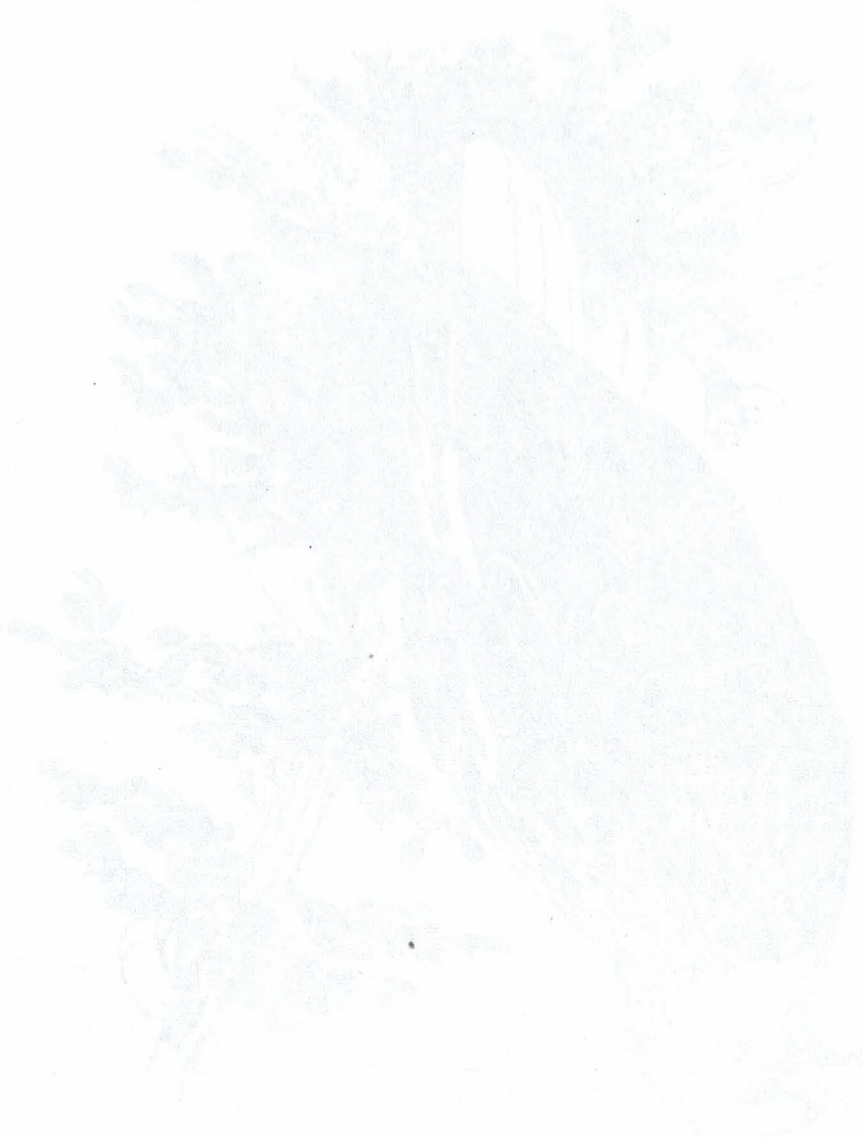
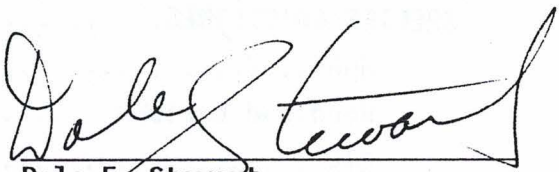
Forest Management Guidelines for Wildlife in Manitoba

December 1989

Manitoba
Natural Resources



These "Forest Management Guidelines for Wildlife in Manitoba" have been developed by an inter-Branch Committee of the Department of Natural Resources. They will serve as a guide to resource managers of all sectors in forest management planning and will promote the integrated management of these important resources. It is my intent to have these guidelines followed as closely as possible while recognizing that there will be reasons to modify their application in special situations.



Dale F. Stewart
Deputy Minister
Department of Natural Resources

TABLE OF CONTENTS

LIST OF FIGURES

OBJECTIVE

These guidelines are provided to enhance communication and cooperation between the Wildlife and Forestry Branches and the forest industry for the integration of forest and wildlife management activities in Manitoba.

INTRODUCTION

The forest industry, although not having direct responsibility for wildlife management, through its activities can affect, both positively and negatively, many wildlife species. Wildlife and forest management concerns have intensified as the demand for timber increases and more remote timber stands are accessed.

The principle of range balance is that for each animal species there is an ideal mixture of food and cover producing habitat. Because of the importance of range balance, much of the effect on wildlife from logging depends on the mixture produced. Size and shape of cut areas and uncut residual stands, location of cut and uncut areas in relation to the topography and species composition of uncut stands all affect range balance (Telfer, 1974).

Forest management from a wildlife perspective involves all activities associated with harvesting and forest renewal including access roads and size, configuration, and timing of cuts. These activities have had an increased impact as a result of increased demands and accelerated forest renewal activities through such programs as the Canada-Manitoba Forest Renewal Agreement and forest licensing and management agreements with major timber companies. These are being conducted on large tracts of land throughout Manitoba, much of which is prime wildlife habitat. Wildlife management concerns centre on increased road access to wildlife populations and the alteration of essential habitats.

Manitobans have sent a clear signal that wildlife is important to them and there are a number of examples to illustrate the point. Manitobans harvest and consume roughly 2 million kilograms of wildlife annually. Wildlife yields direct and indirect income from hunting, trapping, tourism and associated industries and provides recreational hunting for over 80,000 people (Manitoba, 1983). In addition, Treaty Indians rely upon wildlife for a significant portion of their food, income and cultural enrichment. Non-consumptive use of wildlife is very important to Manitobans and almost 18% of Manitobans reported they participated in non-consumptive wildlife related trips while 80% stated wildlife was important to them (Filion *et al*, 1981).

There is a strong and increasing demand for the use of wildlife resources by Manitobans. It is the responsibility of the Department of Natural Resources to manage these resources to meet present and future needs.

This responsibility requires that forest resources are managed to provide for economic opportunity on a sustainable basis while maintaining wildlife habitats to support or enhance wildlife populations.

These Guidelines have been cooperatively developed in consultation with Forestry, Wildlife, Parks, Fisheries and Regional Services Branches of the Department of Natural Resources. Application of the guidelines in all phases of forest management planning will aid in the integration of forest and wildlife management in Manitoba.

It is accepted that it will not be possible to manage for all species of wildlife on the same land base. In specified areas, local decisions will be made as to which wildlife species warrant special attention. In many cases other wildlife will often be accommodated, to some degree, under this selected species concept. The overall intent is to ensure communication and cooperation between the Wildlife and Forestry Branches and the forest industry in planning forest and wildlife management activities with optimum benefit to and minimum loss of both timber values and wildlife habitat. Through contemporary timber management, a diversity of age classes and species of timber will be maintained to provide habitat for wildlife to help ensure that healthy populations of wildlife are passed on to future generations of Manitobans.

Requirements beyond these guidelines may apply in specific areas such as Wildlife Management Areas and Provincial Parks. These guidelines do not replace guidelines currently prescribed by other branches, for example, "Recommended Fish Protection Procedures for Stream Crossings in Manitoba". As new information about forest management/wildlife interaction becomes available it will be considered for inclusion in future revisions of these guidelines. Forest industry personnel, contractors, and others needing assistance in interpreting or implementing these guidelines are encouraged to contact the Regional Forester or Regional Wildlife Specialist at their nearest Department of Natural Resources regional office.

GENERAL GUIDELINES

The following guidelines have general application for all forest management activities and shall be incorporated into all forest management and forest renewal plans. The guidelines shall apply wherever reasonable and practicable. Deviations from the guidelines will require jointly approved prescriptions by the regional forester and regional wildlife manager.

Access

Location and duration of roads must be addressed early in the forest management planning process. Whenever possible, access should consist of seasonal roads. Consideration should also be given in special circumstances to restricting public access on forestry roads entering sensitive resource areas.

All Weather Access (Built-Up Grades)

i) Roads should not be constructed parallel to water courses. Where this cannot be avoided, the road shall be constructed as far as possible from the water's edge.

ii) Where practical, line of sight along roads should be minimized (up to 1 km).

iii) Visual barriers are required on all weather access roads and may include regenerated areas, topographical features, cutting block design, and unmerchantable or young stands.

iv) Roads will avoid identified unique and sensitive wildlife habitats.

v) To encourage wildlife use of cut blocks, main access roads should be located outside of the cut blocks, where possible.

Seasonal Roads (Winter and Ungraded Roads)

i) Roads should not be constructed parallel to water courses. Where this cannot be avoided, the road shall be constructed as far as possible from the water's edge.

ii) Line of sight along roads should not exceed 1 km where practical.

iii) Roads will be rendered temporarily impassable after timber removal and renewal operations are completed.

iv) Winter access should follow unproductive forest cover types.

v) Guidelines for all weather access roads will apply to all long term (3+ years) winter roads in sensitive wildlife areas.

Timber Harvesting

Timber harvesting operations have varying impacts on wildlife depending upon the method and design of cutting, timing of cuts, and the habitat requirements of individual wildlife species. Wildlife concerns are generally related to design of harvested areas and limited incorporation of features which will benefit wildlife.

Operating/Cutting Area Design

Operating/cutting areas should incorporate the following guidelines.

i) Cut blocks should have irregular boundaries to break line of sight and maximize edge effect to benefit wildlife.

ii) Distance to thermal or escape cover should not exceed 200 m and line of sight within cutover should not exceed 400 m. Visual barriers to break line of sight may include regenerated areas, topographical features and unmerchantable or immature stands.

iii) A minimum of 20% cover should be maintained in any operating area.

iv) If less than 50% cover is maintained in an operating area, then an adjacent leave area of equivalent size to the operating area should be maintained.

v) When less than 50% cover is maintained, the size of operating area should not exceed 5 km^2.

vi) Leave areas may be harvested when adjacent cutovers have regenerated to a height of 2 m in softwoods and 3 m in hardwoods to provide cover unless otherwise jointly prescribed.

vii) Selective harvesting by joint prescription is permitted adjacent to water bodies. Clear cutting should not occur within 100 m of water bodies except by joint prescription. To protect important wildlife habitat, additional width of leave area may be required.

viii) Where safe to do so, snags should be left standing, subject to the provisions of the Workplace Health and Safety Act.

ix) Where unique or sensitive areas are identified, special prescriptions or species guidelines will be required. Examples of such are: colonial nesting sites, critical wintering areas, mineral licks, and calving sites.

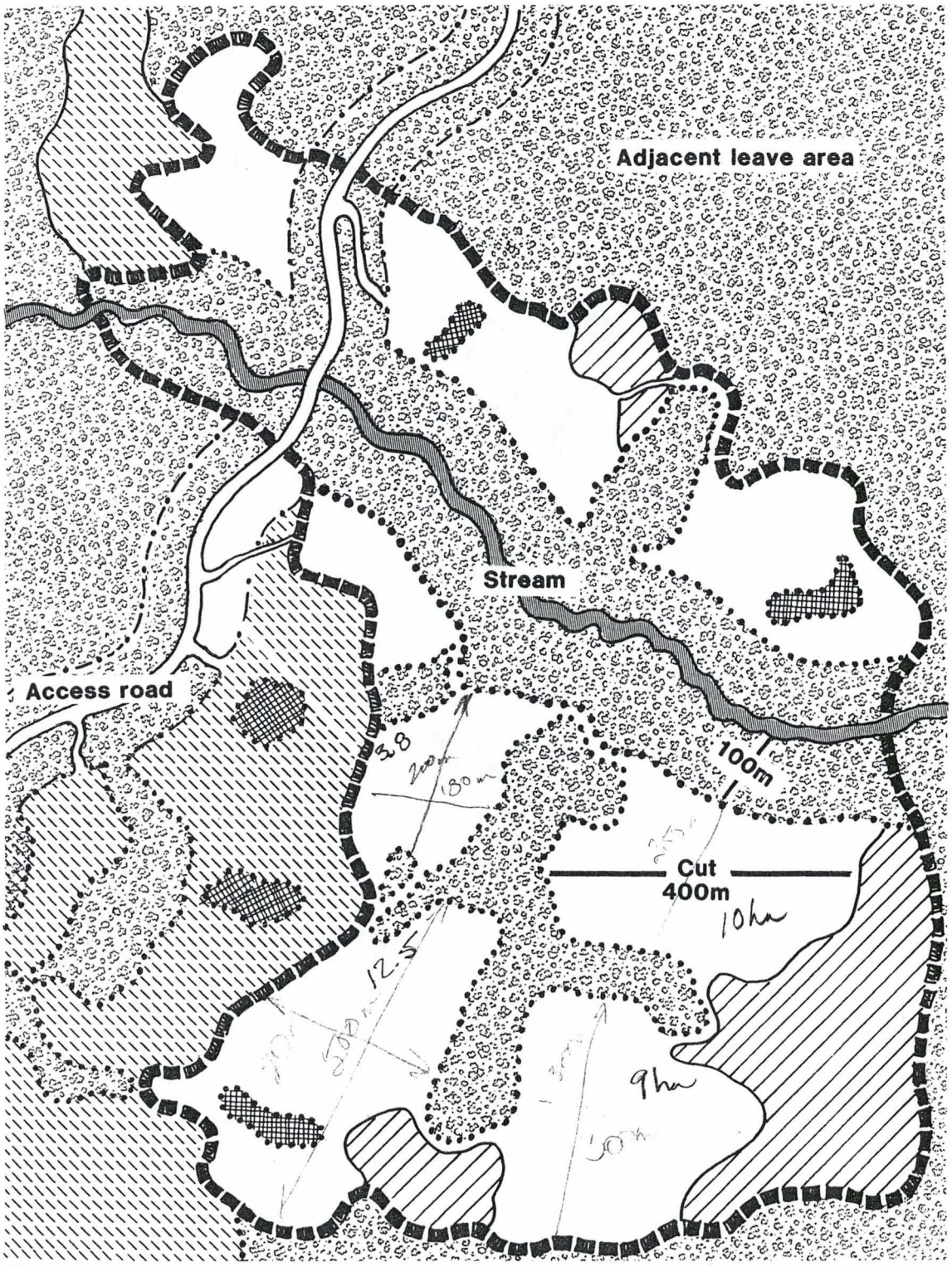
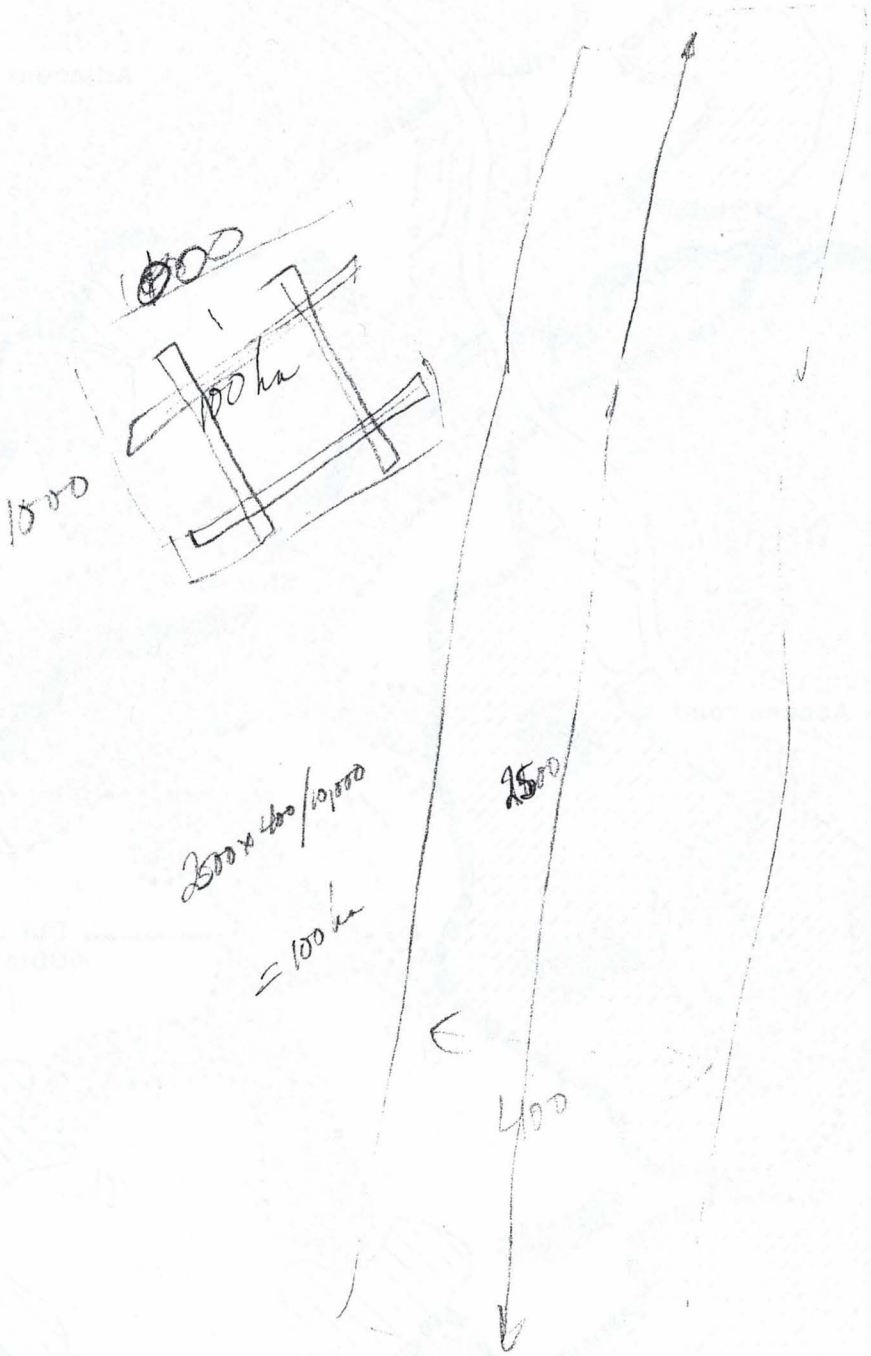


Figure 1 demonstrates an example of a timber operating area which incorporates the guidelines into the cutting block design.

- Visual Barriers (may include 700-899)
- Wind firm cover and leave areas (1-699 cover types)
- Cut Area
- Mixed wood cut overs (50% cover remaining)
- 10+ year old regenerated cutting area
- Boundary of Operating Area
- Boundary of wind firm cover and leave areas
- 100M residual or regenerated buffer


1000
100㎡
1500
2500×400/10000
=100㎡
2500
400

Forest Renewal

Natural regeneration on cutover forest areas should be encouraged wherever possible. This provides for maximum diversity in the forest community, thus providing the most benefits to wildlife.

Planting

Softwood plantings should not exceed the original (pre-cut) level of softwood composition. This can be achieved by silvicultural methods that result in the appropriate softwood composition (illustrated in Figure 2) such as.

i) modified block plantings and regenerated areas;

ii) alternate strip method;

iii) modified plantation spacing.

Planting of species native to the area will be encouraged.

Site Preparation

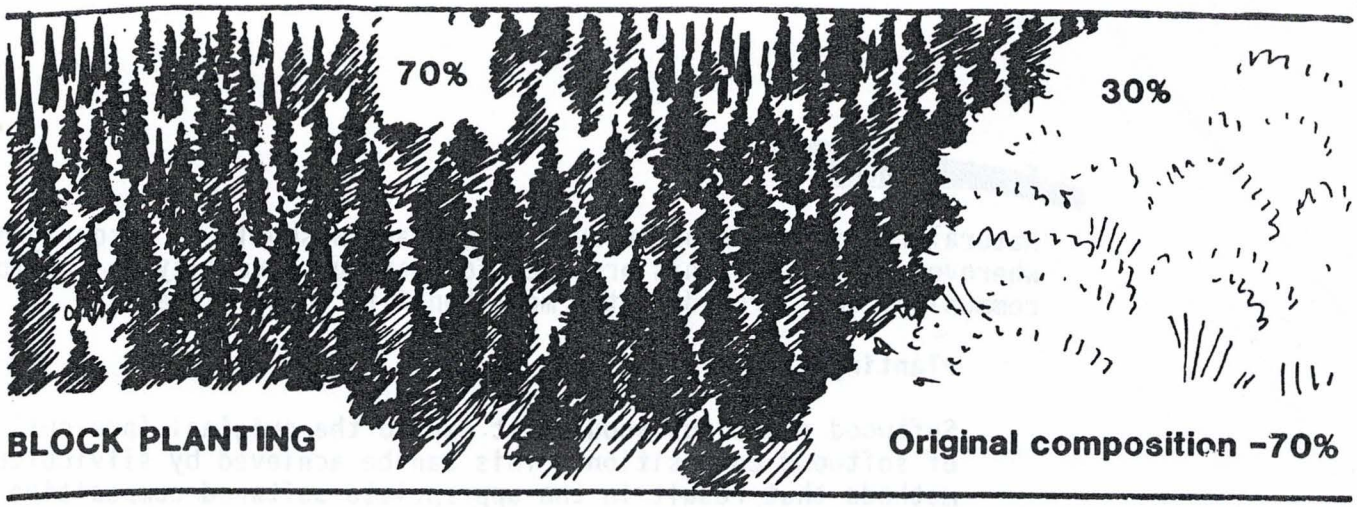
i) Backlog areas designated for reforestation shall incorporate guidelines prescribed for cutting block design.

ii) Scarification for natural regeneration shall occur in accordance with the prescribed cutting block configuration.

iii) Scarification techniques should be designed to produce reasonable depth of furrows.

iv) Alternate strips should be designed to
- have irregular boundaries
- avoid straight lines
- be parallel to any water courses or roads
- have breaks in brush piles at least 10 m. in width, at 100 m intervals
- have brush piled in prepared strip rather than leave strip.

v) Herbicide treatment for site preparation may occur only by joint prescription and in accordance with the Environment Act.



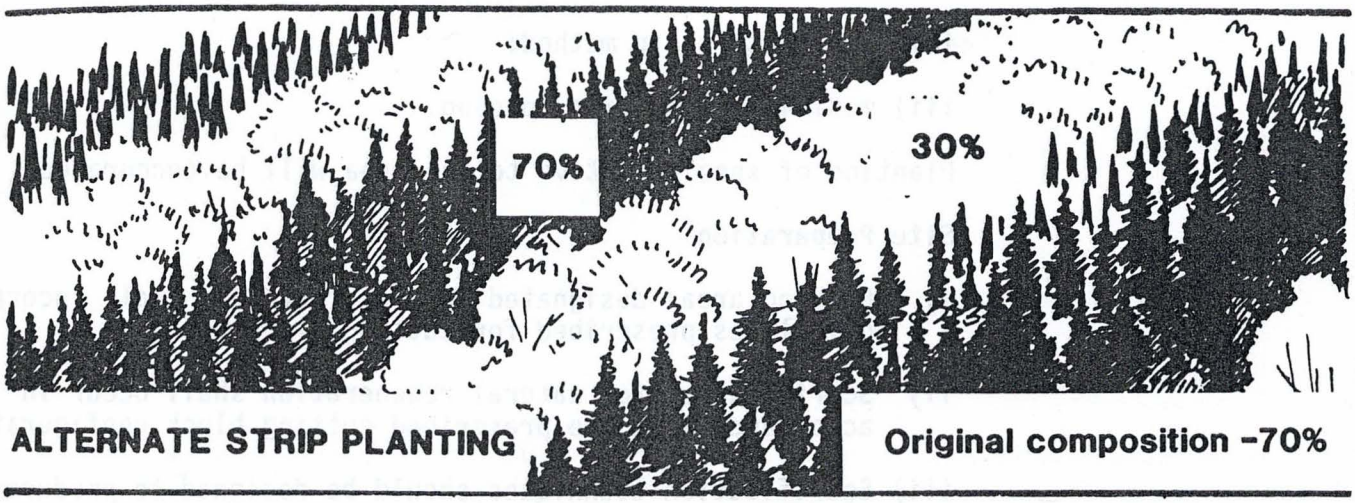


Fig. 2 Silvicultural methods to maintain hardwood composition in reforested areas.

Tending

i) Manual (mechanical) tending will be recommended over chemical tending. There will be no restrictions on manual tending, provided it conforms to previous stocking rates and general site preparation guidelines.

ii) Only manual or mechanical tending should occur on juvenile stands (7+ years).

iii) Pesticide applications will be evaluated on a site by site basis by joint prescription. Requirements of the Environment Act must be met.

SPECIES GUIDELINES

The following guidelines will be applied in special areas by joint prescription.

Moose

Guidelines described in the General Guidelines section will apply in all areas to accommodate habitat requirements of moose.

i) A minimum of 50% cover should be maintained in any operating area on identified critical winter range.

Woodland Caribou

Woodland caribou are limited in distribution in Manitoba in relation to forest type. Because the species depends on mature and overmature forests, logging and silvicultural activities can seriously impact important caribou range. The following general guidelines are recommended to protect woodland caribou habitat.

i) Maintain a minimum of one-third of the area as blocks of mature and overmature forest (60-80 year jackpine, 80-100 year black spruce) within critical caribou winter range.

ii) Leave blocks should be a minimum of 1 km^2 in size.

iii) Special prescriptions are required on some ranges such as critical winter range, rutting areas, and calving areas. These prescriptions may include buffer strips, temporary access, avoidance of an area, etc.

Elk

Behavioral and differential habitat requirements dictate that in elk range, the following special guidelines should apply to forestry operations.

i) All cuts should incorporate irregular boundaries to break line of sight and maximize edge effect to benefit elk.

ii) Distance to cover should not exceed 200 m and line of sight should not exceed 400 m.

iii) Operating areas should not exceed 2.5 km^2 in size.

iv) A minimum of 50% cover should be maintained in any operating area on critical winter range, and a minimum of 20% cover should be maintained in other areas.

If less than 50% cover is maintained in an operating area, then an adjacent leave area of equivalent size to the operating area should be maintained.

v) Leave areas may be harvested when regeneration in operating areas has reached 2 m in softwood stands and 3 m in hardwood stands.

vi) Slash should be burned within cut block areas to clean up debris and stimulate new growth of grasses, forbes, shrubs and saplings. If burning is not possible, slash should be reduced in height to as low as possible.

vii) Unique areas such as mineral licks, calving grounds, wallows, feeding meadows require a minimum buffer of 200 m.

viii) Access roads should remain at least 200 m from any major feeding meadow or opening.

White-Tailed Deer

White-tailed deer generally occupy smaller ranges and can often be affected by even small scale logging operations. The following guidelines are recommended.

i) Cut block areas are not to exceed 8 ha within critical deer range such as important wintering areas.

ii) Operating areas should not exceed 1 km^2 in size and no more than 50% cover should be removed in important wintering areas.

Many species of wildlife will benefit from application of both the general guidelines and species guidelines for large animals. However in areas of special importance identified by regional wildlife managers, the following guidelines are recommended.

Furbearers

Species of furbearers such as marten, fisher and lynx depend upon mature forest habitats to survive. Other species such as beaver, mink and weasel depend upon productive riparian zones of habitat for feeding and raising their young.

The general guidelines will largely accommodate the needs of most furbearers. In critical habitat areas for species such as lynx, marten and fisher, special joint prescriptions may be implemented. The Regional Wildlife Specialist shall identify special areas and joint management prescriptions for these areas shall be developed.

Raptors, Passerines and Colonial Nesting Birds

Guidelines as recommended in the general guideline section will largely

accommodate the needs of raptors (hawks and owls) and passerines (song birds). The protection of snags is especially important for nesting and perching sites. In addition, at least 100 m buffers should be retained around active eagle and osprey nests. In certain areas, blocks of mature cover may have to be retained to accommodate nesting great grey owls.

Great blue herons depend upon forests and riparian zones for nesting, feeding and resting areas. The following guidelines are recommended to help protect habitat important to colonial nesting birds.

i) No cutting should occur within 200 m of any colonial nesting site.

ii) No clear cutting should occur within 200 m of the water's edge of important riparian zones. However, selective cutting may occur within the 100 m zone as jointly prescribed by the regional forester and wildlife manager.

Waterfowl

The following guidelines are recommended to help protect waterfowl habitat.

i) Riparian zones, including beaver floods, will be protected as per guidelines. Shorelines and riparian zones adjacent to water bodies in forested areas represent the most important area to breeding waterfowl.

ii) All forest operations should be set back a minimum of 100 m from the water's edge.

iii) Wherever possible, snags should be left standing to provide nesting sites for wood ducks, common goldeneye, bufflehead, and other cavity nesters.

iv) Logging slash should not be piled within the 100 m buffer surrounding wetlands.

v) No forestry operations will be allowed on grassland or open brush land within 300 m of water bodies.

Upland Game Birds

Forest harvest activities in general benefit ruffed and sharp-tailed grouse as creation of openings in the forest provide feed and brood rearing areas. The following guidelines are suggested to help protect and enhance grouse habitat.

i) Cut blocks should not exceed 16 ha in size for ruffed and spruce grouse.

ii) Cut blocks up to 40 ha in size will benefit sharp-tailed grouse.

iii) Planting of conifers in natural forest openings or abandoned fields should be discouraged.

iv) Stand diversity should be encouraged wherever possible to provide food and cover. Aspen and berry producing shrubs are important food sources for grouse.

IMPLEMENTATION

Integrated Management

In order to derive the most benefit from these guidelines, it is important to incorporate their use into all aspects of forest management planning. Review and input by all resource managers in implementing the guidelines will enhance benefits to all resources. Voluntary integration of these guidelines into resource management planning will be far more effective than relying on enforcement of the guidelines at the field level.

Review and Approval Process

i) Proposed forest management plans or revisions will be submitted to the Wildlife Branch at least three months (90 days) prior to Departmental approval of the plan.

ii) Wildlife Branch will provide their comments within 20 working days.

Appendix I

ACKNOWLEDGEMENT

This document was prepared and reviewed by the following committees:

Manitoba Wildlife Branch-Forestry/Wildlife Guidelines Committee

R. Cameron
G. Collins
Dr. V. Crichton
D. Davies
C. Elliott
D. Robertson
D. Schindler
B. Gillespie

Manitoba Department of Natural Resources Joint Review Committee

K. Hill - Chairperson, Regional Services Branch
R. Lamont - Forestry Branch
D. Lamb - Forestry Branch
R. Cameron - Wildlife Branch
G. Collins - Wildlife Branch
M. Gaboury - Fisheries Branch
B. Watkins - Parks Branch

<u>Illustrations</u>

J. Carson

Appendix II

LITERATURE CITED

Filion, F.L.; James, S.W.; Ducharme, J.L.; Pepper, W.; Reid, R.; Boxall, P.; and Teillet, D. 1981. The importance of wildlife to Canadians. Forty-Seventh Federal-Provincial Wildlife Conference, 40 pp.

Manitoba Department of Natural Resources. 1983. Five-Year Report to the Legislature on Wildlife. Manitoba Department of Natural Resources, Wildlife Branch, Winnipeg, Manitoba, 150 pp.

Manitoba Department of Natural Resources. 1984. Recommended Fish Protection Procedures for Stream Crossings in Manitoba. 46 pp.

Telfer, E.S. 1974. Logging as a factor in wildlife ecology in the boreal forest. Forestry Chronicle, Vol. 50, No. 5.

Appendix III

GLOSSARY OF FOREST-WILDLIFE TERMS

ALTERNATE CUT METHODS:
The practice of cutting large contiguous stands of forest in blocks or strips and alternating the cut blocks with uncut blocks or strips.

BACKLOG AREA:
An area which was harvested of softwoods and left to regenerate. At the present time, the area is typically a mixed wood stand with a softwood component that is less than the maturing hardwood component.

BUFFER:
i) A windfirm strip of trees of sufficient height and density to act as a visual barrier between a cutover and a road.

ii) A windfirm area of forest left around a sensitive site, eg. riparian buffers include that area of forest not cut along water courses; area of uncut forest around a heron colony.

CLEARCUT:
A method of cutting where all merchantable stems of the operational species are removed.

CORRIDOR:
A windfirm strip of forest left between cutovers. It is usually of greater width than a buffer.

COVER:
Forest cover types 1-799 that provide a windfirm visual barrier, or selectively harvested forest cover types 1-699 which provide adequate thermal cover (50% or more crown closure), or regenerated areas that have reached 2 m in height in softwood stands and 3 m in height in hardwoods.

CRITICAL HABITAT:
A habitat type which is necessary for a wildlife species to exist in an area; or habitat required for a rare or endangered species to exist.

CUTTING BLOCK:
The actual stand or block of trees cut.

CUTOVER:
An area harvested of timber by some cutting method such as clearcutting or selective cutting.

DIVERSITY:
A variety of habitat types including stands of forest of various stages of succession and maturity, and forest openings intermixed in close proximity.

EDGE:
The interface of standing forest and a forest opening or early successional stage.

FOREST RENEWAL:
The active management of an area aimed at replacing harvested timber with new stock of a desired species.

IMPORTANT HABITAT:
Habitat required by a wildlife species and which affects the population attainable by that species. The absence of this habitat will not necessarily prohibit the species from occurring in the area.

INDICATOR SPECIES:
A species which has a narrow range of conditions in which it can survive and by its relative abundance indicates the environmental health of an area.

HERBICIDE:
A chemical agent which kills a specific type or broad range of vegetation.

OPERATING/CUTTING AREA:
The general area in which cutting is occurring or scheduled to occur. (Also called "proposed areas of operation".)

NATURAL REGENERATION:
Regeneration of a cutover by natural seeding with or without mechanical treatment. No planting of stock occurs.

PRESTICIDE:
Includes all compounds that control plants (herbicides), insects (pesticides), plant diseases (fungicides and bactericides), nematodes (nematocides), and rodents (rodenticides).

RARE, THREATENED OR ENDANGERED SPECIES:
Those species listed as such on the COSEWIC list.

RIPARIAN HABITAT:
The zone of vegetation next to a lake, stream or wetland.

SITE PREPARATION:
The treatment given a cutover to enhance growth of desired tree species prior to planting. It includes scarification such as dragging chains, plowing, trenching, discing, broadcast burning, shear blading and bracke.

SNAG:
A dead standing tree within a cutover. Also included is the term chicot.

STAND CONVERSION:
Converting a stand of one species of trees to another species of trees, eg. killing standing poplar by some method and converting the area to a stand of spruce.

VISUAL BARRIER:
Any physical obstruction to line of sight.