Using Incentives to Promote Stewardship on Private Forest Land in BC

by

Detmar Schwichtenberg

BA Sociology, University of British Columbia, 1987

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

Master of Arts

in

THE FACULTY OF GRADUATE STUDIES

(Institute for Resources and Environment)

We accept this thesis as conforming
to the required standard:

THE UNIVERSITY OF BRITISH COLUMBIA

April 1999

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Department of Resource Mgmt + Environmental Studies

The University of British Columbia
Vancouver, Canada

Date April 28/99

Abstract

The government of British Columbia plans to regulate forest practices on private land in the province, largely in response to public pressure. The stated goals are to ensure a long term and stable timber supply and to protect environmental values. To achieve these goals, the BC government must choose among regulatory options ranging from a highly coercive and punishment-oriented approach such as the Forest Practices Code at one extreme, to an encouragement and reward-based approach at the other.

The ideal choice is one that achieves the desired goals at the lowest cost to both the public and landowners. My hypothesis is that a shift away from traditional punishment-based *command-and-control* approaches and toward *education-and-incentives* would greatly promote regulatory efficiency.

To test the hypothesis, three areas of research are considered. First, Organizational Behaviour research is examined to better understand the relative efficacy of punishment and reward in motivating people, and to assist in designing a reward-based motivation system. Second, a survey of BC private forest landowners helps determine how they might best be motivated to achieve public objectives. Third, other forest jurisdictions are examined to gain practical knowledge on the relative effectiveness and cost of different regulatory options.

The survey indicates most forest landowners recognize a legitimate public interest in forest management on private land, but also that landowners place a high value on their independence and freedom to manage their forests. Landowners therefore favour a regulatory system based on education and financial incentives.

Landowner preferences are supported by Organizational Behaviour research and experience in other jurisdictions. Studies indicate education greatly enhances the willingness and ability of landowners to meet public objectives, and that regulatory systems based on incentives are less expensive to administer, less intrusive on private property rights, and more likely to promote innovation. Research also shows government predilection for coercive regulatory measures is mainly the result of perceived political advantages.

Finally, the paper outlines a regulatory system based on education, freedom to manage forest resources and financial incentives that can be used to achieve public objectives on private forest land in BC.

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Acknowledgments

I would like to thank:

Members and employees of the Forest Land Commission for their logistical support, unflagging enthusiasm and sense of humour. Special thanks to Alan Chambers for encouraging me to address the issue of private forest land stewardship, and to Kirk Miller for making room in a tight budget.

Committee members Craig Davis, George Hoberg, Les Lavkulich and Casey van Kooten for their considerable expertise and support, and for encouraging me to reach my own conclusions.

My parents Marianne and Günther, siblings Kerstin and Holger, and sister-in-law Catherine for their confidence, patience and insightful feedback. Jennifer Wilson for her apparently genuine interest in forest policy, exacting literary standards and warm personality.

Susan Herman for her knowledge of organizational behavior and for setting deadlines, and Joakim Hermelin for his international experience in private forest land issues. Also Sean Flynn, Harold Macy, Fred Marshall and the staff at BC Assessment.

Managed forest landowners who took so much time to share their accumulated knowledge, invited me into their homes and guided me through their forest properties.

Fellow students for the interesting conversation, beer nights and reference lists. Mark Sullivan for reminding me it is possible to do thesis work even on sunny days, and my sports friends for believing otherwise. Also housemates and everyone who made the post-defense celebration so entertaining.

Chapter 1: Background and Framework for Regulation

1.1 Introduction

The government of British Columbia plans to regulate forest practices on private land in the province, largely in response to public pressure. The stated goals are to ensure a long term and stable timber supply and to protect environmental values. To achieve these goals, the BC government must choose among regulatory options ranging from a highly coercive and punishment-oriented approach at one extreme, to an education and incentives-based approach at the other. The ideal choice is one that achieves the desired goals at the lowest cost to both the public and landowners.

Achieving regulatory efficiency is a demanding task. It is difficult and time-consuming to consider all the factors that affect costs and effectiveness, and it takes time to determine if desired goals are being realized. In addition, efficient regulatory options are not necessarily the most politically expedient ones. As a result of these factors, choice of regulatory options is often decidedly subjective, based on emotional arguments from competing interest groups, bureaucratic inertia and perceived political advantages.

Despite the obstacles, the best way to combat inefficient and politically expedient regulatory options is to highlight their shortcomings and research effective and inexpensive alternatives. The purpose of this paper is to analyze the efficiency of coercive regulatory approaches such as the Forest Practices Code, to consider the cost and effectiveness of alternative options based on education and incentives, and to propose an efficient regulatory system for private forest land.

Research is concentrated in three main areas. First, the discipline of Organizational Behaviour contributes the basic concepts of human motivation – notably the relative efficacy of punishment and reward – as well as details on how best to design motivational systems based on encouragement and reward. Second, a survey of private forest landowners provides insight into how landowners might be best motivated, as well as gathering ideas for the objectives and structure of a new regulatory system. Third, other jurisdictions with private forest land yield examples of practical experience in the effectiveness and cost of different regulatory options.

The paper concludes that regulatory options based on encouragement and reward have several crucial advantages over regulatory systems based on coercion and punishment. These include lower administrative costs, better use of human ingenuity and innovation, less adversarial relationships between regulators and regulated, and less infringement of private property rights.

A proposed system for BC would include availability of information and education for all private forest landowners, maintenance of landowners' autonomy and responsibility, and the use of financial incentives to encourage achievement of public objectives on private land.

1.2 Background

BC has between two and four million hectares of privately-owned forest land, comprising about four to six percent of the total forest land area in the province. This seems relatively insignificant when compared to 59 million hectares of publicly-owned forest land, but the importance of private forest land is greater than the relative area suggests (Macy 1997, FLC 1996). First, private forest land is usually highly productive, combining fertile soils, moderate climate and intensive management to achieve growth rates higher than the provincial average. As a result, private forests contribute an average of 10-12 percent of the timber harvested annually in BC. Second, most private forest land is near human settlement areas, where it provides a range of non-timber benefits, including watershed protection, fish and wildlife habitat, recreational opportunities, visual backdrops, spiritual value, carbon dioxide sequestration and noise abatement.

1.2.1 Regulated and unregulated private forest land

Stewardship[1] of private forest land varies considerably. Just over 900,000 ha, known for tax purposes as "managed forest," (see table 1) and subject to some regulation, are considered reasonably well-managed, at least from a long-term timber production point of view. Figures provided by BC Assessment (BCA) indicate the mean annual increment (MAI) on managed forest land is about 4.5 million cubic metres (FLC 1996). This compares favourably to the average 3.4 million cubic metres harvested annually between 1992 and 1994 (see figure 1). Harvested areas in this category must be promptly reforested.

Private forest land in three other tax categories recognized by BC Assessment - unmanaged forest, residential forest and farmland forest - is virtually unregulated and generally not well-managed, either in terms of long-term timber production or the provision of non-timber benefits. Large areas have been cleared for use as marginal agricultural land or residential development, while other areas have been the target of speculators who buy the land, then "cut and run." Figures indicate the MAI on unregulated private forest land is about 2.6 million cubic metres (see

[1] For the purposes of this paper, stewardship of private forest land refers to a combination of ensuring a long-term timber supply and protecting environmental and recreational values.

Table 1: Tax categories of private forest land in BC

Private Forest Land Classifications

There are at least two million hectares of private forest land in four distinct tax categories recognized by BC Assessment.

1. Managed forest: About 920,000 hectares in 4160 parcels, of which 98% is owned by 20 large forestry companies, mainly on Vancouver Island but also the southern Interior. Land is assessed at its value for growing trees ("use value"), effectively reducing landowners taxes,' especially near urban areas where development pressure is high.

In return landowners must submit and adhere to a basic forest management plan that calls for reforestation within 5 years of areas harvested or cleared by natural events, with trees "free to grow" in 15 years, some other silviculture and a commitment to harvest trees at some point. Property tax on the value of standing trees is deferred until harvest.

Only private forest land in the managed forest tax category was in 1994 included in the Forest Land Reserve, a land use zoning that severely restricting landowners' development rights. The three main allowed uses of land in the FLR are timber production, grazing and conservation.

2. Unmanaged forest: Some 55,000 hectares in 650 parcels, much of it in small pieces adjacent to managed forest. Also assessed at "use value," though property taxes are higher than those paid by managed forest landowners. No forest management plan is required and forest practices are unregulated. Property tax on the value of standing trees is deferred until harvest.

3. Residential forest: Total of about 500,000 hectares, much of it in small pieces zoned for residential development, usually but not always near communities and suburbs. Exact data are unavailable, so the number of parcels is unknown and total area may under or overestimate total residential forest land area. Land is assessed based on its value for residential development ("highest and best use"), resulting in the highest property taxes among forest land categories.

Property tax is paid annually on both the value of the land and trees, creating an incentive for landowners to cut trees prematurely. Forest practices are unregulated. Residential forest is often the site of the worst forest practices, including "cut and run" speculators.

4. Farmland forest: A minimum of 400,000 hectares, mostly in small pieces attached to farms in the Agricultural Land Reserve (ALR). Data are inexact and ALR land could contain over 2 million hectares of forest, often managed sporadically as part of farming operations. Property taxes are the same as other ALR land and easily the lowest of the four tax categories. The value of trees are not assessed for property tax purposes. Forest practices unregulated. Some owners of forest land run grazing animals in the forest to qualify for farm class.

Source: BC Assessment, FLC 1996, Hopwood 1996, Wetton 1988

tables 4-6), while the average annual harvest between 1992 and 1994 was 4.3 million ha (see figure 1). Reforestation efforts appear to be minimal, though a lack of data obscures the true picture.

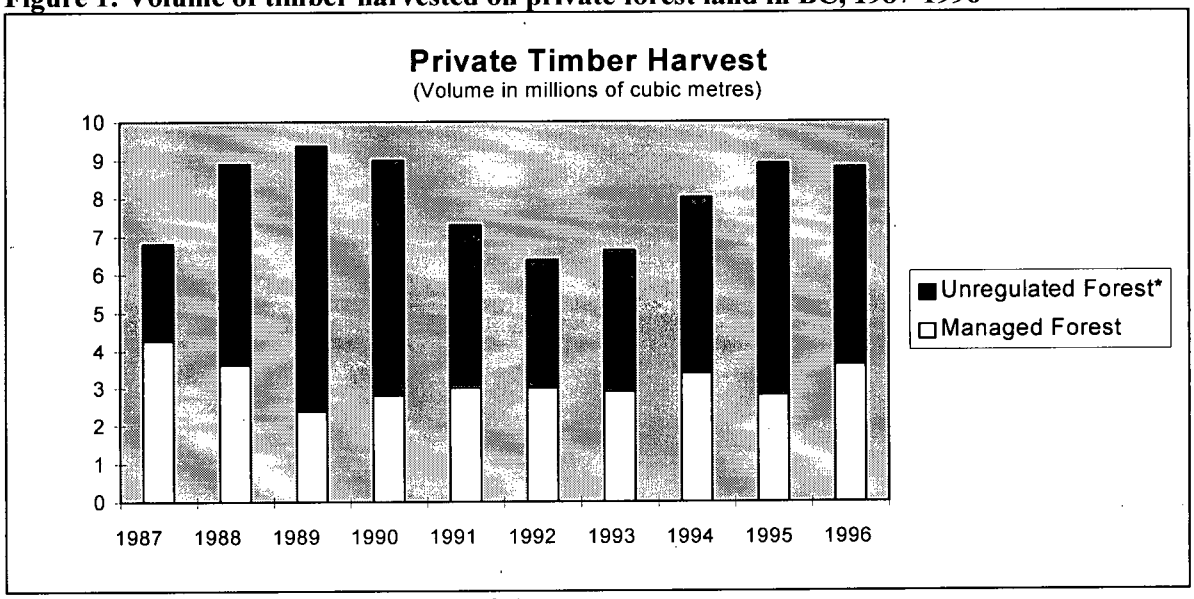
Pressure on all four categories of private land has increased in the past decade, driven first by higher global market prices for wood products, then by new environmental legislation, expanded protected areas and stumpage increases that make public timber more expensive and less

accessible. These factors make private timber production more financially attractive, though recently depressed timber markets have temporarily eased the pressure. Demand for development land remains strong, however, especially on southeastern Vancouver Island and the Gulf Islands (Macy 1997), where communities and rural subdivisions continue to expand, often at the expense of forest land.

1.2.2 Public pressure for improved stewardship

The combination of apparent overharvesting and loss of forest land to development has attracted public concern to the stewardship of private forest land. At the same time, the public perception of stewardship is gradually expanding from the traditional objective of long-term production of timber to include the protection of non-timber benefits provided by forest land, especially recreational opportunities (Haley and Luckert 1992) and water quality, but also a range of other benefits (FRC 1991). As a result, the BC government has been forced to reconsider its private forest land policy both in terms of promoting forest management practices that yield both timber and non-timber benefits, and in terms of protecting the productive forest land base.

Figure 1: Volume of timber harvested on private forest land in BC, 1987-1996



Source: Ministry of Forests annual reports, BC Assessment
* Unmanaged, residential and farmland forest

1.2.2.1 Existing policy measures

Some policy changes have already been made. In 1987 the BC government, through BC Assessment, introduced the "managed forest" tax classification, which offers private forest landowners a property tax break in return for developing and adhering to a "sustainable" forest management plan that emphasizes reforestation and other silviculture. At the same time, a joint federal/provincial Forest Resource Development Agreement (FRDA, pronounced "FeRDA") was initiated, providing technical and financial assistance for planning, reforestation and silviculture on private forest land. Landowners did not have to be in the managed forest class to take part. FRDA was discontinued in 1996.

In June 1994 the government created the Forest Land Reserve (FLR), a land use zoning administered by the Forest Land Commission that severely restricts the use of some forest land for purposes other than forestry. This zoning is very similar to the Agricultural Land Reserve (ALR), which is administered by the Agricultural Land Commission and aims to protect land for agricultural use. One mandate of the Forest Land Commission is to collect data on private forest land in BC. Currently, information is so sparse that estimates of private forest land in the province vary between two and four million hectares, mainly because no one knows how much forest is on land in the ALR.

These policy measures have serious shortcomings. For one thing, the managed forest tax category and its attendant "sustainable forest management plan" encompasses less than half of all private forest land in BC. The idea was to entice owners of land in the other three private forest land tax categories into the managed forest category by offering greatly reduced property taxes. Initially, many landowners chose to join the managed forest (FLC 1996), especially those paying substantial property taxes in the residential forest land tax category even though they had no plans to use their land for residential housing or other development. Owners of farmland forest showed little interest in joining the managed forest, since they already pay lower property taxes than managed forest landowners.

Interest in joining the managed forest tax category was almost completely eliminated by the creation of the Forest Land Reserve, which includes only private forest land in the managed forest tax category and about 15 million ha of public land. The Reserve and its development restrictions were imposed without consultation with managed forest landowners. Many are resentful and wonder why managed forest landowners, already the best managers of private forest land in the province, are the only ones being "punished" with a loss of property rights, while other private forest landowners face neither land use restrictions nor forest management

regulations (though owners of farmland forest are subject to land use restrictions under the ALR).

One final factor to consider is that recent policy changes do not directly address increasing public concerns over forest practices that threaten the loss of non-timber values. True, some non-timber benefits are a "by-product" of managing forest land for timber production. For example, reforestation of harvested areas helps prevent soil erosion, maintains water quality, sequesters carbon dioxide and eventually provides visual appeal, forest habitat and recreation opportunities. However, no provisions exist for protection of streamside buffer zones, wildlife tree patches and other ecologically sensitive areas, or the idea of preventing forest fragmentation and managing private forest land as part of a larger forest ecosystem.

1.3 The current situation

The BC government is inclined to address public concerns over forest practices by applying the Forest Practices Code to private land, and has included a specific provision in the Forest Practices Code Act. Strangely, current plans call only for the Code to be applied on managed forest land, again excluding the majority of BC's private land from regulation. Not surprisingly, most managed forest landowners strongly oppose the Code, arguing the legislation is coercive, bureaucratic, inflexible, expensive and ultimately ineffectual. Instead, various groups of managed forest landowners, recognizing that some kind of regulation is inevitable, have put forward suggestions for a less bureaucratic and more flexible regulatory system based on education and incentives.

Chapter 2: Managed Forest Landowners Survey

2.1 Introduction

To develop policy mechanisms that can improve stewardship on private forest land in BC, it is essential to know more about the demographics, views and ideas of private forest landowners. To this end, I initiated and recorded a series of personal interviews with private landowners in the "managed forest" tax classification. Managed forest landowners cumulatively own less than half of all private forest land in BC and are generally considered among the best private forest land managers. They were selected for the survey because they are accessible, knowledgeable and relatively few in number.

The survey indicates that managed forest landowners are generally well-educated, experienced, and well aware of issues affecting private forest land. The survey also indicates that, while there are some differences of opinion between large and small landowners, they broadly agree on several key issues. First, the public has some legitimate interest in forest practices on private land. Second, something needs to be done to address these interests but should not punish or restrict those already engaged in good forest stewardship. Landowners regard government interference, bureaucracy, inflexibility and paperwork as punishment. Third, if government does increase regulation and restrict land use, it should offer some kind of compensation. Landowners suggested a range of incentives that would provide some compensation.

This chapter describes in detail the objectives, style, structure and administration of the survey, recounts private forest landowners' responses, and summarizes findings from the survey, with a focus on future policy development.

2.2 Objectives

The overall intention of the survey was to find out more about private forest landowners in BC. This information could then be used to assist in developing policies aimed at improving the overall stewardship of private forest land in BC. The survey focuses on private forest landowners in the "managed forest" tax classification and information gathered includes:

1. Basic demographics such as name, address, education and training background, forestry experience, size and nature of landholding.

2. Goals, values and beliefs of managed forest landowners, especially views on forest management, environmental issues and the role of government in addressing public concerns on private land.
3. How managed forest landowners think government can best induce private forest landowners to improve stewardship.

The decision to address these three questions was made after considerable debate over the relative merits of quantitative versus qualitative survey methods. For guidance, I examined studies in other jurisdictions, as well as in BC. One paper (Bliss and Martin 1990) examined over 200 published surveys of non-industrial private forest landowners in the US, yet concluded that:

> *"We cannot relate programs to people because we do not know anything about the people... even with all these studies, we do not have much information about the private landowner which can be used to predict behaviour patterns."*

Other studies noted that most private forest landowners surveys were limited to descriptive statistics on ownership and owners (e.g. Birch *et al* 1982, Roberts *et al* 1986), while only a few focus on landowner attitudes, beliefs and motivations. Similar studies in Scandinavia concluded that more work was needed to understand more about owners, their goals, views and procedures for decision-making (Lonnstedt 1997).

In BC there have been at least two in-depth descriptive surveys (Wetton 1988, Enfor 1996) of non-industrial private forest landowners – including information on where private land is located, the amount owned by individuals in different regions, how much wood is produced, site quality and demographics of landowners. At least two qualitative surveys (Macy 1997, NIWA 1994) have also been done but were restricted to Vancouver Island and included information only on "extension services," a combination of education and financial assistance. I decided more qualitative information was needed and would be within the scope of a master's thesis.

2.3 Methodology

Before I could begin gathering information, I needed to answer two questions: who to gather information from, and how to do the gathering? These questions had to be considered within the limits of the resources available. There are an estimated 20,000 private forest landowners in BC

(Wetton 1988). Obtaining a representative sample of such a large group is difficult. In addition, records of who owns residential and farmland forest are not complete.

2.3.1 Who to survey?

For tax purposes, BC has four categories of forest land (see table 1). BC Assessment, which assesses property values for tax purposes, does not keep records of forestry activity on two of these forest land categories. That is because trees on agricultural land ("farmland forest") are not included in the tax assessment, while trees on land slated for residential development ("rural residential forest") are included in the total assessed value of the land. As a result, neither BC Assessment nor other government agencies know how much forest land in these two tax categories. The third tax classification, known as "unmanaged forest," comprises only a small fraction of private forest land in BC.

That leaves owners of "managed forest," who collectively own less than half of all private forest land in the province. BC Assessment has good records of those in managed forest because landowners in this tax category receive a reduced property assessment, and therefore a tax break, in return for a forest management plan. The system is managed and monitored by BC Assessment. Conveniently, there are only 138 managed forest landowners. This number is manageable and allows fewer but more in-depth and personal interviews.

2.3.2 How to collect data?

I originally considered three main options for gathering information: a mail-out questionnaire, a telephone interview survey and a one-on-one personal interview process (or some combination of these). I chose the third option for several reasons. First, as a journalist I have done many face-to-face interviews and am very familiar with the process. Second, I have found people more forthcoming and forthright in the presence of an interviewer than on the telephone or on mail-out questionnaires. Third, personal interviews allow more latitude for discussion than mail-out questionnaires. Every individual has different areas of interests and expertise and I wanted to encourage elaboration of those areas. Fourth, personal interviews in the home or workplace of those interviewed provide context to the discussion. I also hoped landowners would want to show me their land and their forest practices. The disadvantage of the personal interview is the logistical difficulty and expense involved in visiting managed forest landowners spread around the southern part of the province.

Interviewing managed forest landowners has other implications. I had already spoken to a number of managed forest landowners as part of a previous job with the Forest Land

Commission and found them knowledgeable on matters of forest management, environmental issues and government regulation. Managed forest landowners are already the best managers of private forest land in the province and usually not responsible for bad forest practices that have attracted public attention.

This could be considered a disadvantage because it does not address the question of why some private landowners badly manage their forest. On the other hand, determining who "good" managed forest landowners are and what motivates them could reveal how a sense of stewardship can be instilled in landowners currently engaged in bad forest practices. It could also reveal how to further improve stewardship of managed forest land.

2.3.3 Choosing a random sample

To begin, every managed forest landowners on the BC Assessment list received a letter of contact outlining my identity, the purpose of the survey, the intended use of information gathered, assurances participants could withdraw at any time and that all information would be held in strict confidence. While the letters made their way to the recipients, I developed a list of questions and chose a random sample of candidates.

To choose a sample, I ranked the list of 138 owners of managed forest land according to the number of hectares owned, from largest to smallest. Sizes range from 300,000 ha to only 12 ha. I decided to start with a sample of 25%, and so selected an initial sample of 35 landowners by taking every fourth name on the list. This provided a range of landholding sizes, from the very large to the very small. To decide whether to start my selections with the first, second, third or fourth name on my list, I put four pieces of paper, each with a different number, one to four, into a basket and chose one. Number one came up so I started my selection with the first name on the list, then the fifth, ninth and so on down the list.

2.3.4 Contacting interview candidates

I began phoning landowners on my list of 35 in March 1998, starting with those who lived in Vancouver, surrounding municipalities and the Gulf Islands. Interviews were organized as soon as possible. After each of the first four interviews, I felt compelled to add, delete and re-word questions, as well as revise the question order. I have excluded these four pilot interviews from the final results, shortening the original list to 31. As a result, the survey is somewhat biased against landowners in the Lower Mainland and the Gulf Islands. The remaining interviews were conducted during three trips separate road trips - one up the east coast of Vancouver Island, a second up Hwy 97 from Hope to Vanderhoof and a third in a loop around southeastern BC.

Every landowner contacted was willing to be interviewed - most enthusiastically, some more reluctantly. However, for a number of reasons, only 22 names on the shortened 31-name list were interviewed. One landowner no longer owned managed forest, three landowners were in areas too remote to be incorporated into the three road trips and five others were unavailable during the times I was available to speak with them. These landowners were replaced by the landowner closest in land area on the original 138-name largest-to-smallest list. Two landowners became unavailable on short notice and were replaced by two landowners of similar size in the same geographic area. This re-selection resulted in my interviewing the two largest owners of private land in the province.

2.3.5 Interview process

Representatives of large landowners were interviewed in offices, all but one in downtown Vancouver or attached to processing facilities. Almost all small landowners were interviewed in their homes, of which about half were located on their managed forest property. Two were interviewed in restaurants. Conducting interviews in these settings was very useful in providing context to the discussions. Both offices and homes were generally modest and functional, those interviewed dressed in casual work clothes. No one wore a tie. In addition, seven of the landowners also provided thorough tours of their managed forests – though only after the interviews – so I was able to visualize many of the things we had discussed. All interviews were recorded on tape and ranged from 40 to 90 minutes, with an average of less than one hour.

Landowners and representatives appeared to answer questions openly and honestly, with large landowners tending to focus on cost and financial aspects, while smaller landowners were more interested in discussing forest management issues. These differences only became apparent when I transcribed the taped interviews. Many landowners took long pauses to consider their answers and seemed to appreciate a chance to talk about issues important to them. On the whole, the atmosphere was comfortable and relaxed.

The personal interview process also had other advantages. I met one of BC's first Registered Professional Foresters and heard about the "old days" of forestry, examined a healthy clone from the Queen Charlottes' recently downed Golden Spruce, fed trout, biked the Gulf Islands, learned about controlling radioactivity in hospitals and nuclear power plants, and visited old university cronies and other friends now scattered around the province.

2.3.6 Collating results

Upon completion of the survey, tapes were transcribed and the resulting information used to create answer summaries for each question. One interview did not record properly and is not included in the final data, reducing the number of interviews included in the results to 30. Perhaps the most interesting thing about the transcription and summarization process was how earlier interviews took on new meaning in the light of subsequent information. For me, the context had changed and I was able to get new information on issues I had not previously considered.

Answer summaries for each question have been presented in the order of their apparent importance to managed forest landowners. Where relevant, differences in views and opinions between small and large landowners have been noted. For simplicity, I will follow established convention and refer to small landowners as *non-industrial* landowners, and large landowners as *industrial* landowners. In BC, a recent program to assist small landowners described non-industrial landowners as those with less than 4,000 ha of private forest land in one or more parcels and/or an interest in a sawmill with a capacity no greater than $50m^3$. One large landowner interviewed had no production facilities.

2.4 Results

2.4.1 General Information

The most significant information from this section is the nature of land ownership. One third of managed forest landowners surveyed are industrial landowners: publicly or privately owned companies that also (except in one case) own and operate wood processing facilities. Industrial landowners surveyed range in size from 700 ha to 330,000 ha, and total about 674,000 ha. Among these landowners, I interviewed company representatives, usually a woodlands manager or chief forester. These men in their 40s and 50s all have post secondary forestry education and average over 20 years of practical forestry experience. They are all well-informed and aware of issues raised in the interviews, and tended to take a pragmatic and business-like approach to these issues.

The other two-thirds interviewed are non-industrial landowners, either families or small companies, with holdings ranging from 12 ha to 365 ha in size. The average size is almost 90 ha, though only five are over 100 ha, and total 1885 ha. Most surveyed non-industrial landowners have alternate sources of income, often forestry related, and four also own small portable mills.

All but one small landowner surveyed are men, many with some kind of post secondary education, but only three in forestry-related fields. These three are also RPFs. Other education includes two biology PhDs, an economics PhD, a master's in engineering and a bachelor's degree in computer science. Non-industrial landowners average over 30 years of forestry experience, with three having less than 10 years experience and four with 50 years or more. While non-industrial landowners were also well informed on issues relating to private forest land, and some took decidedly business-like approach to interview questions, they were much more likely than large landowners to express emotional attachment to the land. Half of those interviewed live on their forest land. Some do little or no logging.

Industrial and non-industrial landowners are not geographically divided. All are widely dispersed around the southern half of the province, with about one third on Vancouver Island, the Gulf Islands and the Lower Mainland, another third scattered around BC's southeastern interior, and the remainder in the Okanagan Cariboo-Chilcotin and Bulkley Valley. However, land area of those interviewed is concentrated on Vancouver Island, and to a lesser degree in the Kootenays. The forest land has been in current ownership an average of 37 years, in continuous timber production – to varying degrees – for 72 years and is all producing second, third and even fourth growth logs.

2.4.2 Private landowners, public interest and government regulation

2.4.2.1 Do you think the public has a legitimate interest in forest practices on private forest land?

Almost all managed forest landowners said the public has at least some legitimate interests in what happens on private forest land. Only two of the 30 interviewed believe the public has no such interest, while the remaining 28 had different ideas on how far public interest should extend. Some reluctantly accept legitimate public interest on private land, some see certain limited interests, while others say all public interests should be addressed. Three landowners highlight the difference of opinion:

"I would like to say that it's none of their business but these days it is their business."

"The public has some rights but not as many as they think they do. And if they want to increase rights, there has to be compensation or other recognition."

"I think public views should be addressed and cared for, especially if, like I am, they are part of a managed forest and get tax breaks."

Among those who said the public has a legitimate interest on private forest land, easily the most recognized interest is **water quality** and runoff affecting downstream water users. Industrial landowners all said they manage for water quality as part of their overall planning, though most also said this does not necessarily mean leaving a riparian buffer zones on all streams. Non-industrial landowners tend to be less formal, and those with streams or rivers running through their properties were most likely to say they simply "do not go near the creek." One non-industrial landowner describes his informal water management policy:

> *"When we do logging by a creek we leave a buffer zone. Not on the flood plain though. [Recently] we took out a temporary bridge once we were done in the area, and left logs across the streams. I wanted to take them out - they were perfectly good trees- but DFO and fishermen don't like that. I don't want to get in any trouble"*

To a lesser degree, landowners also recognize a legitimate interest in **fish and wildlife habitat**. Industrial landowners said they include animal range and fish stream management in their planning. One described how management of deer winter range differs from management in areas not considered essential to wildlife. Non-industrial landowners are less formal but well aware of the animal and plant species on their land. One non-industrial landowner has substantial areas of elk and deer winter range and manages his forest in such a way as to maintain the 60-70% forest canopy to provide the thermal cover they need to survive harsh winters. In return he gets tonnes of fertilizer applied to his land. Other legitimate interests mentioned include **soil erosion and landslides**, and generally maintaining the long term productivity of the land.

Managing for **visual quality** is more controversial. Most landowners said visual quality should be the choice of the forest owner but expect public pressure to log selectively and in small clearcuts to remain strong. Industrial landowners said public pressure has induced them to include visual quality objectives in their management plans. One RPF providing a tour of an industrial forest tract showed me the exact spot in a non-industrial town that he decided to use as a reference point to ensure a planned cutblock would still look acceptable from the community. Non-industrial landowners, meanwhile, said they consider visual quality because they often live on or near their forest properties. Several said they know their neighbours and others in their communities, and are sensitive to their concerns.

Many landowners said the degree to which the private forest landowners manage for visual quality depends on where the land is. Those next to major roads or towns should consider partial

retention logging. By the same token, private forest landowners with coho streams or in a community watershed should take special care of water quality.

A number of other issues were raised. One is that the public tends to forget that private land forestry should be a legitimate business and that managing for non-timber benefits costs money. Most industrial landowners and many non-industrial ones argue that if the public wants more rights to protect its interests on private forest land, then the public should pay **compensation**. Other non-industrial landowners said tax concessions already received by managed forest landowners means landowners should make sure public concerns are addressed.

Another oft-mentioned issue is the relationship between managed forest land in **the Forest Land Reserve** (FLR) and agricultural land in the **Agricultural Land Reserve** (ALR). Private forest landowners wonder why their ALR neighbours do not need riparian buffer zones and often allow cattle easy access to streams. Several non-industrial landowners noted that a pasture is also a clearcut replanted with a monoculture of grasses and grazed by introduced mammal species. They also point out most agriculture land was once clearcut and now provides little fish or wildlife habitat.

Not directly related to the question but of obvious concern to many landowners is the issue of **public access**. Most allowed and even encouraged public access to private forest lands. Industrial landowners said they accept that the public treats their land as if it were crown land. Smaller landowners often had hiking, biking or riding trails through their forests. Root damage from mountain bikes is a concern, as are the noise and environmental effects of motorbikes, ATVs and snow machines. Some discourage dogs and horses. One landowner has 400-600 people a year hiking on a popular trail running through his property, of which "5% are incapable of treating the land with respect."

One landowner wonders why, if the public is so interested in private forest land, they illegally cut down trees and leave garbage all over his property. However, most say the vast majority of people are appreciative and respectful. One landowner provides access to a piece of property of spiritual significance to First Nations.

2.4.2.2 Do you think the government should regulate forest practices on private land?

Nineteen interviewees said government should regulate forest practices on private land but all have mixed feelings about government intervention on private property. They see a need to alleviate public concern over forest practices on private land but are concerned additional

regulation will mean the bureaucracy and paperwork associated with the Forest Practices Code. One non-industrial landowner summed up the contradictory feelings:

> *"In principle yes [government should regulate], but when I see how they regulate on crown land, I have to say no. The best thing would be for people to care enough to do it. So I would say yes but squirm while I do it because it is very easy for government to screw something like that up."*

Eleven landowners said "no" to government regulations, mainly because additional rules are an infringement of private property rights but also because of concern over bureaucratic interference, unnecessary restrictions, inflexibility and "useless paperwork." Non-industrial landowners were more likely than industrial landowners to say "no" to government regulation. Several industrial landowners said they were opposed to more regulation but accepted that more regulations are likely to come. These landowners said they supported the Private Forest Landowners Association's proposal for alternative private forest land legislation less "process-oriented" than the Forest Practices Code (see chapter four). One landowner said he found it ironic that the Private Forest Landowners Association has been lobbying government to regulate managed forest land.

Whether "yes" or "no," landowners interviewed broadly agree on four issues. First, managed forest landowners have a **legitimate stewardship interest** and most do not require additional regulation. Most said they already meet or exceed Code standards, without the paperwork (though several larger landowners said this has not always been the case "until recently.") Several non-industrial landowners expressed concern over management practices among some industrial landowners. One non-industrial landowner said management on his family forest land has improved without regulation:

> *"There are things I have done in the past that I would not do today. My Dad thinks the things we spend money on today is crazy."*

Second, landowners believe **additional regulation is likely**. In that case they want new legislation to be less comprehensive and inflexible than the Code. Several suggested performance or "results-oriented" legislation covering only a limited range of environmental values and aimed mainly at ensuring a "sustainable forestry." Others stressed that any new regulatory system should allow maximum freedom for those consistently engaged in high standards or practice, while reserving additional scrutiny for those with bad track records.

Third, all regulation applied to managed forest should apply to all private forest land and that private forest landowners should be **treated equally**. Many landowners said that, not only are unsustainable forest practices (so-called "log and flog" or 'cut and run") a waste of land, but also that just a few examples of bad logging practices reflects negatively on all private forest landowners. Fourth, if the public demands additional regulations then **compensation** or incentives should reflect the additional work required. One said the tax breaks he receives already entitle the public to the protection of environmental values.

Another issue brought up be several industrial and non-industrial operators is that any regulations must be simple, **easy to understand** and administered by only one government agency. They expressed concerns over conflicts and contradictory information from the Ministry of Forests, Ministry of Environment, Department of Fisheries and Oceans and other government agencies.

2.4.2.3 What do you think of the way the government currently regulates forest practices on managed forest land in BC?

Twenty-three of the 30 landowners interviewed are happy with the way BC Assessment regulates their activities. The main reason given is that BC Assessment requirements are minimal and visits infrequent. When asked what he thought of the current regulatory structure, one landowner remarked: "There is one?" Several landowners added that BC Assessment is understaffed and that the two foresters did their best to visit regularly, were observant, and were helpful with advice and ideas. One said BC Assessment understands managed forest landowners, maintains a good working relationship and looks at results rather than processes. Several landowners were not impacted because they have no mature trees and have done little or no logging. Two said they did not know enough about the regulations to answer the question.

Five landowners dissatisfied with BC Assessment regulation gave a variety of reasons. One non-industrial landowners said that BC Assessment tends to follow Code practices and if a landowner wants to try something different he or she has to "justify or hide it." Two others are unhappy that woodlot license on public land stipulates that the Code also applies to their private land. They argue this does nothing to improve forest practices but means substantially more paperwork. A fourth said big private forest landowners still have so much economic clout they can do pretty much what they want, despite regulations. One industrial landowner said he did not like the threat of section 217 of the Forest Practices Code Act (allowing the Code to be applied to private land) hanging over his head and added that any regulations should apply to all private forest land.

2.4.2.4 Do you think managed forest land should be in the Forest Land Reserve?[2]

Landowners interviewed are split on this issue. Ten said they favour the inclusion of managed forest land in the Forest Land Reserve, ten are opposed, six undecided and another four said they do not know enough about the Reserve to answer the question. The apparent reason for the split is that most landowners want to see forest land remain in long term forest production but are, to varying degrees, reluctant to accept additional restrictions on land use associated with the Reserve, especially without any additional financial incentives. As one non-industrial landowner said about being in the Reserve: "As an entrepreneur, no, as a concerned British Columbian, yes." This ambivalence is also the reason six landowners said they remain undecided about the Reserve.

Of those who favour the Reserve, six said the main reason is that it **protects their right to practice forestry** on their land. The Forest Land Reserve Act provides a "right" to practice forestry and specifically supersedes anti-logging restrictions that municipalities or organizations like the Islands Trust might try to impose. As one landowner put it, the Reserve restricts additional restrictions. Other landowners support the Reserve because they believe in land use planning, have no intentions of selling land or have no desire to use their land for purposes other than forestry. One said the Reserve prevents his kids from putting him in a home and developing the land.

Ten landowners who oppose the Forest Land Reserve do so because it imposes too many **restrictions on land use options** - especially residential development - without compensation, and because this loss of options diminishes the re-sale value of their land. One industrial landowner said appreciation of land value is a big part of the investment return on private forest land and that the Reserve has diminished land values. A non-industrial landowner said he had his property appraised before and after the Forest Land Reserve and the value went down by $120,000. Another industrial landowner not interested in residential development said lower land values means lower assessments and lower property taxes, but added that smaller operations, where private forest land often acts as a pension fund, should have more development options.

Three landowners said they are trying everything to get out of managed forest land and the Forest Land Reserve, so far without success. Several landowners said they are not putting

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[2] The Forest Land Reserve restricts land use to forestry and forestry-related activities, much like the Agricultural Land Reserve restricts land use to agricultural purposes. All managed forest land was included in the Forest Land Reserve in 1994, along with 15 million ha of crown forest.

additional land into the managed forest, and thereby automatically into the Forest Land Reserve, until they know more about what future restrictions will mean to landowners.

Whether in favour, opposed or undecided, all landowners interviewed said they resent the imposition of the Forest Land Reserve without **consultation**. Managed forest landowners argue that they already manage their forest land to higher standards than other private forest landowners, yet only managed forest land is included in the Reserve. One landowner likened it to being sucker punched, first drawn into the managed forest by a tax break then unexpectedly put into the Reserve. Two others said the Reserve punishes those already engaged in good forestry while offering no new financial incentives. One landowner said such a system "should be built from the ground up, not from the politicians down."

Other suggestions were put forward. Several industrial and non-industrial landowners said the Agricultural Land Reserve **(ALR)** and the Forest Land Reserve **(FLR)** should be combined and, because landowners face the same restrictions, they should also get the same benefits. Several others said the Forest Land Reserve should apply to all private land and one wants to include public forest land. One landowner is dissatisfied by a clause in the Forest Land Reserve Act that requires him to move his portable mill to a new location every five years.

One non-industrial landowner is particularly bitter, wants out of the Reserve and welcomes the opportunity to voice his opinion. His managed forest land was purchased years ago and replanted as a "growing pension fund," with some areas considered for possible development and others for some combination of forestry and agriculture. He said that in the Reserve, he can no longer sell the land for purposes other than forestry, use it for agricultural purposes or even build additional residence for his children, should they want to get involved in forestry. On this last point, his concern is shared by two other non-industrial landowners. Several non-industrial landowners with children are also concerned with the capital gains they must pay if land is passed on to their children (more on this in section 2.4.3.4). The embittered landowner said he no longer sees forestry as a viable business option and has stopped improvement work on his land.

2.4.2.5 Would you like to use your forest land for purposes other than growing trees?

Twenty-one of the landowners interviewed said they would like to use their managed forest land for one or more purposes other than growing trees. The most cited reason is **residential development**. Seven want to develop residential properties, usually 5-10 acres lots, three have lakeshore or ocean properties they would like to develop, and three others have one or more areas

of marginal forest land they believe is best suited for residential development. Four landowners are considering **recreational** options, from hiking, biking and riding, to forest education tours, travel lodges and river rafting. Three are considering **agroforestry** - a combination of forestry, crops and animal husbandry - including Christmas trees, sheep, cattle, mushrooms, boughs, herbs and medicinal plants.

Several landowners said a mix of forestry, agriculture, recreation and residential development is needed to keep taxes paid. Other use proposals include sawmills, a Ducks Unlimited preserve, parkland, wildlife management, rock quarries, a grazing lease and a tree nursery. One industrial landowner said land use possibilities will inevitably include commercial development, highways, power lines and ski hills. Six landowners have no non-forestry plans but would like to keep their future options open, usually for residential development. Two plan to use their land for forestry in perpetuity. One says he would only develop a piece if the alternative is selling his entire property.

2.4.3 Promoting stewardship on private forest land

Before landowners were asked the final set of questions, I asked them to: "assume the government will increase regulation of forest practices on private land."[3]

2.4.3.1 Should the Forest Practices Code be applied to private forest land?

Twenty-eight managed forest landowners interviewed opposed the application of the Forest Practices Code to private forest land. The reason is not that they oppose the intent of the Code – many said they see a need for better forest management practices on some private land – but that they consider the Code too **"bureaucratic"** and "stifling," full of "red tape" and **"paperwork."** The two dissenting landowners said there might be instances in which the Code could be selectively applied to landowners engaged in "unacceptable" forest practices. Overall, most landowners said they were doing a good forest management job and would best be left alone. Some typical comments, first from three non-industrial landowners and then two industrial ones:

> *"I'm OK with parts of it, such as water quality, site degradation and that kind of thing, but not the detailed management. The Code doesn't allow that. The Code is complex, we'll never figure it out and get swamped in red tape."*

[3] The Private Forest Landowners Association (PFLA) has been actively lobbying the BC government to implement its proposal for a regulatory structure considerably less comprehensive and also less "process-oriented" than the Forest Practices Code.

"I've been managing this forest land for years and some guy out of college who has never seen my land comes and tells me to do something. I'd kick his ass and tell him to get the hell out of here."

"I contributed to the Code on wildlife but I understand the Code is huge and has many requirements, so for guys like us the Code is probably too prohibitive... I don't know enough about the Code but we've been here for decades and generations and I want to see trees continue to grow."

"No. The Code is so process-oriented it's stifling. [We should] stay as far away from the Code as we can, to something that is performance-based. It's the biggest disincentive I can think of for putting land in managed forest."

"We manage [private land] to Code specs [but] I always encourage people not to manage to Code because it stops thinking. Many numbers are politically motivated and not scientific. For example, in our ecosystems riparian areas often burn right to the bank."

Many landowners said they have had first-hand experience with the Code. All but one of the industrial landowners also manage crown forest land under Tree Farm Licenses (TFLs) or Timber Supply Areas (TSAs), and said they manage their private land much the same way they manage operations on crown land. Two said they are being encouraged to do so by the Private Forest Landowners Association and the BC Forest Alliance. Seven non-industrial landowners said they also manage crown forest land through woodlot license agreements, under which the Code applies to both crown and private land. These landowners said they already manage to Code standards but do not have the staff and expertise to deal with the Code's complexities and paperwork.

Most non-industrial landowners had **"Code stories"** to tell. One landowner related how a friend had often cut willow on his property and then wove the material into garden chairs. When the landowner was awarded a woodlot license, the Ministry of Forests told him willow cutting was not part of the management plan and therefore not allowed. Another tells about his experience in producing a management plan for his woodlot license:

"My experience with the Code has been that it took them [Ministry of Forests] over five months to read a document that could be read in one hour. And the plan is just a philosophical document, it doesn't really say anything. It's not controversial at all. They found some small discrepancy in the amount of land [I said was] under management. Those figures are just estimates, because of things like our residence, driveways and forest roads."

Another, also with a woodlot license, told how a major storm blew down trees on his property and he applied to remove it "to prevent insect infestation." The application took almost a year to

process, by which time the logs had deteriorated and diminished in value, and the market price for wood had fallen. Meanwhile, farmers with forest land in the storm area could immediately remove their fallen trees.

Yet another tells how Forest Renewal BC (FRBC) turned down a request to fund reforestation on a piece of not satisfactorily restocked (NSR) crown lands. Later, the Ministry of Forests found extra funding and decided to do the replanting. The next year, someone hired by FRBC was found prepping the site, effectively undoing the replanting MoF had already done. The same landowner also recounted how FRBC paid to de-activate a road that lead to a MoF fertilization trial, forcing the researchers to fly in.

Many landowners, industrial and non-industrial, emphasized they do not oppose the intent of applying the Code to private land. They see a need for better stewardship on some private land and want to see private forest land continue to grow trees at a sustainable level. Several said that the Code could provide guidelines, but that "common sense" should be used in applying them. Other landowners are worried the Code is not flexible enough to take into account differences in regional and local conditions.

Other comments:

- The return on investment on private forest land is only 4-5%, if things are going well, and the Code will make that even lower.
- Some people want a lifestyle and they do a good job, so stay away from them.

2.4.3.2 Could incentives to used to regulate forest practices on private land?

Twenty-six of the landowners interviewed said incentives could be used to regulate forest practices on private land. Two landowners said "no" and two others said they had not given the issue enough thought. The most common reason given in favour of incentives is that, if the public wants to improve stewardship on private land, it should be prepared to **compensate** landowners for additional costs incurred. As one non-industrial and one industrial landowner put it:

> *"I am willing to go with the desires of the people of BC if they are willing to offset my costs of doing so.*
>
> *"Our [Private Forest Landowners Association] position has been that it [a regulatory structure] should be a results-oriented process and that should be tied in with additional*

financial incentives, and if regulations are imposed over and above key public value points then there should be compensation as well."

This view seems to be most strongly held by industrial landowners, who often mentioned concerns about profitability. However, several non-industrial landowners also emphasized this concern, arguing that long term viability is needed if private forest land is to be well managed. One said **long term viability** is the best way to prevent short term speculators from buying land, logging and reselling. Other non-industrial landowners also said they like the idea of incentives but are not primarily motivated by money. Several said forestry is a lifestyle more than a business. Two non-industrial landowners summed up this feeling:

"I don't need an incentive. I like the way things are being done on my property. I don't do it for the money. I [only] have to make a certain amount to pay the taxes."

"We bought the land because we wanted to get out of the city and we like to hunt. Once we had the property and realized we have more time now that we are retired, we decided to see what we could do with trees on the property. Personal satisfaction is the real motivation."

One non-industrial landowner opposed to incentives is concerned incentive benefits will go mainly to larger landowners, and says the best incentive is **public pressure**. (Almost all the landowners said public pressure has had an effect on how they manage their land.) The second opponent doubts that incentives alone are sufficient to prevent bad forest practice and emphasizes the need for some kind of regulations to set base standards.

Landowners broadly agree that any incentives should be in the form of **tax concessions**, mainly property tax but also income tax. Many said they would like rates similar to those applied to food farmers. Landowners also agree that incentives should be conditional on performance. Those who do not meet minimum standards, do not get tax breaks. Those who do more, should receive additional tax breaks. One landowner said tax incentives should be available to encourage better wildlife management.

Landowners, especially industrial ones, also said that, with the introduction of land use restrictions under the Forest Land Reserve, **additional incentives** will be needed if private forest landowners in other tax classifications are to be attracted into the managed forest land category. Right now, being in the managed forest classification, and therefore automatically in the Forest Land Reserve, is considered more of a disincentive than an incentive.

One non-industrial landowner said research by former UBC forestry professor Peter Pearse shows private landowners already manage their land better than crown land because their ownership gives them a built-in incentive to manage their land properly.

2.4.3.3 What do you think about taxation policies currently applied to private forest land?

Property tax was the most broadly discussed during the interviews. Almost all landowners are well informed on the subject and offered a range of ideas and suggestions. There is, however, a distinct different of opinion between non-industrial landowners, who are generally happy with their property taxes, and industrial landowners, who are not.

Most **non-industrial landowners** interviewed say they support lower taxes for managed forest landowners and find their property taxes reasonable, even inconsequential. Several had no idea how much they paid in property taxes. One landowner voiced a broad sentiment:

> *"If you are in the managed forest, you get tax relief. I support that general idea. It's very worthwhile. It brings taxes down to levels where it is quite possible to carry out good standards of forest practice."*

Satisfaction with current property taxes seems at least partly due to the fact that many saw their **taxes drop considerably** when they moved from other property tax categories to managed forest. One said he paid five or six times as much property tax before moving to the managed forest class. Another said her family owns two acres of waterfront residential land, which costs $2000 a year, and 25 acres of managed forest, which costs $100 a year. Several other non-industrial landowners are less certain of the exact property tax rate differentials, but describe the managed forest rate as "more reasonable."

Two landowners said they have fought BC Assessment to get their land into the managed forest tax, both successfully. One tells how BC Assessment had said the **"highest and best use"** of his forest land was to subdivide into residential lots, and wanted to tax the property as rural residential land. The landowner wanted to keep it as forest land in the managed forest tax classification and took the issue to court. On the second attempt, the **court ruled** in his favour and he was able to change his tax classification from residential forest land to managed forest land, dropping his tax bill "from about $4000 a year to $600-700." The other landowner faced a similar situation and saw his tax bill drop to $350 a year, one-third the previous rate.

When asked if a further property tax reduction could be used as an incentive to improve forest practices on private land, most non-industrial landowners were doubtful. One comment reflected the views of many colleagues:

"In my case it [property tax] is about $300 a year. In the beginning [before managed forest] I had to pay something like $1200. Its nice to pay less but we also have to work for it. The remaining $300 is not much of an incentive."

Three landowners said that lower taxes might be attractive but that tax cuts for managed forest landowners would mean higher taxes for others. One added that he did not like to see his neighbour, the CPR, pay a lower tax rate than himself.

Industrial landowners are generally not satisfied with their property taxes. Their main concern is that, even though BC Assessment assesses managed forest land at values lower than unmanaged and residential forest, municipalities and regional districts set the mill rates applied to the different forest land tax categories (see chapter four: financial compensation). The result, say industrial landowners, is that they often pay higher property taxes on managed forest land than on residential or unmanaged forest land. This is contrary to the objective of the managed forest tax category: to provide landowners submitting and adhering to a forest management plan with a tax break, relative to other forest land tax categories. One industrial landowner states his case:

"I think there should be a single mill rate all across the province. That's a real true incentive for people who want to keep their land in that land classification. The mill rate in one area can be much higher or lower than in neighbouring area... On unmanaged land in one municipality we pay 13.82 [cents per $1000 in property value], while on managed forest outside the municipality we pay $29.04."

Industrial landowners said the reason for the differential is that municipalities or regions see industrial landowners, who often also own wood processing facilities, as an attractive source of tax income. Several industrial landowners said they sympathize with the needs of municipalities and Regional Districts – who are now getting less money from the provincial government – but are still concerned local and regional governments might "throttle the golden goose.".

Two industrial landowners said their property **tax payments** have also **increased** because, as the value of private forest land values increases, so does the assessment made by BC Assessment. One said his company's property tax assessment had doubled to $3.6 million in the past "four or five years." Several industrial landowners suggested property taxes should be variable and based on the **site productivity** or mean annual increment (MAI) of the forest land, as assessed by a trained forester. One added the base tax rate should drop if forest practices are adhered to and raised if landowners engage in "unsustainable practices."

All but one of the industrial landowners interviewed said the best way to deal with their property tax concerns is to tax managed forest land at the **same rate as agricultural land**. In fact, they suggest that all tax matters should be the same for managed forest landowners as for "food farmers" (see harvesting tax, income tax and capital gains tax below). The main reason given is that managed forest is now part of the Forest Land Reserve (FLR) and subject to the same kinds of land use restrictions as agricultural land in the Agricultural Land Reserve (ALR). Several industrial landowners also said that, unlike most farmers, managed forest landowners allow public access to their forest land, that forestry is less environmentally damaging than agriculture and that farmers do not employ as many people as managed forest landowners. One landowner said that, with property taxes at current levels, it does not make sense to buy bare land now and wait 60 years for a return.

While supporting the idea of equality between managed forest landowners and food farmers, industrial landowners acknowledged that this would not solve the problem of varying mill rates. Several of the non-industrial landowners also support **FLR/ALR equality**, including some who currently found their property taxes reasonable. One says the rate for ALR land is one-third the already low rate he pays for his managed forest land. Another says the need to pay property tax sometimes compels him cut trees even though log prices might not be good. In all, half of the landowners interviewed, industrial and non-industrial, raised the issue of FLR\ALR equality.

Harvest taxes (see section 7.3.1.1) were opposed by several industrial landowners who said trees are a crop, like corn or wheat, and that "food farmers" are not taxed when they harvest these crops. Under the same tax system as food farmers in the ALR, managed forest landowners would pay no severance or harvesting tax. One industrial landowner said the harvesting tax is one part of a system that also imposes income tax and a logging tax on all trees cut on managed forest land. However, another said a harvesting tax is appropriate because private forest landowners can't have high ground rental because it could take 60-100 years to grow a rotation. Instead, government gets its share when the trees are harvested.

Non-industrial landowners, on the whole, did not have a problem with the harvesting tax. Though some were not entirely clear on what taxes applied to their forestry activities, the general sentiment was expressed by one landowner, who said:

> *"I think what is going on now is pretty satisfactory. As you reap the benefits of your harvest, you pay the tax. I do not see taxation at rates similar to food farmers as a major issue. The taxes are so reasonable on this forest land that no one could complain about it."*

Capital gains tax was not a big concern for most landowners interviewed, either because the land is owned by a publicly traded company that does not face the problem of intergenerational transfer or because most landowners currently have no plans to sell land, or to pass it on to another generation (in which case capital gains does apply). However, six non-industrial landowners were in situations in which capital gains taxes had been or were being levied. They expressed strong feelings about paying the tax:

> *"If they wish to keep the land as forest land, they should provide the same [capital gains] exemption as on agricultural land. People have dedicated their lives to their forest land... We bought this land second-hand with most of the timber harvested and we've been reforesting. We've worked hard for the capital gain."*

> *"Even if we form a company, when we die it is deemed a sale and subject to capital gains. That's a real consideration for us right now. What we paid for it 35 years ago is practically nothing. Those are not the same rules that apply to farms."*

> *"There are so many taxes now in BC and the only thing that's left is your capital gain. People usually earned it through a hell of a lot of work. I don't think there should be a tax on capital gain. They earned it."*

Of the other three affected landowners, one said they had been pushed into selling some of their land to pay for capital gains after inheriting the property, a second said there was a risk of forest landowners harvesting trees prematurely to pay capital gains after inheriting, while a third wondered if - since the assessed value of his property had diminished since being put in the Forest Land Reserve - the government would offer him a "capital loss rebate."

Other taxes were of minor concern. Many landowners interviewed did not always have a clear idea about what taxes they are paying. For industrial landowners, this is because the people interviewed were usually not the same people who dealt with tax issues. However, one said farmers pay 50% less school tax than managed forest landowners, a second said income tax, harvesting tax and logging tax was "triple taxation" of the same product, while a third said landowners should be able to deduct from the logging tax any expenses incurred over years.

Many smaller landowners have combinations of ALR and FLR land, while others have woodlot licenses or other forestry and agricultural enterprises. This makes it difficult to keep track of various taxes. One non-industrial landowner said his investments in silviculture are not deductible from income tax, while another said all improvements are deductible. Others wanted to be able to deduct expenses for vehicles used in forestry, the way farmers can deduct expenses

for farm vehicles. Several were not aware of the existence of a logging tax, as separate from harvesting tax.

2.4.3.4 Do you think managed forest landowners currently have the freedom to manage their forest resources?

Twenty-eight managed forest landowners interviewed said they **currently have freedom** to manage their forest resources. Several said they currently have "total freedom and would like it to stay that way." One said that "even the Islands Trust" supports his forestry activities, while another said the Fisheries Act and the Water Act were his only concerns. Several non-industrial landowners were unaffected because they had little mature timber and were doing no harvesting. The two landowners who said they did not have sufficient freedom did so because their private lands are incorporated into a crown land woodlot license and subject to Forest Practices Code rules.

Despite their overall satisfaction with the current arrangement, there are some concerns. The main one, especially among industrial landowners, is the threat of the **Forest Practices Code** "hanging over our heads." Another concern among all landowners is that the Code would likely only be applied to managed forest land, leaving other less well-managed private forest land unregulated.

Other issues were also raised. One non-industrial landowner said industrial private landowners have been criticized by environmental groups, which he considers unwarranted. A second said the practices of industrial forest landowners reflected badly on non-industrial landowners. Another said BC Assessment requires relatively quick reforestation of harvested areas, which does not allow time for natural regeneration. However, he added that the inspection forester has been lenient in his interpretation of the rules, allowing him to do some natural regeneration. A third landowner said that his freedom to do non-forestry activities on his land had been curtailed by the Forest Land Reserve.

Most landowners, industrial and non-industrial, are adamant they want **current freedoms maintained in future**. Generally, they argue that the current system is working and does not require change, though several non-industrial landowners expressed doubts about some management practices among industrial landowners. Few landowners are optimistic that current freedoms will be maintained. One landowner expresses a common sentiment when he says there are just enough "bad apples" among private forest landowners to ensure public pressure will force government to "do something."

If government does do something, landowners support some kind of regulation that maintains as much "freedom to manage" as possible. All but one of the industrial landowners interviewed said they have been involved with the PFLA and its development of a more "results-oriented" alternative to the **"process-oriented"** Code (see section 6.3). Industrial landowners argue this will give them much greater freedom in achieving the outcomes important to the public, with less paperwork. Several added that the PFLA proposal calls for the removal of section 217 from the Forest Practices Code Act, a provision that allows the Code to be applied to private land.

Non-industrial landowners are also concerned about the Code – and even the PFLA alternative – and want as much freedom an possible maintained. Anything else will be "deconstructive," said one landowner:

> *"I believe there should be a wide range of freedom. If government regulations impinge on the right of the property owner to manage his own property, it works against achieving the cooperation of the landowner. I'm a big believer in non-industrial private landowners owning their property and managing their own way. Most do a good job."*

Two non-industrial landowners said they wonder about who might administer a new regulatory system. One said the **new regulatory body** cannot be the Ministry of Forests (replacing BC Assessment) because:

> *"For something really different... you really need a different bureaucracy, not the MoF and their way of doing things."*

The second said a new regulatory body should be an **"advocate"** for forestry, much like the Agricultural Land Commission is an advocate for farmers in the ALR. In the past, one landowner said, he looked forward to seeing the District Agriculturalist and discussing important issues but when he sees a forester he thinks "what have I done wrong this time?"

A minority of non-industrial landowners are "unconcerned" about the Code, some because they are not harvesting or planning to harvest, others because they have woodlot licenses and the Code already applies to their private land. Several landowners said the Code would do little to change their management practices, but would significantly increase paperwork. One landowner said he liked the PFLA proposal for a results-oriented regulatory approach but wonders whether such a system is feasible:

> *"The idea has its merits and is certainly better than a process-oriented system. But where are we going to get people who can measure these things? It takes a lot of experience. On my land it has taken a lifetime of being sensitive to what's happening to living things."*

2.4.3.5 Should information and education services be made available to private forest landowners?

Twenty-six landowners interviewed said information and education services should be available to private forest landowners. Only two said "no" and two were "undecided." However, while most said the services should be available, only a few landowners said they would make use of such services. Reasons for this lack of interest differ between industrial and non-industrial landowners.

Industrial landowners said they already have trained foresters and woodland managers on staff, and often do training and education in-house. When they said they support education and information services, they were thinking more about **smaller landowners** who might not have the same level of expertise, and especially about non-industrial forest landowners not in managed forest and in the Forest Land Reserve. When asked if they would be willing to share this expertise with smaller landowners, one said it is "not in our interest to help competitors," two said this is already happening to some degree through the PFLA (one noting the conflict involved in assisting competitors) and two others said that until recently they had done so but economic realities had since made them "lean and mean," leaving fewer resources for such activities.

Most **non-industrial landowners** said they would not make use of most information and education services because they already have extensive forestry training and/or experience. They said they were thinking more about making such services available to private forest landowners not in the managed forest category, especially **farmers and ranchers**. Several non-industrial landowners said there were "always new things to learn."

The four non-industrial landowners who said "no" to information and education services, or were "undecided," did so because they felt most of the **information is already available** if you knew where to look. This perception is also shared by non-industrial landowners who said "yes" to information and education, though they also note the process is complicated and requires interaction with a range of government and private agencies. One relatively new landowner describes her quest for information:

> *"I think a lot is available if you look for it but it's very time-consuming. Once you have the contacts, they are more than helpful. They sent me information on barrier protection, reforestation and how to deal with root rot. It's there, but nothing is compiled as a guide. That would be very helpful."*

Types of information desired again varied. For non-industrial landowners, easily the most common suggestion was access to the **services of a professional forester**, someone to come out

and look at their forest, make suggestions and discuss ideas about forest management with the landowner. One landowner summarized the feelings of many other non-industrial landowners:

> *"The most instructive two days I spent was going out with a forester and looking at the forest through the eyes of a forester. I really benefited from that. I know it's probably easier to send people to workshops but each piece of land tends to be unique. I don't know who is going to pay the teachers [foresters] but... the public likes to see undisturbed forest so it might not be bad if they paid for a bit of it."*

Topics landowners might like to discuss with a professional forester include reforestation, other siliviculture, diseases such as root rot, environmental protection, marketing, non-industrial scale forestry issues, harvesting and technical issues, forest ecology, and financial and non-industrial business assistance. Several landowners suggested a forester's role could include convincing others with private forest land to join the managed forest tax classification. One interviewee said professional foresters could probably "learn a thing or two" from forest landowners.

Like the landowner quoted above, most non-industrial landowners said they realized making one-on-one forestry advice available, while desirable, is **expensive**. Most said they could not afford the services of a forestry consultant. In this context, several landowners mentioned FRDA (Forest Resource Development Agreement) because this joint provincial/federal funding scheme made professional foresters available to private forest landowners.

Other kinds of information and education services suggested included **workshops and lectures**, possibly through local colleges, the Private Forest Landowners Association, woodlot associations, or the Ministry of Forests. Several landowners said they are reluctant to see any government agencies involved, citing concerns over the development of a "massive bureaucracy." Other landowners, industrial and non-industrial, said there are already workshops and courses being taught, possibly through the PFLA or community colleges. Materials suggested included videos, pamphlets, newsletters, handbooks and other printed information.

One landowner said business advice should include dealing with unscrupulous logging contractors and log brokers He said common problems are contractors who also own forest land can mark some trees logged on contract as their own, while others make a mess and leave the landowner to clean up. The landowner suggests a system of training and certifying contractors.

Other comments

- The small amount of private forest land in BC makes it hard to achieve the "critical mass" needed for good information and education programs, and to form strong forest landowners associations.
- In Oregon and Washington, non-industrial owners benefit [from information and education programs] more than others.
- Information and education should be reasonably priced, but not free.
- When providing information, who decides what is right and what is wrong?
- Some people have not been in the education system for 30-40 years, and are often unfamiliar with trade language.

2.4.3.6 Should the government provide funding assistance for silvicultural activities on private land?

Opinions on this issue were split roughly down the middle, with landowners industrial and non-industrial on either side. Those who said the government should provide funding assistance did so for two main reasons. Among industrial landowners, the main reason given is that, if the government is going to regulate forest management on private forest land, then they should assist in funding silvicultural costs. Several non-industrial landowners also made this point, but a greater number said they support silvicultural funding assistance because **silviculture is expensive** and many non-industrial landowners do not have the money to pay these costs up front, especially if they do not have much mature timber to harvest. Several industrial landowners said funding assistance was probably more appropriate for non-industrial landowners. One said funding would help **create forestry jobs**.

Landowners opposed to silvicultural funding assistance have two main concerns. One is that silviculture is part of forest management and if silvicultural activities do not make business sense, then they are not worth doing. **Subsidizing** these activities encourages landowners to do things they might not otherwise do. Several non-industrial landowners said their desire for additional government funding was offset by their concerns as taxpayers that government programs tended to be **"wasteful."** One said we are simply passing the cost on to future generations because government would have to borrow the money.

The second concern is that government programs tend to grow and become more **"bureaucratic"** over time. One landowner expressed a common sentiment:

"I was against FRDA and I'm against FRBC. Once they [the government] get their foot in the door they will be in there hollus bollus. I don't want them to even get a finger in the door. If you want to do enhanced forestry, then do it at your own expense."

Two non-industrial landowners opposed to funding said they use selective harvesting methods and are therefore not engaged in traditional silvicultural practices such as replanting and brushing. Two others expressed doubts that silvicultural activities pay for themselves in the long run.

Most industrial landowners and several non-industrial ones said that, if government wants to encourage silvicultural activity, they should do so through **taxation policies** rather than **direct subsidies**. This makes it less likely that landowners will carry out needless silvicultural activities, and also reduces direct government involvement in forest management. One landowner said a sound business climate would automatically ensure necessary silvicultural activities are carried out.

Even those opposed to funding said that if the money were made available, they would take advantage. Several said government should only pay a percentage of silvicultural costs, instead of making them free for landowners. Two non-industrial landowners said they would not take part "out of principle."

Over half of landowners interviewed took part in the joint federal/provincial program known as FRDA **(Forest Resources Development Agreement),** which included funding assistance for silvicultural activities. These were mainly non-industrial landowners but also several industrial landowners. Many who took part in FRDA said they oppose funding assistance for silvicultural activities but took advantage because the "money was available." One industrial landowner said his company took part to "create jobs." Several non-industrial landowners took part because they did not have the resources to fund silviculture. One said he liked the money but has misgivings:

"I've gone through the FRDA thing, got help from them just as a lot of other people got help. But like a lot of other government programs, it was wasteful. I did it because I needed to... I appreciated the financial gifts in order to get my stands into a fully stocked position. I would have done it anyway, but probably slower."

Many non-industrial and industrial landowners called FRDA **"increasingly bureaucratic"** and **"wasteful,"** with too much money spent on **"paperwork."** One landowner said FRDA paid him $6000 to produce a management plan he did not need. Landowners also expressed concerns that subsidies encourage unnecessary silvicultural activities (FRDA funded up to 80% of costs).

Several non-industrial landowners were very positive about FRDA, saying the program got them started in forestry, both through funding and technical advice:

"We got involved in FRDA early on, planting and thinning, and we got good money for it. It really got us started. We would probably not have done those things if we did not have financial support. We needed $5000 for seedlings, and where to get them was a bit of a mystery. With FRDA we had help, and not only financial."

"I thought it was great because it was voluntary. If someone wanted to try it they could. Also, [government] should only pay part of it so the landowners still have to pay. That means landowners only use the funds if they really want to do something, not just because the money is available."

2.4.3.7 Do you ever have trouble finding a market for timber cut on private land?

Eighteen landowners interviewed said access to markets is not an issue, while eight said finding markets is a significant problem. Four had little or no mature timber to sell. Concern over access to markets **varies considerably**, depending mainly on access to manufacturing facilities but also on geographic location.

Only one of the ten industrial landowners interviewed said access to markets is a concern. Industrial landowners said this is because they also own wood processing facilities and can tailor their private land cut to suit the needs of those facilities. Several industrial landowners said they also export logs to the US and Asia. One says his company does not sell any logs on the open market but, rather, trades with other companies. For example, one company might trade logs to log home manufacturers and take pulp wood in return.

The one industrial landowner interviewed who has no production facilities said he can readily sell logs but would like greater **access to markets in the US**, where he said numerous small mills would like to buy Canadian logs. Several other industrial landowners mentioned export restrictions. One said it's a purely political decision and that "we are supposed to be doing free trade," and a second that "markets have become global so we can't have local restrictions anymore." One non-industrial landowner said he needs a permit to "export" certain kinds of wood to Alberta.

Non-industrial landowners were about evenly divided on the question of access to markets. The split seems to be **largely geographical**. Most concerned about access to markets were private forest landowners on the Gulf Islands. Four of five Gulf Island landowners interviewed said the biggest problem was the limited number of log buyers in their proximity. One landowner summed up the views:

"There are only one or two timber buyers so your chances of getting a good price for your logs are diminished, even from three or four years ago. All these amalgamations [of wood buyers] have been taking place."

One relatively new Gulf Island landowner said selling timber has required considerable research. First she had to locate buyers, then ship logs to a sort yard on another island. However, the ferry ramp on the island with a log sort could only handle half a load at a time, so she instead decided to send the load to the mainland or Vancouver Island. This is more expensive and time-consuming option, given the ferry schedule. The landowner also discovered that any logs that go off her island have to be listed by species and volume. Another Gulf Island landowner wondered what happened to government plans to create more sort yards for private logs, while a third said a movement is now afoot to do a collective or co-op marketing system for private forest landowners, saying this kind of system had worked well in other countries and would "be a boost here in BC."

Some landowners on Vancouver Island also said they are concerned about the limited number of buyers for their products, especially at the south end of the island. One landowner said big companies are organized so they know not to compete with each other in buying logs. Landowners on northern Vancouver Island seemed to have fewer marketing problems. Two landowners expressed different perceptions:

"One wishes the market were deeper and broader. More buyers would be nice. Also, there is no market for the lowest quality of wood, known as slash in the industry, so we have to waste it. We have sold some firewood on the local market but those activities tend to be marginal.. We do it to clean up our sites. We have to live with the market as it exists, for our good wood."

"Buyers are very competitive. Initially, going back 15 years, there were only two buyers on this part of the island but there is now a veneer plant that is an aggressive buyer of second growth fir, a new buying station in Nanaimo, a non-industrial dry land sort in Ladysmith and also a couple of buyers of hardwoods have come along... Each needs different products, sizes and grades."

Non-industrial landowners in the BC interior did not find a lack of buyers to be a problem, though they, like their colleagues around the province, said they are concerned about the weak market for wood. Many non-industrial landowners said they were currently not harvesting, hoping for better prices in future. One landowner said new markets had developed for hardwoods such as alder and aspen, while another has mostly cedar and says the market is still strong.

Other comments:

- Non-industrial landowners can have difficulty finding markets for non-industrial amounts of wood, especially high or low quality wood. One industrial landowner said there is no real market for lower quality woods in any volume.
- There is a need for a publication listing buyers and prices, as well as log brokers.

2.4.3.8 Could some kind of sustainability or eco-certification program be used to promote improved forest practices on private land?

Ten landowners interviewed said an eco-certification system could be used to improve forest practices on private land, nine landowners said "no", four are "undecided" and six said they do not know enough about the issue to comment. There are significant differences of opinion between industrial and non-industrial landowners.

Most non-industrial landowners said either that they support some kind of eco-certification, or they do not know enough about the issue to comment. Those in favour were enthusiastic but said **certification has to pay its way**. Most believe certification is inevitable. As one non-industrial landowners says:

> *"I think it could work very well. We are eventually going to get there. If you adhere to an acceptable standard then you can get a premium over the next guy. But it has to be international, not homegrown in BC."*

Many non-industrial landowners said **certification should be automatic** if landowners adhere to regulations and pass routine inspections. Several said certification must take place at the plant or mill level because wood from various non-industrial landowners gets mixed up during production. One said keeping certified wood separate from uncertified wood could only be done at considerable expense, a second that industrial landowners could have problems with such a system if they are "not philosophically in tune," and a third that he would like to have a choice of what system to participate in and that two, possibly CSA (Canadian Standards Association) and FSC (Forest Stewardship Council) are already available in BC. A fourth sees certification as recognition of good stewardship:

> *"I Think its a good idea. It's an incentive. It makes the logger feel good, feel like they have done something the public likes to see. It also takes the heat off those who are doing it right."*

Several non-industrial landowners said certification is a bad idea, because most managed forest land is being well managed and certification will just mean more government intervention. One landowner says certification is political, echoing the concerns of several non-industrial and industrial landowners:

> *"My initial reaction is that it's just a bunch of public relations spin doctors. I'm not against it in principle but I'm not sure how well it would work once it's through the public relations. It's too close to politics."*

Most industrial landowners either oppose an eco-certification scheme, or are undecided. The main reason is that they remain unconvinced that consumers are prepared to pay a premium for certified wood: a premium at least large enough to offset the additional costs of a certification system. At the same time, industrial landowners said consumer preferences are changing and that some kind of certification system is inevitable. One industrial landowner sums up the position:

> *"Any certification program should be marketplace driven and should flow from the market back to the land. Until there is a demand for it, there is not need. Consumers have to demand certification because it is costly. The last thing you want is another government program. Pressure is building though, slowly, and inevitably there will be some kind of requirement for an internationally acceptable certification program."*

Several industrial landowners also said certification is becoming an issue in Europe but not in their principal markets in the US and Asia. One landowner said he was a champion of certification four or five years ago, but has since changed his mind because certification means the desires of relatively uninformed consumers supersede a landowner's forest management objectives. Another landowner said a customer had recently inquired about certified wood but was not prepared to pay much of a premium.

2.4.3.9 If and when government does introduce a new regulatory system on private forest land, which of the following issues do you think are most important to consider? Access to markets, sustainability certification, "freedom to manage," property and other taxes, extension and education programs?

With this question, some landowners named only the one, two or three issues most important to them, while others ranked them all in order of importance. Twenty-two landowners, industrial and non-industrial, said **freedom to manage** is the most important consideration for any future legislation. Another four said freedom to manage was the second most important consideration. Most said they currently have considerable freedom to manage their forest and wanted to keep

things that way. Reasons for placing importance on freedom to manage differed between non-industrial and industrial landowners.

Many non-industrial landowners said freedom and **"lifestyle"** were the main reasons they owned forest land and that freedom should be maintained as long as they are doing a good job. Some expressed concern over the **cost of regulations.** Industrial landowners are much more concerned about regulatory costs, and said any new legislation should maintain freedom to manage by introducing a "results-oriented" system rather than a "process-oriented" system like the Forest Practices Code. Several said freedom to manage gives them the ability to **react quickly** to changing market conditions. Two industrial landowners said freedom to manage is more of a right than an incentive.

Landowners identified **property and other taxes** as next in order of importance. Three said property and other taxes were the most important issue, while another 16 ranked taxes second, usually after freedom to manage. For most, the biggest concern is property taxes. This is especially true for industrial landowners (for details, see section 2.4.3.3). Several non-industrial landowners also want lower property taxes but several others said property taxes are already so low that additional cuts are not much of an inducement. Three suggested changes to the way income is taxed. Two landowners said capital gains was their major concern. One said lower taxes are always nice but that everyone has to pay their share.

Third on the list is **extension and education**, including funding assistance for silvicultural activities. One landowner said extension and education is most important, one ranked this issue second and four placed it third, after freedom to manage and taxes. All except one who chose this option are non-industrial landowners. Also, every landowner interviewed said the education component is more important for other landowners, especially those not in the managed forest tax category. One said more education would mean landowners know what they want and would demand more freedom. Another said it is "just as important" to educate the public as to educate the landowners.

Four landowners, all of them non-industrial owners on Gulf Islands or southern Vancouver Island, said **access to markets** is the most important consideration. Two others considered the issue to be of some importance. Only two landowners, both non-industrial, considered **eco-certification** to be an important issue, ranking it second and third, respectively.

2.4.3.10 Are there any other issues you think are important to this discussion?

About half of landowners interviewed felt that the questions had covered most of the issues they felt to be most relevant. The other half made a range of suggestions.

Selective logging was raised by four landowners, in different ways. One said that, even though aesthetics are controversial and most private forest landowners resist imposition of visual quality standards, many already practice alternatives to clearcuts, often because of public pressure. He said alternative practices include patch cuts, selective retention, strip logging, cable logging and helicopter logging. A second landowner said he has a neighbour logging on crown land who is doing one hectare patch cuts because of pressure from the local watershed committee. A third said he has done selective logging on his property for 30 years, mainly removing the "dead, dying and diseased." A fourth says some landowners think they're doing selective logging but are really high-grading:

> "A*n owner who is looking to the future will not cut best, biggest and straightest trees because he knows they will be more valuable 10 or 15 years from now. He might cut lower grade logs and lower his cut, maybe carrying out commercial thinnings. He should be planning for the long term.*

Two industrial landowners said **forest land privatization** of crown land is likely in future. One said this would create a stewardship ethic and provide tenure security, and could be used as an incentive to manage existing private lands well. It would also provide the provincial government with money before trees are harvested. The second landowner said that, while he did not support privatization, it would likely happen because the government is broke and they need money for compensation issues like the Protected Areas Strategy and fast-tracking land claims. Several industrial landowners said they are interested in buying additional forest land.

Other comments

- We still have a frontier mentality in BC and have not yet developed a stewardship ethic.
- Changes on public land have increased pressure to cut trees on private land.
- BC Assessment could be a good regulatory body if given sufficient resources.
- The best regulation system is some combination of regulations and incentives.
- Companies should keep their own records and do their own audits, reducing cost to government and increasing freedom to manage.
- The ability to manage for non-timber values depends on the revenue derived from the forest.
- Maybe we need more regulations for farmers, not less for foresters.

- Unless non-industrial landowners get a tax structure similar to food farmers, they are "on their way out" and larger companies will buy up the land.

2.5 Conclusions

The purpose of the survey was to gather information about the goals, views, ideas and capabilities of private forest landowners in the "managed forest" tax category. This information can be used to assist in the development of policy mechanisms aimed at improving the level of stewardship on all private forest land in BC. The 30 personal interviews that comprise the survey indicate several important areas of agreement among managed forest landowners, and a range of ideas that will be of assistance in private forest land policy development.

2.5.1 Industrial vs non-industrial landowners

Many surveys make a distinction between industrial and non-industrial landowners but since I favour forest policies that apply equally to all landowners, I was initially reluctant to emphasize this distinction. This approach was partially supported by large areas of overlap in views expressed by industrial and non-industrial landowners. However, there were also areas where different views and sentiments were expressed, and different market and other conditions prevail. Therefore, I have employed the distinction between industrial and non-industrial landowners where the situation warrants.

2.5.2 Public interest on private land

There is broad agreement among all landowners surveyed that the public has at least some legitimate public interest in forest practices on private land, especially water quality but also fish and wildlife habitat, soil erosion control and maintaining long-term productivity of the land. Most landowners said visual quality should be the choice of the landowner but recognize that visual quality is viewed by the public as a proxy for stewardship. Most landowners allow public and even encourage access to their land but see it as more of a privilege than a right. Concerns include mountain bikes, ATVs, snow machines, wood theft, dogs and garbage.

Most landowners expect public pressure for better forest stewardship to increase. Industrial landowners said they have reacted by increasingly including riparian areas, wildlife management, sensitive soils, visual quality and recreation in their forest management plans. Non-industrial landowners take a less formal approach. All landowners said they are currently doing a good

job. Every non-industrial landowner said they already manage their private forest land to high standards, usually for personal reasons but also because of public pressure.

2.5.3 Regulation

Most landowners interviewed are content with the current system of regulating forest practices on managed forest land, mainly because there are few restrictions, and believe most managed forest landowners do a reasonable job of forest management (though some small landowners thought large ones could do better). However, most also feel the government must "do something" to improve stewardship on other private forest land, because a few "bad apples" were affecting the reputations of all private forest landowners. They also said restrictions should apply equally to all private forest land, including the Forest Land Reserve.

Even landowners who strongly support increased regulation (especially industrial) share a major concern with those opposed to regulation (usually non-industrial): that additional government regulation inevitably means more bureaucracy, inflexibility, waste, expense and paperwork. For these reasons, landowners almost unanimously oppose the application of the Forest Practices Code to private land. Conversely, most say some combination of incentives could be used to promote stewardship in private land. Finally, landowners broadly agree that if the public demands additional regulation they should pay, or at least defray, the costs. This view was especially strong among industrial landowners.

2.5.4 Freedom to manage

Landowners have strong ideas about parameters for any new regulatory system aimed at improving stewardship on private land. Most importantly, a majority said that, if a regulatory system is implemented, the most important concern is the maintenance of the "freedom to manage" their forests. For most, that means defining objectives the public would like to achieve on private land, then leaving landowners freedom to achieve those objectives in ways suitable to their particular situation. Industrial landowners referred to this a "results-oriented" system, as opposed to a "process-oriented" system like the Forest Practices Code. Cost was the biggest consideration. Non-industrial landowners' support for freedom to manage is more intuitive and informal, with loss of freedom and lifestyle the main concern.

2.5.5 Tax structure

Industrial landowners are particularly concerned about property tax, mainly because tax rates determined at the municipal or regional level tend to negate tax advantages for managed forest landowners provided by lower property assessments at the provincial level. Large landowners also say their property values, and therefore their taxes, have risen substantially in recent years.

Most non-industrial landowners said their property taxes are reasonable, even inconsequential, especially compared to taxes paid before they were put in the managed forest tax category. Most also consider the harvesting tax reasonable, unlike some industrial landowner, who argue a tree crop is like a corn or wheat crop, yet food farmers are not required to pay a tax on harvest.

Non-industrial landowners subject to capital gains tax said they worked hard for the capital gain, like planting and tending trees, and that the tax forced them either to sell some land to raise money or to harvest immature trees. All wonder why they do not qualify for the same capital gains exemption as food farmers.

2.5.6 Agriculture vs forestry (details in Appendix A)

Industrial landowners favour tax conditions for managed forest landowners in the Forest Land Reserve similar to those applied to agricultural landowners in the Agricultural Land Reserve. This opinion was supported by many non-industrial landowners. Owners of forest land in the ALR pay lower property tax than managed forest landowners, pay no harvesting tax, get a $500,000 capital gains exemption and can pass on farm assets to lineal descendants without paying capital gains.

2.5.7 Information and education

Two thirds of managed forest landowners interviewed said information and education programs should be made available to private forest landowners, but most were thinking about other landowners – especially those not in the managed forest tax category – rather than themselves. Almost all landowners interviewed had considerable forestry experience and education. In addition, industrial landowners said they already have trained foresters on staff. Non-industrial landowners said they know their land intimately, though some said there is always more to learn. A few landowners said all necessary information is available if you know where to look.

Non-industrial landowners value access to a professional forester with whom to view their land, discuss ideas and swap suggestions. Other topics of interest include reforestation, other

silviculture, disease, environmental protection, marketing, small scale forestry, harvesting and technical issues, forest ecology and financial and small business advice. Landowners large and small expressed concern that government education and information programs would become bureaucratic and wasteful and suggested alternatives such as woodlot owner associations. Other materials suggested include videos, pamphlets, newsletters, handbooks, and other printed material.

2.5.8 Financial assistance

About half of all landowners interviewed said government should provide funding assistance for silvicultural activities; industrial landowners because they see it as compensation for lost property rights and the non-industrial landowners because they don't have the money to pay silivicultural costs up front. Those opposed to silvicultural funding programs say silvicultural costs are part of the business, that government programs are wasteful and that they tend to encourage silvicultural activity that is not necessary. If funding assistance were made, most landowners said it should be done through tax policies rather than as direct subsidies. About half took part in a previous joint federal/provincial funding initiative and found the program helpful but also bureaucratic and wasteful. Non-industrial landowners are likely to consider money a less important motivating factor than things like lifestyle, personal satisfaction and freedom.

2.5.9 Markets

Most landowners said marketing their logs was not a problem. Large landowners had their own wood processing facilities, while most small landowners said they had a number of buyers interested in their trees. However, a solid minority said marketing is an issue, mainly because their forest land is on an island and/or there are only one or two log buyers in their proximity. Some industrial landowners are concerned over log export restrictions to the US. All are concerned with the current bad market for wood.

2.5.10 Eco-certification

Non-industrial landowners are more likely to support eco-certification than industrial landowners, but are also concerned about possible costs. Some non-industrial landowners said they are already doing a good job and eco-certification is just another form of government intervention. Most industrial landowners oppose eco-certification, mainly because of concerns over cost and uncertain benefits. Most landowners believe some sort of eco-certification system is inevitable.

Chapter 3: Environmental Valuation

3.1 Introduction

The efficient use of limited resources when addressing environmental concerns requires that, before comparing the relative cost and effectiveness of different regulatory approaches, we first make rational decisions about what ecological issues most deserve our attention. This is currently not the case. Environmental regulations are often enacted for decidedly subjective and emotional reasons, fueled perhaps by a glaring case of environmental degradation, momentary focus of media attention, proximity to one's own backyard, expenditure of resources by powerful lobby groups, political aspirations of government, or the big round eyes of species perceived to be at risk. While this intuitive approach has been valuable in garnering attention for environmental causes, it does not result in the most efficient use of public and private resources.

An alternative to this subjective approach is to create objective measures of the benefits to human welfare provided by ecological systems.* Unfortunately, valuation of such benefits is very complex, largely because scientific knowledge is uncertain and incomplete but also because it is difficult to compare economic, social and spiritual benefits without having some kind of standard valuation system.

Economists have made a number of attempts to assign monetary values to benefits to human welfare provided by earth's ecosystems. Although these methods all have shortcomings, they are useful in highlighting the substantial benefits humans derive from earth's ecosystems, ranking the value of ecosystem functions relative to one another, and developing basic monetary estimates of the ecological benefits to allow a comparison with commonly measured economic benefits. Collectively, this information can assist in deciding what regulatory action, if any, is appropriate for private forest land in BC, and what factors to consider in the development of such regulations.

* An ecological system, or ecosystem, consists of plants, animals, and microorganisms that live in biological communities and that interact with each other and with the physical and chemical environment, with adjacent ecosystems and with the atmosphere (Constanza *et al* 1997).

3.2 Impetus for regulation

3.2.1 Market and non-market values

The traditional justification for government regulation on private forest land has been to secure a stable and long-term supply of timber to the economy, based on the assumption that the long time period required to grow trees discourages investment in reforestation and favours conversion of forest land to agriculture or development. As a result, policies have been aimed mainly at reforestation and preventing land conversion but also on promoting soil conservation and water quality. Over time, however, the public has become increasingly aware of non-timber benefits provided by forests.

Non-timber benefits come in two varieties (see table 2). Some can be bought and sold, just like timber, and have a market price or market value. *Market values* include goods such as mushrooms, berries, salal, medicinal herbs or maple syrup, and services such as grazing rights or commercial recreation. Other benefits cannot be readily bought and sold and so do not command a market price. *Non-market values* commonly associated with forests include non-commercial recreation, aesthetics, fish and wildlife habitat, carbon dioxide sequestration, soil stability, watershed protection, noise abatement and spiritual significance. It is these non-market values that the BC public appears to consider inadequately protected (FRC 1991) and which the government seeks to protect through additional regulation.

Table 2: Possible market and non-market benefits for private forest land

Market values	Non-market values
Timber Products:	**Social and cultural functions:**
sawlogs	non-commercial recreation
pulp wood	aesthetics
firewood	spiritual significance
christmas trees	
Non-timber products:	**Ecological services:**
mushrooms	soil conservation
berries	watershed protection
medicinal herbs	fish and wildlife habitat
ornamental products	carbon sequestration
	nutrient cycling
Non-timber services	micro-climate control
commercial recreation	biodiversity conservation
grazing rights	

Though public concerns appear to be mainly intuitive, they reflect a growing academic awareness of non-market values provided by forests and other ecological systems. Environmental economists refer to non-market values as ecological services (Barbier, Burgess and Folke 1994) or ecosystem services (Costanza, *et al* 1997). They encompass all ecological goods and services currently perceived to support and protect human activities or affect human well-being. They include the maintenance of the atmosphere, amelioration and stability of climate, flood controls and drinking water supply, waste assimilation, recycling of nutrients, generation of soils, pollination of crops, provision of food, maintenance of species and a vast genetic library, and also maintenance of the scenery of the landscape, recreational sites, aesthetic and amenity values (de Groot 1992, Folke 1991).

Note that protection of biological diversity, or biodiversity, is based on the premise that diversity at genetic, population and ecosystem levels are assumed to contribute to maintaining ecosystem services. For example, loss of unknown species may mean the loss of genetic material that contains a potential cure for cancer, a population of microorganisms might be vital to a species web that provides soil generation or waste assimilation, or an intricate combination of interdependent species may be needed to provide as yet unknown ecosystem functions necessary for human survival.

3.2.2 Market failure

Environmental economists believe ecological services are not adequately protected by existing institutions in industrial societies. Most economists would view this inadequate protection as the result of *market failure* (Pigou 1920). The reasoning is relatively straightforward. In market systems, product prices increase to reduce quantity demanded when supplies are low, and prices drop to increase the quantity demanded when supplies are high, keeping supply and demand in equilibrium. This mechanism is known as a negative feedback signal. The problem with ecological services is that, because they are "external" to the market (i.e. they have no market price), there are no market signals to keep supply and demand in equilibrium.

As a result, even when the supply of ecological services provided by forests is diminishing, there is no corresponding price rise to reduce demand and encourage conservation. There is no negative feedback signal to keep use in equilibrium with availability, and therefore a market failure. Two comments summarize the problem:

"Markets are superb at setting prices, but incapable of recognizing costs. Today we have free markets that cause harm and suffering to both natural and human communities because the market does not reflect the true costs [social and environmental] of goods and services" (Hawkins 1993, p75).

"Because ecosystem services are not fully captured in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions" (Costanza, *et al* 1997, p1).

3.2.2.1 Reasons for failure

Until relatively recently, the inadequate weight given to protection of ecosystems has been largely ignored outside the academic community (and even in it), for several reasons (Cairns and Pratt 1995, Daly and Cobb 1994). One, current societies employ measures of human welfare, like gross national product (GNP), that were never intended for this purpose and do not measure degradation and loss of ecological services. Second, existing world views tend to alienate people from their dependence on healthy ecosystems. Third, modern societies assume that future technological solutions will compensate for the loss of ecological goods and services.

Public attitudes appear to be changing, driven by the increasingly visible alteration and destruction of ecosystems as population and per capita consumption of resources increase. Meanwhile, there is a growing awareness in the scientific community of the value of ecological services to human welfare, as well as an awareness of the interdependence of economic and ecological systems (Daly and Cobb 1994). This interdependence increases as economic activity grows in relation to the capacity of ecosystems. Isolating them for academic purposes has led to distortions and poor management, which takes us back to Pigou.

3.2.3 Valuation of ecological services

The logic of market failure has led environmental economists to argue that the best way to protect ecosystem services (i.e. non-market values) is to incorporate or "internalize" them into the market system (Hanemann 1988, McNeely 1988, Randall 1988). One way to achieve this is to grant private individuals sole rights to particular environmental resources (Constanza *et al* 1997). The main problem with this option is that it may not result in the conservation of environmental resources if their value is rising at a rate less than those of alternative investments. For example, a private individual may find it to his or her best advantage to liquidate an animal species and invest the money elsewhere. There would also be considerable political opposition to privatization of environmental resources.

Another approach is to find indirect ways to determine the economic or market value of ecological services. Common methods are discussed in greater detail later in this section. However, the point is that, once values of ecological services have been established, the market can be used to encourage their conservation. In the case of forest land, establishing the economic value of fish and wildlife habitat, carbon dioxide sequestration, watershed protection and other ecological services would encourage wood product prices to reflect the true cost of cutting trees, including the loss of important biological functions. Awareness of the value of ecological services provided by forest would allow us to measure the benefits derived from different regulatory approaches.

Valuation of ecological services might also provide cause to consider that, while forest landowners provide a range of ecological services beneficial to human welfare, they do not derive any income from these services. So landowners bear the cost of providing ecological services, while societies in BC and elsewhere reap the benefits. Publicly buying or leasing ecological services from landowners would provide a strong incentive to reforest and to manage forest land for a range of environmental attributes increasingly demanded by the public. Alternatively, or simultaneously, land cleared for development or agriculture could be taxed at a rate that reflects the loss of ecological services.

3.2.3.1 Problems with valuation

Unfortunately, valuation of ecological services is a difficult task. One problem is the sheer magnitude and complexity of ecosystems that, despite considerable research in recent years, still harbour many unknown species and biological functions. Scientific uncertainty is exacerbated by the fact that all ecosystems, like market systems, are related to each other in some way (Costanza, Cumberland, *et al* 1997). For example, when the price of oil changes, so does the demand and the price of products that use gasoline, as well as the demand and the price for coal and other substitutes, and so on. Similarly, the "right" price of a forest ecosystem will depend on the availability of a range of other ecosystems with which it is interdependent, as well as ecosystems that may be substitutes or complements in use. As a result, the value of an ecosystem would always be interconnected with both ecosystems and economic systems.

Another problem with valuation is that economists are more interested in marginal value – the cost or benefit of one more unit – than the average value of a good or service. Marginal value, however, is a difficult concept to bring into environmental analysis. It may be clear that the cost of wiping an entire species is high, but what would be the value attached to the loss of one, ten,

or a hundred members of a species? Similarly, while the cost of losing all forest ecosystems probably approaches infinity, what is the value of the loss of each successive hectare of forest?

Perhaps the biggest problem is the opposition to valuation among environmentalists. For many, attaching a price tag to clean mountain air, a herd of caribou or an ocean sunset is philosophically unacceptable. Valuation concedes the validity of an economic system seen as responsible for environmental degradation and appears to give individuals the "right" to destroy ecosystems, as long as they pay the going price (Stanbury and Vertinsky 1998). In addition, it is argued, some values simply cannot be expressed in monetary terms and valuing ecosystems in terms of their use to humans is anthropocentric.[4] Certainly some things, such as extinction, are beyond costing and others are difficult to estimate (Economics Focus 1998). For example, what is the price of other species' rights to existence? Or the intrinsic satisfaction we gain from knowing biodiversity is being protected? Some things, the argument goes, such as human life, environmental aesthetics and ecological functions are "intangible," and protecting them is the morally right thing to do (Sagoff 1988).

One influential book says the very difficulties associated with valuation detract from the importance of protecting the ecosystems being valued:

> *"Dollar figures are powerful, but they can never be secure and never represent a complete defense of the value of biodiversity... There is nothing worse than for ecologists to get bogged down over valuing"* (Leakey and Lewin 1995, p135).

3.2.3.2 Advantages of valuation

Proponents of valuation counter that, as long as we have limited resources (always) and are forced to make choices, we make implicit valuations. For example, we may invest in regulatory legislation or restoration projects for forest ecosystems, improve highways or fund medical research, build particle accelerators or space telescopes. All have value to human welfare, yet more resources for one project means less for another. As for morality, the moral argument for protecting ecosystems might well conflict with the moral argument that no one should go hungry (Constanza, Cumberland, *et al* 1997). Finally, some things may well have non-use or intrinsic value, but these are also decided by humans. Humans cannot avoid being anthropocentric, they can only be aware that they are.

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[4] Anthropocentism refers to a world view that considers everything in terms of human wants and needs (Daly and Cobb 1994).

Since we are required to make choices and therefore implicit valuations, there is a strong argument that valuation should be as explicit as possible. That means using the best information available, as well as being explicit about the uncertainties of valuation. This encourages the development of new and better ways to make the best policy decisions possible. Something to consider in this context is that politicians might well prefer implicit valuations precisely because they are vague and allow more latitude to do what is politically expedient rather than beneficial to society as a whole. In addition, governments have proven themselves fully prepared to mortgage the welfare of future generations in order to pay for current consumption (van Kooten 1993) and thus enhance their re-election prospects. This is apparent in the way governments have managed public debt, and also in the way they have allowed ecosystems to be degraded to allow higher levels of material consumption. Explicit valuation would make this much more difficult.

3.2.3.3 Methods of environmental valuation

Researchers have used a variety of ways to value ecological services provided by ecosystems (Mitchell and Carson 1989, Barde and Pearce 1991, Pearce 1993, Goulder and Kennedy 1997) One simple method is to compare the cost of a piece of ocean front real estate with a similar real estate with no ocean view. Other things being equal, the difference in price is the value of the ocean view. Another method, promoted by UN guidelines (Economics Focus 1998) estimates the cost of repairing environmental damage as a way of valuing ecosystem services. Most methods, however, are based, directly or indirectly, on attempts to estimated individuals' "willingness to pay" (WTP) for ecosystem services (Costanza, *et al* 1997), including one study that concludes British Columbians are willing to pay over $1 billion a year for recreation and preservations values (Murray and Reid 1992). The major shortcoming of WTP, or "contingent valuation," is that most individuals do not have sufficient knowledge of social fairness, ecological sustainability and other important issues to provide anything more than intuitive estimates. Of course, insufficient knowledge is also apparent in consumers' willingness to pay for a vast array of non-essential items promoted by astute advertisers.

One study (Costanza, *et al* 1997) attempts to consolidate the large amount of information aimed at valuing a wide variety of ecosystem services and present the results in a way policy makers, the public and Master of Arts students can understand. While emphasizing the inexact and complex nature of their calculations, the authors estimate that, for the entire planet, the value of 17 separate ecosystems is somewhere between US$16-54 trillion a year, with an average value

of US$33 trillion. Most of this value is "external" to the market system, which estimates total global economic activity, or global GNP, at about US$18 trillion a year. Study authors consider their estimates to represent a minimum value that will probably increase as we learn more about the value and complexity ecosystem services, and as increasing populations and per capita consumption put additional pressure on finite ecosystems. The authors acknowledge the many limitations of this approach but argue the method at least offers an approximation of the value of earth's ecosystems and their importance relative to one another.

3.2.4 Valuation of BC's private forests

Keeping in mind the high degree uncertainty in determining exact dollar values for ecosystem services, it is still useful to look at some ecosystem values derived from this study in the context of private forest land policy in BC (see table 3). Most notably, the annual value of ecosystems services provided by one hectare of temperate forest is estimated to be around US$302 (Cdn$460), suggesting that one million hectares of managed and unmanaged forest land in BC provides annual ecosystem services worth Cdn$460 million, compared to timber production annually worth about $1.6 billion (Price Waterhouse 1995). The study also indicates that wetlands and watercourses are of particular importance, and support the assumption that riparian areas merit particular consideration. Together, the information suggests that changes are needed to include the value of ecological services in market signals influencing the behaviour of private forest landowners. (Note that the benefits provided by ecosystems in BC accrue in large part to people outside the province).

Naturally, it is not as simple as that. For one thing, the study identifies the average value of ecosystem services per hectare, rather than the marginal value. The marginal ecosystem value of

Table 3: Average global value ($US) of select terrestrial ecosystem services

Biome (terrestrial)	Global area (millions of hectares)	Total value ($/ha/year)	Total global value (billions of $/year)
All Forests	4,855	969	4,706
tropical	1,900	2,007	894
temperate	2,955	302	906
Grass/rangelands	3,898	232	906
Wetlands	330	14,785	4,879
tidal marsh/mangrove	165	9,990	1,648
swamps/floodplains	165	19,580	3,231
Lakes/rivers	200	8,498	1,700

Source: Costanz et al, 1997

the first hectare of forest converted to residential housing could be virtually nil, but would steadily rise with each additional hectare converted. Conversion would cease only once the value derived from ecosystem services outweigh values derived from the sale of timber and other marketable forest products. It is even possible that the ecosystem services value of private forest land is negligible relative to much larger areas of public forest land in BC and that private forest land should not, economically speaking, be protected. On the other hand, given the proximity of private forest to human settlement areas, it is possible that the value of ecosystems services provided by private forest in BC is higher than the average, and could even exceed the value of timber and products derived, in which case private forest land should receive additional regulatory protection.

3.3 Conclusions: Lessons for private forest land regulation in BC

The concept of ecosystem service valuation is complex and difficult to apply. Despite the shortcomings, however, valuation appears to have considerable merit. First, valuation emphasizes the importance of ecosystem services to human welfare, and states their importance in the monetary terms recognized by those who participate in the existing global economic system. In fact, in the long run, ecosystems are absolutely essential to human existence, in effect priceless. At the very least, valuation suggests the price of commodities produced by exploiting ecosystems directly or indirectly should be much higher than they are today.

Second, valuation of biodiversity and its attendant ecosystem services makes their contribution more explicit and encourages their proper consideration in the political decision-making process. Even if the monetary values are inaccurate, they at least assist in ranking the importance of different ecosystem services relative to one another. Third, valuation shows that, as ecosystems are increasingly stressed, their value rises, thus demanding our increased attention. Finally, the uncertainty of valuation emphasizes the importance of additional research.

In the context of this paper, valuation neither supports nor contradicts public perceptions in BC that government should "do something" to promote stewardship on private forest land, not only for timber production but also non-market values, so the decision whether to regulate or not remains largely political and subjective. Clearly, additional work on the valuation of ecological systems in BC is needed. Valuation does show, however, that private forest landowners provide important ecosystem services to the public not only for BC, but on a global scale, and that future policy development must take this into consideration.

Chapter 4: Regulation and Private Property Rights

4.1 Introduction

Existing and proposed BC government restrictions on private forest land use and management constitute a loss to landowners of some private property rights. This situation is not uncommon in North America (and elsewhere) and is known as *regulatory taking,* or the *takings issue.* In Canada, regulatory taking is legally considered well within the powers of the state and there appear to be few limits on the BC government's ability to control land use and economic activity taking place on private land. An examination of the implications of regulatory taking, however, suggests costs and benefits of regulatory taking should be seriously considered before new forest policy is implemented, and that at least some compensation for loss of private property rights be a component of new private forest land policy in BC.

4.2 Historical precedent

Private property law in both Canada and the United States is based on English common law, which is in turn based on historical precedent rather than written laws. This precedence has over time established that the private landowner has exclusive but not absolute rights and that property rights are limited by the overall interests of society, as administered by the state (Barlowe 1972). In the case of private forest land, this limitation is based on two different legal concepts.

Most long-standing forest practice regulations are based on the *doctrine of waste,* which establishes that individuals may not use their property in a manner that will injure the real property rights of others (Cubbage and Siegel 1985). This was initially intended to balance the desire of a current landowner to make productive use of a property, with the desires of future landowners to receive the property substantially unimpaired. The doctrine has gradually expanded to ensure that natural resources are not "improvidently" depleted or destroyed. The doctrine of waste is the basis for legislation in many jurisdictions that seeks to ensure long-term productivity of forest land and prevent "needless destruction and inappropriate consumptive uses." (Kreutzwiser and Crichton 1987).

Newer forestry laws regulating road construction, harvesting, stream protection, silviculture, chemical applications and other potentially harmful practices on private land in many jurisdictions are based on the concept of *private nuisance* (Cubbage and Siegel 1985), which allows the use of "police power" to restrict the freedom with which owners may use their land,

in order to "protect and promote public health, safety, morals and general welfare." This concept is open to broad interpretation and has allowed courts in the US and Canada to rule, generally, that environmental protection for public welfare takes precedence over private property rights (Hansen 1978). Public nuisance has been challenged many times by forest landowners in the US, during which time it has been clearly established that the law allows states to enact new forestry practices regulations (Cubbage and Siegel 1985). In BC, weaker protection of property rights easily allows land use restrictions such as the Forest Land Reserve, as well as the application of restrictive forest management regulations such as the Forest Practices Code.

4.3 Compensation for taking

Neither the doctrine of waste nor private nuisance should be confused with *eminent domain*, which allows property to be taken for public purpose in return for "just compensation." Under eminent domain, property owners are required to forfeit all private property rights (ie. ownership) to the state, rather than just a portion of their property rights, as under regulatory taking. In return, the state is expected to pay compensation, usually market value. In the US, such compensation is expressly demanded by the constitution but in Canada compensation is not mandatory and varies among provinces, though payment of market value is fairly standard. Transfer of private ownership to the state under eminent domain, or expropriation, is often used for public projects such as highways, power lines or hydro dams.

Regulatory taking under the doctrine of waste or public nuisance may decrease property value and earning potential but does not result in the complete loss of the physical property. Even in the US, where the constitution's Fifth Amendment guarantees that no "private property be taken for public use, without just compensation," courts have generally ruled that as long as restrictions are applied equally to all landowners, compensation is not required. In Canada the state generally has stronger authority over private land (Greenwood and Whybrow 1991), though the federal constitution gives power over local land use regulation to provinces. In BC, a precedent for regulatory taking on private land without compensation has been set by the creation of the Agricultural Land Reserve and more recently the Forest Land Reserve.

Despite the apparent lack of ambiguity, the issue of compensation for regulatory taking remains open to debate. In the US, in particular, landowners continue to resist regulatory taking in the courts (Lewis 1995), arguing that regulatory requirements are becoming increasingly onerous and closer to complete expropriation of property. A similar argument can be made in BC. For example, legislation such as the Forest Practices Code might well require private forest

landowners to leave a riparian buffer zone along fish-bearing streams. No tree harvesting is allowed in this zone, nor can the area be disturbed in any other way. Since the landowners can no longer use the land, it has essentially been "taken" (Lewis 1995). In reality, partial compensation is often indirectly provided in the way of financial assistance or tax breaks, considered in Chapter Seven, but a proper basis for such compensation needs to be established.

4.3.1 Compensation and regulatory efficiency

Regulatory taking without compensation allows governments to "offload" policy costs on to private individuals who are few in number and often without power. Politically, this is an attractive option because the costs of a policy are largely hidden and do not directly affect voting taxpayers or government budgets. Unfortunately, it also allows government to understate the true cost of new regulations, making it difficult to establish the true net gain, or loss, to society. Given the limited resources available to society, implementing policies that yield little or no net gain is wasteful. In contrast, efficient use of society's scarce resources makes it possible to achieve more social objectives, including environmental ones.

Requiring government to compensate private individuals for regulatory taking would reveal the true and often high cost of new policies. These costs would have to be justified and outweighed by the social benefits derived. Establishing net social benefit is not easy (see section 3.2.3) but the need to do so would force government to take a greater interest in valuation of social benefits purportedly derived from forest land regulation, including a stable timber supply and protection of ecological services. Once benefits can be at least approximated, regulatory efficiency becomes more transparent. In the end, the true test of whether a policy is desirable is if those who benefit from the policy are able to compensate the losers and still be better off (Costanza, Cumberland, *et al* 1997).

Few studies in forest literature make an effort to quantify the benefits of regulation (Cubbage 1995) even though the same studies consistently find that mandatory and voluntary forest practice guidelines impose substantial costs on both private forest landowners and the government agencies that implement them. In BC, no attempt at all has been made to identify the net social benefits of either the Forest Land Reserve or the proposed implementation of the Forest Practices Code on private land.

One important point to consider in the context of regulatory taking and compensation is that, if government must pay compensation, there is a strong incentive for politicians to avoid enacting policies aimed at environmental protection (Haley and Luckert 1998). This concern could be

mitigated by paying compensation over an extended period, or providing tax benefits in lieu of lump sum payments. (This issue is further discussed in section 7.4)

4.3.2 Compensation and regulatory effectiveness

A lack of compensation for regulatory taking not only disguises the true cost of new policies, it can impede their ability to achieve the desired social outcome, or even encourage an outcome opposite to the one intended. This situation is known as a "perverse incentive." One oft-cited example is the US Endangered Species Act (ESA), enacted in 1973. Under the ESA, landowners with endangered species or habitat for endangered species on their property are required to protect the species and/or habitat. No compensation is given for habitat protected and therefore lost to other forms of production. This provides landowners with an incentive not to report the existence of endangered species on their property, or to simply destroy existing habitat. Research indicates this has frequently occurred (Bourland and Stroup 1996). New programs are beginning to make money available for rent payments to landowners who protect endangered species habitat (Kennedy, Costa and Smathers 1996).

The reason for the ineffectiveness of the ESA is that landowners feel they have no financial stake in achieving the socially desirable outcome. This is also the case with the imposition of the Forest Land Reserve, which removed managed forest landowners' development rights without compensation. The result has been resentment and friction between many landowners and government agencies. In the event of additional regulatory taking through forest practices legislation on private land, a lack of any compensation or financial incentive will give landowners a strong inducement to ignore or avoid regulations where possible, thwarting intended social objectives.

4.3.3 Compensation and regulatory fairness

One of the stipulations generally attached to regulatory taking without compensation is that the rules should apply equally to all landowners. That way at least there is a sense of equity and fairness. In the case of the Forest Land Reserve, however, only land in the managed forest tax category was included, resulting in the loss of development rights without compensation. Owners of unmanaged and residential forest land were not included in the Reserve and did not lose their development rights. Instead, unmanaged and residential forest landowners often realized an increase in the value of the their land because managed forest land was no longer available for development. Similarly, development restrictions on agricultural land resulting

from the creation of the Agricultural Land Reserve in 1973 raised the value of other land still available for development, including forest land.

4.4 Adapting private property structures

Despite what some landowners may wish, private property rights cannot be absolute. In fact, current trends point toward a continued weakening of property rights. This is not necessarily a bad thing. Growing populations and increased per capita consumption put pressure on resources and demand new and more sophisticated ownership systems (Pearse 1990). In addition, there is a growing public awareness of the social benefits provided by forest land, and that these forests are a part of much larger and complex ecosystems that transcend artificial boundaries. This idea, known as ecosystem management, suggests private land is are part of broader ecosystems and need to be protected (Lewis 1995) even if, as in BC, they are limited in area. Or, as another writer puts it, "no property exists in biological isolation" (Cubbage 1995).

4.5 Conclusions

The BC government faces few legal impediments to restricting land use or forest practices on private forest land, and there appears to be no legal requirement to provide compensation in the event of such regulatory taking. However, private property rights are central to our existing economic structure and flouting those laws can undermine the system, as well as alienating private property owners rather than gaining their cooperation in achieving public objectives. The government should therefore choose regulatory options that minimize infringement of private property rights where possible.

Where government does infringe on private property rights, compensation for regulatory taking should be seriously considered. First, compensation forces government to consider the true cost of new regulatory policies and seek options that minimize those costs. There is, however, a risk that high initial cost would discourage politicians from enacting environmental regulations. Second, compensation can encourage the cooperation of private forest landowners in achieving public objectives on their land. Third, compensation assists in ensuring landowners are treated fairly, and that some private forest landowners do not benefit from lost private property rights of other landowners.

A combination of minimizing private property rights infringement and paying compensation would encourage more truly beneficial policies and fewer politically expedient ones.

Chapter 5: Motivation by Punishment and Reward

5.1 Introduction

Once the BC government decides regulatory intervention is needed to improve stewardship on private forest land, it must next decide how this aim might be best accomplished. The BC government is strongly inclined to improve stewardship by applying the highly coercive and punishment-oriented Forest Practices Code to private land. This type of approach, known as *command-and-control*, typifies government efforts to address most environmental problems in North America and Europe. Private forest landowners strongly oppose this approach and advocate instead an encouragement and reward-oriented regulatory system based on financial and other incentives. When applied to forestry, reward-oriented systems usually include an educational component, so I will refer to this approach as *education-and-incentives*.

The two approaches reflect a well-worn debate over very different methods of motivating human behaviour. One assumes humans must be forced to perform by coercion and punishment, the other that humans can be enticed to perform by encouragement and reward. The two approaches are often referred to simply as *stick* and *carrot*.

Chapter Five examines the relative merits of coercion, punishment and command-and-control versus encouragement, rewards and education-and-incentives, focusing first on the use of stick and carrot to motivate individuals in commercial and non-profit organizations, then on approaches used by government to motivate citizens and firms to meet public environmental objectives. Research will be analyzed within the context of proposed efforts to motivate industrial and non-industrial forest landowners to improve stewardship forest land stewardship.

5.2 A personal bias for rewards

Before I begin to outline academic research on the relative merits of stick and carrot in motivating human behaviour, it is first necessary to expose a bias in favour of reward over punishment. This bias is based on personal experiences that highlight the power of reward as a motivational tool in a wide range of settings in which humans interact. These experiences eventually caused me to wonder at the almost complete lack of reward in government regulations aimed at motivating humans to protect the environment, and prompted me to return to university in an attempt to answer this question.

My most persuasive individual experience came when I spent a month as a young teen in 1978 driving with my family through communist Czechoslovakia, East Germany and Poland,

including a stop at my father's former family farm southeast of what is now Gdansk. What struck me most, aside from giant statues of Lenin and roadside signs proclaiming the virtues of Peace, Prosperity and Socialism, was the indifference of the working population. Workers on the now collectivized farm seemed particularly apathetic, although tradesmen, professionals and other former friends of my father were also visibly indifferent to their work. At the risk of oversimplifying a complex situation, the lack of "work ethic" seemed to me the result of a system in which workers received a fixed salary regardless of performance, eliminating the relationship between effort and financial reward. The trip also made me consider the economic effect of entire countries run by bureaucrats.

A second experience impressed on me the power of financial reward to motivate my own behaviour. After graduating from high school, I worked on a farm in Germany, intending to save for eight months before going traveling. It soon became apparent that my apprentice's salary was completely inadequate to meet my objectives. To make matters worse, considerable overtime was unpaid and the farmer's idea of motivation was verbal abuse. Frustrated and sullen, I considered quitting but instead summoned the courage to voice my complaints. To my surprise, the farmer agreed to pay me overtime for work after 50 hours a week. My enthusiasm, and no doubt performance, improved notably. My reward was a summer of freedom, backpacking around Europe.

The efficacy of money as a motivator was reinforced when I planted trees in northern BC in summer to pay for university. Pay was based on number of trees planted or area covered, and planters worked and thought hard to make sure they maximized their earnings. Little time was wasted, even for breaks. It was not a pleasant job but we were highly motivated.

Later I learned first hand that I could be motivated by non-financial rewards. As a novice journalist working on salary, I had an editor who had an amazing ability to persuade subordinates to work and think, even though there were no additional financial incentives for performance and little chance of getting fired. She gave us lots of autonomy and responsibility, set high personal standards and expected us to do the same. I could never quite explain it, but she made me want to do a good job. Of course, being from a farm, I am familiar with the concept of non-financial rewards. Few things are as satisfying as putting the last bale of hay in the barn, then sitting on the veranda with a cold beer.

These and other personal influences convinced me to begin looking at a range of human activities and consider the relative merits of punishment and reward. Parents can motivate children by exercising their authority as parents and by rewarding them for "being good."

Coaches can berate and reinforce. Teachers coerce and encourage. Religious organizations use variations of heaven and hell to influence earthly behaviour. Management wields the carrot and the stick. Similarly, government can choose command-and-control and education-and-incentives to influence behaviour of citizens. The same principles apply because the objective is to motivate individuals and the factors that motivate them are much the same regardless of the context in which motivation takes place.

5.3 Organizational behaviour

The debate over use of punishment and reward is an old one. Socrates and his disciples studied human nature and weighed the relative merits of coercion and encouragement in motivating human behaviour, as did the Romans, medieval philosophers like Thomas Aquinas and later Descartes, Hobbes and Spinoza. These and many other thinkers noted that political and commercial leaders historically relied almost exclusively on coercion and punishment to motivate people, even though encouragement and reward can also be powerful motivational tools.

Modern work on human motivation has been incorporated into a relatively new social discipline known as Organizational Behaviour (OB). The discipline is aimed at understanding how an organization – described as "a number of individuals systematically united for some end or work" (Robbins 1993) – can be most effective in achieving its aims, goals or objectives. OB looks at a range of organizational attributes, including power, communication, leadership, hierarchy, group dynamics, technology and organizational behaviour. This paper will focus mainly on reward systems and why OB research considers them to have significant advantages over punishment-oriented systems. In making my arguments, I will refer to original references only if the findings have stood up under scrutiny.

To improve organizational effectiveness, OB draws on knowledge from different behavioural disciplines (Robbins 1993, Cherrington 1994). Psychologists probably have the biggest influence because they focus directly on understanding and predicting individual behaviour. Other disciplines, however, contribute to our understanding of concepts such as group processes and organization. Sociologists study the social system in which individuals interact, examining people in relation to other people. Social psychologists focus on the influence people have on one another, with much work recently devoted to how people adjust to change. Anthropologists study societies, past and present, to learn about humans and their activities, especially their culture and environments. Political scientists study the behaviour of individuals and groups

within a political environment, while historians provide a record of practical experience in human motivation.

5.3.1 Defining motivation

Since organizations are made up of human individuals, the underlying question becomes: how can people best be motivated to work toward the goals of an organization? Or, more specifically, what motivates human individuals and how can this knowledge be used to achieve organizational goals? At this point, it is useful to explain exactly what is meant by motivation.

"Motivation" is derived from the Latin word *movere*, which means "to move." In the context of OB, motivation is what "energizes, directs and sustains human behaviour" (Steers and Porter, 1975). Motivation has three basic characteristics. First, the amount of energy or effort individuals are willing to exert – those who are willing to exert more are highly motivated. Second, that effort is goal directed. Activity should focus on achieving some objective, since motivation is more than just being busy. Third, that people persist in their activity and continue their goal-directed efforts for extended periods of time, or until the goal has been reached.

Essentially, humans can be motivated in three ways: coercion, exhortation and incentives. These motivational methods are achieved through punishment, education and reward. I will initially focus on the relative merits of punishment and reward, but will include the role of exhortation (education) later on in this discussion. First, however, an explanation of why motivating humans to work toward the goals of an organization is applicable to improving stewardship on private forest land.

5.3.2 Motivation in commercial organizations

Much of the theoretical and practical research examining the efficacy of punishment and reward in motivating human behaviour has been done in the context of commercial organizations – businesses, companies, corporations and other organizations intended to provide goods and services for profit – because commercial organizations have been the most interested in applying the lessons learned (Cherrington 1994). The result has been a gradual increase in motivational systems relying on encouragement and reward. There appear to be three reasons for this.

First, in a commercial organization, participation is voluntary. Even though individuals may be induced to accept certain coercive and punishment-oriented rules and regulations because they desire the financial reward associated with being employed, they have the option of working elsewhere. This option has increased as workers become increasingly mobile and educated, and less likely to accept coercion. Second, commercial organizations have gone from manufacturing

and industry, where physical area allows constant supervision and workers are not required to be innovative and creative, to more service-oriented businesses, where ideas and creativity are very important. The importance of reward in fostering creativity will be further discussed below. Third, commercial organizations have a strong profit motive, and so commercial leaders are prepared to try innovative motivational techniques to improve the bottom line. The effectiveness of such systems can be relatively easily measured by their success in improving productivity.

Though much of the research in motivational techniques, as well as their application, has been done in the context of commercial organizations, research and application has gradually expanded to include other types of organizations. These include volunteer, charity and community organizations, as well as environmental, religious and political organizations. Though these organizations may differ in structure and objectives, motivational principles are applicable because they are made up of human individuals, and it is the nature of these individuals that determine the efficacy of punishment and reward as motivational tools.

5.3.3 Motivation in social organizations

A regulatory system that involves government and citizens is also made up of individuals, leaders to motivate and followers to be motivated, systematically working toward what is presumably a socially-desirable objective. It is, in effect, a *social organization*. In case of private land forestry, the social organization is comprised of government, the change agents, and private forest landowners, the change targets. This chapter outlines research that has gradually increased the use of encouragement and reward to motivate individuals in commercial organizations, and indicates areas in which this same knowledge can be used to motivate individuals in our particular social organization. The result offers support for the increased use of encouragement and reward in motivating private forest landowners to meet social objectives on their forest land.

5.4 Applying Organizational Behaviour to private land forestry

Research behind the principles of organizational behaviour suggests people behave the way they do based on past experiences, good and bad (Thorndike 1991). Through trial and error, humans learn to repeat forms of behaviour that are rewarded, while avoiding behaviours that are punished. Subsequent research (Green *et al* 1986) established that effects of punishment and reward differ among individuals and are dependent on personal factors such as values, beliefs and physical limitations. Therefore, opinions of positive and negative can vary and are

subjective, so no set of reinforcements is universally applicable. However, some generalizations can be made.

5.4.1 Theory X and Theory Y

Acknowledgment that both punishment and reward can change or reinforce human behaviour has led to the development of two very different human motivation philosophies: one based on encouragement and reward, the other on coercion and punishment. The two philosophies have been around for some time but the man who formalized them (McGregor 1960) called them Theory X and Theory Y, apparently in reference to Brand X versus Brand Y detergent commercials popular at the time.

Theory X takes a rather dark view of human nature and rests on four fundamental assumptions.

- The average human inherently dislikes work and avoids it if possible.
- Because they dislike work, most people need to be coerced, controlled, directed and threatened with punishment to get them to achieve desired objectives.
- The average human prefers to be directed, wishes to avoid responsibility, has relatively little ambition and wants security above all.
- Human dislike of work is so strong that even the promise of rewards is not enough to overcome it. Instead, people accept rewards but continually demand higher ones, creating a ratchet effect of inflated expectations.

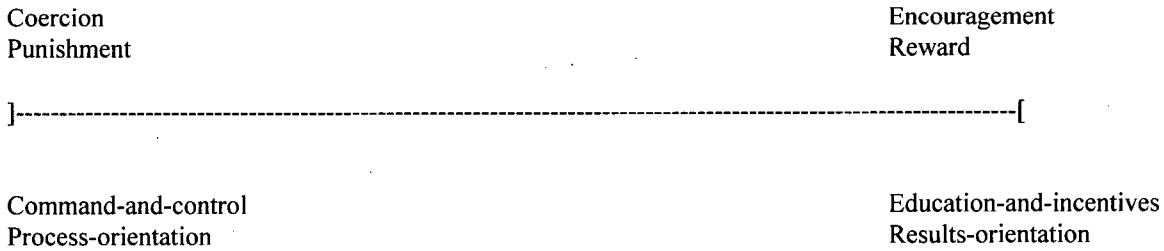
Theory Y takes a more generous view of human nature, based on five very different assumptions:

- Expenditure of physical and mental effort in work is as natural as rest or play. Most humans do not inherently dislike work.
- People will exercise self-direction toward objectives to which they are committed.
- Commitment to objectives is a function of the rewards associated with their achievement. Rewards can be financial or intrinsic, such as job satisfaction, autonomy and responsibility.
- The average human not only accepts but seeks responsibility under the right circumstances. Avoidance of responsibility is the result of past experience.
- The imagination, ingenuity and creativity of the average human is only partially realized.

5.4.2 Balancing punishment and reward

In practice, most organizations adhere to motivational philosophies somewhere on a continuum between the two extremes (see figure 1). For example, commercial enterprise have rules dictating minimum hours of work, starting and quitting time, sick leave, dress codes, inter-employee conduct, theft, fraud and the like. Failure to respect rules leads to punishments,

Figure 2: A continuum of motivational and regulatory concepts



including dismissal. The same commercial organization can also have encouragement systems that offer financial rewards, autonomy, responsibility and flexibility in return for performance above minimum standards.

The exact location on the continuum depends on the experiences and preferences of managers and on objectives they want to achieve (Lawler 1973). The location also depends on the often significant differences that exist among the individuals being managed. Even the same person reacts differently at different times and in different situations. For example, a charity organization is unlikely to use coercion and punishment to motivate because members would simply not participate. Members of commercial organizations are more likely to tolerate more coercive measures because they strongly desire the financial rewards that go with the job. Members of social organizations, citizens of a society, are most likely to tolerate coercive measures because they cannot easily opt out, and because management (the government) has policy power to enforce and punish coercive measures, or laws.

5.5 Effectiveness of punishment and reward

Ability of organizational leaders to apply coercive measures and the willingness of employees, members or citizens to accept such measures is not, however, the central issue. The real issue is whether coercive and punishment oriented measures are more effective means of

motivating individuals to meet organizational objectives. Organizational Behaviour research and its application in commercial organizations indicates that, while some rules and minimum requirements are usually required, encouragement and reward are more effective.

5.5.1 Problems with punishment

The problem with coercion is that it ultimately relies on punishment, or the threat of punishment, to ensure compliance. This is not to say that punishment cannot motivate changes in human behaviour. A child may learn by touching that a stove plate is hot and avoid the experience in future. Similarly, a few expensive photo radar tickets can convince most drivers to obey the speed limit, and a jail sentence persuade a thief not to steal, or at least not get caught. In a commercial enterprise, fear of a tongue lashing (or, longer ago, a real lashing), demotion, fines or dismissal can convince people to follow the rules.

However, punishment has several disadvantages (Cherrington, 1994) that make it ineffective in motivating and sustaining many kinds of commercially and socially desirable human behaviour. These reasons are directly applicable to the case of private land forestry in BC.

1. **Effective punishment and control requires constant supervision.** Though possible in contained situations such as a factory floor or office building, constant supervision is usually difficult, time-consuming and consequently expensive. Over a large and dispersed work force, constant supervision may be prohibitively expensive. This is a crucial consideration for any government agency attempting to supervise private forest landowners dispersed over a large and variable physical area. The BC government is learning this lesson in attempting to enforce the Forest Practices Code.

2. **It is difficult to force people to be innovative and creative.** Managers want employees to find more effective and efficient ways to do their jobs, but find they cannot stimulate innovative and creative acts by decree. Instead, coercive systems are more likely to channel human creativity toward minimizing or avoiding punishments. The same is true for government agencies attempting to force their will on citizens. Consider the effort and creativity that goes into minimizing and avoiding taxes. In the case of private land forestry, coercive legislation is likely to encourage landowners to devote their intellectual energy toward minimizing and avoiding punishment, rather than to finding new and better ways to improve forest stewardship. Under the Forest Practices Code, many companies meet the letter of the law but not the spirit.

3. **Punishments can only indicate what is wrong, not what is right.** Managers can punish employees for breaking rules. The absence of punishment, however, could mean either that they

are doing something right or simply that they haven't been caught. Similarly, coercive regulations can punish undesirable forest practices on private land but leaves no mechanism to reinforce what is being done right. For example, punishments can induce landowners to achieve the minimum standard of water quality in fish-bearing streams, but it cannot encourage them to go beyond minimum standards, even if they have the expertise and technology. As well, the fact that a landowner has not been punished may not indicate adequate performance but rather that inadequate performance has not been detected. Punishment only indicates what not to do, not what to do.

4. Punishments create negative feelings toward the punishing agent. In a commercial enterprise, most managers recognize the importance of good relations between management and employees. Unfortunately, punishment requires constant supervision, which is in itself intrusive. Actual punishment exacerbates this problem, alienating and frustrating employees who are then less likely to work toward the objectives of the organization, and more likely to quit. Government is more flexible in using punishments because private forest landowners cannot opt out of the social organization, though they could sell their land. However, landowners are also likely to find constant supervision intrusive and demeaning, and resent punitive fines. Landowners surveyed say new coercive measures such as the Forest Practices Code impinge on private property rights and autonomy, and indicate a lack of trust in their forestry ability.

5.5.2 Advantages of reward

Given the limitations of punishment-oriented systems, research in Organizational Behaviour has focused on finding ways to use reward-oriented systems to motivate individuals. Using rewards to motivate human behaviour, can be complex. First it is necessary to know what people value, so we know what rewards they covet. This was one of the aims of the managed forest landowners survey in Chapter Two. Second, rewards must then be built into a system that links the achievement of organizational objectives to desirable rewards.

Humans have some basic physiological needs, such as food, water, sex and the removal of pain. These needs, known as primary motivators, are usually beyond the scope of modern reward systems and are not relevant to efforts to motivate private forest landowners. Instead, reward systems focus on psychological needs, known as secondary motivators. These needs are more complex and have challenged many attempts to formally identify and label them (Maslow 1943, Herzberg *et al* 1959, Herzberg 1966, McClelland 1961 and 1962, Maslow 1968, Chung 1977).

They include security, self-esteem, achievement, affiliation, recognition, status, praise, social approval, responsibility, autonomy and power.

5.5.2.1 Money and financial reward

Rewards that meet secondary needs can be used to motivate people to work and think. Of course needs, and therefore desired rewards, can vary considerably among individuals, so reward systems will by necessity vary among organizations, or even among individuals in the same organization. The situation is considerably simplified, however, by the use of money as a reward because money is seen by most individuals as a means to a variety of ends. For example, money can provide financial security and a sense of achievement, as well as increased autonomy, status and power

Money also has other advantages. First, money can be easily controlled and changed. Second, pay is easy to quantify. Third, it has meaning shared across many cultural and ethnic groups, symbolizing success, wealth and property. Fourth, even high achievers who do not value money itself see financial rewards as recognition for their effort and ability. As a result, the most common rewards in commercial enterprises are financial, including wages, salaries, bonuses, profit-sharing and incentive plans (Lawler 1971).

This does not mean money, or financial reward, is the only or even most powerful motivator. In fact, the ability of money to motivate depends on the degree to which individuals believe money will result in the satisfaction of their perceived needs. In the words of an author of one benchmark study:

> *"The valence [value]of money to an individual is determined by the valence of all the outcomes he or she perceives to depend upon money and the subjective probability that money will lead to them* (Vroom 1964)."

For example, if an individual desires security, esteem, love or power and perceives that he or she can obtain them directly from money, then money will have a high valence. Other individuals are not motivated by money because they do not believe they can buy the things they desire.

The varying strength of financial reward as a motivator is relevant to the regulation of private forest land in BC because the survey of managed forest landowners indicates industrial landowners are more likely to be motivated by money than non-industrial landowners. This is not surprising, since industrial forest landowners tend to be large commercial organizations

whose main aim is to realize a return on investment, making them very conscious of cost and revenue considerations. Non-industrial landowners, meanwhile, are usually owned by families or individuals who often have secondary sources of income. Though there are retirement considerations, a need for periodic income and a desire to at least not lose money on their forest land investment, non-industrial landowners appear to be strongly motivated by factors other than money. These survey findings are supported by research in the US (Bliss and Martin 1990).

5.5.2.2 Non-financial rewards

Some non-financial rewards are, like money, extrinsic motivators. That is, they come from some external source, and include social approval, praise and recognition. According to the survey, social approval, or public pressure, seems to be a strong motivating force among non-industrial forest landowners. Non-industrial landowners also have intrinsic motivations for engaging high levels of forest land stewardship, including pride in their forestry ability and experience, satisfaction associated with working outdoors, autonomy, responsibility, a sense of "doing it right" and the desire to manage their forest resources with as little outside interference as possible. Survey respondents tended to refer to this as "freedom to manage" and "lifestyle." One plan aimed at social approval suggests an annual and well-publicized awards ceremony to honour private landowners who excel in achieving high environmental standards.

Though money is of most importance to industrial landowners, they also have, to varying degrees, other motivations. Social pressure and public approval appear to have motivated at least some changes in forest practices, and successful industrial landowners seek recognition for their accomplishments, especially if they have strong attachments to a community or region. Employees of industrial landowners also say they take pride in their forestry ability and would ideally like as much autonomy, responsibility and freedom to manage as possible (see Chapter Six).

5.6 Designing reward-based motivational systems

The previous section established that a range of rewards can be used to motivate human behaviour. However, a variety of other factors must be considered before this knowledge can be effectively incorporated into a system that rewards individuals to work toward organizational objectives (Robbins 1993, Cherrington 1994). These factors are relevant to the creation of a system aimed at motivating landowners to meet social objectives on private forest land.

5.6.1 Clearly defined and attainable goals.

First, it is necessary to define the goals and objectives individuals are expected to meet. Research indicates humans are much more likely to strive to achieve specific and quantifiable goals than vague goals (Locke 1968), and that higher goals lead to higher task performance. However, while goals should be challenging, they should not be so daunting that there appears to be little or no chance of achieving the desired outcome (Vroom 1964).

Environmental objectives the public would like private forest landowners to meet are notoriously vague, difficult to quantify and scientifically uncertain (see section 6.2.3). Goals should be as clearly defined and quantifiable as possible, as well as achievable. Here education (exhortation) can play a significant role by providing knowledge and skills that make complex objectives more attainable (see Chapter Eight).

5.6.2 Linking goals to rewards

Second, there should be a direct link between achieving the desired goal and the reward received. Absence of a direct causal connection will nullify the motivational effect of reward. Any effective motivational system applied to private forest landowners must link rewards, such as money, autonomy or recognition, to the degree to which landowners are meeting socially-desired environmental objectives on their land.

The BC government has set certain minimum forest management goals for the private landowners to achieve, in return for a reduction in property taxes. Many private forest landowners found the stewardship goals attainable and the reward desirable, and voluntarily became part of the managed forest tax category. Unfortunately, the link between performance and reward has been reduced for some landowners by the ability of municipal and regional governments to mitigate this tax advantage (see section 7.3.2.1.2).

5.6.3 Fairness and consistency

Third, Organizational Behaviour research includes studies in social psychology that indicate the importance of treating individuals in an organization fairly, mainly in terms of financial compensation but also in other areas. Owners of managed forest land wonder why only their land - already considered among the best managed private forest land - was included in the restrictive Forest Land Reserve, while unmanaged, residential and farmland forest was not. They also wonder why proposed forest practices legislation is to apply only to managed forest land.

5.6.4 Participation in system development

Fourth, it is critical that the individuals being motivated have a chance to participate in designing the motivational systems in which they take part. This is known in OB as participative management or participative decision-making. Research shows individuals will achieve higher levels of effort and performance if they are involved in managing an organization, including the definition and setting of goals and building reward structures. Individuals should also be treated with respect, encouraged to recommend innovative ideas, and encouraged to take development and training opportunities. Meanwhile, research indicates people tend to reject goals that are imposed, considered unfair and inconsistent, or considered irrelevant and meaningless (Locke 1968). Individuals may also reject goals imposed by management, or government, they mistrust.

The main drawback to participative decision-making is that it can be time-consuming, complex and expensive. It is difficult to assess whether the increased costs of participation are offset by the benefits. However, unlike a commercial organization, our social organization does not require management (government) to pay for the time and effort contributed by individuals (landowners) in developing a regulatory system. The government is currently consulting with the different private forest landowner associations in an apparent effort to develop a mutually acceptable regulatory system.

5.6.5 Management by Objectives

The criteria listed above are incorporated in Management by Objectives (MBO), a philosophy of management that reflects a positive, proactive way of managing human endeavour (Drucker 1954). Focus is on predicting and shaping the future of an organization by setting long-term objectives and concentrating on the achievement of objectives rather than the performance of activities. To achieve this, MBO requires the development of clear, precise organizational goals, the coordination of individual goals with those of the organization, and the systematic review of performance, with adjustments made if goals are not met. Feedback is essential and constructive criticism a useful and necessary part of the process. MBO requires considerable coordination, planning and also participation by all groups involved in the decision-making process. It stresses communication, trust and mutual respect. The effectiveness of MBO has been examined in case studies and surveys of managerial opinions (Raia 1974, Cherrington 1994).

The lessons of MBO suggest that promoting stewardship on private forest land requires clear, long-term objectives and a focus on the achievement of those objectives. Objectives might include maintenance of environmental values, a stable timber supply and long-term financial

viability. Private forest landowners be should involved in defining goals, reviewing performance, providing feedback and making adjustments. These suggestions support the idea of a "results-oriented" regulatory system favoured by many private forest landowners, in BC and elsewhere, as opposed to the "process-oriented" kinds of regulation such as the Forest Practices Code (see section 6.3 and 6.4).

5.7 Command-and-control versus education-and-incentives

Government use of rewards to motivate individuals and firms to achieve environmental objectives is not a new idea. Numerous articles and books have been written in the past 30 years (Stavins and Whitehead 1992) by economists, policy planners, political scientists and others, particularly on the use of financial or economic incentives to achieve environmental objectives. Policies based on financial incentives – often referred to as market-based policies[5] – have been proposed, and to a much lesser degree applied, to address a range of environmental concerns. These include control of industrial effluent, toxic waste, air pollution and greenhouse gas emissions, promotion of recycling, reducing water use and waste, reducing packaging and preventing overexploitation of fisheries (Tietenburg 1990, Stavins and Whitehead 1992, Stavins and Whitehead 1996, Ridley and Low 1993, Project 88 1991).

Financial incentives have also been proposed and often used to improve forest management, mainly to encourage reforestation but increasingly to protect wildlife habitat and biodiversity in the US (Kennedy et al 1996, Bourland and Stroup 1996, Lippke and Fretwell 1997, Brown *et al* 1993), Canada (FLC 1996, Attridge 1997) Europe (Stjerquist 1973, Salwasser 1990) and New Zealand. Many jurisdictions, especially Britain, New Zealand, the European Union and the eastern US, have successfully used financial and other incentives (see Chapter Six) to reforest marginal agricultural land. In New Zealand, the government has been trying to ascertain the non-market values of forest land – that is, the value in terms of aesthetics, recreation, carbon dioxide assimilation, pollution control, etc, and to compensate the landowner for those values. The US also has programs aimed at habitat and species protection.

[5] Market-based policies include what are euphemistically referred to as "negative incentives," such as user fees, pollution charges or carbon taxes. These are aimed at including all costs, including environmental costs, in the price of goods and services purchased by consumers (see Chapter Three).

5.7.1 Rationale for incentives: efficiency and effectiveness

The rationale for the use of incentive-based policies instead of command-and-control policies to achieve environmental objectives is much the same as the rationale for using reward systems to motivate individuals in commercial organizations. These include:

- Ensuring environmental protection is pursued at less cost to industry, government and ultimately the public.
- Encouraging individuals and firms to innovate, finding new and better technologies to achieve environmental objectives.
- Making environmental costs more visible because costs are passed on to the consumer. This allows more public debate on tradeoffs between environmental objectives and economic goals.
- Avoiding the adversarial relationship among regulators, environmentalists and those regulated often caused by command-and-control policies.

The first two points are particularly important because they address the issues of efficiency and effectiveness. If incentive-based policies can indeed achieve environmental objectives at less cost to society than command-and-control policies, then more resources are available to achieve environmental objectives currently not being met. Of course, this assumes incentive-based policies are at least as effective (per dollar spent) as command-and-control policies. This is much more difficult to ascertain than cost. The strongest argument is that incentives can achieve objectives not achievable through command-and-control, especially by encouraging individuals to think and innovate. To see the relative effects of command-and-control and market-based policies on innovation and new ideas, it is useful to look at the former command economies in Eastern Europe, Russia and elsewhere (Stavins and Whitehead 1992).

In any case, it does not have to be a either/or proposition. Just as motivational structures in commercial organizations are somewhere on a continuum between coercion (punishment) and encouragement (reward), public policies aimed at environmental protection also exist on a continuum, with command-and-control policies at one extreme and incentive-based policies at the other (see figure 1). The former represents a highly state-interventionist approach to regulation, justified by the assumption that unregulated private enterprises are motivated mainly by short-term profit and tend to discount or ignore the effects of their activities on the environment (Cook, 1997). The latter option relies on market forces, based on the assumption

that the best way to promote higher environmental standards is to ensure it is in the financial (and other) interests of the private enterprise to do so. The idea is to combine minimum and punishable standards with incentives to encourage performance above those standards.

5.7.2 Political rationale for command-and-control

As regulatory control has expanded in both Canada and the US (Ice *et al* 1997), environmental policies implemented by government have not been exclusively command-and-control but have certainly tended very much to that end of the continuum. This brings up an obvious question. If reward-oriented systems have advantages over punishment-oriented systems, why have governments tended so strongly toward command-and-control regulatory structures to achieve environmental objectives? More specifically, why has the BC government chosen an almost pure command-and-control structure like the Forest Practices Code instead of a more innovative system based on education and rewards, despite recommendations from the Forest Resources Commission (FRC 1992) that new regulations should be "cost effective, flexible, reward good practices and punish bad, and be developed in an open, accountable manner?" The answer lies in public perceptions and the nature of our democratic political system.

For politicians, the most important goal is to be re-elected (Stone 1989, Weimer and Vining 1992). This goal supersedes the goals of any regulatory system and provides a strong incentive for politicians to heed public opinion (Kingdon 1995). In BC, public opinion in the early 1990s showed strong support for a "tough" regulatory stance (FRC 1991 and 1992, MoF 1994) aimed at improving forest practices in the province. This information is consistent with a much broader poll in 16 countries, including Canada and the US (Environics International 1998), which indicates large majorities of people strongly favour strict laws as the best way to ensure the protection of environmental values. A minority said incentives were the best way to protect the environment.

In general, when people see something they do not like, they seem to take the view that "there ought to be a law" to prevent the offending behaviour. One Swedish academic says governments assume laws take effect by their mere existence:

> *"Our traditional approach to government has been legalistic. It is assumed that people have an absolute duty to obey the government and that, therefore, all government planners have to do is issue an order and the desired results are automatically obtained. This*

attitude about government with its 'light switch' theory of regulation , is not adapted to the mass regulation problems of the modern age" (Stjernquist 1973, p23).

The obvious solution is to try to educate the public on the merits of incentives over coercion (see section 8.6). For the moment, though, continued public support for coercive measures reinforces political strategies aimed at attaining re-election, resulting in several trends.

5.7.2.1 "Doing something" and "getting tough"

First, governments are expected to react quickly to public demands, to be seen to be "doing something," particularly in a "crisis" situation (Cubbage 1995). Environmental protests certainly constituted a crisis in BC and the coercive Forest Practices Code was meant to send a clear signal to the BC public and the international community that the government was "getting tough" on the forest industry (Stanbury and Vertinsky 1998). Much of the Code is designed for its symbolic content, such as the large number of offenses (over 300) and the large penalties attached to them (up to $1 million per day). This allows the Code to be waved around as a symbol of the government's commitment to higher standards of forest practice. In reality, the government was never willing or able to make the large financial commitment needed to enforce the Code. For example, Ministry of Environment officials say they received less than half of the amount they estimated would be needed to properly enforce the new legislation.

The desire to command-and-control the forest industry also appears to appeal to the anti-capitalist, pro-state intervention faction of BC's ruling New Democratic Party, and is supported by environmentalists suspicious of incentives-based environmental policies and of the ability and desire of big business to properly protect the environment. The Code makes it clear that companies do not have the "right" to degrade the environment.

In contrast, regulatory systems based on education and incentives tend to lack the sense of immediacy demanded by the public. They are also complex and take time to develop, because they are a departure from the command-and-control structures with which politicians and bureaucrats are familiar. In fact, turnover of political leaders works against the trust and cooperation needed to build functional incentive-based motivational systems. In addition, the effects of incentives-based policies take time to become apparent, and may offer no immediate political reward to those who initiated their development and implementation.

5.7.2.2 Well-disguised costs

Second, governments like command-and-control structures because the costs are usually well-disguised. Administration and enforcement costs are often hidden in a maze of expenditures spread among government departments, so taxpayers don't directly perceive the expense. Other costs are passed on to individuals and commercial organizations being regulated and can be difficult to measure. Cost estimates for the Forest Practices Code vary considerably (Saunders 1993, McCloskey 1993, Haley 1995) from $300 million to over $2 billion. The NDP government deflected criticisms over uncertain costs by arguing the costs of not implementing the Code would be higher (Wilson, 1998).

The costs of incentive-based regulatory systems, meanwhile, are both immediate and apparent. Most obvious is the cost, or loss of net revenue, to government that results providing financial incentives or tax breaks to those being regulated. One paper, prepared by the Private Forest Landowners Association (PFLA1998) estimates government would forfeit $7.8 million in current annual revenue if their proposed incentive-based regulatory proposals are implemented, though it also predicts other tax income will rise by $5.4 million because of increased forestry activity. Another cost involves education of landowners and bureaucrats, an initial investment that can be significant, especially if the education involves issues as complex as forest and ecosystem management. Of course, education is also needed to teach bureaucrats and those being regulated about a new regulatory system as complex as the Code. At least knowledge in forest and ecosystem management has lasting benefit.

5.7.2.3 "Creating jobs"

Third, command-and-control regulation gives governments the opportunity to "create jobs," and to fill them with people who might later vote politicians back into power. They certainly do create jobs, which is why they tend to be expensive, but if the same environmental objectives can be achieved with fewer bureaucrats, more public funds are available for other socially-desirable expenditures. A shortage of work to be done is not the problem.

5.7.2.4 Having power and using it

Fourth, governments like to control things (Stanbury and Vertinsky 1998) and command-and-control systems provide a high degree of control. This is certainly true of the Forest Practices Code, which provides the Minister of Forests considerable discretion and is set up so that subsequent changes to regulations and standards are entirely in the hands of a committee of the cabinet, rather than the Legislature. An incentive-based systems would transfer power from

politicians to private forest landowners. As well as controlling things for political advantage, governments control things because, as mentioned earlier, they *can*. Citizens cannot easily opt out of society, so most citizens have little choice but to follow rules enforced by legislative and judicial power.

5.7.3 Political science and limits to policy development

Insight provided by political scientists provides a better understanding of the reasons governments continue to apply command-and-control policies to forestry. In an ideal world, decision-makers (politicians and bureaucrats) responsible for forest policy development and implementation would compile a list of all economic, environmental, social and spiritual values, then rate them so that the outcomes of various policy alternatives could be objectively compared. The administrator could then consider all policy options, and chose and implement the one that offered the greatest aggregate value. This is known as the "rational-comprehensive" model (Lindblom, 1959).

In reality, these conditions almost never exist. Instead, decision-makers face, to varying degrees, ambiguous and poorly defined problems, incomplete information about alternatives, incomplete scientific baseline information, inadequate information on the consequences of alternatives and on public values and preferences, as well as limited, intellectual capacity, skills and financial resources. Time is always short because changes are usually made in response to some kind of "crisis." These limits to ideal decision-making create a situation known as *bounded rationality* (March and Simon 1958, Forrester 1984).

Under these "bounded" conditions, decision-makers rarely look at policy problems afresh and make bold, sweeping changes. Instead, they make a succession of small, incremental changes to policies already in effect, using solutions with which they are familiar and have used before (Perrow 1970), search for alternatives along familiar paths and select the first satisfactory solution that comes along. According to Forrester, decision-makers "satisfice," or simply make do, rather than "optimize." For politicians, this means avoiding politically costly mistakes. For bureaucrats, it means maintaining their own relevance because they have expertise in old policies and are likely less familiar with new policies and approaches. Command-and-control policies also concentrate power in the hands of bureaucrats. The problem with "satisficing" is that it forces policy makers to ignore excellent policy options.

5.7.3.1 Developing the Forest Practices Code

These models seem to fit neatly with the development of the Forest Practices Code. In the summer of 1993 the ruling NDP government asked the Ministry of Forests, the Ministry of Environment, Lands and Parks, and the Minerals Division of the Ministry of Employment and Investment to draft an all-encompassing Forest Practices Code in time for the Spring 1994 parliamentary session. This involved consolidating and improving a range of existing regulations and guidelines, including 20 provincial Acts, six national Acts, approximately 700 federal regulations and over 3000 guidelines (Nelson, 1993). Resources were limited, alternatives dependent on complex relationships among economic, environmental, social and spiritual values, and scientific information uncertain. Time was tight because the government needed to address local and international concerns over forest practices in BC.

A bold policy change would have included at least some consideration for incentives and other market-based policy options. Instead, policy makers took the rules and regulations of command-and-control, process-oriented policies used in the past and amalgamated them into one new piece of legislation. The policy style did not change. Decision-makers "satisficed" rather than "optimized." Interestingly, in 1998 the "crisis" facing the forest industry has become economic rather than environmental, and government is responding by tinkering with the existing command-and-control Forest Practices Code rather than trying a less heavy-handed incentives-based approach.

Even though the current and past crises have so far yielded no truly new approaches to forest policy, political scientists consider such crisis conditions crucial to creating a "window of opportunity" for innovative change. The trick is for interest groups to lay the groundwork in anticipation of a crisis sufficient to create a demand for a new policy approach. One policy analyst (Kingdon, 1995) uses the analogy of a surfer waiting for the big wave. She has to get out on the water, be ready to go and prepared to paddle. If not, when the big wave comes along, she's not going to catch a ride. The next big wave may not come along for some time. Then again, it may come very quickly.

5.7.4 Scarce resources and new directions in forest policy

Advocates of incentive-based forest policies believe such a window of opportunity already exists. Governments seem increasingly inclined to at least consider the short-comings of command-and-control regulatory systems, and examine the merits of using incentives to motivate socially desirable environmental outcomes. This trend is largely driven by a lack of resources

(Kingdon, 1995, Stavins and Whitehead, 1992) as governments try to reconcile continued public demand for environmental protection with growing public demand for fiscal prudence. Governments are also faced with growing concerns that an expanding eco-bureaucracy is imposing unsustainable costs on individuals and businesses, without providing the promised benefits. Incentive-based policies offer the possibility of achieving environmental objectives at less cost to both government and the private sector.

5.7.4.1 Shift toward incentives

This does not mean we can expect governments to suddenly discard command-and-control regulations in favour of entirely new incentive-based regulations. Rather, in keeping with political and bureaucratic limitations, such changes are likely to happen slowly and only in the face of public pressure for new approaches to environmental protection. In addition, most regulatory policies are likely to require some combination of coercion and reward to be most effective. The result is likely to be a gradual shift along the continuum: away from command-and-control and toward incentives.

The private forest land situation in BC allows the government a good opportunity to initiate change without incurring significant political risk. Less than 5% of forest land in BC is privately owned and an incentive-based system would affect only this land, leaving public land under the auspices of the Forest Practices Code. In addition, private forest landowners, at least in the managed forest tax category, have a strong interest in making sure an incentive-based system meets public expectations because it will allow them to avoid the costs and loss of autonomy associated with the Code. If this limited experiment with incentives achieves desired environmental outcomes, the lessons can be more broadly applied.

5.7.4.2 Nothing ventured, nothing gained

Of course, there is always the possibility, however remote, that command-and-control systems are in fact the most efficient and effective way to achieve environmental objectives, particularly in situations a complex as forestry. If this turns out to be the case, government can always tighten the regulatory screws and move back toward the coercion end of the continuum. However, evidence provided in this paper suggests incentive systems have considerable merit and are worthy of incorporation into future forest policies.

5.8 Conclusions

Most modern practical and theoretical research has been consolidated in a relatively new social discipline called Organizational Behaviour (OB). This discipline examines motivational techniques, mainly in commercial organizations, and provides a high degree of insight into how humans are best motivated to work toward organizational goals. Much of this research, especially the relative efficacy of punishment and reward, is directly relevant to the development of a regulatory system best suited to motivating forest landowners to improve stewardship on private land.

Research in OB shows that punishment-oriented motivational systems have been losing favour in commercial organizations because they are difficult and expensive to administer, indicate only what is wrong and not what is right, cannot induce people to think and innovate, and cause resentment among employees. In contrast, motivational systems that use financial and non-financial rewards – such as autonomy, responsibility and recognition – are less expensive to administer, indicate what is right, induce creativity and innovation and build a sense of trust and cooperation. In reality, most motivational systems incorporate some combination of punishment and reward, and commercial organizations have been moving along the continuum away from punishment and toward reward.

OB research indicates an effective motivational system based on reward must include clearly defined and attainable goals, must ensure a clear link between the attainment of goals and subsequent rewards, be fairly and consistently applied, and include participants, in our case private forest landowners, in the development of the motivational system. OB research also emphasizes that the focus of the system is on the desired outcomes rather than the process of getting there.

Punishment-oriented systems are often referred to as "command-and-control," while reward-oriented systems are known as incentives-based or, for the purposes of this paper, based on "education-and-incentives." Even though education-and-incentives regulatory systems offer social organizations much the same advantages, in terms of cost-efficiency and effectiveness, as reward-oriented systems in commercial organizations, governments have tended very much toward the command-and-control end of the continuum in dealing with public environmental concerns, including the highly coercive Forest Practices Code. The reasons for this preference are political rather than economic.

Politicians want above all to be re-elected and must therefore consider public opinion. The public, in turn, demands fast action through strict and coercive environmental legislation, so

politicians choose command-and-control systems that indicate government is "doing something" and "getting tough." Command-and-control options such as the Forest Practices Code also offer other political advantages, including well-disguised regulatory costs, the ability to create administrative jobs and maintenance of control over a key industry.

Convincing politicians and bureaucrats to change is not easy. Bureaucrats tend to choose systems with which they are familiar and have expertise, and most environmental legislation has tended very much toward the command-and-control end of the continuum. Politicians, meanwhile, tend very much toward incremental change and are reluctant to take the political risk associated with rapid and radical change. However, private forest land in BC is fairly limited in area and political sensitivity (though the latter is changing), compared to public land forestry, and is an ideal context in which to try innovative and cost-effective new approaches to forest management.

Chapter 6: Freedom to Manage

6.1 Introduction

Most managed forest landowners surveyed (see Chapter Two) believe measures aimed at improving stewardship on private forest land in BC are necessary, or at least inevitable, and accept that new regulations will likely be introduced. At the same time, landowners are adamant that any new regulations should minimize the bureaucracy and inflexible rules associated with command-and-control regulatory approaches like the Forest Practices Code. Forest landowners want instead a system that maintains, as much as possible, their current independence, responsibility, flexibility and level of private property rights. In short, landowners want to maximize what they refer to as *freedom to manage*, and rated this the number one criterion for any new regulatory system.

This aversion to bureaucracy and desire for autonomy is at odds with government efforts to meet public interests on private forest land because new regulations inevitably involve some loss of freedom to manage. However, while government in BC has the legal authority to impose almost any regulation on private forest land (section 4.2), a respect for private property rights should limit infringement. In addition, evidence suggests (see section 5.3) retaining freedom to manage can be used to motivate landowners to improve stewardship on private land. Chapter Six examines the public and private advantages of maintaining landowners' freedom to manage and outlines a system that could achieve public objectives on private forest land while respecting autonomy and private property rights of landowners.

6.2 Rationale for freedom to manage

Private forest landowners want to minimize bureaucratic intervention in their affairs. This section focuses on areas where private desire for freedom to manage can be used to meet efficiently the public interest on private land. Many of the arguments are similar to those outlining the advantages of education-and-incentives over command-and-control (section 5.7.1) but are more issue specific.

6.2.1 Lower cost to government and landowners

Less interventionist and bureaucratic regulations cost less to administer, for both government and landowners. Lower operating costs appear to be the main reason among industrial forest landowners for supporting freedom to manage. Most also have tenure on public land and are

familiar with the multitude of highly detailed and expensive provisions imposed by the Forest Practices Code. Some non-industrial landowners also base their desire for freedom to manage on past experiences with what they regard as wasteful and paperwork-oriented regulations. Costs to government and landowners are ultimately borne by taxpayers and consumers.

6.2.2 Freedom as an intrinsic motivator

Freedom to manage is the reason many landowners are engaged in forestry. This is particularly true of non-industrial landowners, many of whom cite freedom, independence and lifestyle as their motivation for managing forest land. This theme is repeated in other studies of non-industrial forest landowners (Stjernquist 1973, Bliss and Martin 1990), which indicates landowners who exercise high levels of stewardship do so largely for intrinsic reasons, and do not want to deal with the frustration of a system imposed by the "political/bureaucratic machine" (NIWA 1994). This is consistent with findings (section 5.5.2.2) that indicate responsibility, autonomy, pride and job satisfaction can be powerful motivators and can be used to encourage private forest landowners to environmental objectives.

Loss of freedom to manage will cause resentment and frustration among landowners and likely make them less willing to work toward socially-desired environmental objectives. Most managed forest landowners surveyed said they already engage in high levels of stewardship and should not be punished by restrictive legislation along with landowners not interested in stewardship. This seems to be particularly true of landowners who have considerable forestry education and experience. If the education proposals also included in this paper (Chapter Eight) are instituted, landowners will be more educated, and more likely to desire and expect to be given more latitude in managing their forest lands.

6.2.3 Innovation and ingenuity

Freedom to manage promotes innovation and new ideas. Restricting landowners with preconceived and often scientifically uncertain notions about how best to combine timber production and protection of ecological services on private land fails to take into account the considerable power of human ingenuity. Freedom to manage encourages landowners to find new forest management approaches, as well as new uses for their land never envisaged by a bureaucracy, including growing alternative crops like mushrooms, salal, medicinal and edible herbs, decorative plants and other non-timber forest products (FRBC 1998). Meanwhile, flexibility provided by freedom to manage allows landowners to adapt to local and regional conditions, as well as a changing marketplace.

6.2.4 Private property rights

Respect for private property rights is one of the fundamental principles of our society and even though Chapter Four demonstrated that government has considerable legal authority to restrict both land use and forest practices on private land, infringement of private property rights should be minimized, especially if it cannot be demonstrated that the infringement is necessary to meet the public interest. If another system with less infringement can achieve the same public interest, it seems prudent to consider that option.

A point to consider is that private property ownership appears to reinforce the very objectives proposed forest policies are intended to achieve. Many private forest landowners conserve soil, replant trees and practice silviculture because they own the land and want to maintain and enhance its value. Others protect streams and encourage wildlife because they take pride and satisfaction in practicing conservation on land they own and enjoy. In contrast, it is difficult to encourage tree-harvesting companies to take a long-term interest in land they do not own. Studies in BC show that the more secure the future tenure of the land, the more likely forest companies are to invest in silviculture and other improvements (Pearse 1993, Zhang 1994). This suggests regulations on private forest land need not be as restrictive as regulations applied to public land.

6.2.5 Diversity of ownership

Finally, there is a risk that over-regulation can lead to concentration of forest land ownership. Non-industrial landowners surveyed said restrictive legislation favours industrial landowners because only they have the resources and expertise to deal with complex regulations. Research in the US indicates that over-regulation will frustrate landowners and force them to sell to corporate interests (Lewis 1995). In BC only a small fraction of all private forest land is in the hands of non-industrial landowners (see table 1).

6.3 Results-oriented regulatory system

6.3.1 Old focus on process

Traditional approaches to environmental regulation are often called *process-oriented* because they dictate in detail the sequence of steps individuals or businesses must follow in order to arrive at the socially desired environmental outcome. The Forest Practices Code is a good example of a process-oriented regulatory system. Despite recent "streamlining," it lays out in

great detail the series of steps companies must follow in the harvesting and reforestation process, including mapping, planning, road construction, harvesting technique and reforestation through to a new stand of "free growing" trees. The underlying assumption is that, if forest companies follow the process, they will arrive at the socially desired result – a sustainable timber supply and protection of ecological services.

Process-oriented policies are a kind of command-and-control policy and suffer basically the same shortcomings (section 5.7). Most importantly, they are economically inefficient (Spence and Weitzman 1993) because there are no market signals to indicate which firms can most cheaply achieve the desired result, so firms have no financial incentive to find ways of achieving the result more cost-effectively. Process-oriented policies are also expensive to administer and ignore important differences among firms and regions. In the end, too much time and energy is expended on a bureaucratic system designed to ensure the process has been satisfied, which detracts from the original objective. In the words of the landowners surveyed, process-orientation is "expensive" and "inflexible," represents "red tape, bureaucracy and paperwork," and "infringes on private property rights."

Governments have tended very much toward process-oriented policies in dealing with environmental problems (Stavins 1997, Costanza, Cumberland *et al* 1997), for much the same reasons they have opted for command-and-control. They appeal to the public desire to "get tough" with inherently untrustworthy industries, bureaucratic costs are well-hidden, they maintain a high degree of government control and they create bureaucratic jobs. These criteria appeal to politicians seeking re-election (section 5.7.2). However, like command-and-control policies, process-oriented regulations are being reconsidered as governments face increased fiscal restraints, a growing sense of urgency in dealing with environmental concerns, as well as concerns over the costs imposed on businesses and their effect on international competitiveness.

6.3.2 New focus on results

Opponents of process-oriented systems, including forest landowners in BC, propose instead a *results-oriented* system of regulating forest practices on private land. A results-oriented system means stating clearly the goals government wants landowners to achieve, then giving them a high degree of freedom in choosing the succession of steps that achieve those goals or results. The role of government in such a system is to audit only the final result, rather than the entire process. Purported benefits include less expensive bureaucracy, greater freedom to innovate, flexibility to deal with variable local conditions, less confrontation and more cooperation.

Proponents of results-orientation point especially to Sweden, which has in recent years greatly reduced bureaucracy and paperwork (Haley 1995), moving away from a highly interventionist process-oriented forest policy to a much more flexible results-oriented policy. Other results-oriented systems exist in New Zealand and US states such as Idaho, Wyoming and Oregon. In BC, numerous stakeholders supported a results-oriented Forest Practices Code (Baskerville 1992), including the forest industry, the BC Wildlife Federation, various professional associations (including professional foresters) and the Commission itself. Even Greenpeace said the "outcome should be the target."

6.3.2.1 Back on the continuum

Like command-and-control and education-and-incentive policy structures (section 5.7), process-oriented policies and results-oriented policies are at opposite extremes on a continuum (see figure 1). The former dictates in great detail the steps a business must follow in order to achieve an environmental result, while the latter specifies a result and allows a business complete latitude in achieving that result. As with command-and-control and incentives-based policies, most public forest policies will in practice be somewhere on a continuum between the process-oriented and results-oriented extremes. Given the workings of government (section 5.7.3), the likely future trend is a gradual shift along the continuum toward results-orientation.

There is some evidence of this shift in BC. The BC Ministry of Environment, Lands and Parks recently moved toward greater results-orientation in regulating pulp and paper mill emissions. The previous system, based on models used elsewhere in North America, was process-oriented policy, with government prescribing in detail the steps mills must follow in treating air emissions and water effluent, right down to dictating the type of technology the companies should use. New regulations set effluent and air pollution standards (results) and fine companies that emit more than the set amount, giving companies flexibility in finding new ways to achieve the desired results. This example also indicates that command-and-control policies can also be results-oriented, and that failure to achieve the set result can be punished. This paper advocates that success in achieving results should be rewarded.

6.4 Problems with environmental results

Despite the apparent theoretical advantages, there are a number of practical obstacles to applying a results-oriented regulatory system to private forest land in BC. Perhaps the most significant drawback is a lack of proven results-oriented systems in other forestry jurisdictions on which BC can model its own system for private land forestry. Results-oriented systems in

Sweden, New Zealand and some US states are relatively new and it is not yet possible to say whether they have been successful in achieving desired results. More importantly, the intended result of these systems is mainly to ensure reforestation and management of harvested areas in order to guarantee a stable long-term timber supply, while a results-oriented system in BC would be expected to also include protection of non-market values, or ecological services.

6.4.1 Defining and measuring results

Evidence suggests landowners are more likely to strive for clearly defined and quantifiable goals than for vague goals (section 5.6.1). Evidence also suggests clear goals make it easier for the government to monitor the effectiveness of a results-based regulatory system (see section 5.6.5). The traditional goal of most forest policies – to ensure a stable and long-term timber supply – is relatively easy to define and measure. It just means measuring the approximate growth rate of trees, then each year harvesting a volume roughly equal to the annual growth. The result can be easily measured by keeping an inventory of the volume of standing timber on all private land. If the inventory shows a steady decline, the policy is not achieving its intended result. The only real difficulty is accurately measuring annual growth rates. Similarly, it is relatively easy to identify results that enhance recreational use of forest, or visual quality.

Establishing clearly defined and measurable environmental results is much more difficult. Scientific knowledge of forest ecosystems and their interactions is inadequate and uncertain, so the desired ecological result of forest practice restrictions is unclear. For example, maintaining biodiversity requires baseline information on all species that exist in a forest, their interactions with other species and what forest attributes different species require for their existence. Since we do not have this knowledge, we do not know what forest attributes – such as streams, wetland areas, course woody debris or wildlife trees – most require protection. In addition, results benefiting one species may not benefit another. Deer and elk apparently do well - at least in summer - in recent clearcuts where grazing is plentiful and predators easy to spot. Meanwhile, amphibians do not do well in clearcuts, but instead require cool, moist, shaded habitat found in mature forest. Similarly, leaving snags and wildlife tree patches behind during harvest is good for eagles and other raptors, but not good for their prey, now easily visible from high perches overlooking a clearcut.

Inadequate scientific knowledge also hampers our ability to assess the importance of other ecological services provided by forests, such as carbon dioxide sequestration, soil conservation, watershed protection, climate control or the provision of unique medicinal plants. We do know

they have value but we do not know how much, or how they rank relative to one another. This is why efforts to establish values for ecosystem services (section 3.2.3) are so important.

The situation is further complicated by a debate over semantics that brings up new questions. What is a result and what is a process? Is a healthy riparian buffer zone a result? Or is it just part of a process aimed at maintaining water quality in fish-bearing streams? Or is that in turn part of a process aimed ensuring the survival of salmon stocks. And if salmon survival is the desired result, and the process is not dictated, could companies simply line the banks with concrete and build a spawning channel?

6.4.2 Time and cumulative effects

Another problem with a results-oriented regulatory system is that considerable time may elapse before a regulatory agency is able to audit results. Mistakes may remain undetected for some time and considerable ecological damage may result. Even if audited regularly, mistakes may not be readily apparent. In Oregon, determining the results of the state's Best Management Practices (BMPs) with regard to stream protection and water quality means waiting for "testing storms," which are unpredictable and may not occur for decades (Ice et al 1997). Under a process-oriented system, each step along the way is monitored, so mistakes made by landowners can be detected earlier. Given the low level of responsibility shown in the past by the forest industry and the Ministry of Forests, this can be a significant drawback for a results-oriented forest policy.

In addition, environmental damage tends to be cumulative. For example, clearcutting along parts of a stream may have little effect on fish in terms of increased water temperatures, but as more areas are logged, temperatures may rise above the threshold tolerated by some fish species. This is a particular problem if two of more logging companies are at work in the same watershed.

6.4.3 Knowledge and liability

A results-oriented system requires knowledgeable landowners. This may be true for many managed forest landowners but landowners in other private forest land categories, such as farmers and ranchers, often have little or no forestry education or experience. Bringing all private landowners up to speed would require time and effort, and provide little opportunity for political gain. Finally, it can be argued that giving individuals and companies greater freedom to manage under a results-oriented system exposes them to greater liability, because they cannot simply throw up their hands and argue they "followed the process." Under a process-oriented system bureaucrats dictate the steps landowners must take, so their liability is limited.

6.4.4 Overcoming obstacles to results-orientation

On the whole, obstacles to results-orientation are probably no more daunting than those associated with process-orientation. It is certainly true that defining environmental results is difficult, especially given BC's remarkable diversity of plant and animal species over a huge land area (Bunnell 1990, Bunnell *et al* 1991), but results must also be considered before there is any point in establishing a process-oriented system. In fact, process-orientation can detract from the desired results. How often are the intended outcomes of the Forest Practices Code discussed?

At least some results can be clearly defined. One relatively uncontentious result is the preservation of salmon stocks in logged areas. These stocks can be measured before and after harvest for comparison. To maintain stocks, logging companies will need to prevent stream siltation and higher water temperatures, which in turn requires some kind of riparian vegetation buffer zone. Other results will become more clear as scientists gain a greater understanding of forest ecosystems.

Mistakes being made under a results-oriented system can be addressed through regular audits. Since a results-oriented system requires much less paperwork, more resources will be available to put experienced people into the field.

6.4.5 Freedom to manage as reward

Though some minimum rules and penalties will be needed for a results-oriented regulatory system on private forest land, this paper has established strong reasons for rewarding individuals and firms who meet socially desired environmental results. One way to reward landowners is by maintaining or increasing their freedom to manage. Landowners who consistently meet environmental objectives would be given almost complete latitude in managing their forest land and would be subject only to infrequent audits. Landowners who fail on one or more occasions to meet environmental objectives would be audited with increasing frequency, and would be required to prepare more detailed management plans. Such a system was recently proposed in place of the Forest Practices Code on public land (MoF 1998).

One landowner suggests a 1-5 ranking system for public land, with those at 1 being given complete freedom to manage, and those at 5 facing the most restrictions. Consistently meeting objectives set by government would move landowners up the ranking system, while failures would move landowners down. Changes in rankings would also have financial implications, because detailed management plans and other paperwork cost money. In addition, it would be

possible to provide additional tax breaks or other financial rewards as landowners move up the ranking system.

Recognition can also be used to reward landowners in BC. Wisconsin provides awards to county "Tree Farmer of the Year," sponsored by the American Forest Council, in effort to promote active forest management on non-industrial forest land (Bliss and Martin 1990). Similar programs exists in other US states, Sweden, New Brunswick and Quebec.

6.5 Conclusions

If government chooses to apply the Forest Practices Code or similar legislation to private forest land, it will greatly restrict landowners' freedom to manage their forest properties. This infringement of private property rights may be acceptable if it is necessary to achieve public interests on private forest land. However, research suggests that public objectives could be achieved with much less loss of freedom to manage, which would not only protect private property rights but also provide additional benefits to the public. These include lower administrative costs of regulation, a leverage to encourage improved stewardship, promotion of innovation and new ideas and encouraging diversity of ownership.

For political reasons, the BC government continues to tend toward interventionist regulatory policies that dictate in detail the process landowners must follow in order to achieve public objectives on private land. Landowners suggest instead a results-oriented system in which government dictates only the socially-desired outcomes and allows private forest landowners much greater latitude in achieving those outcomes. This would allow landowners considerably more freedom to manage their resources.

While results-orientation has been increasingly used by governments, often to control point source pollution, such a regulatory system is more difficult to apply to forestry, especially if regulations are aimed not only at promoting a stable timber supply but also at protecting ecological services provided by forests. Scientific uncertainty makes it difficult to define and measure environmental outcomes, and our inability to identify the relative importance of differing ecological functions makes it difficult to assign priorities.

. In addition, process-oriented regulatory systems tend to pick up mistakes more quickly than results-oriented systems, because it may take a long time for environmental effects to become apparent. Focusing on results requires educated and experienced landowners who may be more open to liability than under process-oriented systems.

In response, proponents of results-orientation point out that environmental results must also be identified and prioritized in a process-oriented system, otherwise the series of steps dictated by regulation have no clear intended outcome. Meanwhile, mistakes under a results-oriented system can be picked up by regular audits, conducted by people who would be desk-bound under a more process-oriented system. Given the advantages of maintaining landowners' freedom to manage their resources, it appears prudent for government to consider a results-oriented system, leaving open the option of applying additional restrictions if necessary.

Chapter 7: Financial Incentives

7.1 Introduction

Financial reward is a strong motivator of human behaviour (section 5.5.2.1) and one that must form an integral part of any system aimed at promoting stewardship of private forest land. Financial incentives have been used for some time to encourage reforestation on private land (Salwasser 1990, FLC 1996) and to protect the long-term productivity of forest land. Objectives encouraged by financial incentives have gradually expanded to include planning, mapping, road building and other silviculture such as brushing, pruning and thinning. This situation currently typifies most private forest land in North America, including BC.

In the past decade, however, public interest has expanded beyond long-term timber productivity and now includes growing concerns over the protection of non-timber benefits, including market values such as recreation and non-market values, or ecological services, provided by forests. Some non-timber benefits are already protected to some degree by financial incentives aimed at reforestation but the public is increasingly demanding greater protection for ecological values, including fish and wildlife habitat, watershed protection, visual quality and soil conservation.

Chapter Seven examines the financial rewards provided to private forest landowners in BC, how they compare to financial rewards provided in other jurisdictions, the relative effectiveness of direct and indirect (tax) incentives, how these incentives might be used to protect not only timber values but also ecological values provided by forests, and how financial incentives might best be structured in BC to minimize costs and maximize effectiveness in promoting stewardship on private forest land.

7.2 Direct financial assistance

Also known as cost-sharing, direct financial assistance is usually part of more comprehensive government programs known as an "extension services," which combine education and direct financial assistance. Generally, the idea is to first offer information and education, then provide subsequent financial assistance for activities such as management planning and mapping, road building, reforestation and other silviculture. Landowners pay some percentage of these costs and/or provide "sweat equity." Extension programs appear to be politically popular for some of the same reasons as command-and-control regulatory systems, including their sense of immediacy in "doing something," the ability of politicians to announce their creation and their

ability to "create jobs." For simplicity I will deal here only with the financial assistance part of extension programs, and discuss education and technical advice in Chapter Eight.

In Canada, all provinces have access to direct funding assistance programs through joint federal/provincial extension programs. In BC, this extension program was know as the Forest Resource Development Agreement (FRDA, pronounced "FeRDA") and combined scientific research, economic analyses, technical advice and funding assistance (CFS 1996). Many managed forest landowners in the survey participated in the Private Woodlands Forestry Sub-Program of FRDA, which provided funding of up to 90% of allowable silvicultural costs, with an initial limit of $50,000 per client that was subsequently reduced to $30,000. This money was available to non-industrial forest landowners, including individuals, partnerships, non-profit societies and corporations having legal title to at least 10 contiguous hectares of productive forest land. The largest eligible parcel size was 4,000 ha. To protect public investment, landowners must keep their land for 15 years afterward. The Private Woodlands Forestry Sub-Program disbursed a total of $15.9 million (1994 dollars) for silviculture, planning and minor road improvements before the program was discontinued in March 1996.

In the US, the federal Forestry Incentive Program (USDA 1995) is available in all states to owners of 5 to 400 hectares of forest land who are not engaged in business of manufacturing forest products (i.e. non-industrial landowners). Landowners who meet minimum productivity requirements received 50-60% of costs for site preparation, tree-planting, pre-commercial thinning, release cutting, vegetation control, and browse protection devices for seedlings. The annual limit is $10,000 per landowner.

The US also has private extension programs in which forestry corporations are involved in financial and technical assistance programs for smaller private forest landowners, especially in the Southeast. Landowners are asked to commit their timber to the company in return for management and reforestation. Industry statistics indicate 72 million seedlings are provided to landowners each year under these programs (FRBC 1996). In addition, some US power utilities are funding tree planting programs in the US and developing countries as a means of sequestering atmospheric carbon to counter emissions of coal and gas powered thermal stations. (Some industrial landowners in BC surveyed for this paper said they provide seedlings and technical assistance to non-industrial landowners, usually in return for future cutting privileges.)

The European Union also has extensive public funding assistance programs, largely in an effort to reduce agricultural surpluses by encouraging the conversion of marginal farmland to forest land. The EU provides funding not only for planning and silviculture but also an annual

income for 20 years to compensate for lost farm income. In Germany, this adds up to anywhere between 600 and 1400 German marks per hectare annually (Cdn$480 to $1120), depending on site productivity and geographic region. Considerable direct funding assistance is also available in Norway and Finland, as well as jurisdictions as diverse as New Zealand, Chile, Brazil, Argentina, Paraguay, Indonesia and Australia (FRBC 1996).

7.2.1 Problems with direct financial assistance

Despite the popularity of direct financial assistance programs, obvious shortcomings have been identified by surveys and articles on private forest land (CFS 1996, Bliss and Martin 1990, NIWA 1994) and supported by the results of the managed forest landowners survey. First, direct financial assistance programs tend to devote substantial resources to program administration, so only a percentage of the funds committed actually ends up in the hands of landowners, while the remainder pays for what tends to be a growing bureaucracy (Cubbage 1995). Landowners surveyed who took part in FRDA, even those who supported the program, commented on excessive bureaucracy and administrative costs.

Second, direct financial assistance often funds activities that landowners would likely have carried out even in the absence of subsidies. Participants in FRDA interviewed in Chapter Two support this contention, though they say funding assistance accentuated the speed and scope of their forest management projects. Research also shows that funding assistance programs are effective in promoting private land stewardship more because they provide education and access to a professional forester than because of financial subsidies, though funding does affect the timing and size of a project (Bliss and Martin 1990). As a result, direct financial assistance is less of an incentive to manage than an "*ex post facto* management subsidy."

Third, direct funding programs tend to be sporadic, often depending on the state of government finances and the need among politicians to meet re-election interests. This tends to frustrate landowners who pay silvicultural costs out of their own pockets only to discover that, had they waited a few months, they would have been subsidized under a newly announced funding program. This approach tends to reward landowner who hesitate before undertaking reforestation and other silviculture, and punish those engaged in good stewardship practices on their own accord.

7.2.1.1 Reactions to direct financial assistance problems

Sweden has eliminated most direct subsidies, providing financial assistance only under special circumstances, such as in the case of abandoned farmland or forest land severely

damaged by insects, disease or fire (Haley 1994). In those cases it is considered unfair for the owner to shoulder the whole reforestation cost. "Normal" reforestation costs are never subsidized but are considered part of the cost of doing business. (It should be noted that this new approach follows years of considerable public investment in restocking clearcut areas, largely allaying fears of an impending timber shortage.)

A paper released in BC (FLC 1996) takes the Swedish approach, suggesting reforestation costs be publicly funded only under the same extenuating circumstances. One identified candidate is the Bulkley Valley around Vanderhoof, where an estimated 55,000 ha of private land was not reforested after harvest – initially prompted by subsidies to clear marginal land for agriculture – and seems destined to remain Not Satisfactorily Restocked (NSR) without public funding.

New Zealand has responded with an innovative program in which direct financial assistance is paid to landowners in the same year that the expense is incurred, leading to the development of specialized reforestation companies which buy and lease land to plant (Greenwood and Whybrow 1996). These companies issue shares or bonds which are legally tradable and which any private individual or institution can buy. Because of high growth rates in New Zealand, these shares gain real value within about three years, and a broad capital market for forest futures has been established.

7.2.2 Advantages of direct financial assistance

Despite the apparent inefficiency of direct financial assistance, it should be noted that this approach appears to have achieved at least some success in many jurisdictions. Large areas of marginal agricultural land in the EU, notably Scotland, Ireland and Germany, have been reforested, as have areas in Sweden, the eastern US and Canada (FAO 1997). BC has been less successful (FRBC 1994), largely because less than half of all private lands in the province has been eligible for direct financial assistance, mainly non-industrial land in the managed forest tax category.

Direct financial assistance also has the advantage that costs of the program are relatively easy to identify, compared to tax incentives, where the costs or revenue lost to various layers of government are difficult to determine. On balance, though, short-comings suggest that direct financial assistance has not been an efficient way of promoting private forest land stewardship.

7.2.2.1 Direct financial assistance and non-market values

Direct financial assistance could have a new role to play as public demand for non-market benefits provided by forests continues to increase. Current criticism of direct financial assistance is often based on the valid argument that public money is simply a subsidy for silvicultural investments that landowners would have to make anyway in order to realize a financial return from future timber sales. However, landowners have no such financial incentive to invest time and money in the protection and enhancement of non-market values, because they cannot derive future income from an investment in streamside buffer zones, winter range for elk and deer, or wildlife tree patches.

True, some forest landowners invest time and sacrifice income to protect and enhance non-market values for intrinsic reasons such as pride and satisfaction. Protection of non-market values could be considerably enhanced, however, if landowners received direct financial assistance. The level of payments is difficult to establish (section 3.2.3) but initial values could be estimated and adjustments made through trial and error. This argument is reinforced by evidence (section 4.3) that suggests mandatory streamside buffers, wildlife tree patches, or other ecologically sensitive "no log" zones constitute a kind of regulatory taking and should be compensated.

The US has gone further than other jurisdictions in providing direct financial assistance for the protection of non-market values. One federal program available to states is the Conservation Reserve Program (USDA 1995), which is aimed at soil and water conservation. Owners are reimbursed 50-75% of tree planting and enhanced forestry activities, up to a maximum of $3500 a year per landowner. Another program is the Stabilization and Conservation Service which, with assistance from Natural Resources Conservation Service, administers federally sponsored cost-share programs for a variety of soil and water conservation practices, including tree planting, timber stand improvement and wildlife habitat improvement. Private initiatives are also encouraged. Together with the American Forest Products Association, some corporations are promoting the idea of habitat enhancement of complete ecosystems, including riparian zone protection, monitoring rivers and streams for their entire length, 20% set-asides for special values, and alternatives to large-scale clearcutting.

7.3 Preferential tax treatment

Tax policies can have a significant impact on how landowners manage their forest land (Bliss and Martin 1990, Grayson 1993). With that in mind, most jurisdictions offer some combination

of tax exemptions, deductions, deferments, credits and remissions to achieve public objectives on private forest land. These measures have often been successful in promoting timber production but have not been widely used to protect non-market values. Tax incentives are different from direct financial assistance in several ways.

First, tax policies tend to be continuous rather than sporadic, since legislative authority is usually required to make changes. That provides a sense of stability and enhances the ability of landowners to make long-term investment plans. Of course, tax policies resulting in socially undesirable effects are also more difficult to change. Second, tax policies apply equally to landowners in any one tax category, so they are generally viewed as more fair and equitable. Third, the effects of tax policies tend to be subtle and often invisible in the short-term, making them politically less glamorous than direct financial assistance. Fourth, tax policies can be complicated and contradictory in terms of achieving social objectives, since taxes are levied at federal, regional and local levels. This can frustrate and confuse landowners, and create unnecessary administrative overlap.

One recurring theme in discussions on tax policies applied to private forest land is that the system be simple and easy to understand. This, and the factors above, will be considered in the discussion of tax policies applied to private forest land in BC and other jurisdictions.

7.3.1 Property tax

All jurisdictions surveyed for this paper have some kind of preferential property tax treatment for forest land. Some European countries implemented such policies before Canada was even a country (Grayson 1993) but there is also a long history of preferential property taxes in North America, beginning in the US in the 1860s. Ontario followed suit in 1906 and BC in 1951. Now all Canadian provinces and all but four US states offer preferential property tax for forest land.

The rationale behind the early trend toward preferential property taxes is based on the long period required to grow most trees. Forest landowners must pay annual property taxes but derive income from tree harvesting only periodically or, if land has been clearcut and then reforested, only after a wait of 50 years or more. That means a substantial investment must be made over a long period of time, usually longer than the life of an individual, before a return is realized. To compound the problem, tax can also be applied to the value of the trees, which is often substantial and increases as trees mature. This can discourage investment and encourage the harvesting of immature trees.

7.3.1.1 Harvest tax

To encourage investment in timber production, governments have found ways to reduce annual property taxes on forest land. One method is to assess only the value of the land for property tax purposes. That translates into substantially lower annual property taxes, especially as trees mature. However, tax on the value of the trees is usually not eliminated but merely deferred and collected when the trees are harvested and landowners realize an income. This is known as a severance tax or, as in BC, a harvest tax. The harvest tax in BC is determined by log market values on the coast and by forest product values in the interior. It is not a fixed percentage of timber value but rather a residual value left after subtracting costs.

7.3.1.2 Taxing "use value"

Another method is to assess the land at its current use, rather than its "highest and best use." Since land has less potential value as forest land than as land for residential, commercial or industrial development, this can constitute a substantial annual property tax saving. This approach is especially important in areas of rapid economic growth where private forest land is under strong development pressure. In the absence of "use value" assessments, property values and therefore property taxes can rise rapidly and force landowners to sell or develop their land.

One example on BC's Gulf Islands, where development pressure is strong, provides a good illustration. A 160-acre property on Lasqueti Island was assessed a market value of $80,000 in 1992, $160,000 in 1993, $300,000 in 1994, and expected to be worth $450,000 in 1995, with property tax in that year of $5,000. Instead, the land was placed in the managed forest tax category, assessed at a "use value " of $56,000 with $800 in property tax (Kubenik 1996).

Other examples are included in the managed forest land survey (section 2.4.3.3). One landowner said he paid five or six times as much property tax before moving to the managed forest class. Another said her family owns two acres of waterfront residential forest, which costs $2000/year in taxes, and 25 acres of managed forest, which costs $100 a year. Two landowners surveyed had to fight BC Assessment to allow a switch from residential forest to managed forest. Both succeeded, with one reducing his tax bill "from about $4000 a year to $600-700," the other $350 a year, a third the previous rate.

Many taxation experts argue it is best to assess land at its market value rather than some "artificial" use value, and offer tax concessions by adjusting the relative rates at which different categories land – agricultural, forest, residential, commercial and industrial – are taxed (Greenwood and Whybrow 1991). This issue will be further discussed later in this chapter.

7.3.2 Forest property tax in BC

There are currently four property tax categories for forest land in BC (see table 1), each taxed in a different way (see tables 4-7). Managed forest and farmland forest are assessed at their "use value," based on accessibility, location, topography and soil types, while unmanaged and residential land are assessed at market value. Managed, unmanaged and farmland forest are assessed only on the value of the land, while residential forest land is assessed for both land and timber value. Managed and unmanaged forest is subject to a harvest tax, applied by adding the value of timber sold to property assessment two years after harvest, while farmland and residential forest is not subject to a harvest tax. Tax rates applied to the assessed property value are generally, but not always, highest for residential, followed by unmanaged, managed forest and finally farmland forest. Confused? So are many landowners. Clearly these property tax policies do not meet the criteria of simplicity or equity.

An effort was made in 1987 to simplify the process by offering property tax incentives sufficient to entice all owners of private forest land into a newly created managed forest land tax category. The strategy appeared to be working until the creation of the Forest Land Reserve in 1994 (FLC 1996), a land use zoning restriction much like the Agricultural Land Reserve (ALR) that severely curtails residential, commercial or industrial development rights. Only managed forest land was included, and owners of other private forest land have since rejected the idea of joining the managed forest tax category, whatever the tax benefits. Owners of forest land in the ALR already pay lower property taxes, and no harvest tax, so have no incentive to join the managed forest.

7.3.2.1 Proposals for property tax changes

One proposed solution is to create additional property tax incentives, preferably the same as those currently applied to agricultural land (for a comparison of forest vs agricultural land taxation, see tables 4-7). Proponents of this idea also covet other tax incentives now offered only to agricultural landowners but the provincial government only has legislative power to control property taxes, while the power over other taxes resides with the federal government. This makes changes much more difficult. Still, property taxes are usually the largest fixed cost for most forest landowners, so agricultural land status would provide a substantial financial incentive. However, there are additional obstacles.

Local governments in BC (municipalities and regional governments), as elsewhere in Canada and the US, rely on property tax as their main source of income to pay for schools, roads, police

and fire protection, sanitation, parks and other government services. The importance of property taxes has increased further in recent years because provincial governments have been cutting financial assistance to local governments. In BC, figures presented at the 1998 meeting of Union of BC Municipalities (UBCM) indicate government grants to municipalities have been reduced from $113m in 1996 to $78m in 1998 and local governments expect further cuts in 1999 (Van Sun 1998).

Jurisdictions such as Ontario, Quebec, Michigan and Wisconsin (Greenwood and Whybrow 1991, Malme 1995) have addressed this problem by first letting local governments collect property tax revenue, then reimbursing landowners from provincial or state budgets. Since property tax incentives are designed to have a broad public benefit, it makes sense that the brunt of such measures should not be borne at the local level. In Quebec, the rebate amounts to 85% of school and other municipal taxes, though the last 10 years of rebates must be repaid of the land is converted to other uses. Ontario provides a 100% tax rebate, though not for less than $100 and maximum of $25,000. Some restrictions and conversion penalties apply.

7.3.2.1.1 Non-industrial forest landowners

The survey suggests non-industrial managed forest landowners in BC generally view their property taxes as very reasonable and that further cuts would not constitute much of an incentive. Even the deferred property tax in the form of a harvest tax is considered reasonable partly because many landowners do not have mature timber, do not cut large volumes of wood or because they recognize that paying some tax is part of belonging to society. Property taxes so low that further reductions do not constitute much of an incentive is common in most Canadian provinces (Hermelin 1998).

One property tax change that should be made, however, is to allow landowners of residential forest land to pay property tax only on the value of the land base, then pay the timber portion on harvest in the same way as owners of managed and unmanaged forest. Currently, owners of residential forest land pay annual taxes on both land and timber values, creating a "perverse incentive" to deforest. Eliminating perverse incentives can be as important as implementing positive incentives.

Another area of potential change is to ensure landowners can put their land in the managed forest tax category, even if BC Assessment thinks the "highest and best use" of their property is residential development. Tax savings incurred could be recouped if the land is subsequently withdrawn and developed. It should also be noted that the "highest and best use" criteria applied

by BC Assessment is defined in monetary terms and does not consider non-market values. Often private land with endangered and therefore valuable ecosystems, such as Garry Oak, old Douglas-fir and old growth Ponderosa Pine, are located in areas with high land prices and pressure for development, such as Gulf Islands, southern Vancouver Island and southern Interior (Hopwood 1996).

7.3.2.1.2 Industrial forest landowners

At least one change should be made in the way property taxes are assessed on industrial forest land. Currently, BC Assessment, a provincial agency, determines the value of a piece of property – the assessed value – but municipalities and regional districts independently set the property tax rates – the mill rate – that are applied to that assessed value. When the BC government decided in 1987 to lower property taxes to private forest landowners willing to join the managed forest land tax category and submit and adhere to a general forest management plan, it did so through BC Assessment, which lowered the assessed value of the property and therefore the total property tax paid.

This approach only works if municipalities and regional districts apply the same tax rate to managed, unmanaged and residential forest. However, in many instances this tax saving has been eliminated because municipalities and regional districts apply a higher tax rate to managed forest land than to unmanaged and residential forest land, often because industrial forest landowners are an obvious source of tax income in communities and regions lacking other sources of tax income (see tables 4-6).

To eliminate this problem, government need not dictate the mill rates applied by local governments but only require them to fix the relative rates at which the different forest land classifications are set. For example, managed forest land must be taxed at rate x, unmanaged forest at $3x$ and residential forest land at $4x$. This would protect owners of managed forest land from taxation rates that eliminate the intended management incentive. Ontario instituted a system in 1998 in which managed forest is assessed at rates "similar" to farmland, then ensures the assessed value is taxed at 25% of the rate applied to residential land. In return, landowners submit a 20-year forest management plan, mainly reforestation and an intention to harvest (Ontario 1997). The BC government only "encourages" municipalities to set rates applied to managed forest at levels close to farm land.

Regional Breakdown of Private Forest Land in BC

(Residential and farmland forest areas are minimum estimates)

Table 4: Property tax rations on Vancouver Island

Assessment Class	Area (in hectares)	Site quality (average MAI*)	Assess value (land & timber)	Tax revenue (per hectare)
Managed forest	650,000	6.0	$600 million	$12
Unmanaged forest	5,300	6.0	$3 million	$15
Residential forest	15,000	6.0	$90 million	$60
Farmland forest	15,000	6.0	$1 million	under $2
Total	685,300		$694 million	

Source: BC Assessment

* Mean annual increment, measured in cubic metres/hectare/year

Table 5: Property tax ratios in the Kootenays

Assessment Class	Area (in hectares)	Site quality (average MAI*)	Assess value (land & timber)	Tax revenue (per hectare)
Managed forest	225,000	2.3	$47 million	$3
Unmanaged forest	28,000	2.0	$10 million	$9
Residential forest	85,000	2.0	$45 million	$5
Farmland forest	20,000	2.5	$1 million	under $2
Total	385,000		$100 million	

Source: BC Assessment

* Mean annual increment, measured in cubic metres/hectare/year

Table 6: Property tax rations in the Central Interior

Assessment Class	Area (in hectares)	Site quality (average MAI*)	Assess value (land & timber)	Tax revenue (per hectare)
Managed forest	2,500	2.5	$1 million	$5
Unmanaged forest	3,500	2.5	$4 million	$30
Residential forest	175,000	2.5	$87 million	$5
Farmland forest	120,000	2.5	$3 million	under $2
Total	301,000		$95 million	

Source: BC Assessment

* Mean annual increment, measured in cubic metres/hectare/year

7.3.2.2 Property tax on site productivity

Rather than tax the value of forest land, some jurisdictions tax site productivity, or sustained yield. This method was proposed by a number of industrial landowners in the survey and offers several advantages. One is that it taxes high productivity sites at higher rates than sites that yield lower productivity. Taxation policies that do not take productivity into account tend to encourage the conversion of low productivity sites to other uses. Site productivity taxes also smooth out property taxes, rather than creating blips when trees are harvested as can be the case with the current harvest tax. Finally, site productivity taxes moderate increases when property values are rapidly rising.

Oregon once had a tax on land value and a severance (harvest) tax, but has now introduced a tax based on site productivity. Idaho offers a choice of property tax and severance tax or site productivity tax to landowners between 5 and 2,000 acres and most prefer the site productivity method because it is less complicated (Malme 1995).

Evidence from other jurisdictions is more ambiguous. Norway has used the sustained yield method but is now converting to a separate tax on land and timber, transitionally offering landowners a choice (Vennesland 1998). Finland until 1993 taxed on the basis of site productivity (an area-based yield taxation with progressive tax rate) in which the taxable income is not affected by actual removals or by stumpage revenues obtained (Grayson 1993, Järveläinen 1998). Now a new taxation option, based on net stumpage earnings (a net revenue-based taxation with fixed tax rate), is being introduced. After 2006 all Finnish forest owners will be taxed according to net stumpage earnings. At the moment, about half of the non-industrial forest landowners have chosen the net revenue-based system.

A tax on site productivity encourages landowners to manage their forest land more intensively. If the land is capable of growing $5m^3$/ha/year and the tax is based on this ability, wood produced above this amount constitutes a "tax free" bonus. Owners who do not harvest are in effect penalized.

7.3.2.3 Unintended effects of reduced property tax

Reductions in property taxes are intended to prevent the conversion of forest land to other, more profitable uses, mainly residential development. However, it is generally accepted that reduced taxes are capitalized into land value (Greenwood and Whybrow 1991), increasing its value and preventing forest landowners from expanding their holdings or new owners from buying forest land. It may also increase speculation on the urban fringe, by lowering holding

costs. In the interim, the public is, in effect, renting or leasing development rights. Recouping taxes when land is converted to other uses addresses this problem to some degree.

7.3.3 Income Tax

Federal income tax laws allow forest landowners to deduct silvicultural expenses from income derived from the sale of timber or timber-cutting rights. In addition, forest landowners can generally deduct expenses from other sources of income. The latter is especially advantageous for non-industrial landowners, who often derive much of their income from non-forestry related sources and might not even have mature trees to harvest. Allowable deductions include the cost of buildings used in forestry operations, interest, property taxes, improvements, seedlings, labour, and depreciation of equipment and tools.

The only catch is that the landowner be able to demonstrate "a reasonable expectation of profit" from the forest operation. That is, with "experience, skills, planning and financing," the forestry-related business will be profitable in the long run. These rules are the same as those applied to other businesses, but the profitability rules are particularly important for forestry because losses can add up over many years before any income is realized.

Income tax deductions can encourage landowners to reforest after harvest and take on other silvicultural improvements aimed at the long-term production of timber but they cannot promote conservation work such as protecting or creating habitat for plants and animals, restoring streamside buffer zones affected by past logging practices or other activities not related to the production of income. This was a point of concern for several landowners surveyed and would require tax changes at the federal level. Agricultural status for forest landowners would have implications for income tax (see Appendix A).

There appear to be no examples in other jurisdictions of income tax provisions that promote conservation activities. Even in Europe, where tax provisions strongly encourage reforestation and other silviculture, the provision of more complex non-timber benefits does not yet seem to be a priority. However, one report released by the US Department of Agriculture (USDA 1995) states that, if the provision of non-timber benefits is also in the public interest, then the taxation system should be designed to, "if not promote, then at least not punish these activities."

7.3.3.1 Green Savings

One option that can reduce income tax and direct money toward forest management is a "green" savings account, in which owners can accumulate pre-tax dollars to pay for future management expenses (Macy 1997). Norway has had such a system, known as the Forest Trust

Fund, in place since the 1930s. An obligatory fee is deducted from the amount paid to forest landowners for their timber. Most timber is purchased through forest landowners associations and they make the deductions. The landowner retains ownership of the fund but must use it for the benefit of the forest property, such as "silviculture, timber production and forest management," including his/her own and hired labour. No interest is paid on these accounts, encouraging landowners to make investments as soon as possible. Instead, 23% of interest goes to forest owner association and rest to the Department of Agriculture. Landowners can choose to deduct anywhere between 8% and 25% from their timber revenue, which is not included in income tax. When removed, a portion remains free of income tax.

A similar system is being proposed in Nova Scotia (FRBC 1996), with a levy based on annual harvest put into a trust fund managed by the Nova Scotia Sustainable Forestry Board or other regional body. Funds would be distributed through voluntary landowner applications. Adaptations of this system could be used to fund work aimed at protection or enhancing non-market values on private land.

7.3.4 Capital Gains Tax

The managed forest landowners survey indicates capital gains tax does not appear to be an issue among industrial forest landowners in BC. I will therefore restrict the discussion to non-industrial forest landowners, some of whom identified capital gains tax as a significant factor in their forest management decisions. Their concerns are shared by other non-industrial landowners in Canada and the US (USDA 1995, Hermelin 1997).

When forest land is transferred to lineal descendants, either upon death or by gift, the Canadian federal government taxes the capital gain. Often this capital gain is substantial, especially if land is located near urban areas, as is most private forest land in BC. As a result landowners can be forced, or at least inclined, to develop part of their forest land to pay the capital gains tax, or to harvest trees prematurely to raise money. Alternatively, landowners may simply sell the land, often to corporations, further concentrating the ownership of forest land (whether this is a bad thing is beyond the scope of this paper). Also, landowners may decline to invest in reforestation or other improvements, in anticipation of a inter-generational transfer.

Most European countries (Grayson 1993, Vennesland 1998, Järveläinen 1998) allow forest land, like agricultural land, to be rolled over to a new generation without incurring a tax penalty. The US has an inheritance or state tax for such situations that is lower than the rate for capital gains (Bliss and Martin 1990, USDA 1995). One alternative method suggested for BC (Macy

1997) is to provide a capital gains exemption based on years of ownership, so that a landowner who has held the land for 40 years might receive a complete exemption, while another landowner who has held the land for only 3 years might receive only a very small exemption.

Non-industrial landowners can gain some benefit from the capital gains tax, relative to their industrial counterparts; in that occasional sales of timber are treated in Canada as capital gain rather than income and therefore taxed at a lower rate. The decision on how to treat the sale of timber can be complicated, depending on whether the landowner holds the property on a long term basis to earn income or simply flipped the property in the short-term, the number and frequency of similar transactions, length of time the property was held, extenuating circumstances (such as death or expropriation), individual or corporate ownership and whether all the trees on a property are cut at once or over a period of time (Versi 1995).

In the US, taxation rules in place from 1943 to 1986 allowed timber income to be treated as long-term capital gains for tax purposes, which meant total taxes paid were lower. This was eliminated in favour of reduced marginal tax rate (Cubbage 1985).

Significantly, owners of farmland forest in Canada can pass on their property to children without paying capital gains, and also receive a $500,000 capital gains exemption if they sell the property on the open market. If the property is jointly owned by a couple, the exemption total is $1,000,000. Similar rules apply to both agricultural land and forest land in western Europe (Grayson 1993).

7.3.5 Logging tax

The BC government levies a logging tax on logging operations under the Logging Tax Act (CFA 1983). The tax is equal to the lesser of 10% of "income derived from logging operations" or 150% of the credit allowed under section 127 of the federal Income Tax Act, which allows a deduction for two-thirds of provincial taxes paid on logging income. This tax is biased toward non-industrial landowners because the first $25,000 of logging income in a year is exempt. However, the Income Tax Act allows the deduction of one-third of the logging taxes from tax otherwise payable, so the impact on industrial landowners is mitigated to some degree. Quebec has a similar logging tax.

7.4 Covenants and conservation easements

A covenant is a private legal agreement between two or more parties that determines how a specific piece of land will be used. From a landowners point of view, it is a promise to do or

refrain from doing certain things pertaining to the use of their land. For example, a landowner might sign a covenant with a conservation organization that states "Mr Jones and his heirs promise to use the property for conservation purposes." Alternatively, an agreement might promise that the land "not be used for development purposes." Landowners enter into these restrictive covenants because they want to ensure their land is used in perpetuity for conservation and/or because the self-imposed land use restrictions lower property values and therefore property taxes.

A conservation easement is a kind of covenant that actually transfers an interest in land from the landowner to another party, usually a non-profit organization such as a "lands trust" or "land conservancy," or other organization specializing in the management of forest and other lands for conservation purposes. Like other covenants, the terms of the easement define and limit the kind of activities that can take place on the property, usually preserving the land from development but also ensuring the protection and enhancement of ecological values. Landowners continue to maintain ownership of the land itself and may continue to use it for purposes such farming or forestry as long as they meet the stipulations of the agreement. Conservation easements are often granted by landowners, or sold for a relatively low price, but this does not necessarily have to be the case. The agreement can be for a limited time or in perpetuity but, once signed, the landowner cannot opt out of the agreement.

7.4.1 Implications for forest stewardship

Covenants and easements have obvious implications for conservation of non-market values on private forest land and governments in Canada have been introducing legislation to encourage their use. New Brunswick recently became the latest province to pass a Conservation Easement Act (Gibson 1998), following the lead of BC, Alberta, Saskatchewan, Ontario, PEI and Nova Scotia. Several non-industrial forest landowners said they would be much more willing to enter into agreements with non-profit organizations than forfeit land use rights to the government. BC recently made this easier by allowing covenants, under section 219 of the Land Titles Act, to be held by private conservation groups.

Conservation easements could also be used as a mechanism through which government could provide at least partial compensation for loss of forest land use rights. The US government created the Forest Legacy Program as part of the 1990 Farm Bill, allowing the US Forest Service to purchase permanent easements on lands that can be effectively protected and managed. and that has important values (USDA 1995). In BC, government or non-profit organization may

enter into agreements with private forest landowners to purchase and manage ecologically sensitive areas, such as streamside buffers and winter habitat for ungulates, leaving landowners freedom to manage the rest of their land.

7.4.2 Purchase of land use rights

Another option is outright compensation for all regulatory takings, including the outright purchase of development rights at market value (Schwindt and Globerman 1996), and also the purchase of land use options considered to be environmentally detrimental. This would certainly provide a strong financial incentive for landowners to meet public interests on their land. The added advantage is that such compensation forces government to consider the true cost of regulations (see section 4.3). It also encourages land to be assessed at market value rather than some artificial use value.

Opponents of this approach argue that the high cost of compensation will prevent government from addressing environmental issues (Cohen and Radnoff 1998). This argument has merit, so to keep initial expenses down, government could pay compensation over time, or through additional tax deferrals. Alternatively, the BC government could sell crown forest land, excluding development rights and forest practices considered harmful, and use proceeds to buy development rights and land use options from existing private forest landowners. Another point to consider is that imposing development restrictions on some forest land increases the price of other land still available for development. Some of this increased value could be used to compensate landowners who have lost value.

7.5 Access to markets

Landowners cannot be expected to engage in good stewardship if management of private forest land is not a viable enterprise. Unfortunately, some non-industrial landowners, particularly on the Gulf Islands and Vancouver Island but also in the interior, have had problems finding markets for their timber, making it difficult for them to manage a profitable enterprise. Normally, a lack of markets would not be an area of concern for government policy. In this case, however, government forest policy appears to be the main reason for the poor state of log markets in BC.

Before World War Two, the log market in BC was very active along the coast, with timber sold by independent logging companies to log brokers and buyers. This competitive market has since been undermined by the gradual integration of large forest companies that both harvest

timber and manufacture wood products, greatly reducing the need for competitive log buying (Marchak 1983). The Pearse Report noted that by the 1970 the volume of logs bought and sold on the Vancouver Log Market had declined from 20 percent immediately after the Second World War to less than 14 percent by the mid-1970s, although actual volumes harvested in BC had doubled. Even the 14 percent figure does not accurately portray the actual situation because many of the transactions included are not between independent buyers and sellers but rather trades among integrated companies who swap one kind of log for other logs more suitable to their needs. Currently, ten companies account for 87% of the timber transactions on the Vancouver Log Market, mostly in the form of trades (Burda et al 1997) rather than competitive buying and selling.

One of the main effects of this arrangement is the exclusion of non-integrated buyers from the wood products manufacturing industry, particularly when markets are strong. The lack of competition among buyers has also reduced the price of logs in BC. A six year study – 1988/89 to 1995/96 – of the more competitive Seattle Log Market shows prices were, on average, 136 percent higher than those on the Vancouver Log Market (Mascall 1997).

For non-industrial landowners, the lack of competitive log markets has resulted in a lack of independent buyers interested in modest volumes of timber, while administratively determined log values set on the Vancouver Log Market (Burda *et al* 1997) have keep prices low. Significantly, stumpage paid on public forest land is set based on these administratively determined log values, allowing the Americans to argue that BC subsidizes its forest industry through access to low cost timber (Schwindt and Heaps 1996). Stumpage has risen substantially since 1992 but much of the increase goes to FRBC, which channels the money into projects such as reforestation and restoration, that forest companies should have been doing anyway.

7.5.1 Improving access to markets

The ideal solution to this problem is for the BC government to market greater volumes of timber harvested on crown land (Burda *et al* 1997) and to encourage a greater range of small and medium-sized wood products manufacturers rather than encouraging large integrated forest companies. These approaches were strongly advocated by the Forest Resources Commission (FRC 1991) and are again the topic of discussion. In the interim, government has set up publicly-run competitive markets, notably the Vernon Log Market, that make a variety of different woods available to untenured businesses and individuals, and that buy small consignments from private landowners.

Private initiatives have also made marketing easier for private forest landowners. One example is Wood BC in 150-Mile House, where timber from private land is gathered into larger consignments attractive to wood products manufacturers, and where small value-added manufacturers can buy small volumes of specialty woods. Computers are also playing a role. The Central Interior Wood Producers Association has set up a bulletin board on the Internet to bring buyers and sellers together. In addition, the BC government has set up BC Wood Fibre Net to encourage links between buyers and sellers.

Finally, one way for private forest landowners to create new markets is to seek "eco-certification" or "sustainability certification" for their products. Both the Forest Stewardship Council and the Canadian Standards Association are working to set up certification systems, hoping that consumers are willing to pay a premium for wood harvested according to relatively strict environmental standards. Landowners surveyed liked the idea but were concerned about certification costs.

7.6 Conclusions

Governments originally began offering forest landowners financial incentives because the long time period required for trees to reach marketable age tended to encourage the conversion of forest land to other uses that offered a more immediate return on investment, such as agriculture or residential development. It was felt that incentives were needed to ensure a stable future supply of timber to the economy. More recently, under pressure from the public, governments have become more aware of the non-timber benefits provided by forests and have begun considering financial incentives to promote the protection of environmental values.

Most governments try to promote stewardship, aimed mainly at ensuring timber supply, through direct financial assistance for activities such as reforestation, other silviculture, mapping and planning. The problem with direct financial assistance is that these programs, often part of more comprehensive "extension programs" combining research, education and financial assistance, tend to be increasingly expensive to administer. In addition, such assistance is in effect a subsidy, since it only encourages landowners to carry out activities they must anyway undertake, albeit more slowly. Finally, direct financial assistance tends to be sporadic and dependent on prevailing political conditions.

On the other hand, direct financial assistance costs are usually transparent, compared to tax benefits, which are often hidden. Also, direct financial assistance may be useful in promoting the protection of non-market values provided by forest land, because there are no market

incentives for landowners to undertake activities such as stream protection and wildlife range management.

Most governments, including in BC, also provide preferential property tax treatment for forest landowners. Policies often reduce annual tax payments in return for a harvest or severance tax when trees are actually harvested. In BC, property taxes for non-industrial landowners are already low and offer little scope for additional reductions as an incentive for protection of environmental values. However, an existing policy to require payment of annual property tax on both land and timber values on residential forest land should be changed to allow lower annual payments, with a harvest tax applied when trees are cut. Industrial landowners, meanwhile, would benefit from a policy that ensures mill rates applied by local governments do not work at cross-purposes to tax breaks provided by the provincial government. Forest landowners could also benefit from agricultural status, which would offer a number of financial benefits (see Appendix A).

Income taxes are mainly a federal matter and largely beyond the power of the provincial government to lower in exchange for improved stewardship, though the provincial government can issue tax credits or adjust its portion of the income tax. Changes to be introduced in 2001 could give provinces more discretionary power. For now the provincial government could work with the federal government to offer tax deductions for landowners who invest in conservation. Currently, deductions are only allowed for improvements that will yield future profits, such as reforestation, other silviculture, new buildings and equipment.

Capital gains tax is also a federal issue but deserves serious attention, particularly for non-industrial forest landowners who may seek to develop forest land to raise money to pay for capital gains when land is transferred to lineal descendants, or who harvest immature trees in order to reduce land values and capital gains payments. Again, owners of agricultural land can transfer land to lineal descendants without paying capital gains, and get a $500,000 deduction (per spouse) if the land is sold outright.

Given the lack of latitude in reducing property taxes and federal jurisdiction over other taxes, the BC government should consider encouraging the use of covenants and conservation easements. Non-profit organizations or government agencies could purchase the development rights of private forest landowners, and enter into agreements protecting environmental values. This arrangement ensures the costs of government environmental policies are transparent and that landowners are compensated for any "regulatory taking."

Finally, the BC government should reassess policies that promote the disappearance of competitive log markets in BC, not only for their effect on the ability of non-industrial forest landowners to market their timber, but also because these policies hamper forest companies with tenure on crown land, as well as the ability of new wood products manufacturers to find timber supplies.

Chapter 8: Information and Education

8.1 Introduction

Providing information and education on forest management to private landowners can pose a number of practical and political difficulties. Education and information programs are difficult to organize and coordinate, and can be expensive to administer, while results are neither immediate nor easily measurable. In addition, there are always disagreements over the "facts" and how to provide scientific information on forestry and environmental issues that is objective and credible. This is especially true as public demands on private forest land have expanded from simply ensuring a stable timber supply to the much more subjective and complex issue of addressing environmental concerns.

On the other hand, research strongly suggests that information and education programs can have a significant and lasting effect on how landowners manage their private forests, and whether they are willing or able to meet public interests on private land (Bliss and Martin 1989, Bliss and Martin 1990, Stjernquist 1973, Macy 1997). More importantly, research shows information and education is a prerequisite to the effective use of other incentive programs. This chapter examines the merits of education and information programs in BC and other jurisdictions, considers the practical and political obstacles to such programs, and applies this knowledge to the development of future information and education programs in the context of private land forestry in BC.

8.2 What is information and education?

The terms information and education are used interchangeably in much of the literature applied to private forest land and it is tempting, for the sake of simplicity, to use only one term or the other. They are, however, subtly different terms. Information refers to knowledge, facts or data and one role government can and has played is to make forestry related information available to private landowners who choose to take advantage. Education refers to systematic development or training by instruction or study, and represents a more practical approach in which private forest landowners are actively encouraged to acquire knowledge. Information and education programs therefore refer both to forestry-related knowledge and to the act of actively conveying such information.

The purpose of information and education – from a public policy point of view – is to instill in private forest landowners a desire and ability to improve the stewardship of their land in a way

that meets public interests. In most jurisdictions this has meant undertaking reforestation and other silviculture aimed at providing a viable and stable future supply of wood, so information and education programs thus far have included silviculture, mapping and planning, harvesting methods, equipment maintenance and operation, safety and small business skills. Public expectations have since expanded and information and education programs are beginning to include forest and wildlife ecology, ecological values provided by forests, recreation opportunities, aesthetic values and how to adapt this knowledge to local conditions and individual circumstances.

8.3 Support for information and education

Considerable evidence suggests government involvement in information and education programs is critical to the success of government policies aimed at improving stewardship on private forest land. Much of this research was done in the context of non-industrial forest landowners in Canada and the US, where studies show landowners often engage in poor forestry practices because they lack technical expertise (Bliss and Martin 1990) and because many people own private forest land as a principal residence rather than for forestry purposes (NIWA 1994). Similarly, landowners most in need of information and education in BC appear to be farmers, ranchers and owners of residential forest land, though owners of managed forest land, both non-industrial and industrial, could also benefit to varying degrees.

8.3.1 Evidence from other jurisdictions

One early study on the effectiveness of education was done in Sweden (Stjernquist 1973), where about half of all forest land is owned by 250,000 non-industrial landowners. The study compares two regions, one in which the "letter of the law" applied, the other in which a combination of "education and gentle prodding" was used. The result strongly supports the educational approach widespread in Sweden. A look at Swedish forestry (Haley 1994) concludes that:

> *"A successful forest policy requires a competitive forestry sector with enlightened landowners and managers of the forest resource who can make locally adjusted decisions."*

This conclusion is supported by an extensive review of studies in the southern US and Great Lakes states (Bliss and Martin 1990), which concludes:

"Education has... the greatest and most enduring effect on [non-industrial private forest land] management."

Information and education programs are often included in government programs that fund some combination of research, education and direct financial assistance, known ambiguously as extension services (see section 7.2). Research into the effectiveness of these programs indicates information and education is a prerequisite to the adoption of good forest management practices (Stjernquist 1973, CFS 1996, Macy 1997), and that continued or increased financial assistance, tax breaks or technical assistance programs are only effective once the decision to improve stewardship has been made. Other research (Bliss and Martin 1989, Jones *et al* 1995) indicates education yields more "publicly desirable management activities" than silvicultural funding assistance and other incentive programs.

Another interesting analysis of information, education and private land forestry (Salwasser 1990) observes that knowledge and technology bring affluence, and affluence allows people to perceive they can afford a better quality environment and to support costs of achieving it. Finally, the survey of managed forest landowners showed a strong majority of landowners saw the need for more information and education for all private forest landowners, especially non-industrial ones (see section 2.4.3.5), and said there is a correlation between education and stewardship.

One final note of interest is that promoting stewardship of environmental values on private forest land may not always be conducive to increased timber production. In Finland, which is 90 percent forested, wood-products firms have been forced to look outside the country for logs because many of the 300,000 small private woodland owners, many of them absentees who live in cities, have no desire to manage their land for timber (Journal of Forestry, Sept 1985) preferring instead to maintain untouched forest on their land.

8.4 Program design: Lessons from BC and other jurisdictions

Based on research mentioned above and interviews and unpublished papers from former New Brunswick Forest Extension Service director Joakim Hermelin, this section outlines the important features of an education and information program appropriate to BC.

8.4.1 Consultation with professional foresters

Most landowners surveyed said the best educational option for non-industrial landowners is one-on-one consultation with a professional forester. Many respondents consulted with a

professional forester under the FRDA program (see section 7.2), which delivered technical advice through Woodland Extension Foresters contracted to the Canadian Forest Service. Duties were to provide initial consultation with clients, prepare reconnaissance surveys and inventory, discuss logging plans and silvicultural improvements, monitor projects and liaise with landowners. One landowner who took part in the FRDA program, discontinued in 1996, summed up the feelings of many other non-industrial landowners:

> *"The most instructive two days I spent was going out with a forester and looking at the forest through the eyes of a forester. I really benefited from that."*

Preference for one-on-one consultations is consistent with research in the US. One study in Wisconsin includes a literature review (Bliss and Martin 1989) of studies in other US states, and concludes one-on-one consultations are "perhaps the most powerful external incentive to forest management." In a later study (Bliss and Martin 1990), the authors also found that, when forest landowners were asked to chose only one of three options, technical assistance, cost-sharing or tax incentives, they unanimously chose technical assistance from professional foresters. The report concludes:

> *"Professional foresters can take pride in the fact that, of all incentives offered NIPF [non-industrial private forest] owners, active managers value most highly the advice and assistance of professional foresters. This should send a clear signal to policy-makers as they decide which programs to expand or cut."*

The Wisconsin state government provides 60 professional foresters upon request, free of charge. Information provided includes forest reconnaissance, management planning, timber marking, pest control advice, product marketing and utilization, and available programs. Similar programs also exist in other US states (notably Oregon), the European Union and, to a lesser extent, in Canadian provinces under joint federal/provincial funding arrangements similar to FRDA. The problem with one-on-one consultations is that they are expensive, and demand always seems to outstrip the resources available (Hermelin 1998).

8.4.2 Program coordination

The first step for new information and education programs, or new sub-programs, is to get the attention of forest landowners. A survey of forest landowners on Vancouver Island (NIWA 1994) shows that 73% of respondents were unfamiliar with the forestry extension services listed in the questionnaire. Similarly, only about 10% of eligible private forest landowners in BC took

advantage of FRDA (CFA 1996). Initial communication is usually done through pamphlets, posters, newspapers or radio. Television would be a good medium but is expensive.

The next step is to build a relationship with interested landowners through newsletters and in-house newspapers, then provide educational opportunities through any combination of books, videos, modular courses, workshops and seminars. Computers are also playing an increasing role and provinces such as New Brunswick are looking at distance education options (Hermelin 1998). Issues covered vary widely, but generally include harvesting, safety, silviculture, shelterbelts and windbreaks, small-scale woodlot equipment, taxation issues and small business skills, and more recently forest ecology, integrated land management and continuous cover silviculture systems.

Providing knowledge in this way helps ensure landowners are able to make the most of their time with professional foresters. The logical progression from basic education, to one-on-one forester advice to financial assistance is common to many extension programs. Experience and education varies considerably among landowners, so the system must be flexible and voluntary.

8.4.2.1 Making the most of professional foresters

One way to use professional foresters more efficiently is to make use of conferences, workshops and field demonstrations, so they can pass their knowledge on to a large audience. Many landowners, however, are reluctant to attend functions away from home. Some jurisdictions have addressed this problem by offering special training to volunteer woodland owners, who in turn pass their knowledge on to other landowners. This is supported by evidence that landowners prefer to learn from their peers. In Oregon, this initiative is called the Master Woodland Manager Program (Macy 1997) and includes a 85-hour "train-the-trainer" instruction. From 1983 to 1991, 5700 people have been reached by these volunteers. Wisconsin has a similar initiative (Bliss and Martin 1990). Given the experience and education among landowners in the survey, there is plenty of knowledge that could be passed on to other private forest landowners, as well as professional foresters. Another way to improve access to professional foresters, and among landowners, is through the Internet, including websites, bulletin boards and "chat rooms."

8.4.3 "One-stop-shopping"

A number of non-industrial forest landowners surveyed noted that much of the information they required to effectively manage their forest land was available, as long as they are prepared to invest considerable time and effort to obtain it from government agencies, forest companies, educational institutions, or sift through vast amounts of information on the Internet. Difficulty in

obtaining usable information can be a significant impediment to learning, but can be addressed through the creation of a central office to provide "one-stop-shopping" for information. Such an office can provide an initial contact for landowners and could provide a range of additional information, or at least point landowners in the right directions. Several jurisdictions have taken notable steps to provide one-stop-shopping.

Forest Extension Services in New Brunswick (Hermelin 1995) has a central lending and distribution library - or Woodlot Resource Centre - used by staff, individuals and groups involved in woodlot education and public education, providing written material, modular courses and videos for individuals or for use in classes, workshops and seminars. The office also coordinates training for professional and technical staff, as well as interested landowners. A computer-based distance learning facility is being developed.

In Sweden, research consolidated around SKOGFORSK, which takes a "holistic approach" to studies in harvesting, silviculture, economics, human resources, organizations, and environmental and ecological issues. This information is made available to forestry field workers and the forest education community through scientific reports, reports for field use, news bulletins, videos, handbooks, pamphlets, manuals and other material. The forest landowner can tap into the research directly or through forest landowner organizations, government extension services, and educational institutions.

Norway has a centralized system consisting of the public Forest Service, the private Forest Owners' Association and a public/private partnership in the Forest Extension Institute, which is a joint venture among 30 forestry organizations and scientific institutions. Germany has coordinated research, information and education in the Forstliche Versuchs- und Forschungsanstalt (Forestry Research and Experimentation Institute). Meanwhile, European efforts are coordinated in the European Forestry Institute.

8.4.3.1 US states and Oregon

US states can take advantage of a partnership between the federal Department of Agriculture, land grant universities which administer research, information and education, and local governments which provide what is known as Cooperative Extension Service aimed at agriculture, forestry and wildlife and fisheries. One oft-cited example is Oregon which has, in terms of faculty and budget, the largest Forestry Extension Program in the US (Macy 1997), combining education, technical assistance and tax incentives.

Under this system, Oregon State University does environmental and forestry research, trains foresters, provides educational material and administers the program, while the one-on-one technical assistance is provided through the Oregon Service Forestry Program, a section of the Oregon Department of Forestry. Organizers of the Oregon program emphasize that they provide information in response to needs expressed by learners and that feedback mechanisms ensure the service is constantly evolving. The program includes 35 faculty at the university campus, who provide research and support, and in county offices, where faculty work directly with landowners. The program has an annual budget of $2 million: 50% state, 25% federal, 15% county and 10% from grants and other sources. About 35% of forest land in Oregon is privately owned.

8.4.3.2 Coordinating legislation

Landowners are often as confused by the array of programs and policies that apply to private forest land as they are about sources of forest management information. The survey (Chapter Two) suggests the same is true in BC, where federal, provincial and local government regulations apply. That means landowners are affected by the federal Department of Fisheries and Oceans and Environment Canada, the provincial Ministry of Environment, Lands and Parks and Ministry of Forests, BC Assessment and the Forest Land Commission, various local administrations and municipal by-laws, as well as organizations such as the Islands Trust.

A study in Wisconsin (Bliss and Martin 1989) shows landowners find a variety of government agencies address narrow concerns rather than broad management needs. This results in a "confusion of programs, requirements, procedures and personalities." Even in Oregon, where information and education is highly centralized, information about new regulations and services is provided by other government agencies. Most landowners would prefer a single government agency that interacts with the private forest landowners.

8.4.4 Neutrality and objectivity

While a central repository of information and education is desirable, there must be assurances that no industry, government agency or other organization gain control over content, so that information is seen as objective. As the author of a recent study in BC puts it:

"[*Education should*] *provide the means and capacity for landowners to make informed management decisions appropriate to local conditions and individual circumstances. It must do so in an atmosphere of credibility and neutrality* (Macy 1997, p48)."

Objectivity and neutrality is especially important in the area of research. According to a Swedish paper on education (Salwasser 1990), researchers have an obligation to provide objective and unambiguous information on what is possible, to help develop sound strategies to meet goals, and to show the costs and consequences of alternative strategies. The objective is to help landowners meet their own needs. The information provided should include more than just forest management, and should include a knowledge of the humanities and "the bigger picture."

One possible problem associated with centralization is stagnation and lack of new innovations, so objectivity can be enhanced by providing access to material from a range of sources. The Forest Extension Service in New Brunswick works together with local groups and woodlot owner associations, as well as research units in other countries, and has agreements with extension staff in Eastern Canada and US to exchange free educational material. (Hermelin 1995). New members are welcome as long as it is a "two-way street." Information sharing also helps reduce costs, a useful idea in BC where the number of private forest landowners is limited.

8.4.4.1 Objectivity in administration

Like research, the organization or organizations administering information and education programs must be seen as objective and credible. Universities or other relatively neutral institutions are useful in this regard – as in Oregon, Sweden and Germany – especially compared to government agencies, which are constrained by a range of political, environmental, social and economic issues. Often the actual field work is done by foresters or other trained professionals on contract to government or landowner associations, but it should always be possible for landowners to consult directly with research staff and to access to original research.

It should be noted that the objectivity and neutrality argument has been complicated by increasing public demand for protection of ecological values provided by forests. Traditional information and education encompasses issues like planning and mapping, harvesting techniques, safety, adaptation of farm equipment to small-scale forestry, soil conservation, reforestation and other silviculture, small business management skills and other relatively unambiguous topics. More recent information and education has begun to include more complex and subjective issues such as visual quality, habitat protection and maintenance of biodiversity.

8.4.5 Continuity

Information and education programs should be as continuous as possible. Local and international market conditions are constantly changing, as are consumer preferences and public demands on private forest land. Forest land often changes hands at least once during a rotation,

and new landowner may not have the same experience and education as the previous owner. In addition, scientific research continues to change the way we view forest ecosystems and new knowledge should be translated into practice. Such changes make it likely that both non-industrial and industrial forest landowners can benefit from ongoing access to information and education. Again, Internet access and website development could be used to enhance continuity.

Unfortunately, information and education programs in BC have been sporadic and haphazard. The main program, FRDA, was discontinued in March 1996 and no successor has emerged. Some information and education is available through various community colleges, the Ministry of Forests or Forest Renewal BC (Macy 1997) but efforts are not coordinated, extensive or continuous. This mirrors trends in other jurisdictions in Canada and the US, where fiscal restraints are reducing government commitments to such programs (Hermelin 1998). Lack of funding is exacerbated by the lack of immediate and quantifiable results provided by information and education, which makes it difficult for politicians to enhance their re-election efforts.

8.5 Program delivery

The issue of program delivery is largely about the degree of government involvement in information and education. Funding is usually provided largely by government – though landowners also provide funding, often through levies on timber sales – so government not surprisingly wants to maintain a degree of control, not least over new jobs created. There are, however, three reasons to minimize government involvement.

First, government involvement tends to foster costly bureaucracy, a trend witnessed by many forest landowners in BC over the life of the FRDA program. Second, landowners do not trust government and prefer to learn from their peers or professional foresters. One study on Vancouver Island (NIWA 1994) shows twice as many people would prefer to contact the North Island Woodlot Association than the Ministry of Forests for assistance in managing their forest land. The study is supported by the managed forest landowners survey, which shows landowners who also have Woodlot Licenses on crown land believe MoF staff - currently the main source of information - do not understand the attitudes, objectives and constraints of private forest landowners.

Third, government programs tend to be centralized (Macy 1997), and "a centralized delivery agency cannot respond as readily or as economically to current or future needs of the diverse group of landowners." Jurisdictions such as Oregon and Sweden have chosen a centralized

administration for research and a central repository of information, but have made program delivery as local and decentralized as possible, usually through landowners associations.

8.5.1 Options for BC

Macy says the best option for BC is to deliver information through the Federation of BC Woodlot Associations - composed of 22 local associations from Vancouver Island to the Peace River - which has the advantage of being known, local and decentralized. The Federation is currently involved in "evolving dialogue" with the MoF over extension services to those involved in the Woodlot License program, many of whom also own their own forest land. Other landowner associations could be also become involved.

There is also a role for the BC Forestry Continuing Studies Network, which is connected to various post-secondary institutions, yet maintains a degree of autonomy in its operations. Instructors are generally local and could use information and courses from a central repository to develop curricula suited to local needs. The network also has experience in adult education, which can differ considerably from more formal education if the participants have families, work full time, often have considerable experience, want to learn, and have little time grades, exams or certifications.

Another option (Macy 1997) is to offer information and education through the Ministry of Agriculture, Food and Fisheries (MAFF). The ministry already has District Agriculturalists providing advice on food crops, and since many non-industrial landowners also own farmland, additional training in forestry could make them more versatile. At the moment, however, MAFF is facing reduced funding and is expected to cut 80 positions by end of 1998. Still, a joint approach with agriculture makes sense, in terms of research, administration and delivery.

8.5.2 Private initiatives

Several industrial landowners surveyed said they share technical expertise with non-industrial landowners in return for preferential access to timber produced on their land. This type of arrangement is common in the US, especially southern states such as Georgia, Mississippi, Alabama, Florida and Louisiana, where major mills and manufacturing facilities who do not have enough forest land to meet their requirements offer "manage assistance programs" (Bliss and Martin 1990). The company provides private forest landowners with a 5-year management plan, including stand acreage and volumes, harvesting estimates, and projected income and expenses for that period. This management plan, plus subsequent supervision of harvesting and silvicultural activities, is at no cost to landowners, though they do pay for seedlings and planting.

While the primary focus is timber production, company foresters will also work with owners on recreation and wildlife management issues.

One thing to remember is that landowners are competitors and might not always consider it in their best interests to share information. There are advantages, however, especially for industrial landowners. One, it helps ensure a supply of timber to manufacturing facilities, especially when crown timber supplies are increasingly restricted. Second, industrial landowners can use their expertise more widely and possibly derive additional income. Third, forest practices on small landholdings reflect on all private forest landowners and the investment can help avoid additional government intervention.

8.6 Educating the public

Education and information services should include some form of public education. It is in governments' interest to keep the public apprised of measures taken to improve stewardship on private land. More importantly, though, landowners have an interest in informing the public of timber and non-timber benefits provided by private forest land and what measures landowners are taking to protect those benefits. This education is becoming more important as countries become more urbanized and people lose their connection to the land (Salwasser 1990). In BC, many people are not even aware of the existence of large areas of private forest land. Landowners could also benefit from efforts aimed at changing public attitudes about the way private forest land is regulated, in particular convincing the public that heavy-handed command-and-control measures are not the best way to achieve public objectives on private land (see section 5.7.2)

In Sweden, public education begins early, through a special program called "Forests in the School" that has for 28 years offered educators forestry components to include in their existing curricula (Hermelin 1995). This approach allows teachers to include forestry examples in everything from mathematics to geography to social studies, with minimal effort and disruption. Similar program have been set up for New Zealand schools and the former head of TimberWest, a New Zealander now with Macmillan Bloedel, wants to do the same for BC schools. Again, there could be considerable disagreement over forestry and environmental "facts."

8.7 Conclusions

Funding for information and education programs is not always popular among politicians. The effects of such programs are never immediate and results are hard to quantify, even over

time, so there are not many political advantages. Information and education programs are also difficult to organize and administer, while decisions over what information to provide can be subjective and controversial.

However, evidence strongly suggests that if the public wants to improve the level of stewardship on private land, an investment in information and education programs can go a long way to achieving that result. In fact, research shows that low levels of stewardship among landowners are often the result of a lack of expertise and that information and education programs are the most effective remedy, more effective even than financial incentives. At the very least, information and education is a prerequisite to financial incentive programs, and to maintaining the landowners' freedom to manage.

Research in BC and other jurisdictions shows landowners most value one-on-one consultations with professional foresters. However, this approach is expensive, so many jurisdictions try to first provide information through written materials, videos, courses, seminars and workshops so landowners have the background to make the most of one-on-one consultations. Training some landowners to then pass their knowledge on to other landowners is also a cost effective approach. The Internet, including websites, bulletin boards and chat rooms, could be used to make information transfer more efficient.

Information and education program design should also consider other criteria. One, there should be central administration and repository of information, so landowners know where to turn, as well as one government agency dealing with private forest land. On the other hand, training opportunities should be decentralized where possible. Second, information should be seen as neutral and objective, so research from universities and other independent sources is crucial. Neutrality is also important in program delivery, and one reason actual training is best done by contracted professionals through landowner or woodlot associations. Third, programs should be continuous, so new landowners can gain access to information and other landowners can keep up with market changes and scientific developments. Finally, landowners should be proactive in educating the public about the value and ecological functions of private forest land, and the advantages of alternatives to heavy-handed regulatory approaches like the Forest Practices Code.

Chapter 9: Final Conclusion and Recommendations

9.1 Final Conclusion

The BC government plans to regulate forest practices on private land in the province, largely in response to public pressure. The stated aim is to ensure a long term and stable timber supply and, of more immediate public concern, to protect environmental values. Though it is beyond the scope of this paper to judge the merit of new regulations, the proposed legislation would address two structural problems common to forestry worldwide.

First, the length of time taken to grow trees to marketable age often discourages landowners from adequately considering future timber supplies, and governments have often stepped in to ensure adequate reforestation and protection of forest land from conversion to agriculture of urban development. Second, our current economic system tends to ignore or underestimate non-timber benefits provided by forest land, including clean water, soil conservation, fish and wildlife habitat, carbon sequestration, noise abatement, recreation and visual quality. Rapidly growing public concern over non-timber benefits is forcing governments to reconsider the traditional bias in favour of timber production.

There us no doubt that the BC government has the legal authority to regulate forest practices on private land. Canada's legal structure clearly allows the BC government almost complete latitude in restricting land use or forest practices on private forest land, and there appears to be no legal requirement to provide compensation in the event of *regulatory taking.* On the other hand, such regulation is an infringement of the private property rights central to our existing economic structure and flouting those laws can undermine the system, as well as alienate private property owners rather than gain their cooperation in achieving public objectives. Compensation for regulatory taking could offset such infringement, but the costs would be high and could prevent politicians from enacting environmental legislation.

Whatever the arguments for and against regulation, public pressure has convinced the government to proceed with plans to regulate private forest land. The purpose of this paper is to propose a regulatory system that efficiently and effectively achieves public objectives on private forest land.

9.1.1 Seeking efficient regulation

The central hypothesis of this paper is that a regulatory system based on encouragement and reward is a more efficient approach than a regulatory system based on coercion and punishment.

This does not mean government has a choice of two extremes. Rather, a range of choices exists on a continuum between the two extremes. The hypothesis suggests there are benefits to both regulators and regulated in moving along the continuum, away from the current bias in favour of coercion and punishment toward more reward-based regulatory systems. Three areas of research have been examined to test this hypothesis: Organizational Behaviour, a survey of private forest landowners, and regulatory experiences in other jurisdictions with temperate forest.

Research in Organizational Behaviour examines, among other things, how people are best motivated to achieve organizational goals. Though much of this research has been done in the context of commercial organizations, the findings are applicable to motivating private forest landowners to address public objectives. Of particular interest is strong evidence that incentives and rewards have significant advantages over coercion and punishment in motivating human behaviour.

Punishment-based motivational systems tend to require constant supervision to ensure compliance, often alienate those being motivated, focus attention on what is wrong rather than on what is right, and channel human creativity toward determining how best to circumvent rules and avoid punishment. In the context of private forest land regulation, punishment-based regulatory systems such as the Forest Practices Code are complicated and expensive to administer, create an adversarial relationship with those regulated, are out of touch with desired public objectives, and focus human innovation to evading rather than achieving stated public objectives. Punishment-oriented systems, known in government policy circles as "command-and-control," also infringe more on private property rights.

In contrast, reward-based systems require less supervision, foster cooperation, focus on what is right, and promote innovation and creativity. In the context of private forest land, that means lower administrative costs, more cooperation between regulator and regulated, a clear focus on environmental and timber supply objectives, and the channeling landowners' creativity and innovation toward achieving those objectives. Reward-based systems, known for the purposes of this paper as "education-and-incentives," also mean less infringement on private property rights.

9.1.2 Political opposition to new regulatory approaches

Despite the apparent advantages of using rewards to motivate people, governments have traditionally chosen command-and-control approaches to regulation. Forest Practices Code is a good example. Research from political science indicates this choice is more the result of

perceived political and personal advantages than an effort to determine the most effective and least costly solution to a problem.

Politicians like command-and-control regulations such as the Code because it creates a perception that government is "doing something" immediate and "getting tough" with transgressors. In addition, regulatory costs are often well-hidden among general government expenditures, and new public sector jobs are "created" for people who might in future vote politicians back into power.

Political scientists also suggest bureaucrats often prefer command-and-control approaches because they are familiar with this approach and have expertise in this area. Both bureaucrats and politicians seek to avoid the risks associated with radical new regulatory approaches. Instead, changes tend to be slow and incremental.

9.1.3 Survey of private landowners

Organizational Behaviour also offers insight useful to the creation of reward-based motivational systems. Such a system must be developed in conjunction with those being motivated, must be fairly and consistently applied, requires clear and attainable goals, and must provide a clear link between the attainment of goals and subsequent rewards. Most importantly, such a system requires the identification of rewards desired by those regulated.

The survey of private forest landowners was designed to obtain in-depth knowledge of the goals, values and capabilities of those being regulated, so we know what they covet and so how they might best be motivated. The survey also served as an opportunity for landowners to share ideas and suggestions on proposed regulatory policies. Only private forest landowners in the managed forest tax category were surveyed.

Perhaps the most revealing conclusion from the survey is that, while there are significant areas of overlap, the goals, views and capabilities of small or *non-industrial* landowners often differ from the goals, views and capabilities of large or *industrial* forest landowners. This differentiation is especially apparent when discussing landowners' motivations for owning and managing forest land. Industrial landowners are companies that manage forest land for profit, so financial considerations are paramount. Non-industrial landowners also want forest land management to be viable but are also strongly motivated by lifestyle, independence and emotional attachment to their forest land.

The survey also found that almost all forest landowners surveyed believe the public has at least some legitimate interest in forest practices on private land, especially water quality and soil

conservation and, to a lesser degree, fish and wildlife habitat. Few consider visual quality a legitimate public interest. Most do not object to public access for recreational purposes, but consider it more privilege than a right. All landowners, industrial and non-industrial, said they believe they are already managing their forest land to high standards.

While landowners recognize some public interest on private forest land and see a need for government to 'do something" to deal with "bad apples" among private forest landowners, they strongly oppose the application of the Forest Practices Code, or other government intervention considered "inflexible," "bureaucratic," "wasteful" and "expensive." Instead landowners, especially industrial landowners, want a regulatory system based on financial and other incentives that would promote stewardship but leave landowners a high level of independence, or *freedom to manage* their land. For most, that means defining objectives the public would like to achieve on private land, then leaving landowners freedom to achieve those objectives in ways suitable to their particular situation. This is often referred to as a results-oriented system.

Rewards for achieving stated results should be in the form of tax breaks, mainly on property tax but also other taxes. Most landowners said direct subsidies encourage landowners to reforest and manage their land, but also say such programs tend to become bureaucratic and wasteful, and often fund activities landowners would do anyway, albeit more slowly.

Many non-industrial landowners said those who achieve higher environmental standards should also receive additional incentives. All landowners said new regulations should apply to all private forest land, not just land in the managed forest tax category. Many said giving forest landowners agricultural status would provide additional tax and other incentives.

9.1.4 An education-and-incentives systems for BC

Many of the findings from Organizational Behaviour and the landowners' survey are supported by research of private forest land regulation strategies in other jurisdictions, including other Canadian provinces, American states, European countries and New Zealand. Using Organizational Behaviour, information from the survey and examples from other jurisdictions, it is possible to outline a education-and-incentives based approach to regulating private forest land in BC. The proposed system focuses on three main areas: education, freedom to manage and financial incentives.

9.1.4.1 Information and education

Landowners surveyed stressed the importance of education. This assessment is supported by research in other jurisdictions that shows education can greatly improve both the willingness and

ability of landowners to meet public objectives on their private land. In fact, education appears to be prerequisite to the maintaining freedom to manage and to the efficient and effective use of financial incentives.

Despite the apparent advantages, information and education in areas of forestry, small business management and related skills is not politically popular. Programs can be difficult to organize and coordinate, and expensive to administer, while results are neither immediate nor easily measurable. In addition, there are always disagreements over forestry and environmental "facts," and over public versus private control, administration and funding. These obstacles can, however, be addressed.

Access to one-on-one consultations with visiting professional foresters is the information opportunity most desired by landowners, in BC and elsewhere. Unfortunately, this kind direct of access is also expensive, so education and information programs must ensure landowners first have access to pamphlets, reports or videos, then attend seminars, courses, field days and workshops. Costs of professional forester consultations can also be reduced by consulting in groups, or through so-called woodland manager programs, which train small groups of landowners, who then pass the knowledge on to their peers.

The Internet, including websites, bulletin boards and chat rooms is so far underutilized as an education medium for private forest landowners.

Information and education programs should have one central administrative location, so landowners know where to start. In contrast, administration of courses and training should be decentralized, and coordinated as much as possible by landowner groups, in cooperation with government and using contracted professional foresters. Educators should strive for neutrality and utilize independent sources such as universities for up-to-date research. Programs should be continuous and coordinated, so landowners can keep up with market changes and scientific developments.

Education should include an effort to educate the public on the economic and ecological value of private forest land, stress the costs of command-and-control approaches such as the Forest Practices Code and outline the merits of alternative regulatory systems.

9.1.4.2 Freedom to manage

Private forest landowners in BC, as elsewhere, tend to value their independence, lifestyle and overall freedom to manage their forest land. Education increases both the desire and ability of landowners to maintain this freedom. Non-industrial landowners are especially anxious to avoid

regulatory approaches they regard as bureaucratic, inflexible and an unacceptable infringement on private property rights. Industrial landowners also oppose intervention but seem most concerned about regulatory costs.

An approach advocated by industrial landowners and supported by many non-industrial landowners is that government clearly state the socially-desired environmental objectives give landowners considerable latitude in achieving those objectives. Such a relatively *simple results-oriented* system, proponents argue, could achieve the same environmental objectives *as process-oriented* systems like the Forest Practices Code, but at lower cost to both landowners and public. This is because it would not be necessary to administer activities in such detail. In addition, results-orientation would promote innovation and infringe less on private property rights.

Results-orientation would have been relatively straightforward in the past, when the principal public objective was to prevent overcutting and to promote reforestation. Now that public objectives increasingly include a range of environmental values, results-orientation is a greater challenge.

Scientific uncertainty makes it difficult to define and measure environmental outcomes, and our inability to identify the relative importance of differing ecological functions makes it difficult to assign priorities. In addition, it can take a long time for environmental problems to become apparent. On the other hand, the same scientific uncertainty and valuation problems face any regulatory approach that aims to address environmental concerns, and regular government audits of forest practices can catch environmental problems, such as potential landslides and erosion, before disasters occur.

Maintaining autonomy, responsibility and freedom to manage for private forest landowners is in itself a reward for meeting public objectives. This is especially true for non-industrial landowners, who have a strong attachment to the land and their independence, and often already engage in high levels of stewardship. Additionally, these landowners can be motivated by non-financial rewards, such as public recognition. Some jurisdictions have used award ceremonies to reward high levels of stewardship.

9.1.4.3 Financial incentives

Money is a powerful motivator and financial rewards should be used to promote stewardship on private forest land in BC. Survey results show financial rewards are especially important to industrial landowners, though non-industrial landowners can also be financially motivated to meet public objectives.

Financial incentives have long been used in other jurisdictions to encourage forest landowners to reforest and keep their land in forest production rather than converting to other uses such as agriculture or development. Initially intended to ensure a stable timber supply, tax breaks and direct financial assistance have successfully encouraged reforestation, other silviculture, mapping and planning, and helped prevent conversion of forest land to other uses. More recently, governments have begun using financial incentives to encourage landowners to protect environmental values, such as critical fish and wildlife habitat.

9.1.4.3.1 Direct financial assistance

Often grouped with information and education into what are known as *extension* programs, direct financial assistance has been effective in promoting reforestation, other silviculture and planning, but experience has shown such programs are sporadic and dependent on prevailing political conditions, and can become increasingly expensive and bureaucratic. Research also shows direct financial assistance often amounts to a subsidy because it pays for silvicultural work landowners would anyway have to undertake to produce timber.

Direct financial assistance may be better suited to the more recent goal of encouraging environmental work, such as stream protection, buffer zones and maintenance of critical habitat, because these are not activities landowners undertake in the course of timber production. Direct financial assistance also has the advantage of being transparent in terms of costs.

9.1.4.3.2 Preferential tax treatment

Most governments, including BC, use tax breaks to encourage stewardship of private forest land. The most common concession is lower annual property taxes in return for a harvest or severance tax when trees are harvested. This mechanism reduces the cost of holding forest land until trees are cut and cash generated. Private forest land zoned for residential purposes is taxed annually on both the land and timber values, resulting in the harvest of immature trees. Property taxes are of considerable interest to industrial landowners, while non-industrial landowners generally consider current property taxes fair.

Unlike property taxes, income taxes are mainly a federal matter, so the BC government is restricted to adjusting the proportion of income tax that accrues to the province. The BC government should work with the federal government to provide allowable income tax deductions for landowners who invest in conservation. Deductions are currently only allowed for improvements that promise to yield future profits, such as reforestation, other silviculture, new buildings and equipment.

Non-industrial forest landowners could also benefit from changes to capital gains tax regulations, which now require capital gains to be paid even if the property is passed on to lineal descendants.

Both industrial and non-industrial landowners support giving forest landowners agricultural status, which would give them lower property taxes, lower income taxes and exemptions from capital gains tax. If this is considered, government should ensure additional financial incentives are linked to environmental performance.

9.2 Recommendations

1. **Improve inventory of private forest land**, including total private forest area, site quality, and condition and extent of current forest cover. Appropriate policy changes need a basis in an accurate inventory. Some of this work is currently being done by the Forest Land Commission.

2. **De-politicize the policy development process**, to ensure decisions over whether and how to regulate are made as objectively as possible. Political considerations appear to be the main impetus for command-and-control regulatory options. Revisit research and recommendations made by the Forest Resources Commission.

3. **State clearly, and be able to justify, reasons for regulatory intervention** on private forest land. Environmental valuation methods should be more thoroughly investigated and applied to this question. Additional research is required, both in BC and elsewhere.

4. **Be able to justify a chosen regulatory approach** by objectively considering the full costs and benefits of different regulatory options.

5. **Respect private property rights** and ensure policy options minimize infringement of private property rights where possible. Seriously consider appropriate compensation for "regulatory taking," possibly through outright purchase of development or timber rights in some areas, or the use of covenants and conservation easements. Also, recognize that regulation of forest practices on crown land differs from regulation on private land.

6. **Research the beliefs, values, goals and abilities of all private forest landowners.** Most research has included only managed forest landowners (such as this paper), especially

landowners on Vancouver Island and the Gulf Islands. Much more information is needed on farmers and ranchers who own farmland forest, especially on their motivations for owning and managing forest land.

7. Recognize the drawbacks of punishment in motivating human behaviour, while acknowledging that at least some rules and supervision are needed to enforce minimum standards

8. Recognize the advantages of reward in motivating human behaviour, particularly in encouraging people to innovate and develop new ideas. Ensure a reward-based system provides clear and attainable goals, linked to financial and non-financial rewards coveted by private forest landowners. Acknowledge that a regulatory structure will need to employ some combination of punishment and reward.

9. Ensure maintenance of freedom to manage for private forest landowners who meet the public interest on their land. Create a system that reduces freedom to manage only for landowners who continually engage in bad forest practices, and increases freedom to manage for those who do well.

10. Consider the merits of results-oriented regulatory systems over traditional process-oriented regulatory systems. Expand research on the use of results-orientation in achieving environmental objectives in other jurisdictions, particularly in forestry.

11. Apply regulations equally to all private forest landowners. Currently, only managed forest land is regulated, while other private forest land remains unregulated. Proposed new legislation is intended to apply only to managed forest land.

12. Avoid the use of direct financial assistance to encourage stewardship, in favour of preferential tax treatment. Consider direct financial assistance only to protect environmental values, as compensation for lost productivity.

13. Apply taxes equally to all private forest landowners. Create a single property tax category for managed, unmanaged and farmland forest. Residential forest landowners should be able to join this tax category, and tax concessions can be recouped if and when the property is

developed. Residential forest landowners should also have the option of paying annual property tax only on the value of their land, then paying a harvest tax when trees are cut.

14. Ensure local governments apply a fixed ratio of tax rates to managed, unmanaged and residential forest land, to ensure that tax benefits for improved stewardship are maintained.

15. Consider giving forest landowners agricultural status, in return for improving commitment to stewardship. In addition to addressing recommendations 13 and 14, this would address non-industrial forest landowners' concerns over capital gains tax.

16. Ensure forest landowners have the information and education they need to achieve public objectives on their properties. Establish a central repository for forest management information, and share information with other jurisdictions. Ensure information and education is objective and continuously available. Take advantage of institutions such as universities to provide neutral administration and research.

17. Provide access to professional foresters, or experienced and educated peers. Access should be preceded, if necessary, by learning from other sources such as written material, videos, seminars and workshops.

18. Minimize direct government involvement in information and education and maximize local control of education and information by using forest landowners' associations. Indirect government involvement is needed to ensure information and education adequately addresses public objectives on private land.

19. Do not use established government agencies such as the Ministry of Forests or Ministry of Environment, Lands and Parks to regulate private forest land. These agencies are too rigid and bureaucratic to consider new and innovative regulatory methods. The Forest Land Commission is one alternative. To avoid confusion, ensure landowners deal with only one agency.

20. Establish mechanisms to ensure new approaches are adequately documented and monitored, so that problems encountered and lessons learned can be used to make systematic improvements.

Appendix A: Forest Land vs Agricultural Land

A.1 Introduction

During my research, including the managed forest landowners survey, a recurring theme has been agricultural status for forest landowners. Trees with short rotations, such as hybrid poplars, are already treated as agricultural crops and a significant portion of BC's private forest land is already in the Agricultural Land Reserve (see table 1). The province could include other forest lands by giving agricultural crops status to other tree species. Agricultural designation would provide significant financial benefits to forest landowners (though Ottawa might well have something to say about federal tax revenue losses) and could be used to reward landowners for high standards of practice or as compensation for their inclusion in the Forest Land Reserve.

A.1.1 Tax advantages

- Most importantly, annual property tax on agricultural land is, on average, only about one-third the rate applied to managed forest land and trees harvested on agricultural land in BC are not subject to a harvest tax. When the managed forest tax category was established in 1987, the government promised tax rates that would "approximate existing farm rates."
- Agricultural landowners pay no residential tax rates on land occupied by their residence(s).
- Agricultural landowners receive a 50% reduction on school, hospital and some other taxes.
- Agricultural landowners can leave or gift land or property used in farming business or shares in family farm partnership to a child of lineal descendent, without paying capital gains tax. This is known as a "rollover provision." Farmers also qualify for a $500,000 capital gains exemption if they sell agricultural property, though some restrictions apply to land after June 18, 1987 (Versi 1995). Neither of these benefits are currently available to forest landowners.
- Land removed from the Forest Land Reserve - which includes all managed forest land - for non-forest purposes is subject to a "recapture tax" reflecting tax savings accrued in this preferential tax category. Meanwhile, land withdrawn from the Agricultural Land Reserve can be withdrawn without a "recapture tax." (Hopwood 1996).
- Food farmers receive some sales and fuel tax exemptions.
- Losses from a farming business can be carried back three years and carried forward ten. Losses from other businesses, including forestry. may only be carried back three years and forward seven.

- Farmers can deduct all expenses in the year they were paid, unless they are clearly capital in nature, such as the purchase of land, equipment and so on.

There is one tax provision that may favour forest landowners over agricultural landowners. Forest landowners can deduct forestry related expenses from other income, as long as their is a "reasonable expectation of profit." For a part-time farmer, losses that can be claimed against other income are currently limited to the first $2,500, plus 50% of the next $12,500 of losses, for a maximum deductive loss of $8,750. This provision was intended to affect so-called hobby farmers who used their landholdings to deduct large losses from other income (Versi 1995). A full-time farmer whose chief source of income is from farming is allowed to deduct the entire farm loss against other sources of income.

A.2 Rationale for differences

A.2.1 Frontier mentality

To determine the validity of equal treatment of agricultural and forest landowners, it is important to consider the background of tax benefits applied to agriculture. Part of the impetus seems to be a lingering "frontier mentality" that provides financial incentives to people who clear the forest for agricultural cultivation. Until relatively recently, BC provided forested land virtually free of cost, provided new settlers promptly clear the land for agriculture. These "agricultural lease lands" in the provinces northern areas have often proven to be marginal agricultural land and are now prime candidates for direct financial assistance to encourage reforestation (see section 7.2.1.1).

A.2.2 Preservation of farmland

BC has had preferential property tax treatment for farms since 1930 (Greenwood and Whybrow 1991). Interestingly, there is strong evidence that preferential property tax treatment in itself does not result in the preservation of farm land (Gloudemans 1974, Currier 1978, Dunford 1980, Duncan 1987) because there is simply not enough latitude for cuts in the face of more lucrative alternatives such as residential development. That is why some US states and Canadian provinces have instead chosen land use zoning to preserve both agricultural and forest land. The best option might be to provide tax concessions as a *quid pro quo* for land use restrictions (Greenwood and Whybrow 1991).

The reason more tax benefits accrue to agricultural landowners, one argument goes, is that food is essential to human existence and that food self-sufficiency can be crucial in times of war, drought and famine, or simply because a growing human population makes farmland an increasingly scarce resource. Only about 4% of BC is considered arable, and at the time of the creation of the Agricultural Land Reserve in 1972, BC was importing about 65% of food needs (Greenwood and Whybrow 1991). This factor is probably less important to a current generation of Canadians that have never experienced deprivation and believe food comes from the supermarket. Instead, greater importance has been placed on "green space" provided by agriculture and enjoyed by urban residents. Finally, many Canadians seem to trace their roots back to the farm, perpetuating a certain empathy for family farming and the rural lifestyle.

A.2.3 Preservation of forest land

Financial support for forestry has traditionally been intended to encourage reforestation and promote a stable and continuous supply of timber to the economy. BC has had a basic tax break available for reforestation since 1948. It seems strange to provide incentives to de-forest one area, while offering incentives to re-forest another, especially since forest land often provides the same security, amenity and social values as farmland and could well be treated equally.

For example, even if trees are planted on what is now agricultural land, forest land can if necessary be readily converted for intensive agricultural use. In addition, forest land provides the same (or better) green space valued by urban residents. In fact, forest land provides considerable public benefits as recreation areas, fish and wildlife habitat and carbon sinks. It is easy to forget, looking at tidy green fields and neat red barns, that the usual first step in farming is to obliterate the existing ecosystem. Modern food farming also tends toward the intensive use of natural and artificial fertilizers, pesticides and herbicides, while green space values are eroded by the introduction of greenhouses and other buildings. Of course, intensive tree farming can have many of the same drawbacks, including the use of chemicals, while providing minimal habitat or recreation opportunities. However, even a managed forest provides environmental benefits that do not exist if the area is not forested at all (Salwasser 1990).

A.2.4 Unintended consequences

Favouring food farming over forestry causes can promote undesirable environmental consequences. For example, many landowners, especially in the interior, let animals graze in their forest in order to qualify for farm status (Hopwood 1996). This can have negative environmental consequences, particularly on the coast, in terms of streambank stability and water

quality. The tax system also promotes monocultures and intensive cultivation over combinations of forestry and farming, known as agroforestry (Wills and Lipsey 1998), that can provide more environmental and economic benefits to the public.

Differentiation between food farming and forestry also creates an expensive administrative burden. This is particularly true for Revenue Canada, which devotes considerable resources to differentiating between farming and forestry operations for income and capital gains taxation purposes. The line between the two is quite blurred. Farming is defined, under the Income Tax Act, as "tillage of the soil, livestock raising or exhibiting, maintaining of horses for racing, raising of poultry, fur farming, dairy farming, fruit farming and the keeping of bees" (Versi 1995). In addition, farming includes short rotation crops, such as hybrid poplars and Christmas trees (Macy 1997). To further complicate matters, income from woodlots is considered farming income if revenue from the sale of logs, lumber, poles, firewood or Christmas trees is less then the income derived from farming.

The same administrative complications are present at the provincial level. BC Assessment must differentiate between farm and forest operations in valuing land for property tax purposes. In addition, separate government agencies currently administer the Agricultural Land Reserve and the Forest Land Reserve, even though they are very similar in structure and intent, and occupy much of the same office space.

It seems to make considerable sense to simply add "tree farming" to the definition of agriculture, thus providing forest landowners with the same tax benefits now applied to agricultural land. This would create a level playing field and allow landowners to choose the combination of plants and animals most appropriate to their personal and biogeoclimatic conditions, including traditional farm crops and livestock, hybrid and natural tree species, and less traditional products like mushrooms, salal or medicinal herbs.

A skeptic might argue that the tax benefits should not accrue to either farm or forest landowners. Realistically, however, it is much harder to dismantle existing benefits than to establish new ones and tax incentives can, with some justification, be viewed as compensation for the loss of private property rights associated with the Agricultural Land Reserve and Forest Land Reserve. Also, it would be strange to have an agriculture/forestry land use zoning that prevents residential, commercial or industrial development, without ensuring that these activities are financially viable.

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