

Woodland Management Planning

Management Planning

(reprinted from the British Columbia rural Forestry Service)

Why Is a Management Plan Important?

Forest management is a long-term process. Desired forest conditions and outcomes can take many years to develop and you need to plan your actions long before you achieve your objectives. For example:

- thinning and harvesting areas must be selected so that roads can be developed to them
- density management and/or pruning must be done at the right time in order to produce future desired wood quality and value reforestation needs must be defined so that seedlings can be grown for planting (1–2 years or more in advance!)
- wildlife habitat conditions (cavity nesting trees, coarse woody debris, understory composition, stand structure) and/or desired forest amenity features (big trees, species mixes, forest gardens, viewsapes) need to be thought out and management interventions planned to achieve the desired conditions in a reasonable time
- timber harvesting, in itself, involves many steps—equipment must be scheduled, contracts arranged and products delivered.

Proper planning helps make these management activities more efficient and helps you to avoid unnecessary costs and delays, as well as unnecessary steps, as you develop your woodland.

A Forest Management Plan is a statement about both the woodland and you, the woodland manager. It describes your woodland or farm property, the resources on it, and the activities you plan to undertake. It will also reflect your own personal interests and expectations, your abilities, your financial objectives, and the goals you wish to achieve. The Forest Management Plan is a blueprint for the long-term and short-term activities needed to achieve your goals.

Developing a Forest Management Plan for your land is fun, interesting, a real learning experience and will create a salable portfolio if ever you want to sell your property. If you are planning to pass the land on to your children, you will have a record of what you have done and why you have done it. There are many advantages to having a plan, not the least of which is the joy of looking back and seeing the tangible results of your efforts.

In general, a Forest Management Plan is recommended for any woodland property. It is a framework for clear thinking that will help you to organize your resources and your actions to achieve your goals for the property.

What Is Planning?

Planning is the process by which you determine your goals, identify the steps required to achieve them, and measure your achievements. The process of preparing a plan forces you to clarify the benefits or goals you want from your woodland. It helps you to identify the alternative ways these goals might be reached, and to choose the most effective means of achieving them. The Forest Management Plan also acts as a record of the condition of the woodland and a basis for monitoring changes over time. Planning is a step by step process and includes the following:

1. setting goals
2. identifying alternative means for achieving them and forecasting outcomes
3. selecting the preferred option
4. developing a set of actions (operational plan) to carry out this option
5. monitoring the plan to see if the goals are being achieved.

Although the planning process results in the production of a 'plan' the process of planning does not stop but continues over time. As time passes, conditions change, new information becomes available, adjustments need to be made, and perhaps new ways of dealing with a situation are developed. These are reviewed and incorporated into a plan to keep it up-to-date. Consequently, planning is a cyclical process which is repeated on a periodic basis to keep things up to date and evolving over time.

What Does a Forest Management Plan Look Like?

A Forest Management Plan is a portfolio of information about your woodland coupled with a description of your goals and how you plan to achieve them and monitor your success. It can be as simple and as short as you care to make it or more detailed and comprehensive as dictated by the complexity of your woodland, your management objectives or external requirements such as certification.

A Forest Management Plan usually encompasses two or three levels of actual planning.

- a long-term plan for 10 to 20 years or more
- a medium-term tactical or 'activity' plan for the next five years
- an annual plan of activities (updated for each year).

While there are various formats used, a basic Forest Management Plan consists of a written section and one or more accompanying maps. The written section usually includes:

- your personal goals for the property
- a general description of the woodland (inventory)
- a statement of your long-term management objectives (e.g., covering 20 years or more)
- a description of the management options and strategy
- a description your short-term area specific activity objectives
- a description and schedule of proposed short-term activities (e.g., over two to five years)
- proposed management standards and guidelines
- a schedule for monitoring key indicators and maintaining records
- references to associated plans, information and records.

The map component of the plan provides the visual presentation of your woodland resources and planned management activities. It lets you see where things are located, how activities relate to each other over time and space, and where there are constraints or potential conflicts. Your maps are also important for doing quick area calculations, distance measurement and initial layout and planning of your management activities.

In cases where management plans are required (e.g., tax assessment, Stewardship Program, Tree Farm Status) the contents of the plan will normally be specified in general or specific terms. While the specific requirements vary between standards, the principles and basic structure are often very similar and there are usually overlaps in the content requirements. This is important to know because it can help you design your Forest Management Plan to ensure that it meets any requirements that you may wish to subscribe to, and one plan can often be developed that satisfies several requirements at once saving you time and money. Before you embark on developing a Forest Management Plan, consult a forestry professional and make sure you check out any requirements that might apply or that you may wish to conform with.

Forest Stewardship Council Certification Requirements for Forest Management Plans

- a) Management objectives.
- b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.
- c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.
- d) Rationale for rate of annual harvest and species selection.
- e) Provisions for monitoring of forest growth and dynamics.
- f) Environmental safeguards based on environmental assessments.
- g) Plans for the identification and protection of rare, threatened and endangered species.
- h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.
- i) Description and justification of harvesting techniques and equipment to be used.

How Do I Develop a Forest Management Plan?

In a sense, the development of a Forest Management Plan is what this book is all about. The individual chapters provide detailed information on the different phases, activities, and options associated with planning and managing. You can prepare your plan yourself by following the steps outlined below, or you can hire a forestry professional to do it for you.

Whichever route you take, one of the most important first steps you can take is to **learn as much as possible about your land and the management options available**. Keep your mind open about how you wish to manage your woodland until you have learned about the options and are ready to consider what you can do and what you really want to do.

A second important tip is to **start simple and let the plan develop as you learn** more about your woodland, your goals, and your capacity and ability to manage your woodland. Don't expect to write the perfect plan the first time around. Start by focusing on just a couple of activities and build up from there. It may take you several drafts as you learn about your woodland and you options to end up with what you want. This is a normal part of the planning process.

The third important tip is to **make sure your plan suits you, your goals, management style and your philosophy**. Do it yourself, if possible. The more relevant it is to you the more you will use it and refer to it over time. Though in some cases the formal plan may be prepared by someone other than yourself it is important that it reflects your goals and that you understand how it is prepared, where choices exist and on what basis decisions are made. **It has been found that more than half of the management plans prepared by non-landowners are never used by the owners.**

The fourth and final tip is to make sure you **write it down**. A documented plan serves as an important record for yourself, your family, third parties who may need to assess what you are doing, and for the future managers of the woodland whether they are your children or a new purchaser.

The following sections present a step by step approach to management planning.

1. Identify Your Personal Goals and Objectives

Your personal **goals and objectives** are about what you want to happen on your land over the long term, what you would like to achieve. Start out by asking yourself: “**why do I own my land?**” This is the best way to focus in on what your **goals** are. Think about your personal and family interests, your financial and estate planning goals, your personal skills and abilities, how much time you have to dedicate to your woodland and whether you intend to do it yourself or use outside help.

While the **goals** represent the vision for the woodland, your **objectives** represent the tactics used to implement that vision. The management goals establish the long-term (i.e., 20–100 years) framework for all your forest management activities. They will be the basis on which more detailed shorter term activity objectives are set out (later in this process) for specific areas and activities within the woodland.



Some examples of goals and objectives for your woodland might be:

Goal	Objective
Investment for future resale. Have a nest egg to fall back on.	Improve the property’s appearance and increase the property value. Manage to improve timber values.
Supplement income. Generate revenue to pay for taxes and for other family needs (child’s university or retirement) Provide employment for family members or others become self sufficient	Create forest land based business. Manage for timber production, agro forestry, ranching, and/or commercial recreation, tourism and/or education. Sell gravel, lease land. Produce firewood or lumber or fence- posts or Christmas trees or botanical products for own use and/or sale.
Practice conservation and keep the woodland natural	Manage for biodiversity and wildlife habitat. Restore damaged ecosystems. Survey and document all ecosystems on the property. Reforest denuded areas and marginal land.
Produce high quality timber	Establish optimal management regimes and practice intensive silviculture from reforestation through to harvest. Create a specific timber profile (species and grade) over the rotation.
Provide a source of water	Maintain and protect riparian areas, streams, wetlands and lakes and aquifer recharge zones. Maintain forest cover.

Increase wildlife habitat for...(your species preference)	Manage for (specified) forest conditions to create habitat conditions, increase the number of wildlife trees, and diversify species composition.
Learn about forestry through practice. Practice a woodlot lifestyle and try your own ideas Create a legacy for my kids	Plan and carry out own management activities and involve family members. Take a master woodland manager course Join a woodlot association Take part in extension activities and field trips
Provide outdoor learning and recreational opportunities for family and friends	Identify and develop facilities (trails, campsites, blinds) for fishing, hiking, camping, cycling, horseback riding, cross-country skiing, hunting, bird and wildlife watching
Reduce property and income taxes	Qualify for managed forest land classification. Learn about tax and estate planning. Set up proper business and tax structure.

There are no right or wrong goals, only your own goals. Recognize that your goals and objectives will change over time as your needs, interests and circumstances change. Some goals and objectives may be mutually achievable while others will conflict but don't worry about this—setting goals helps you to clarify and prioritize your interests and activities. The selection of your goals and objectives deserves careful consideration since they will shape your plan and all the activities on the woodland for many years to come. Document your goals and objectives in your management plan. Use your own words.

2. Conduct an Inventory

In order to finalize your personal goals and begin to develop plans for your woodland, you need to know what is in the woodland, what values it is producing now, what it is capable of producing, and what limitations there may be to production of those values. This will mean either conducting an inventory of the land and its resources, or carefully reviewing already existing information.

Doing an inventory is a great way to learn about your land and notice things that are there but that you may have never recognized before. You should design your inventory with your goals in mind in order make sure you collect the information most needed. Your inventory could also take into account any indicators¹ that you want to keep track of over time in order to monitor your progress and the sustainability of your management. Your inventory will need to consider such things as:

- the current forest cover and ecological communities (extent, tree species, numbers, ages, heights, diameters, volume, growth, value and grade, health factors, vegetation, streams and wetlands, ecosystems)
- site factors (site quality, soils, drainage, terrain, rock outcrops, gravel deposits, sensitive areas)
- infrastructure (boundaries, fences, roads, trails, campsites, easements)
- the presence of other resource values (wildlife, water, recreational features, botanicals)

In addition to telling you what you have, your inventory will act as an important record of what you had when you started. This will allow you to make future comparisons to see how your forest has changed and to

monitor how successful you have been in meeting your goals. How to do an inventory is discussed fully in the inventory chapter.

Your Forest Management Plan should contain a brief summary of your inventory information. Inventory information is summarized in various ways including descriptions of values and resources, maps showing locations of your forest cover, woodland features and infrastructure, and tables summarizing measured data by stand type or management area. Summarizing and organizing this information is important so that it is readily accessible for subsequent activity planning and in order to make future comparisons and updates to the management plan.

3. Assess Your Management Options

Once you know what you have in your woodland and what it is capable of producing, you will be ready to finalize your overall objectives for your woodland, identify your **management options** and develop a **management strategy**. Management options represent the range of potential and alternative management regimes, approaches, actions, and techniques available to achieve your woodland management goals. Your strategy will represent the overall plan for achieving the goals.

The inventory will help you ground your expectations in reality and help to prioritize your list of goals, objectives and preferred options. Practical considerations (operational feasibility), financial considerations (cost and return on investment), woodlot conditions (such as age of your forest), and the biological/ecological characteristics of the site will determine what is possible. In some cases you may need to modify your preliminary goals (e.g., by reducing your income expectations) to align more closely with the capabilities of your woodland.

This is also a good time to consult a professional expert for assistance and advice in choosing your management options as a mistake at this stage could prove to be costly later on. Record your chosen management strategy and your rationale.



4. Divide Your Woodland Into Management Areas

To assist planning, it can be useful to divide the woodland into areas that are similar in terms of how they are to be managed. Each **Management Area (MA)** is comprised of stands that are similar enough in species, age, stocking and site characteristics (soil, terrain, etc.) that they can be treated as one unit. Management areas can also consist of areas of your woodland that you wish to manage for other values, such as wildlife habitat, riparian protection or visual aesthetics.

5. Identify Short-term Objectives

Once the management areas have been defined, you can identify objectives for each of them, such as whether you plan to manage an area as even-aged or uneven-aged, conservation or agro forestry and the products you plan to produce (e.g., sawlogs, firewood, botanicals, grazing). These objectives should be consistent with your goals and should focus on what you need or intend to do in the management area over the short term (five years).

These objectives will, in turn, set the stage for the scheduling of specific management activities, such as road building, harvesting, planting and stand tending treatments that you intend to follow.

6. Schedule Short-term Management Activities

Your long-term vision for the woodland will be implemented by your shorter term management activities, which you have developed for each Management Area on the woodland. This process is called an activity plan.

Your activity plan is the ‘meat’ of your Forest Management Plan and sets out the schedule for all operations that will take place on the woodland over the (five-year) period. It provides the detailed steps and activities you plan to undertake on a year-to-year basis. The activity plan describes:

- *What will be done:* road construction, harvesting, stand tending, reforestation, etc.
- *Where it will be done:* Management Area – location
- *When it will be done:* year, season
- *How it will be done:* methods, equipment, treatment, special guidelines
- *Who will do it:* owner, manager, contractor or volunteer group?

It is also a good idea to include an estimate of the cost for each activity, and where the money will come from, to make sure that the money required for the activities planned is available when needed.

Specific modifications to timber practices to enhance non-timber resources such as wildlife, recreation and aesthetic values are noted in the activity plan (e.g., the selection of silviculture systems, harvesting methods, and the amount of timber and area from which it is cut). Where special projects, independent of timber management activities, are undertaken to enhance other resource values (such as the building of a weir or fish-raising pond), they should also be described in the activity plan. Activity plans are usually summarized in a table form, and accompanied by a map showing proposed roads, cut blocks, treatment areas and timing.

It is also important to include some flexibility into your activity plan to allow for unplanned circumstances (e.g., change in markets, weather). Identify contingencies in case you are not able to follow through with an activity. This is especially important for Forest Management Plan prepared for tax purposes. Make sure there is enough flexibility in the plan so that you can not be penalized for not achieving all planned activities.

The activity plan is revised on an annual basis to reflect what has been done and provide new detail for the upcoming year. The current year will have the most detail and is known. Subsequent years in the plan will have a little less detail but will gradually come in to focus as they move up in the queue.

7. Define Your Management Standards and Guidelines

It is a good idea to identify performance standards to be met in order to achieve your goals and objectives. It is important that these be set out clearly at the start to guide you and others who might be involved in carrying out activities on the woodland. Performance guidelines are often prescribed for things such as:

- acceptable regeneration delay to reforest the land
- frequency of regeneration surveys and assessments to determine adequate stocking
- acceptable stocking levels for regeneration
- spacing in juvenile stands
- acceptable slash levels for fire hazard reduction and regeneration
- environmental protection during logging (e.g., soil conservation, stream and riparian protection, road construction and stream crossing standards, harvest standards for rutting, damage to residuals, site clean-up).

8. Monitor Your Activities and Progress

“If you don’t measure, it you can’t manage it.” Planning doesn’t stop with the production of a Forest Management Plan. You will want to keep track of how well the plan is being followed, and whether or not your management activities are achieving the intended results. Use the indicators established at the outset of your plan as the basis for your periodic measurements. Some things you will need to monitor on an annual basis (area harvested, timber produced, stream crossings, regeneration success) while other indicators will only need to be measured every five to ten years or more (stand growth and yield, progress towards long-term goals).

As the character of your woodland and your needs change, the Forest Management Plan must be updated to reflect these changes and provide clear direction to operations on the ground. It is a good idea to review your Forest Management Plan annually, and update it as necessary (at least every five years).

It is important that you understand and are comfortable with your Forest Management Plan. It should cover all aspects of what you want from the woodland, and provide a realistic set of activities for achieving these. The Forest Management Plan must work for you.

Forest Management Plan

Woodland Description

Owner
Location
Access
Features (Terrain, Soil, Water, Wildlife, Recreation)
Overview Map

Goals and Objectives

Personal Goals and Objectives

Inventory

Timber Inventory
Yield Calculation
Other Inventories

Forest Management

Management Area and Map

Short-Term Activity Plan

Silviculture Activities
Harvesting Activities
Access Activities
Resource Management Activities
Equipment
Contractor/Operator
Financial and Marketing Plan

Management Standards

Protection

Health
Fire

Monitoring and Records

Chronicle / Activity Diary
Management Records

You’ve Done It

If you’ve followed these steps and written everything down then you should be pretty close to having a Forest Management Plan for your woodland. A few final things you could add to it to round it off are appendices for specific information or references, a glossary of forestry terms and information commonly used such as contacts and a list of legal requirements.

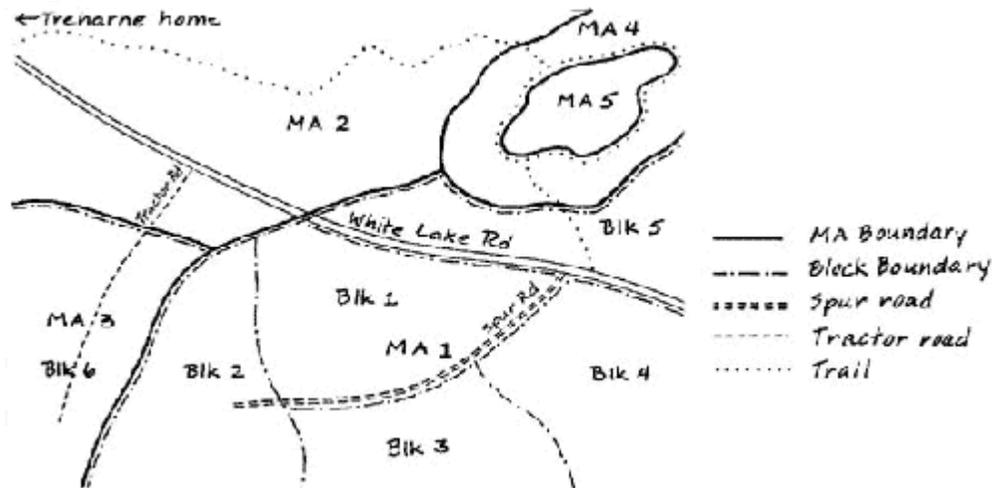
For reference, a template and a sample Forest Management Plan for the Oak's property follows. It provides an example of how the information outlined in the steps above might be presented.

Sample Forest Management Plan

A Sample Forest Management Plan for landowner John Q. Oak:

Woodland Description

The Oak property is located approximately 25 miles southwest of Conneautville on the White Lake Road. The area is 140 acres and the White Lake Road runs through the parcel. The woodland is adjacent to and east of the Oak's permanent residence. The resource values on the area are summarized below. The area also has a moderate capability for deer and a variety of fur-bearing animals, songbirds, waterfowl and several families of grouse use Management Areas 4 and 5.



Goals and Objectives

- to supplement our annual income by approximately \$5000 for the next 8 to 10 years to finance our children's education; then provide periodic income for our retirement
- to increase the value of the property over the long term
- to provide recreational opportunities for family and community groups
- to qualify for the 'managed forest land' classification and obtain a lower tax assessment.

Inventory

A timber inventory was conducted and a sustainable harvest rate was calculated at 350 bd feet/acre per year.

- Conduct wildlife habitat inventory.

Forest Management

To manage the overall area for the continuous production of commercially valuable tree species and to regulate the rate and timing of harvests to achieve personal goals.

- Management Area 1 will be harvested and reforested entirely over a 10-year period, with annual harvests of approximately 4000 bd ft. This might be adjusted to take advantage of market conditions.

The main products will be sawlogs. Care will be taken to minimize the impact on aesthetic values along White Lake Road.

- Management Area 2 will be improved by commercial thinning, eventually harvested for sawlogs and reforested.
- Management Area 3 will be developed as a Christmas tree plantation.
- Management Areas 4 and 5 will be developed for recreational and wildlife habitat purposes.

	Forest Type	Area (ac)	Vol. (bdft)	Age	Height Class	Stocking Class	Site Class
MA 1:	Oak/Hickory	70	40 000	140	32	1 (mat)	M
MA 2:	Hardwoods	40	-	45	26	0(imm)	M
MA 3:	Spruce/Fir	15	-	-	-	-	M
MA 4:	Northern Hdws	10	-	18	18	0(imm)	M
MA 5:	Swamp	5	-	-	-	-	-

Short-term Activities 2003-2007

The five-year activities for each Management Area are summarized as follows:

Silviculture Activities:

- plant Douglas-fir seedlings as Christmas tree stock in MA 3; manage with a 7 to 10 year rotation.

Harvesting Activities:

- harvest all of MA 1 by small clearcuts over 8 to 10 years; plant after logging
- conduct periodic commercial thinning in MA 2 after MA 1 has been completely harvested.

Access Activities:

- construct a road into MA 1, south of White Lake Road to provide logging access
- construct tractor access into MA 3 for management access to the Christmas tree plantation.

Resource Management Activities – Recreation:

- construct a dual-purpose (cross-country ski and mountain bike) trail from the Oak's residence through MA 2 to MA 4 and MA 5, with a connecting link to the White Lake Road.
- enhance MA 4 and 5 for wildlife and recreational values; construct a waterfowl blind at the pond site for Canada geese and other species.

Five-year Activity Plan 2003–2007

Activity	Timing	Area	Location	Description	Work
Road Construction	2003 summer	MA 1	Spur A	Construct spur road 20 ft wide surface with gravel as needed	Contract
	2003 summer	MA 3	Spur B	Construct tractor access to Christmas tree plantation	Owner

Harvest Cut	2003 summer	MA 1	Block 1	Harvest 7 ac, hand fell, skid with tractor	Owner
	2004 summer	MA 1	Block 2	Harvest 7 ac, hand fell, skid with tractor	Owner
	2004 fall	MA 1	Block 1	Burn slash	Owner
	2005 summer	MA 1	Block 3	Harvest 7 ac, hand fell, skid with tractor	Owner
	2005 fall	MA 1	Block 2	Burn slash	Owner
	2006 spring	MA 1	Block 4	Harvest 7 ac, hand fell, skid with horses	Owner /contract
	2006 fall	MA 1	Block 3	Burn slash	Owner
	2007 summer	MA 1	Block 5	Harvest 7 ac, hand fell, skid with horses	Owner/contract
	2007 fall	MA 1	Block 4	Burn slash	Owner
	Planting	2004 spring	MA3	Block 6	Brush removal with brush blade on tractor, plant 2+1 bare root D-Fir for Christmas tree production
2005 spring		MA 1	Block 1	Plant D-Fir, cedar 2+0 plug stock	Jr. Forest Wardens
2006 spring		MA 1	Block 2	Plant D-Fir, cedar 2+0 plug stock	Jr. Forest Wardens
2007 spring		MA 1	Block 3	Plant D-Fir, cedar 2+0 plug stock	Jr. Forest Wardens
Stand Improvement	2005-2007	MA 3	Block 6	Christmas tree shearing, protection activities	Owner/family
	2004/05	MA 2,4,5	see map	Construct x-country/bike trail from residence to MA 4 and around swamp/pond	Volunteer /family
	2006 summer	MA 1,5,6	see map	Construct trail from White Lake Road to connect to trail around swamp	Volunteer /family
	2006 fall	MA 4		Construct waterfowl blind	Volunteer /family
	2006-2007			Review and update Forest Management Plan and 5-year Activity Plan	Owner

Management Standards

- regeneration delay will be a maximum of 5 years following harvesting
- reforestation surveys will be conducted at 2 and 4 years following logging to provincial methods and standards
- provincial species selection guide and stocking standards will be followed
- survival assessments of plantations will be conducted 1 and 3 years after planting using provincial methods and standards
- no skidding equipment will be used within 100 feet of White Lake Road, and selective cutting within that strip will be carried out to maintain aesthetic values.

Protection

- check Area 2 for root rot.
- Monitoring and Records Monitoring and Records

Recommended References

- Hilts, S. and P. Mitchell**, 1999. *The Woodlot Management Handbook*. Firefly Books, Willowdale, 282 pp. (highly recommended, available from Small Woodlands Library)
- Wiskel, B.**, 1995. *Woodlot Management*. B., Lone Pine Publishing, Edmonton, 134pp. (highly recommended, especially for woodland owners in northern BC)
- Baughmann, M. et al**, 2000. *Woodland Stewardship*, A Practical Guide for Midwestern Landowners. Regents University Minnesota, summary, (available from Malaspina College)
- Sanders, P.**, 2002. *How to Start Managing your Farm/Woodlot*. Private course developed by Peter Sanders. (available in summary from SWP Malaspina College)
- Heiligmann, R.** *Forest Management – Developing a Plan to Care for Your Forest*. Extension brief, Ohio State University Extension (available from SW Malaspina College)
- Higman, S. et al**, 1999. *The Sustainable Forestry Handbook*. IIED/SGS, Earthscan Publications, London UK (ISBN 1 85383 599 4)

¹. The international system for monitoring sustainability of forest management (adopted by Canada) involves the identification and measurement over time of specific indicators as a way for a forest manager to demonstrate how they are sustaining various forest values. The Canadian Council of Forest Ministers has adopted an international set of criteria and indicators for use at the National level and these can be used as a guide for application at the local woodland level. See section 'Recommended References.