site seeks to circulate information on biodiversity, soil fertility, and biotechnology, as well as tree and farming regulations.

Visit the website at:

<http://www.agroof.net/>

Study on the Development and Marketing of Non-Market Forest Products and Services

Forests provide numerous goods and services that contribute to our well-being. This study, funded by the European Commission, aims to summarize information on the cutting-edge field of assessing and compensating non-market forest goods and services. These goods and services may involve protecting water or biodiversity, recreational activities, or carbon sequestration.

The report is available online at:

http://ec.europa.eu/agriculture/analysis/external/forest_products/index_en.htm

Bioenergy in Northern Countries: 2009 and Beyond

This report ranks northern countries against European countries in terms of their commitment to bioenergy and outlines their strategies for dealing with the issues of tomorrow. The second part of the report outlines research advances in biofuels.

The report (in French) is available from the Agri-Réseau website: www.agrireseau.qc.ca/energie/

The Association for Temperate Agroforestry (AFTA) website

AFTA is a private, non-profit organization based at the University of Missouri Center for Agroforestry in Columbia, MO. AFTA's mission is to promote the wider adoption of agroforestry by landowners in temperate regions of North America. For over a decade, the association has helped bring together a community of interest around sustainable management practices for farm and forest land in North America. AFTA serves as an information resource for natural resource educators, researchers, extensionists, policy makers, and land managers through scientific meetings, print and Web-based publications, and online forums.

The AFTA website offers a wealth of resources and information for those interested in agroforestry, including webpages that present an overview of agroforestry practices; the Temperate Agroforester, an online publication; an online bookshop; a calendar of events; an activities database; and links to a number of other agroforestry-related websites.

To access the AFTA website, go to www.aftaweb.org

Feature article

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STREAM BANK STABILITY

Indicators:

Look at the pattern of stream channels, land cover along them, and the extent of land development around them. Channel incision and bank erosion may stem from runoff-increasing land development and drainage improvements, removal of riparian forest, and channel straightening at and upstream of the site. Channel dredging and straightening can cause channel incision that propagates upstream (headcutting) and accelerates bank erosion. Extensive and rapid bank erosion indicates a very unstable stream.

Large patches of permanent vegetation produce smaller storm flows. Channels that are lined with riparian forest are more resistant to bank erosion.

GUIDELINES FOR REDUCING STREAM EROSION:

- Bank erosion is easier to control with vegetation along smaller and relatively stable streams.
- Locate agroforestry practices on both sides of a stream. Stabilizing the bank on one side of a stream can accelerate erosion on the opposite side.
- Locate and size agroforestry practices to allow for continued bank erosion until the planting matures enough to provide stability to the bank.
- Select a mixture of fast-growing, deep-rooted shrubs and trees that will protect the bank from surface scour and strengthen it against bank sloughing.
- Select shrub and tree species that can resist toppling by flood flows, and can resprout after breakage caused by floods, ice flows, and bank sloughing.
- Locally-severe bank erosion may need to be stabilized using soil bioengineering, a specialty agroforestry practice.

LANDSCAPE AESTHETICS AND SAFETY

Indicators:

Look at the pattern of landscape elements. Uniform land cover can be monotonous. Views of industrial or urban sites may be undesirable. Noises from roads and railways and odours from livestock and waste treatment facilities diminish enjoyment of other aspects of the landscape. Blowing dust and snow create safety and health problems along roads and in residential areas.

Forested patches and corridors create visual diversity and pleasing mosaic of land covers in cultivated landscapes. Forest strips can help to block noise and undesirable views and to reduce blowing dust and snow. However, improper placement of trees can block desirable viewpoints along roads and cause snow and dust to accumulate on roadways and in urban areas.

GUIDELINES FOR ENHANCING LANDSCAPE AESTHETICS AND SAFETY:

- Locate agroforestry practices where they will add visual diversity to the landscape. Design plantings to mimic lines and shapes of other elements in the landscape.
- Locate agroforestry practices as close as possible to noise, odour, or other air pollutant sources, and to screen undesirable views from roadways and urban areas.
- Locate agroforestry practices away from places where they will block desirable views from roadways and nearby urban developments. Avoid creating blind spots at road intersections.
- Locate and/or orient agroforestry plantings so that they do not cause snow accumulation or blowing dust problems on roadways and in urban areas.
- Select species that will add visual appeal, such as colorful foliage, to the surrounding landscape. Create visual diversity by adding clumps of visually interesting species at the edges of each planting.

ORIGINAL SOURCE

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<http://www.unl.edu/nac>

About this Newsletter

The Quebec and Atlantic regions of Agriculture and Agri-Food Canada have initiated this newsletter in response to our common need to share information and experience.

The newsletter aims to bring together players in all sectors concerned: agriculture, forestry, land management, rural development, and others.

The newsletter is distributed in electronic form through the Agri-Réseau website in Quebec and through various organization websites and mailing lists in the Atlantic.

To Submit an Article

We invite you to submit your short news, publication or website announcements, resources relevant to agroforestry for publication in the newsletter.

Please send your material by email to the editors, Stéphane Gariépy: stephane.gariepy@agr.gc.ca or Chris Pharo: chris.pharo@agr.gc.ca.

Digital images must be good quality and high resolution, and provided as separate files (jpg format). Please provide a caption or descriptive title for each image and indicate the name of the person and organization to which the image should be credited.



Farm woodlot in winter. Photo: Suzanne Campeau.

To Receive this Newsletter

To be notified of the publication of the next issue of this newsletter, please subscribe to the Agri-Réseau Agroforestry mailing list at:

www.agrireseau.qc.ca/agroforesterie/

OR email Chris Pharo at chris.pharo@agr.gc.ca.

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