

Sustainable Forest Management for Timber, Furbearers and Forest Biodiversity

a guide

for trappers, furbearer and forest managers

MARCH 2006

FUR INSTITUTE OF CANADA
INSTITUT DE LA FOURRURE DU CANADA

Photo credits:
Fur Institute of Canada and the Canadian Model Forest Network

ISSN number 0-662-42938-9
Cat. No. Fo94-7/2006E

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About the Fur Institute of Canada

The overall mission of the Fur Institute of Canada is to promote the sustainable and wise use of Canada's fur resources.

The Fur Institute of Canada, a national non-profit organization, has acted as a round table for fur trade, animal welfare and furbearer conservation issues since 1983, and is the coordinator for overall implementation of the Agreement on International Humane Trapping Standards in Canada.

The Fur Institute of Canada is an active member of various international and conservation organizations, including the International Fur Trade Federation, IUCN (World Conservation Union) and the Association of Fish and Wildlife Agencies.

Every province and territory, the federal government, and all sectors of the fur trade along with Aboriginal organizations, conservation and animal welfare groups and support industries, are represented in the Institute membership and on the Board of Directors.

Chairman's Message

On behalf of all the trapping organizations, government departments and forest companies who participated in the questionnaire and subsequent reviews, the Fur Institute of Canada dedicates this publication to those individuals who have and will continue to make a difference in retaining our enormous furbearer resource and associated habitats across Canada.

You have demonstrated that we have the tools and imagination to truly achieve sustainable forest management. We have developed this "common ground" approach to ensure that others can follow in your footsteps.

We thank the Forest Products Association of Canada for their assistance and the Canadian Model Forest community for their initial funding support in the collection of background information.

Chris Heydon, Chairman
Conservation Committee

Introduction

In 2001, the Directors of the Fur Institute of Canada started to examine the extent of actual furbearer conservation in the context of forest management practices across Canada.

In many parts of Canada, trappers are assigned the rights to manage and harvest furbearers on individual traplines. However, they have neither direct responsibilities nor mechanisms to manage the habitats that support these same furbearer populations.

For the past decade, foresters have managed Canada's vast forests under a sustainable management paradigm that recognizes the need to balance all social, economic and environmental interests. This commitment has been strengthened with the recognition of the underlying need to retain the ecological integrity of the forests. It has also become increasingly relevant as forest companies seek certification of their management practices to retain their "social licence" and satisfy international consumers.

A strong element within certification processes, which is also reinforced in the National Forest Strategy, is the conservation of wildlife and wildlife habitat, managed through effective consultation. However, recognition within certification processes of the importance of furbearers as a prime indicator of forest health and status of biodiversity is almost nonexistent. So too, is recognition and accommodation of trappers' interests in furbearers and their habitats.

The purpose of this document is therefore to illustrate how trappers and the trapping industry are an integral part of sustainable forest management, and that several furbearer species could be used as indicators of our collective success in achieving sustainable forestry. We also provide guidance, establishing common ground among trappers, operational foresters and government resource managers, and thus advance furbearer management in forested areas.

This report illustrates the extent of existing habitat inventory, planning and evaluation tools that are available to successfully manage furbearers and their habitats. Although recognizing scientific principles as a strong component of management, this is not a scientific document but rather written to encourage all interests to find common ground in achieving the sustainable management of furbearers within the forested landscape.

Furbearers and biodiversity

Imbedded in conservation of furbearers is the conservation of biodiversity and the ecological processes that support that biodiversity. Furbearers depend on other species; lynx on snowshoe hares, marten on mice and beaver on aspen. Each species belong to a diverse community that depends on habitat conditions. Habitats change from one forest successional stage to another and are therefore inextricably linked to forest management.

Generally where furbearers are strongly represented in an area, biodiversity is being maintained and ecological processes are providing suitable ranges of habitat over time and space. Our goal in furbearer management is then to maintain furbearer populations in sufficient abundance to retain this biodiversity and sustain harvests over the long term.

The approach

An initial survey, conducted in 2001, attempted to discover and document examples of proactive forest management that assisted the trapper and enhanced furbearer populations and/or their habitats. Because few specific examples could be found, five of the Model Forests within the Canadian Model Forest Network, a program funded by Natural Resources Canada, supported the distribution of a questionnaire, circulated in 2003-04, to trapper associations, forest industry representatives, and forestry and wildlife department officials to further examine issues affecting trappers' interests in a sustainable forest management context.

The four overall conclusions from the analysis of responses to the questionnaire circulated highlight the need for cooperation and information.[1] In summary:

1. All interests recognized there is limited investment in furbearer management across Canada's forested landscapes despite the evidence trapping often exceeds the economic return from logging over an 80-year rotation period. Northern and Aboriginal interests appear to have been the most successful in incorporating proactive furbearer management practices into forest management plans.

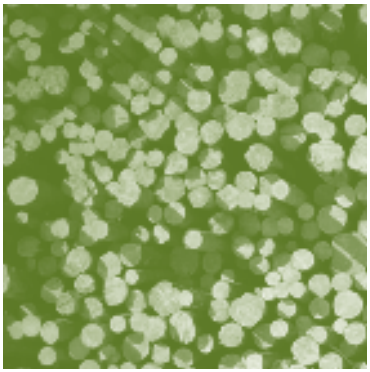
[1] A more detailed analysis of the responses from the questionnaire can be obtained from the Fur Institute of Canada.

2. Despite Canada's unparalleled success in demonstrating sustainable resource management from centuries of furbearer conservation efforts, there is only a limited current effort to retain habitat targets and these are poorly coordinated within forest management programs, most often as an incidental "by-product" of the forest. Most forest managers suggested there is ample habitat for furbearers with current forest cutting practices. Yet,

   - there are limited population or habitat inventories conducted across Canada;
   - there are very limited furbearer and/or habitat objectives (despite industry's certification programs which include the need to achieve stated habitat objectives in demonstrating sustainable forest management);
   - there is a focus almost entirely on endangered species and pine marten (as an indicator of wildlife associated with older-age forests);
   - there has been limited research which would permit the development of habitat models and subsequent assessment of forest management activities despite trappers' local knowledge of the impact of logging operations; and,
   - many furbearer species have been inadequately studied to understand how forest management may affect their populations, especially lynx, fisher, mink, ermine, otter, beaver, wolverine and red fox.

3. The trapping industry has valid concerns that the forest is well managed from a furbearer habitat perspective. However, there is an extremely checkered approach to the recognition of trapper's interests within forest planning and in the extent of mitigative practices. For example, compensation from loss of revenue following timber harvesting is limited to certain provinces and territories for various purposes (from loss of equipment to loss of revenue) and by various interests (from government to industry). There are some provincial/territorial requirements for trapper consultation, yet trappers are rarely formally involved in proactive forest management. Their participation has generally been limited to reacting to individual land-use plans at public meetings. Some jurisdictions are not even able to release names of trappers to appropriate industry representatives, despite trappers having a legally vested interest in the forest. Local mitigative strategies also vary between forest companies and individual trappers, with only occasional success in cooperative management of critical habitats.

4. Trappers are interested in participating in inventory programs that would provide some of the necessary information to manage trapping areas and furbearer populations. The Fur Institute of Canada publication "*Trappers: Stewards of the Land*" reflects this interest. There is interest among trappers to document changes in furbearer distribution and harvest as well as the impacts of habitat disturbance through forestry operations. Clearly the planning and verification tools are partially in place across Canada to engage the deep and extensive trapper knowledge in achieving proactive furbearer management. The challenges of integrated resource management often are just formalizing existing tools, encouraging active participation and ensuring that the results are of benefit to all.



Sustainable Forest Management for Timber, Furbearers and Forest Biodiversity

This report was developed to help trappers and forest managers identify initial management activities that are reasonable, feasible and productive. It should be used primarily as a starting point for discussions among resource managers at the operational level. It is intended to ensure that the future of trapping and the stewardship of furbearers within our commercial forest are maintained, recognizing that all of us have rights, and equally, responsibilities.

Our intention is to build relationships and avoid future problems. The focus is therefore on mitigative efforts rather than accepting compensation to offset the adverse effect of forest activities. We also recognize the great variation in forest management approaches across Canada and that there are large forested areas without logging activity and provinces that do not assign specific areas of crown land.

Situation Analysis

Trappers are partners in sustainable forest management — by default or by design

There is considerable policy, legislation and industry commitment to protect trappers' interests when their trapping area is going to be affected by a proposed logging operation (or other major disturbance). Trappers often are unaware of the breadth of these legal and policy commitments, nor of the level of interest by many companies to achieve an amicable agreement that satisfies all interests under the existing sustainable forest management paradigm. Government agencies have not provided the necessary resources to ensure that furbearer interests, including trapline management, are considered as an integral element of current land-use planning processes. Forest companies appear to have relied on formal public consultation processes, often in urban centers. And often, trappers have not successfully linked trapping rights with associated responsibilities. As parties meet to discuss proactive approaches to furbearer and trapline management, they need to build on the following forces that should bring trappers and foresters together.

Trappers understand that the future of trapping is not in jeopardy, as a whole, as result of logging activities.

Sustainable forest management by definition means the landbase continues to grow productive forests, although the amounts of early seral stages are normally greater than in naturally disturbed forests. Only about 40% of forest management areas will eventually be logged because of the establishment of parks (8.5%), buffer and wildlife reserves (14%) and the extent of non-timber productive areas (40%). However, there is generally no explicit requirement to maintain habitat for individual furbearer species, and the need exists to examine the spatial and fine-scale habitat requirements for many of these species for planning processes. There is still a great opportunity to embark on proactive furbearer conservation programs with approximately 40 to 50% of Canada's forest being outside the existing commercial forest zone. In many ways, the most extensive limitations to trapping continues to be land-use decisions designating protected areas with limited effective trapper involvement.

The impact of timber harvest on forest furbearers varies among species and harvesting practices, at both the stand level and the overall forest landscape patterns produced from forest operations.

Very simply, predators depend on various prey that may or may not respond favorably to logging operations. For example, hare and grouse increase with logging, which is advantageous to predators, such as lynx, coyote and fox. The wolf depends on deer, moose and beaver that all do well in landscapes with early successional forest habitats and winter range. Marten populations generally decline after logging due to changes in prey abundance and accessibility as well as the loss of overhead cover (hunting and denning habitat). These effects can be enhanced or mitigated by the secondary benefits of increased access for trappers during harvesting and subsequent site treatments used to meet tree regeneration requirements. Unfortunately, requirements for many other furbearer species are not well understood.

Trappers rightfully can claim that they are, in part, stewards of the land in relation to their trapline.

The authority for a business to remove furbearers from the forest is no different than the right of other resource interests to extract other resources such as wood products. No one person owns the forest that is held in a custodial trust by government. The principle of first occupancy not being affected by other resource interests is well established in other resource sectors. Unfortunately, government agencies tended to ignore this principle during their long-term allocation of wood from designated forest lands and even more vividly in the allocation of mineral and petroleum exploration and development activities. Partial recognition of this principle does exist with the scattered compensation programs for trappers' direct and indirect losses and in the increasing recognition of trapline interests within Aboriginal land claims. Sustainable furbearer management carries all the hallmarks of sustainable forest management but differs in that rotation ages are much shorter for furbearers and that their habitat is nested within forest management regimes. Trappers should be proud of their history and ongoing contribution to forest conservation as identified in the publication "*Trappers: Stewards of the Land*". However responsibilities are always associated with rights. Trappers need to demonstrate a much greater ability to document the distribution and abundance of furbearers within their trapline, their furbearer management approach, as well as their clear long term commitment to sustainable fur management (three ingredients of any successful stewardship program that maintains populations of furbearers in sufficient abundance to sustain harvest).

In practice, the forest industry is the major steward of the forest.

This sector has become committed to demonstrating sustainable forest management by assuming a high proportion of forest conservation costs (with a tripling of their management budgets during the 1990s and by becoming a large employer of biologists). Canadian forest managers potentially have a unique opportunity to retain the diversity of species throughout their natural ranges. The establishment of protected areas is now seen as an integral component of a landscape level sustainable forest management strategy. The adoption of voluntary certification processes by the forest industry has accelerated the need for measurable biodiversity objectives, but often constrained by the lack of appropriate inventories.

Historically, resource agencies have attempted to manage habitat on public land for a few key game species and those species of concern (vulnerable, threatened or endangered).

The recognition of the importance to conserve all species has grown with the signing of the Convention on Biological Diversity. However, budgets of the responsible management agencies have dwindled during the past 20 years, reducing their capacity to manage. There has been an on-going reliance on indicator/featured species to reflect the health of ecological systems, on forest companies to manage forest lands properly, a reduction in research activity, and a reduced capacity to monitor the effects of forest management. While furbearers are particularly important to this monitoring, as they are permanent residents with small ranges occupying various levels of the food chain, few are currently used as indicator species. Insisting on recognizing the importance of all furbearers is critical as evidenced by the current focus on the status of pine marten, a species that tends to inhabit moist coniferous and mixedwood forests in the later stages of succession. Trappers should be an integral component with wildlife agencies in both monitoring and working with forest companies to implement the necessary creative approaches to retain sufficient marten habitat to support populations abundant enough to sustain harvests.

The National Forest Strategy clearly defines the extensive array of policy and legal commitments across Canada that recognizes the economic and social importance of trapping as well as the retention of furbearers and their habitat.

The National Forest Strategy was developed and endorsed by a spectrum of governments, industry, labour and conservation interests. It outlines programs to ensure there is truly a consensus on the mix of social, environmental and economic benefits garnered from Canada's forests. For the first time, the new Strategy (2003 to 2008) recognizes the importance of incorporating trapper interests. Themes include:

- comprehensive, accurate inventories that include information on key forest values...
- forest use and management must maintain the diversity of plants and animals, ecosystems and landscapes…
- sustainable forest management recognizes a forest's potential to sustain a range of values and the needs and rights of all users...
- forest land tenure systems must balance rights with responsibilities, encourage sound stewardship...
- effective public participation in forest management and planning processes requires an open, fair and well-defined process…
- effective public participation requires current information from a variety of sources.

The delivery of the Strategy requires strong participation from all interests. In addition, the forest industry has adopted auditing of sustainable forest management under certification programs that are intended to ensure appropriate public consultation which should include the maintenance of furbearer populations and associated habitat.

Meeting in the middle

Sustainable management of furbearers and wood products is based on similar principles, planning and stewardship commitments. Both require:

- appropriate information as to the extent and distribution of the resource (inventory);
- a management plan to ensure that harvests do not exceed sustainable harvest levels;
- the adoption of a precautionary approach that recognizes uncertainty and the need to be adaptive to changes in markets, supply and technology; and
- each other's visible cooperation at the operational level to demonstrate sustainable management to their international customers.

Despite similarities between the two historic forest-based industries, and the clear support and opportunities to achieve proactive furbearer management, there is little evidence of cooperation. While the necessary ingredients are largely in place, what is missing? Clearly greater recognition of the economic importance of the trapping industry and trappers' rights to harvest forest products is important. Equally, is the willingness to meet in the middle.

left to right: Mike Waldren, Manitoba Model Forest, Stu Jansson, Manitoba Trappers Association, Bob Yatkowsky, Tembec Inc.

What are the forest community's roles in enhancing furbearer conservation?

With clear policy and legislative commitments to retain the integrity of forests for all forest values and associated sustainable use, how can the various interests ensure proactive furbearer conservation in forest management integrated with sustainable trapping programs? All managers have a role:

- the trapper, as steward of the furbearer resource on the land;
- the forest planner, manager and certifier who collectively manage the furbearer habitat by considering the needs of all interests;
- the trapper and industry associations that provide support in resolving market issues; and,the natural resource agencies, as the legal management authority in the allocation of all forest resources on public land.

Each manager should consider the following steps as considerations in building a proactive furbearer management program. The sum of these roles is not only additive in achieving sustainable furbearer management, they also improve sustainable forest management at the operational level.

Working together in a cooperative manner builds effective partnerships. All of these steps are doable, but presently, are carried out sporadically across Canada. Conducting one or more of these steps in isolation does not build the momentum needed to make real change.

Trappers

1. As stewards of a natural resource, there are many rewards and many responsibilities. The manner in which you discharge these responsibilities on a year-round basis establishes an important public image of trapping within your community. Trapping was Canada's second resource industry after commercial fishing. During the past four centuries, it has established a record of sustainable resource management with the maintenance of all furbearer species across their traditional (non-agricultural) range. It is imperative you be a knowledgeable advocate for furbearers and conservation practices, practice conservation using proper trapping techniques, and understand the extensive policy and legislative safeguards. And, as an advocate of the resource, you must be visible and provide needed trapping services to others on a year-round basis.

2. As stewards, your responsibilities must include intimate knowledge of your trapping area, the amount and distribution of furbearer habitat and relative population trends, and, on registered traplines, the development of a long-term management plan. These responsibilities are not as easy to achieve on private lands with open trapping systems, but can be achieved through collaboration between trappers and involvement in developing land-based plans. In either case, this means:

    - maintaining accurate records of harvest and trapping effort in each habitat type;
    - estimating population densities recognizing the great variation found within different habitats;
    - estimating sustainable harvests based on local knowledge;
    - reporting on local environmental changes (e.g. changes to forests from natural and human disturbances); and,
    - effectively assisting other local community sectors in furbearer management issues.

Without this information as the basis of a management plan, trappers should not expect equal recognition at the land-use planning table. And failure to demonstrate that the fur harvest is set at a sustainable rate limits justification for mitigation/compensation measures.

3. Recognize provincial/territorial furbearer managers have limited resources and your offer of assistance in rare and endangered species management, support of research programs and working with environmental indicators will strengthen your future management position.

4. Build bridges, not barriers. Meet forest managers and planners as others who have an equal interest in developing a win/win arrangement. Work with them in building your management plan. The net economic gain from wildlife can equal or exceed that from timber harvesting over a full rotation period. Timber harvest will have both positive and negative impacts on habitats and the distribution of furbearers. Many of these impacts can be mitigated with different silvicultural /harvesting techniques. Your goals can be met if you:

    - introduce yourself as the legal trapline manager;
    - clearly state your harvest records, expectations (objectives) and long term commitment;
    - identify the habitat features for different furbearers within your trapping area;
    - accommodate change with appropriate short term mitigation/ compensation assistance;
    - provide accurate information of equipment, sites and trails; and,
    - demonstrate willingness to respond to nuisance wildlife issues.

Public consultation meetings can only partially address your issues. With forest companies undergoing certification processes, you should meet privately with forest officials to resolve issues. Report any failure to provide sufficient notice of planned activities and/or refusal to meet with you to your provincial/territorial wildlife agency. The forest industry's efforts to demonstrate sustainable forest management particularly through certification processes should ensure you do not give up income.

Cooperatively Building Your Furbearer Management Plan

The abundance and diversity of furbearers within the forest is primarily determined by the available habitat and existing forest structure. Provincial/Territorial guidelines and objectives are designed to promote optimum forest diversity at the landscape level. However, this direction may be of limited value within specific trapping areas affected by natural disturbances, logging or other major human activities.

To cooperatively develop a management plan, the forest company representative and trapper must therefore:

- have intimate knowledge of the extent of forest types at different seral stages, and,
- link this knowledge to annual furbearer harvests that suggest sustainable harvest levels.

The following is a simple example of the ingredients within a management plan often used as a basis in determining compensation to trappers. This approach is particularly useful in demonstrating the economic value of wildlife over a forest management rotation period (e.g. 80 to 100 years). It is important to recognize the information is for marten on an average trapping area within the Boreal forest. Average densities and preferred forest habitat types vary extensively across Canada. For specific information within your province/territory, contact the appropriate agency listed in Appendix 2.

An example using marten in _____ (province)

1. Average provincial fall densities of marten in different habitat types:
   - one marten per 0.8 to 2.4 square kilometers in unharvested old forests
   - one marten per square kilometer in landscapes where logging has reduced old forests to a third of the area (from A. Harstead, pers comm., 2005.)
   - one marten per 5 to 12 square kilometers in logged areas (from Thompson and Colgan, 1987 and Thompson, 1994)

2. Estimated amount of marten habitat within trapping area from forest inventory maps:
   - amount of mature and overmature softwood and mixedwood forests (e.g., 700 square kilometers)
   - amount of early successional forest including clearcut areas (e.g., 300 square kilometers)

3. Calculation of estimated number of marten in the fall within trapping area:
   - 1.5 marten per square kilometer times 700 square kilometer equals 1,050 marten
   - 1.5 marten per two square kilometers times 300 square kilometers equals 150 marten
   - total population of marten estimated at 1,200 (1,050 and 150) over a 1,000 square kilometer area.

4. Determination of sustainable marten harvest at one different trapping rates:

    - 1,200 marten times 10% equals 120 marten that could be harvested sustainably per year
    - average harvest over past five years is 95 pelts per year
    - range in harvest over past ten years is 60 to 130 per year (Note: Fryxell et al. showed that trapping mortality rates of 35% had no adverse impact)

Similar calculations can be made for other furbearers recognizing densities vary widely within their ranges and the linkages to available food supply. Snowshoe hare populations, for example, oscillate from 5 to 5,000 hares per square kilometer over a ten-year cycle.

In summary, the development of a management plan by the trapper and forest company representative for a variety of species found within this trapping area will illustrate the extent furbearer harvests will be directly affected by logging and/or other major land disturbance. With the logging company's involvement, the trapper can negotiate mitigation measures and, as a last resort, submit a compensation claim.

Forest Company Officials

While recognizing the logistical difficulties in maintaining working arrangements with trappers, the success in managing furbearer habitat and ensuring sustainable fur harvests may be your best local indicator of achieving sustainable forest management. This is an indicator that can only become more central in future certification efforts. Steps required by planners, foresters and managers therefore should include the following factors:

1. Trappers have earned your respect with a history of over 400 years of fur management. Recognizing there have been periods of local over-harvesting, most traplines in most jurisdictions in Canada are now managed sustainably. Trappers should be considered as colleagues who can provide a variety of services, share intimate knowledge of local areas and issues, and be an important communication link to local communities. While they may be a member of your local Advisory Committees, they can also be a major advocate for your activities within the community.

2. Under any partnership arrangement it is important to have common goals, shared objectives and effective communication. When sharing a common land-base among multiple resource users, principles of mutual respect and cooperation are paramount. As the agent of forest change, your responsibility is to ensure trappers are welcomed at the planning stage in their local environment. Arrange to meet local wildlife agency staff along with affected trappers to discuss their sustainable furbearer management programs. It is important to recognize some trappers do not read at an advanced level, so direct contact is essential to exchange information.

3. Build bridges, not barriers. As colleagues, rather than competitors for the land base, use their local knowledge in the planning process and as aids to the development of furbearer management objectives. This might require the provision of some assistance from their colleagues and/or local association representative. Build in associated services such as control of nuisance wildlife, access planning and recording local environmental observations.

4. Be creative in developing harvesting options in areas of key furbearer habitat. While ensuring cabins and trails are adequately buffered, the key issue is retaining habitat supply. With a large proportion of commercial forests designated as non-timber productive and as wildlife/buffer areas, there should be limited costs in being creative to meet trapper specific objectives. In those few cases where there is going to be significant disruption, consider short-term compensation measures (including training and equipment costs to adapt to different trapping situations). In some cases, this might include funding trappers to assist in research and monitoring programs.

Trapper Organizations

Local and/or provincial/territorial trapper organizations must focus on the need for a proactive furbearer conservation program as an element of sustainable forest management. This requires promoting this issue at annual and other meetings and when meeting provincial/territorial officials.

Immediate steps include:

- regularly advise provincial/territorial ministers about issues and progress with the submission of annual assessments and recommendations;
- ensure government forestry and wildlife officials work together to develop adequate mitigative/compensatory programs;
- provide individual trappers with assistance in reporting and resolving land-use conflicts;
- provide training sessions on developing furbearer management plans;
- ask wildlife officials to provide you with basic information such as average densities of animals and sustainable harvest rates;
- ensure management plans for furbearers and their habitat are scientifically based and, where information is lacking, encourage appropriate research programs;
- ensure the provision of provincial/territorial habitat objectives for all furbearer species;
- recognize exemplary trappers under the Forest Stewardship Recognition program;
- interpret habitat and compensation guidelines to individual trappers;
- seek out opportunities to promote furbearer management issues and opportunities, such as at environmental hearings; and,
- in "open" (non-trapline) harvest systems, insist on collaborative development of land units based on species management plans in cooperation with local wildlife managers.

Build bridges, not barriers

While the focus should be at the provincial/territorial level, there need to be local trapper association meetings with local forest company officials held on a regular basis to proactively discuss long term potential plans and appropriate mechanisms to deal with individual trapper concerns. Active participation by all trappers is essential.

In addition, national associations, including the Fur Institute of Canada and the Canadian National Trappers Alliance, can provide considerable assistance. National organizations need to demonstrate the economic importance of furbearers. The Institute is developing a working arrangement with the Forest Products Association of Canada to address mutual concerns such as developments that limit all resource extraction, the funding of furbearer research, and cooperatively examine opportunities around mitigation, compensation and certification programs.

The Institute is also working with other industries that have more progressive mitigation/compensation programs and other resource sectors whose operations have an impact on furbearer populations. The Institute will also explore the development of educational materials (similar to Wetkit which helps farmers develop environmental management plans) and the value of a national trapper questionnaire to monitor progress and provide an information base for the certification of sustainable forest management.

Provincial/Territorial Wildlife and Forestry Agencies

The majority of trappers across Canada have an Aboriginal background and for many trapping remains an important cultural as well as economic activity. Recent court decisions recognize governments must consult with First Nations and/or Resource Management Boards on major policy and land-use initiatives which affect their interests. While this ruling should ensure much closer collaboration between forestry and wildlife agencies in trapline management, the principle also applies to trappers. Even with the limited resources of management agencies, a focused approach in the following areas would make a significant difference in establishing a more positive framework to build proactive furbearer programs:

- establish formal mechanisms between forestry and wildlife agencies to ensure coordination and appropriate integration of trappers' interests in forest management;
- review, revise, enforce and communicate regulations, policies and guidelines for sustainable resource management equally with respect to forestry and furbearer interests;
- report annually to trappers on the extent of cooperation among parties in evaluating and enhancing guidelines and examining mitigation/compensation alternatives;
- encourage trappers in "open" harvest systems to also develop land-unit based species management plans;
- provide the best biological information on population densities in different habitat types to allow trappers to demonstrate sustainable forest management.
- conduct or support research that measures responses of furbearers to changing habitat conditions and supports science-based management;
- conduct workshops with local trapper groups to share information and build management plans;
- ensure compensation programs do not result in long-term degradation of furbearer habitat;
- appoint trappers to local advisory committees; and,
- ensure adequate reporting mechanisms are in place to monitor change and those changes become the basis of future mitigation/compensation programs.

Federal Wildlife and Forestry Agencies

The Government of Canada has a recognized role in ensuring Canada meets obligations under international agreements. Equally, the federal government has a stewardship role on federal lands, including First Nations' interests, and a coordination role in supporting targeted research on national and regional issues. In regards to trapping, Canada has achieved an enviable lead role in both establishing humane trapping standards and encouraging other nations to follow our example. The success in maintaining a strong demand for Canadian fur during international public pressure to ban trapping is a success story that provides lessons to other resource sectors. A visible and ongoing commitment in the following areas would assist other agencies and interests to create and maintain pro-active furbearer management programs across Canada:

- continue to provide long-term funding support for research and testing, in order to meet the requirements of the Agreement on International Humane Trapping Standards (AIHTS) in 2007.
- establish a formal mechanism between federal agencies, other resource sector interests and the Fur Institute of Canada to:
  - promote the humane trapping success story for international marketing of Canada's natural resources;
  - demonstrate achievements in other international agreements; and,
  - ensure decisions on the status of furbearers are based on the best biological information.
- ensure current and future research on sustainable development programs include:
  - utilization of trapper knowledge in Canadian Criteria and Indicators of sustainable development;
  - assessments of all socio-economic interests in forest management;
  - an active research program on furbearer conservation; and,
  - publications on the status of furbearer populations, habitat issues and management challenges.

Conclusion

Although sustainable forest management requires recognition of all social, economic and environmental values, forest managers have not yet been able to proactively manage furbearers (except perhaps rare species) in a similar manner to other natural resources.

The necessary ingredients are largely in place but are only sporadically used by resource managers. While national and provincial policies are also in place to ensure furbearer management there is still minimal recognition of furbearers as exemplified within the new Criteria and Indicators Report (CCFM 2003). To date, forest management and certification efforts have not made consultation processes with trappers or trapper associations more effective. Nor have government agencies established clear furbearer objectives that ensure the maintenance of sustainable furbearer populations under forest management planning.

Much remains to be accomplished in implementing practical and imaginative mitigation and compensation programs. And despite efforts to recognize trappers' stewardship efforts, the trapper community itself has not recognized its exemplary individuals.

Clearly, all groups share responsibility for the current state of affairs and equally are the only ones that can create the solutions needed. This booklet was designed to suggest an approach that all groups might want to lead with. However, it is not words written here, but the individual and collective actions we undertake that will build bridges, foster stewardship, and ensure management of furbearers is a vital part of sustainable forest management.

Appendix 1: A checklist of furbearer and associated habitat management considerations

These considerations may form a basis for meetings between government officials, forest company representatives and trappers[1].

1. Information retrieval

To start, assemble the following information with the assistance of your provincial office (see Appendix 2 for contacts list)

- a current map showing the extent of the trapline area and forest cover/habitat
- accepted density estimates for different furbearer species per habitat type
- past trapline area/management unit plans that projected the amount of habitat for each species, the anticipated population level, the projection of sustained harvest and the past harvest records
- a forest management map for the trapline area/management area and surrounding vicinity that shows the extent of non-timber productive forest, buffer areas and wildlife areas
- a map that illustrates larger landscape consideration in association with the trapline area/management unit, such as the extent of mature coniferous forest and extent of existing and proposed access
- any landscape management guidelines used in forest management planning process

[1] Note: This is largely taken from the Ontario Ministry of Natural Resources forest management guidelines for retaining furbearer habitat. Specific guidelines will vary by region because ecological processes that shape natural forests vary among regions. Check for more specific provincial/territorial guidelines.

2. Habitat questions and considerations

Questions to consider dealing with retention of habitats that help maintain the integrity of natural forest ecosystems:

Wetland associated furbearers

- are all wetlands and streams adequately buffered consistent with both provincial guidelines and the local terrain?
- will any proposed activities modify existing water flows or affect water quality?
- has selective cutting been considered along portions of riparian areas to promote early seral stages for enhanced beaver habitat?
- do proposed harvesting and subsequent site preparation activities maintain habitat for mink, otter and raccoon with snag retention, maintenance of woody debris and downed logs along and near the shoreline?

Some forest associated furbearers

Not all furbearer species can be managed to maximum levels within small areas. To ensure an ongoing supply of fisher and marten habitat, cutting operations must retain a minimum 30 to 40% of the forest canopy of mature softwood stands. This requires creative harvesting, for example small strip cuts and shelterwood operations. Thinning of mature aspen and birch may enhance the growth of coniferous understory. However, to supply future habitat for predatory furbearers such as fox, lynx, bobcat, coyote and wolf, forest operations that open the forest stand to create early seral habitats are required. Clearcuts and prescribed burning will often enhance the habitats for some species of prey on which furbearers depend. It is this mix of various forest conditions and successional stages that provides diversity of habitats which in turn support a diversity of prey and thus a diversity of furbearers.

Furbearer habitat managers should ask the following questions:

- are proposed access routes and timber harvesting practices likely to change animal distribution during critical periods?
- when will temporary access roads be scarified?
- have different harvesting options (from no harvesting to selection or shelterwood cutting) been considered in areas of high value furbearer habitat?
- in areas of proposed clearcutting, are the harvest patches small and irregularly shaped, and are residual patches included to maintain biodiversity, shelter and travel routes?
- are the forest management disturbances consistent with the typical forest disturbances that occur naturally?
- will later site preparation from the impacts of herbicides to the loss of slash/woody debris as well as planting efforts negate earlier mitigative measures and any potential benefits from logging?
- how will understory structure and coarse woody debris be retained in pre-merchantable and merchantable thinning operations?
- is natural regeneration a priority within managed furbearer habitat to ensure some deciduous growth?

3. Trapper opportunities for assistance to and from other parties

Conduct or support research that measures responses of furbearers to changing habitat conditions and supports science-based management. You could:

- provide trapline improvements and contract work in association with forest planning and logging activities in and around trapline areas;
- assist in resolving wildlife damage complaints, particularly associated with road construction;
- investigate the availability of voluntary and government compensation programs; and,
- provide field assistance in research and monitoring programs.

Appendix 2: Provincial/Territorial Contacts

A listing of up-to-date (November 2005) provincial and territorial contacts which can be used to obtain relevant furbearer and forestry regulations and guidelines.

BRITISH COLUMBIA

Biodiversity and Wildlife
Ministry of Water, Land and Air Protection
PO Box 9338 Stn Prov Gov
Victoria BC V8W 9M1
Phone: (250) 387-1161
wildlife@victoria1.gov.bc.ca
wlapwww.gov.bc.ca/wld/

ALBERTA

Fisheries and Wildlife Management
Department of Sustainable Resource Development
Information Centre, Main Floor
9920 – 108 Street
Edmonton AB T5K 2M4
Phone: (780) 944-0313
Fax: (780) 427-4407
srd.infocent@gov.ab.ca
www3.gov.ab.ca/srd/index.html

SASKATCHEWAN

Department of Environment
3211 Albert Street
Regina SK S4S 5W6
Phone: (306) 953-3750 or
1-800-567-4224
inquiry@serm.gov.sk.ca
www.se/gov.sk.ca

MANITOBA

Manitoba Conservation
Wildlife and Ecosystem Protection Branch
Box 24, 200 Saulteaux Crescent
Winnipeg MB R3J 3W3
Phone: (204) 945-6784 or
1-800-214-6497
wildlife@gov.mb.ca
www.gov.mb.ca/conservation

ONTARIO

Fish and Wildlife Branch
Ontario Ministry of Natural Resources
300 Water Street PO Box 7000
Peterborough ON K9J 8M5
Phone: (705) 755-1995 or
1-800-667-1940
Fax: (705) 755 1900
www.mnr.gov.on.ca/mnr

QUÉBEC

Ressources naturelles et faune
Centre d'information
Édifice Marie-Guyart, r.-d.-c.
675 Boulevard René Lévesque Est
Québec QC G1R 5V7
Téléphone: (418) 521-3830 ou
1-800-561-1616
Télécopieur: (418) 646-5974
Info.sfp@fapaq.gouv.qc.ca
www.fapaq.gouv.qc.ca/www.mrnf.gouv.qc.ca

NEW BRUNSWICK

Fish and Wildlife Branch
Department of Natural Resources
PO Box 6000
Fredericton NB E3B 5H1
Phone: (506) 453-2207
Fax: (506) 444-5839
www.gnb.ca/0078/index-e.asp

NOVA SCOTIA

Furbearers and Upland Game
Wildlife Division
Department of Natural Resources
136 Exhibition Street
Kentville NS B4N 4E5
Phone: (902) 679-6091
Fax: (902) 679-6176
www.gov.ns.ca/natr

PRINCE EDWARD ISLAND

Fish and Wildlife Division
Department of Fisheries,
Aquaculture and Environment
Box 200011 Kent Street
Charlottetown PE C1A 7N8
Phone: (902) 368-4880
Fax: (902) 368-4857
www.gov.pe.ca/af/agweb/index.php3

NEWFOUNDLAND AND LABRADOR

Department of Environment
and Conservation
4th Floor, West Block
P.O. Box 8700
St. John's NL A1B 4J6
Phone: (709) 729-2664 or
1-800-563-6181
Fax: (709) 729-6639
www.env.gov.nl.ca/env

NUNAVUT

Nunavut Wildlife Service
Department of Sustainable
Development
Box 1000 Station 21170
Iqaluit NU X0A 0H0
Phone: (867) 975-5925
Fax: (867) 975-5980
www.gov.nu.ca/sd.htm

NORTHWEST TERRITORIES

Industry, Tourism and Investment
Government of Northwest Territories
PO Box 1320
Yellowknife NT X1A 2L9
Phone: (867) 873-7500
infoiti@gov.nt.ca
www.iti.gov.nt.ca

YUKON

Fish and Wildlife Branch
Department of Environment
Box 2703
Whitehorse YK Y1A 2C6
Phone: (867) 667-5652 or
1-800-661-0408 (5652)
Fax: (867) 393-6413
environmentyukon@gov.uk.ca
www.environmentyukon.gov.uk.ca

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