

# LINKING SOCIAL AND ECOLOGICAL SYSTEMS

Management practices and social mechanisms  
for building resilience

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## Integrated management of a temperate montane forest ecosystem through wholistic forestry: a British Columbia example

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### **Introduction: the problem and the response**

By the early 1990s, a 20-year critique of poor management of the North American northwestern temperate rainforest and associated transition zone had gained momentum and focus. This area of Canada (British Columbia) and the US Pacific Northwest (Oregon, Washington, southeast Alaska) had been drawing increasing attention from tribal, environmental and public interest groups concerned about the unsustainable rate of logging, often called 'overcutting'. Although systems of land ownership and tenure differed in these jurisdictions, they all faced two common problems. Timber companies were liquidating the remaining original old growth forest with dispatch – faster than a second-growth forest could replace it. Just as controversial were 'forest practices': the way logging and other tree-farming methods affected forest ecosystems – including fish, wildlife, birds, soils, water, plants and microorganisms.

In most cases where logging had occurred extensively (40–80 hectare clearcuts), critics believed that ecosystem resilience had been lost (Maser, 1988; Hammond, 1991). One measure of this loss was that the area replanted or regenerated after such large clearcuts did not support the volume of timber and little or none of its former associated animal and plant life in the second 'crop rotation'. Most other forest values had been sacrificed to timber production, but even timber production was compromised in the long run. The conventional 'industrial forestry' model was seen as single purpose, short-sighted, and benefiting only one sector (Marchak, 1979, 1989; Drushka and Mahood, 1990; Drushka, Nixon and Travers, 1993).

This chapter describes a creative and promising response to this problem by an Amerindian group, the Eagle Clan ('Lax'skiik') of the Gitksan people of northern British Columbia. The Lax'skiik used a combination of

traditional knowledge and Western landscape ecology approaches to make a sustainable logging plan which would not radically disrupt the forest ecosystem in a 25000-hectare watershed that is one of their traditional territories. They struggle to implement this plan through the assertion of aboriginal rights and an alternative economic development strategy for the entire region, which would include non-aboriginal people in forestry jobs.

The ultimate goal of the struggle – to take on a significant share of the decision-making about forest use in their area – would logically result in a co-management agreement between the Gitksan and the Ministry of Forests, and possibly also the current holder of forest tenure (lease) rights. Effective forestry co-management agreements are typically difficult to achieve, because timber rights are often held by powerful interests which have captured the regulatory agency, the scientific discourse, and the political ideology which justifies the current allocation of rights. This analysis therefore focuses on the development of leadership and successful teamwork in forging a new paradigm, both for who should participate in forest management and also for which principles should guide that management. By focusing on the 'launching' stage of a co-management initiative, this chapter contributes to the identification of factors permitting effective forestry co-management agreements to emerge (c.f. Pinkerton, 1992; Benidickson, 1992; Matakala, 1995). The analysis is innovative in examining the interaction between the development of local leadership and the capacity of the proposed management paradigm to address issues of sustainability and ecosystem resilience.

The chapter analyses how leadership and an ecosystem resilience oriented plan developed by looking at several components of the process: (1) the development of local skills and capacity through training in mapping watersheds and landscape-level forestry planning; (2) the integration of forestry planning with Gitksan traditional knowledge, laws and customary use; (3) the development of political will and vision by a leadership; and (4) the political process of asserting rights to plan for ecosystem values. These components are analysed in the context of interaction between the cultural setting – Gitksan understandings of the relationships between the forest and human society – and the natural setting – ecosystem resilience and its limits.

#### Political dimensions of the problem

For at least four decades, timber policy in British Columbia has been dominated by major timber companies with a single focus on short-term

maximum timber and woodfibre extraction. Although over 90% of British Columbia forests are on Crown land (owned by the state), lease agreements with these major companies have given them both the overwhelming majority of timber supply and a privileged position in decision making. This condition emerged from an initial desire by government to induce the entry of major firms and thus rapid economic development (Scott, 1991; Drushka, 1993). The distribution of revenues from the exploitation of forests that favoured large firms (as opposed to society as a whole, smaller firms, or resource dependent communities) became part of the status quo. This status quo was then defended as these large firms, which had captured policy making, continued to shape policy in their own interests, as predicted by Peltzman's framework (1976).

Critics of this situation up to the present, including governmental commissions of inquiry (Pearse, 1976; Peel, 1991; Tripp, 1994), have noted three critical facts.

- (1) Timber supply is being exhausted by a non-sustainable rate of cut in pure timber volume terms. Travers (1993) notes that 50% of public timber cut has been felled in the last 13 years. As the first growth or original forest is liquidated, the second-growth forest is not maturing fast enough to make the same volume of timber available in time for continuous cutting (as British Columbia's timber policy theoretically requires). Some regions would have to wait up to 30 years without logging before there is sufficient timber to log again.
- (2) There is inadequate compliance with forest practices guidelines or rules (i.e. how logging and silviculture should be done). These guidelines and regulations are intended to protect non-timber resources, such as fish and wildlife, which use the forest (British Columbia Ministry of Forests, 1993a, 1993b; British Columbia Parliament, 1994). For example, a recent audit of compliance with British Columbia's Coastal Fisheries Forestry Guidelines (Tripp, 1994) – guidelines intended to reduce the impact of clearcut logging on fish-bearing streams – found high rates of non-compliance with the guidelines and high levels of logging impact on fish streams. British Columbia's new Forest Practices Code lays out ambitious intentions of addressing these problems, but critics feel implementation will be seriously hampered by the existing institutional arrangements (Sierra Legal Defense Fund, 1995).
- (3) Communities affected by forest management through their dependence on forest resources have little power in policy making and rulemaking, although they suffer most of the consequences of poor management

decisions (Pinkerton, 1992, 1993). The content and timing of land-use planning exercises in British Columbia are negotiated in multi-stakeholder processes, in some cases without benefit of regulation (Haddock, 1995).

These three aspects of the situation have been well documented and are examples of problems in forest management which may exist on a global level. They are the backdrop rather than the centre of this discussion, however. The main focus here is to analyse how an attempt to reverse this situation has met with some success.

An important dimension of the political problem in Canada is that aboriginal rights of First Nations, as defined by the Canadian courts in the 1990s, have also begun to affect resource management policy to some degree. *R. v. Sparrow* [(1990) 1 S.C.R. 1075] ruled that First Nations have a right to a priority allocation of fish for sustenance, social and ceremonial purposes, based in section 35 of the *Constitution Act* of 1982. This right is thus protected at a higher (federal constitutional) level than rights granted under provincial laws or contracts. *Delgamuukw v. B.C.* [(1993) 5 W.W.R. 97 (B.C.C.A.)] held that aboriginal rights were not extinguished (as a 1991 lower court decision had held), but that ownership and jurisdiction over land and resources had not been established by the Gitksan in this case. It then fell to the British Columbia Ministry of Forests (MOF) to develop a policy to implement this judgment as it applied to forest management decisions. The MOF has jurisdiction over all forest land in the province of British Columbia, although how this can mesh with aboriginal rights is contested by First Nations.

Since the nature of the aboriginal right is only broadly and vaguely defined by both these court cases, ministerial policy is likewise vague. The Gitksan hereditary chiefs (who brought the *Delgamuukw* case to trial) are taking the initiative in defining what the right means in forest management. The leadership role played by the Lax'skiik, one of the four Gitksan clans, in this regard is in fact a subject central to this discussion.

The draft policy developed by the MOF following the 1993 *Delgamuukw* case defined aboriginal rights in the following ways: 'aboriginal rights arise from activities which were integral to the distinctive culture of an aboriginal society prior to sovereignty' (1846). The MOF interpreted aboriginal rights as site specific, depending upon patterns of historical occupancy and use of land, exercised by the collective First Nation, possibly practised in a modernized form, including the rights to fish, hunt, trap and berry pick for sustenance, social, spiritual and ceremonial purposes. The MOF's policy

was 'to involve First Nations in forest management planning processes; and to accommodate aboriginal rights and prevent or minimize infringement of these rights by proposed forest management activities. . . The MOF will give priority to an aboriginal activity where the forest management activity clearly limits, impedes or denies the right'.

The policy was also fairly specific about the need for a process to implement these general policy goals. In consultation with the MOF, when a First Nation agreed to participate in planning, the MOF was to develop 'a mutually agreeable process which includes consultation: during strategic planning processes; prior to awarding a license; prior to authorizing a management plan, development plan, or range plan or during annual development plan review'.

In this case, the Lax'skiik's ability to assert these rights rides on their ability to demonstrate how the fish and game which sustain the people use the watershed as habitat, as well as how the Lax'skiik themselves used the watershed, through encampments and trails in their pursuit of fish, game, berries, medicinal plants, etc. It further depends on the Lax'skiik ability to show that they can balance timber extraction with these other forest values.

While there has always been some science informing how non-timber values can be protected – and recently there is much more science than previously about how to do this better – this science has not been applied by timber companies and the ministry because there was too much political pressure to ignore other values if they significantly lessened timber extraction. The Gitksan rights, then, put them in a unique position to press this political point, where many other community-based groups had so far failed to have a significant impact on practice.

#### Scientific dimensions of the problem

Industrial foresters trained in timber management and silviculture (tree planting and tending) generally have a limited understanding of forest ecosystem function. In popular parlance, the Faculty of Forestry at the University of British Columbia is known as 'the Faculty of Logging' because it, like the major companies, is oriented toward maximizing woodfibre yield. This limited perspective has implications both for accurately predicting timber supply and for protecting other forest values. Forest ecologists believe that industrial foresters' predictions of future timber supply in second and third rotations are based on naive projections which ignore soil depletion, erosion, and the effects on timber growth rates and health of the loss of biodiversity in the second-growth forest



causing, for example, higher rates of insect infestations and fire (Maser, 1988; Hammond, 1991). The 'falldown effect' (the difference between timber volumes in old-growth forests, several hundred years old, that are currently being logged and the timber volumes in the second-growth forests, less than 100 years old, that must sustain the industry in the near future) was identified by a Royal Commission (Pearse, 1976). Despite this finding, the rate of cut has not decreased. As noted above, the political situation will not allow a paradigm shift toward forest ecosystem management as a policy objective, since the timber companies appear to be solely interested in short-term timber values. Such a shift would require a rethinking of the British Columbia 'sustained' or 'sustainable' yield policy, which had been defined since the 1921 Forest Act in terms of a relatively even flow of timber, and since the 1978 Forest Act in terms of both timber flow and immediate economic needs as perceived by the minister. Thus the current scientific paradigm is an impediment to a larger definition of the problem.

#### The 'new forestry', new professionals and woodlot managers

Innovators in the Pacific Northwest who began to change this situation came both from inside and outside conventional forestry. The insiders, Jerry Franklin and his colleagues at the University of Washington and Oregon State University (Jim Sedell, Fred Swanson), introduced the concept that logging plans should allow key structural features of the forest to be preserved. For example, instead of leaving isolated forested 'islands' in large clearcut areas, logging should not remove forested corridors which allow wildlife to travel between such islands. Such wildlife movement over a normal range of habitat allows survival of species which play an important role in maintaining forest ecosystem function. Likewise, older decaying trees should be left as wildlife habitat instead of being burned. Chris Maser's research in forest ecology revealed the critical role of plant communities, mycorrhizal fungi, and lichens on decaying tree bodies and in soils in fixing nitrogen and making nutrients and water available to trees (Maser, 1988). Furthermore, the forest was viewed in this model as a living, interconnected web of functions, both above and below ground. Conventional clearcutting and silvicultural techniques of removing debris and burning logged areas often destroy critical organisms and thus disturb key functions maintaining forest and tree health.

However, new forestry concepts as applied in Washington were more mitigative of massive clearcutting than they were actually protective of

ecosystem structure and function. Wildlife experts debated about how large the patches of remaining forest should be, and tended to assume these would be surrounded by large clearcuts.

At the same time, a handful of professional 'wholistic' (sometimes spelled 'holistic') foresters have become more active and vocal in British Columbia in the last decade (Hammond, 1991; Drushka *et al.*, 1993), and their perspective became better known with the increasing circulation of *Forest Planning Canada*, now the *International Journal of Ecoforestry*, published in Victoria, British Columbia. These individuals had greater understanding and caution about what is still not known, as well as what is known but still not applied. They were largely ignored by industrial foresters and worked for communities and First Nations attempting to do their own long-term forest-use plans with multiple goals. Perhaps because more old-growth forests, and therefore more options, remained in parts of British Columbia, wholistic foresters there tended to be more visionary. They asked: 'What kind of forest do you want in the future?' and thought in terms of maintaining the basic structure and function of the *entire* forest.

A few 'natural selection' forest farmers (owning small to medium-size woodlots) have also received considerable attention in the last decade, most notably Merv Wilkinson in British Columbia (Loomis and Wilkinson, 1990) and Orville Camp in Oregon (Camp, 1984). They harvest their woodlots by a gradual, continuous thinning and removal of the weaker individuals of a species, including some smaller trees and some trees which have reached the end of their natural lives. This allows the stronger members of a species to grow more vigorously, with less competition. Thinning the forest to keep it productive without altering its structure may be compared to the fishing strategy of the James Bay Cree (see Chapter 5). In both situations, resilience is maintained by keeping some of the larger, older individuals, as well as individuals in a diversity of age classes. This harvesting strategy stands in contrast to that of industrial forestry, which either clearcuts all the trees simultaneously and replants a monoculture of same age and same species trees, and to that of conventional woodlot owners, who take out all of the larger trees at one time.

Both natural selection woodlot owners and wholistic foresters now use the term 'ecoforestry' to denote ecosystem-based planning for a variety of forest values. Because of their ownership of smaller parcels, however, woodlot owners usually lack opportunities to practise this strategy on a scale consistent with the needs of many forest species to move across different parts of the landscape. Land stewardship programmes in Ontario

have enjoyed some success in persuading neighbouring landowners to co-ordinate their forest use to allow contiguous forests to support more diverse species (Hilts, 1994), and government agencies in the Pacific Northwest are also attempting such voluntary co-ordination.

#### Regulatory reforms

Political pressure opposing conventional forest practices and overcutting in the 1980s eventually resulted in some reforms in the regulation of federal, state and private forest management in the US. Much of the pressure came from treaty tribes with rights to protect fish habitat, which have worked with a growing and well-funded environmental movement (Pinkerton, 1992). Similar reform efforts in British Columbia have had far more limited results.

In 1993, the Clinton Plan for the US Forest Service adopted an ecosystem policy for regulating federal forests, a dramatic change in emphasis. The US Forest Service, through the Presidents' Forest Plan, now requires a much wider (91 metre) riparian zone (unlogged buffer zone along fish-bearing streams) in federal forest lands. Even upland and intermittent streams without fish are given 30–45-metre protection, because of their impact on fish downstream. This can be contrasted with the 10–30-metre riparian zone in the new British Columbia Forest Practices Code, and the little or no protection for other streams.

The US Forest Service is also piloting landscape-level planning and joint watershed planning with Washington State forest lands, and with private forest landowners. The introduction of landscape-level planning was a significant improvement over earlier reforms at the state level affecting only individual cutting permits, because the movements of wildlife, fish and water operate at a (broad) landscape level. For example, species such as moose require low-elevation forest cover in winter and a connected high-elevation browsing area in summer. Coho salmon may swim far upstream to spawn, but use other areas of a stream for rearing. Planning for the long-term cumulative impacts of logging – conventionally approved through individual permits to cut one small patch at a time – requires a landscape perspective. In 1994, Washington State began several forms of landscape-type forest planning, although it is difficult to know how successful these will be in a timber-dominated state with about half the forests under private ownership. British Columbia should have better opportunities, since over 90% of forests are under the same form of public ownership.

#### Values and institutions shaping Lax'skiik wholistic forestry

The Lax'skiik forest planning which took shape between 1989 and 1995 benefited from recent advances in Western wholistic forestry thinking, but gave these its own particular form. To appreciate this form, it is necessary to understand more about the organization and values which shape Gitksan society. The Gitksan form the larger political, social and linguistic group to which the Lax'skiik belong.

Benefits from natural resource use do not simply accrue to individuals in Gitksan society. Each geographic territory is the responsibility of a distinct House, the corporate kin grouping which owns and manages resources in Gitksan society (Duff, 1959; Garfield, 1966; Cove, 1982; Gottesfeld, 1994b). The House carries out its responsibilities through its chief, who is also the conduit for allocating resource access and the economic benefits of the House's work on its territories to House members. The chief gives his or her permission for House members and certain in-laws to access resources, and must be able to provide adequately for those members in order to maintain the status of chief. Participation in feasts provides a major occasion for chiefs to carry out social and political obligations to House members and other Houses. To do this properly, thus validating one's status and position in society, requires that a chief demonstrate an ability to take care of the territory and provide resource access to members and relatives. A chief whose territory has been stripped of forest resources will eventually not be able to 'feed his people', and will be faced with a problem. This occurrence is not absent from Gitksan territory, where many chiefs and Houses have been, or have felt themselves to be, powerless to resist the government and timber industry's plans.

The importance of the Lax'skiik story lies partly in showing how the leadership and commitment of one clan and its leaders can demonstrate alternatives, set a direction, and hold up a standard for the whole of Gitksan society and others. Since the traditional system ideally requires such responsible behaviour of chiefs – and since the Gitksan know that industrial logging is destructive – the traditional system can be used to show others a more responsible approach. This has in fact been an important effect of the Lax'skiik activities.

The Lax'skiik perspective thus differs from the wholistic forestry perspective previously mentioned in at least four important ways. The differences illustrate the significance and potential power of the Lax'skiik example for the larger society.

1. *Adequate planning scale.* The Lax'skiik House territories, probably originally formed around fishing sites, tend to be isomorphic with watersheds and to cross-cut riverine, mid-slope and alpine zones, facilitating a year-round cycle of activities which included fishing, trapping, hunting, berry picking and logging (Cove, 1982: 5). The Lax'skiik thus have an opportunity to plan for whole ecosystems on a genuinely landscape level because of the size and configuration of their territories. In addition, they are likely to get co-operation in planning from other Gitksan Houses with adjacent territory. This larger scale of planning creates important opportunities to conserve a broader range of forest values. Many forest species (e.g. moose) range broadly over large territories in different seasons. Logging impacts on one part of the system may accumulate and affect other parts of the system (e.g. debris and silt entering small upland streams wash downstream and add to siltation there).
2. *Traditional knowledge.* The Lax'skiik – like most aboriginal peoples – have a long historical relationship with their territory. Since they have used the same territory for generations, they can bring to planning a long historical memory and a complex understanding of the impact of human activities on a particular geographic area and all its resources. For example, controlled burning of small forest areas to create berry patches, often in montane sub-alpine areas 'half way up the mountain', was an important activity in pre-contact times, although the practice was suppressed by the Ministry of Forests by the 1940s (Gottesfeld, 1994a). Knowledge of forest succession, and of the behaviour and abundance of animals hunted and trapped in specific areas, was multi-generational and complex.
3. *Personal identification with territory.* The Lax'skiik and Gitksan in general have a personal and spiritual identification with their territories and resources, which form the basis of their cultural and economic life. 'A territory was a House's sacred space which it shared with other beings fundamentally no different in kind from humans; all having similar underlying form, consciousness, and varying degrees of power. Relations to them were not seen as unilateral and exploitative, but rather reciprocal and moral' (Cove, 1982). Hence the territory cannot be sold or alienated from them (as it can from woodlot owners). In a spiritual as well as an economic sense, the fate of the territory parallels their own fate. ('I will not be anybody unless I can live in the land. It's what makes us exist'.) Therefore, they perceive a parallel between the abuse suffered by the land and resources through industrial forestry, and the abuse suffered by their society and people through domination by the

European political and industrial system, drugs and other addictions. Both the land and the people need to be healed, and their healing is linked. A healthy territory and a healthy people go together. The Lax'skiik sense of their relationship to territory is the basis for their management of it. Such a relationship has much to teach others who wish to develop and support a multi-generational stewardship ethic between local populations and their resources.

4. *Economic and cultural importance of multiple forest uses.* Forest values besides timber have considerable economic and cultural importance to the Lax'skiik and other Gitksan. They fish salmon for both subsistence and commercial purposes; the Gitksan have a planning process for the protection and rehabilitation of fish habitat and depressed stocks (Morrell, 1989; Pinkerton and Weinstein, 1995). They also obtain part of their food supply from hunting and berry picking, and additional economic benefits from trapping fur-bearing, forest-dwelling animals. Some Gitksan also collect forest plants for nutritional and medicinal purposes (Gottesfeld, 1994a; 1994b), and observe that the animals they hunt also eat certain plants which heal the animals' wounds or illness. Finally, the forest is used by some Gitksan as a place of spiritual retreat, renewal and education of younger people.

The next section illustrates how traditional Gitksan values and institutions interacted with the political context of modern logging and the opportunities afforded by the wholistic forestry paradigm.

### The development of Lax'skiik forestry

#### *Individual co-evolution with social and natural systems*

How the Lax'skiik developed their wholistic forestry plan and political strategy is illustrated through the story of how a clan wing chief, Art Loring, developed and pursued his vision of the future Gitksan forest. Telling one person's story is not to subtract from, or discount the roles of, other important players. It is merely an effective way of tracking the parallel progress of industrial logging in the area, and Gitksan response to it. The mounting degree of disturbance caused by industrial logging as it intensified in the area eventually provoked the Gitksan to generate an alternative. It is significant that this alternative emerged from some Gitksans' intimate experience with early selective logging, then with industrial logging, and also with subsistence activities on the land before, during and after industrial logging had transformed it.



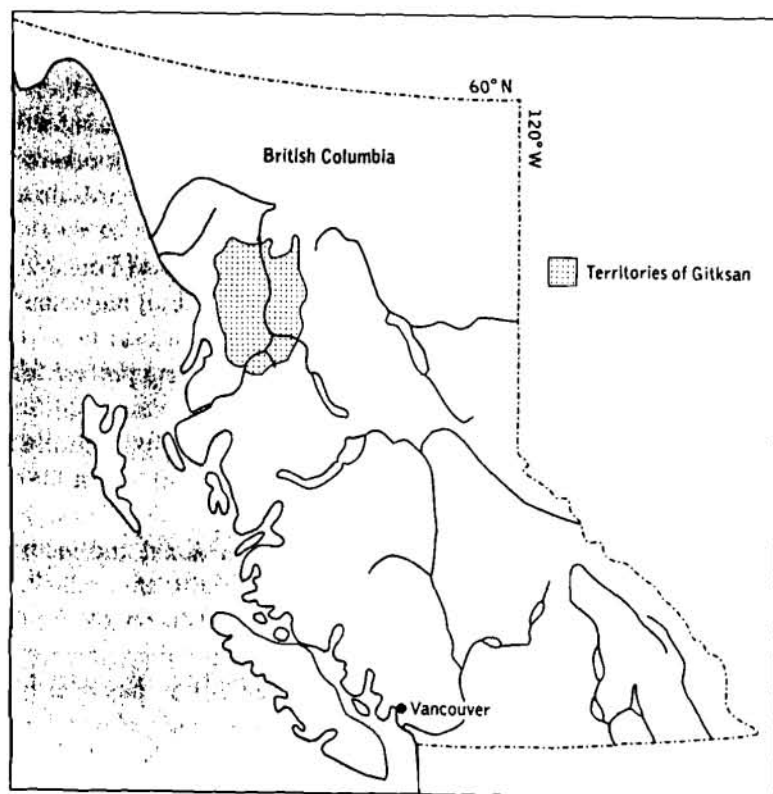


Figure 14.1. Gitksan traditional territories.

#### *Gitksan political organization and social control*

First it is necessary to situate the story. The Gitksan are a Tsimshanic-speaking people, numbering about 6000, of which some 5000 live in six reserve communities along about 200 km of river or elsewhere on the 28160 km<sup>2</sup> of the upper Skeena, lower Bulkley and Nass Rivers in northern British Columbia (Figure 14.1).

In 1977, the Gitksan chiefs jointly laid formal claim to this area as their traditional territory, according to the claims settlement policy adopted by Canada in 1973 for aboriginal peoples. Aboriginal claims then involved establishing a use right to land and resources which had continuously supported a particular aboriginal group. The Gitksan felt that the Canadian aboriginal claims framework did not allow adequate expression of their rights and responsibilities towards the land, so in 1987 the joint chiefs also filed a court case claiming jurisdiction and ownership of the land

[*Delgamuukw v. B.C.* (1991) *W.W.R.* 97 (*B.C.S.C.*)], as discussed below. For a limited period (July 1994 to July 1995), they and the province agreed to adjourn the appeal of the *Delgamuukw* case in the Supreme Court of Canada while they worked collectively towards a treaty with British Columbia and Canada. In July 1995, the adjournment was extended for an agreed period as treaty negotiations proceeded. The Gitksan now operate a co-ordinating body called the Gitksan Treaty Office, with some 15 staff.

Individual Gitksan house chiefs mediate the resource use of their members within their own territories, as discussed above. They also participate in the broader Gitksan society through a shared understanding of Gitksan law. Attempts to codify Gitksan law have been unsuccessful. In the abstract, it consists of a central understanding about the need to respect and acknowledge the spirit within all things and people. In practice, it consists of social norms, rules and customs as interpreted by the chiefs through their recollection of past cases and how they were dealt with.

One important way the Gitksan sanction law-breakers is through questioning their right to their Gitksan name and social status. People who hold names and status come under public scrutiny through the names used to address them in formal interactions. If their Gitksan name is not used, it is implied that they have done something which makes them unworthy of the name and status. Public censure may also occur through speeches or actions at public ceremonial feasting at the local or regional level, or through political meetings at which decisions are made by consensus. Status may be reclaimed by putting on a feast for injured parties and redressing one's behaviour. All these mechanisms of social control may be used strategically in developing resource management policy.

#### *The individual and his historical era*

Art Loring, born in 1955, grew up in the early days of cedar pole and pine (railway) tie logging in Gitksan territory in the 1950s and early 1960s. Much of this work was done by Gitksan Houses with short-term timber leases. Unknown to the government of the day, House groups who ran the cutting camps on adjacent territories worked together and respected one another's territories in their activities. Logging was done selectively with horses and did not create a major disturbance in the forest ecosystem. Loring's mother carried him in a backpack as she worked at logging alongside her husband in their camp in the forest. She began this work at age 16, and continued it while raising her children. The younger children helped at the small sawmill they also ran as a family.

By the time Loring was 14 and began his own logging career, the MOF had granted cutting rights on Gitksan territory to major pulp companies using clearcut methods on up to 500-hectare openings. Loring logged for the company, and by the age of 21 had become a faller, the most dangerous, highly skilled, highly paid, and high-status job in the woods. For the next 12 years, he participated fully in the aggressive and competitive male culture and lifestyle which accompanied it, including heavy alcohol consumption, drugs and parties. But through the hopeful vision of his grandmother, and the perseverance of his wife Mathilda, 'who remained strong and steadfast', Loring gradually came to think of this work and lifestyle as 'the destruction that was beginning to hurt my life and my kids'. He reflects: 'My grandmother said: "That woman [Mathilda] is going to save your life", and she was right. Everything evolves from the woman in our society. The guidance you get from mothers and grandmothers comes back when you start to heal'.

The 'destruction' also became more and more apparent as Loring went back to hunt every winter in one territory being logged. Comparing it to the area where he himself logged, he recognized how rapidly the entire ecosystem was unravelling. 'When we first broke into these areas, you could see 50 moose in a day. The coho [salmon] would be skittering around – it was a major spawning area'. But over time as the area was 'logged right to the creek and river banks, nothing over three metres high left, skid trails going up side hills, machines digging into the mud until they couldn't move, leaving 3 to 4 foot deep skid trails, . . . there was intense erosion . . . the water table was hammered'. Wildlife and fish disappeared from the area: 'steel-head [salmon] are almost completely gone from lake areas at the top of the system; coho still came up the mainstem for awhile, but had nowhere to spawn; now there are few left. . . . You rarely see grizzly bear there now; they need roots that you only find in wet habitats in early spring. . . .'

The growing awareness of the destructive forces in his life and environment also coincided with Loring being asked to join the Eagle Clan (Lax'skiik), his mother's original clan, to help protect their territory. The Gitksan are a matrilineal society which traces inheritance through the female line. Loring's mother had lived away from her natal clan and been adopted at a young age by another clan. A Lax'skiik elder, carrying out the traditional role of handpicking leaders, claimed Loring back into the clan. There are four Lax'skiik Houses, all resident at Gitwanga (Kitwanga), which together make up the Lax'skiik (Eagle) clan. Loring was asked into a House when he and his wife were invited to use a fishing site by its elderly House chief owner. One day Loring quit his logging job and began to

discuss with the other Lax'skiik the importance of protecting their territory from industrial logging. Soon Loring was given a Gitksan name, and was made a Lax'skiik wing chief. The role of this position is to bring the concerns of the clan members to the four head chiefs of the clan. These occurrences laid the groundwork. Loring then moved from strength to strength, acting with greater and greater confidence and articulateness as he developed the knowledge, vision, leadership and support to carry out the innovations which followed.

Some of this support also came from the Gitksan leadership. Gitksan society in general was intensely involved during the 1980s in preparations for their land claims negotiations and their court case. Research, policy development, training, interviewing elders, and developing their own Gitksan language immersion school were all part of a broad effort to revitalize and enlarge traditional institutions to take on modern problems. The slow pace of mainstream institutional response was a constant irritant to the Gitksan. No aboriginal claims had been resolved since negotiations began in 1973, and the courts had not decided yet what aboriginal rights really meant. While these discussions continued, industrial logging had only increased its pace. So many Gitksan searched for alternatives, as it became evident that they had only themselves to rely on to protect their resources.

In 1988, the Gitksan chiefs gave support to a number of blockades led by the Lax'skiik on various logging roads in response to the increased rate of logging on their territories. Some of these blockades were successful. In 1989, the Lax'skiik blockaded construction of a logging road being pushed into their territory in the Fiddler Creek watershed. They subsequently rejected the company's offers of logging contracts, and decided to develop the territory themselves for selective logging, tourism, sportsfishing guiding, and other activities. Working with Richard Overstall, a 20-year veteran forest policy analyst then at the Gitksan Office of Hereditary Chiefs, the Lax'skiik contacted wholistic forester Herb Hammond, and put together a proposal for a forest-mapping and training programme to be conducted by Hammond for clan members. The Lax'skiik received some start-up funds from the Gitksan Government Commission (the combined elected band councils) and hosted a feast to explain their proposal to the other Gitksan chiefs, and to seek their support. These actions launched the Lax'skiik leadership in developing alternative forest policy, planning, and training. Loring was asked to lead the effort.

As in many cases of successful collective action (Popkin, 1979; Feeny, 1983), leaders can be effective when they are perceived as being motivated



by more than a narrow self-interest. Loring abandoned a highly paid job and took risks in exploring new ground. He worked with Lax'skiik and Gitksan elders, chiefs and political leaders of high status from the less-elevated position of wing chief. His competence in the woods, his knowledge of logging and of the land, his choice to work on the land in a fairly traditional manner (unlike many others), his ability to master the concepts and language of wholistic forestry and meld it with Gitksan traditional values, his fearlessness in taking a public stand, and his action orientation – all these qualities were valuable and relatively scarce resources contributed to Gitksan society at large, in a manner which did not threaten the status hierarchy of Gitksan society. Loring was thus able to be a credible and effective leader of a larger political effort.

#### *Integrating wholistic forestry with local knowledge*

The Lax'skiik began with a four-year training programme (1989–92) in wholistic forestry in which eight Lax'skiik enrolled. Forester Herb Hammond spent two weeks of each year working with them in the field and classroom on forest mapping, inventory and wholistic forestry principles. They found these compatible with their own values, goals and understandings of natural systems. In addition, they were able to teach Hammond something about the spiritual dimensions of what Hammond called 'wholism'. The Lax'skiik called this 'living in harmony with the forest and the plants' and gave importance to interactions of people and animals with medicinal plants. These interactions suggested reasons for some animal movements across the landscape. For example, moose plagued by insects would find relief by walking through certain dense shrubs which release an insect-repellent sap.

Principles in wholistic forestry also provided a language which could bridge Gitksan spiritual understandings about the interconnectedness of the natural world and the Western science of landscape ecology. It provided tools for Loring to articulate his vision in a scientific language and framework which was not intrinsically foreign to a Gitksan worldview.

#### *The forestry mapping, training, and the watershed plan*

Richard Overstall and Geographic Information System (GIS) expert Marvin George assisted in the process of putting those who took the training in a position to teach other Gitksan how to map and do forest inventory. At the same time, Loring took out a few Lax'skiik logging each winter

to apply the new skills to low-impact logging with horses. Loring also organized a course by the Fur Institute of British Columbia on fur-bearing animals and their habitats.

The training with Herb Hammond culminated in the development of a wholistic forestry plan for the unlogged 25000-hectare Fiddler Creek watershed in Lax'skiik territory. This involved a plan for first removing from the cut the zones most sensitive to disturbance (because of steep slopes). Then, those zones of critical habitat for fish and wildlife were removed. Gitksan fisheries experts mapped coho salmon spawning and rearing areas. Hammond zoned very wide – 600–1000 yards (550–900 metres) – riparian corridors along each side of the banks of the stream (at least five times as wide as those required by the US Forest Service) and connecting corridors across the valleys. Art Loring eventually mapped the habitat of the most important wildlife species: moose, grizzly bear, mountain goat, pine martin, and bald eagle. Several of these used the riparian zone heavily for travel, feeding, mating and producing young. In this case, Hammond also considered economic opportunities for tourism and set aside a tourism zone.

The forested areas left after these zones were removed could be logged, but not by clearcutting. Hammond estimated that 20% of the forest in the 'wholistic timber zones' would be left on the site to replenish soil and provide structures for forest ecosystem processes.

The wholistic timber zones would thus yield 20% less than the conventional MOF estimate of timber yield in these zones. The wholistic plan also classified about 40% less of the drainage as suitable for logging than MOF standards would require. So, if there were no other considerations, wholistic forestry methods would produce about 40% of the timber from this drainage that conventional forestry would produce. The tourism zone would remove another 15%, meaning the entire wholistic forest plan would produce about 25% of the timber that an MOF scenario would produce.

Of course, other aspects of the ecology/economy calculus must be considered to grasp the trade-off being made here. Economic benefits to the logger are greater per unit of timber logged when big machinery is not used. Logging by low-impact and little-capitalized methods, such as horses, funnel about 75% of the gross costs of falling and yarding directly to workers. More mechanized logging methods funnel only 13–26% of these costs to workers, because machines are so costly to acquire, to finance and to run (Allen, 1989; Silva Ecosystems Consultants, 1993). In other words, machines only make sense in very rapid and high-volume logging which is

concentrated in one area which is not sensitive. Or smaller, light machines may be suitable for less sensitive sites.

Overall cost per unit of production is higher with wholistic logging, but higher prices could be obtained if logs were sold on an open log market instead of through the current system. In addition, certified selectively harvested logs command a premium price in the UK and Japan.

A complete analysis of benefits is beyond the scope of this chapter. It would involve assessing the direct and indirect economic benefits of tourism, fishing, hunting, trapping, non-cash food (game), berries and medicinal inputs. It is more difficult to put a price tag on the value of a stable and sustainable stream of benefits, because some parts of the ecosystem are impossible to restore at any cost after conventional industrial logging. For example, some species of salmon adapted to the conditions of a particular watershed cannot be recovered once that gene pool is lost (Helle, 1981; Withler, 1982). Thin soils on steep slopes cannot be rebuilt in the short term once they are lost.

The stage following the mapping of the Fiddler Creek watershed was larger-scale landscape-level analysis and planning. This required the co-ordination of local plans with planning on adjacent jurisdictions, in order to connect wildlife corridors into the next valley for species such as grizzly bear. Other chiefs asked Loring to help in their own planning, and to train them in low-impact logging. During the planning of the Fiddler Creek watershed, negotiations with the MOF and with the tenure holder, Repap (a large Montreal-based paper company), were pursued, as discussed below.

#### *The Hobenshield agreement: trade-offs in sharing an area*

No agreement has been reached about Fiddler Creek, and no logging occurs there yet. Art Loring currently logs, and conducts some training, in another Lax'skiik territory, where an agreement was reached with the local family-owned Kitwanga Lumber Company (the Hobenshields), who held timber rights and a local mill. The agreement followed a 1992 Lax'skiik blockade of this area (three years after the original Lax'skiik blockade of the Fiddler Creek watershed), and specified that the Hobenshields and the Lax'skiik would work together on planning silviculture, restoration, and some limited logging of the area (c.f. Wild, 1992).

The Lax'skiik had received \$30000 from the Sustainable Environment Fund of the British Columbia Ministry of Aboriginal Affairs in 1992 to train its members to conduct landscape analysis and planning in the larger

territory using a PAMAP GIS environment. Hammond provided initial instruction in setting up the system, but the rest was conducted by the Lax'skiik, who had developed the mapping and inventory skills. The Hobenshield forester participated occasionally in the wholistic forestry course and found considerable common ground with the Lax'skiik. For example, the Hobenshield letter of agreement states: 'We agree that the progressive clearcut logging of the Nash Y area had proceeded at too rapid a rate, and that soil degradation, loss of habitat and biodiversity, and damage to wetlands and water quality has occurred, and that a long period of rest and healing is the appropriate treatment'. The company expressed a willingness for the Lax'skiik to log, by subcontract, some or all of the areas on Lax'skiik territory within the company's tenure area. 'We are testing how Native and non-Native can work together'.

Loring is also conducting some adaptive management experiments in how to log so that the forest is less vulnerable to 'blowdown' (shallow-rooted trees next to a logged opening being blown over by high winds). In one area he takes out the entire overstory, because there is a 20-year-old understory with canopy closure which may give adequate protection against blowdown; in another area, he leaves some of the older trees. Over time, he will be able to see which technique is most effective for preventing blowdown.

#### **Management rights asserted by the Lax'skiik**

The 1993 *Delgamuukw* decision and the MOF policy devolving from it required that government work to consult and plan co-operatively with First Nations so that their aboriginal rights to hunt, trap and fish would be protected. The planning of the Fiddler Creek watershed is a test case of whether government and First Nations can agree about an adequate level of protection of aboriginal rights. The Lax'skiik assert that the mapping of fish and game habitat shows what kind of protection is required for the animals and fish which they can lawfully access. They also hold that the cabins, trails and resource-gathering sites must be preserved, as they are needed to hunt, fish, trap and pick berries.

The Lax'skiik understanding of their rights stands in sharp contrast to that of government. The province has viewed aboriginal rights from a far narrower perspective, e.g. the right to use traditional hunting trails and fishing sites, or the right of *access*. The Lax'skiik argue that if the trails merely pass through clearcuts and destroyed ecosystems, their access is meaningless, and their rights will be violated. This amounts to an

argument that rights of access are meaningless without rights to protect ecosystem function. Furthermore, they have offered a definition of ecosystem function, while the province has no definition so far. The judgment in *Saanichton Marina Ltd. v. Claxton* [1989 36 B.C.L.R.(2d.)79 (B.B.C.A.)] affirmed that the right of access to fish by First Nations carries with it the right to protect fish habitat, lending force to the Lax'skiik position, insofar as fish habitat protection is part of the wholistic forestry plan.

Art Loring notes that the Lax'skiik are willing to share the logging of Fiddler Creek with the company which holds logging rights in the area, as long as the Lax'skiik forestry plan for the area is used. The Lax'skiik might, for example, log the more sensitive areas in the timber zone while the company logged the less sensitive. The Lax'skiik have now mapped all the human and animal trails, campsites, old village sites at three levels of elevation in the Fiddler Creek drainage. If an agreement cannot be reached eventually, a court action will probably occur.

#### Forest ecosystem function

If the Lax'skiik claim the right to protect ecosystem function, how is the forest ecosystem understood in wholistic forestry thinking? This particular ecosystem is at the boundary of the the coastal rainforest and the coastal/interior transition Cedar-Hemlock Biogeoclimatic Zone. Coniferous species - western hemlock, mountain hemlock, subalpine fir, western red cedar, amabilis fir, and spruce - are mixed with hardwoods - mostly black cottonwood, paper birch, and alder. Much of the forest is in steep terrain, where the mountains rise 1500 m above the valley floor, and where many sites have shallow soils less than 50 cm deep, over an impermeable layer. The upper parts of the tributary drainages contain old-growth stands of large 500-year-old trees. Closer to the river the stands are of mixed age and succession.

Wholistic forest planners recognize the role played by some key species, processes, areas, or sub-ecosystems in preserving forest ecosystem function. Some of these are as follows:

1. *The speed and direction of water flow through the system.* Logging roads, which alter the direction of water flow, and large clearcuts, which change the rate of flow, have profound impacts on soil loss, nutrient transport and water retention in dry seasons. Wholistic planning includes the use of horses in very sensitive areas, while small equipment

and elevated log removal systems are used in less sensitive areas. These techniques minimize the disruption of water-flow patterns.

2. *The forest canopy* (the 'roof' of foliage in tree tops) regulates temperature, rain impact and snowmelt. Wholistic forestry planning minimizes disruption of these moderating functions by keeping clearcut openings which disrupt the canopy to 5 hectares or less in most cases. The forest planners prefer to plan most timber harvest simply as 'thinning' operations which leave the canopy relatively intact.
3. *The riparian zone* (the wetted zone along streams) is a key sub-ecosystem which functions as a key corridor and use area for animals, a stabilizer of water flow during intense rain, and a buffer for upland and streambank erosion. The larger riparian zone of influence may be equally important in certain circumstances in mediating the terrestrial/aquatic interface. Both these zones serve such multiple functions that wholistic planning preserves them from logging.
4. *Cross-valley forested corridors* allow wildlife to travel under forest cover over the landscape to summer and winter range and reach adequate forage and shelter in season. Non-retention of these key forested corridors results in animals being unable to access their habitat in season, or suffering exposure and stress leading to reduced survival. Lower survival rates of animals result in dramatic changes in browsing patterns and hence plant species composition.
5. *A diversity of tree species* reduces the level of insect damage. For example, the spruce weevil attacks young spruce in an open plantation. But beneath a canopy of cottonwoods shading the young spruce, the temperature is far less favourable for spruce weevil, which does not become a threat in these conditions. When the spruce grow taller and break through the canopy of the cottonwoods, they are far less subject to damage by the weevil. Ant colonies in ancient decaying cedar are the main attractor for birds, which then remain in the area to devour insects attacking other conifers.
6. *A mix of hardwood and coniferous tree species* allows deciduous hardwood trees such as alder to fix nitrogen (making it available to conifers), to build soil and reduce acidity (through leaf decay and decay of downed tree bodies), and to provide shade for early growth of conifers. Deciduous trees are often called the 'nurses' of conifers, because they rapidly colonize small disturbed areas and provide more favourable conditions for their growth. As the conifers outgrow the hardwoods, the latter are eventually choked out and their decaying bodies then nourish the conifers. The decaying bodies of trees which hold nutrients for



growing trees are particularly important where shallow soils can less easily hold nutrients. Small disturbances which result in the introduction of deciduous trees thus eventually serve to 'feed' surrounding trees. Lightning strikes or aboriginal burning patterns which resulted in small contained fires (Gottesfeld, 1994a) provided small to moderate levels of disturbance, which resulted in the introduction of deciduous hardwoods. The MOF no longer allows this type of controlled burning (originally done to produce berry patches), but small-patch logging can serve the same function without the major ecosystem disruption associated with large clearcuts.

7. *Nutrient transport* to trees through fish swimming into upper reaches of the ecosystem. After spawning, dying salmon are retrieved from the river by bears, otters and eagles, and partially consumed. Decaying salmon carcasses on land, in the river, or salmon recycled through animal digestive tracks, appear to contribute critical nitrogen and carbon to tree growth, according to recent research – at least where salmon are still abundant. For example, 15–20% of the nitrogen in the new needles of hemlock trees in the riparian zone was found to be of marine origin (Bilby, Fransen and Bisson, 1996). Salmon are thus the functional equivalents of hardwoods as nitrogen suppliers. As salmon (particularly coho) are depleted (as they are in the Skeena River system), this functional redundancy is diminished, leaving a less-resilient forest ecosystem.
8. *Keystone terrestrial species* such as rodents eat subterranean fungi on tree roots containing nutrients, water, fungal spores, nitrogen-fixing bacteria, and yeast. Rodent pellets distributed throughout the forest spread the spores and the associated package which serve to inoculate new areas with mycorrhizal fungi, which in turn make nutrients and water available to their host trees (Maser, 1988; Hammond, 1991). Rodents can thus help to recolonize disturbed areas with nutrient transfer and possibly nitrogen-fixing capacity. (It is not known whether or not mycorrhizal fungi in this area fix nitrogen). However, rodents seek protection from predators such as eagles or hawks, and will not travel far from protective forest structures such as downed trees. Therefore, they can rebuild the nutrient-supplying function of the forest floor only where the disturbance is not too great.
9. *Avalanche chutes* provide habitat and transportation routes for grizzly bears, mountain goats, small fur-bearers, and songbirds, as long as the chutes are associated with old-growth forest (Herb Hammond, personal communication, 1995). Some tree species such as mountain ash take root in such habitats, and provide excellent songbird feed. Avalanche

chutes are another example the the role of small to moderate disturbances increasing or supporting diversity, in this case by increasing habitat for some species.

In summary, a fragile ecosystem with thin soils and steep, unstable slopes requires a balance of processes. On the one hand, processes which cycle water and nutrients through the system at a rate and in a manner which makes them available to trees through gradual release provide stability. On the other hand, the system is rendered more resilient through the periodic introduction of new nutrient sources and animal habitats as old ones are depleted or systems evolve. Decaying bodies of salmon on an annual basis, and nitrogen-fixing hardwoods or nutrient-transferring mycorrhizal fungi spread by rodents on a multi-year basis, supply these functions in alternative ways. Conventional logging methods in this ecosystem clearly cause disruptions to ecosystem function on a scale which will allow reconstruction of a forest ecosystem only very slowly or not at all. Wholistic logging methods mimic natural disturbance and aboriginal burning patterns, creating minor to moderate canopy gaps at the patch level, which allow the introduction of critical new nutrients, moisture and light sources or leave structures for the re-establishment of former sources.

Lax'skiik wholistic forestry looks at ecosystem resilience as the necessary product of sustainable management. The function of all forest plant and animal species may not be known at present, but their diversity is likely to be important in ecosystem function. Therefore, the Lax'skiik seek to maintain viable populations of all species and both stand and landscape-level forest structure characteristic of undisturbed forests, and consider 'sustainable' management to mean management which conserves a rough approximation of the species mix before logging. At the same time, they are experimenting with small-scale logging which creates different levels of disturbance and selectively removes some species or ages in small areas (as in Loring's adaptive management experiment to minimize blowdown).

### Conclusion

This case study exemplifies a new paradigm for managing forests of the north-west coast of North America on an ecosystem basis, and shows ways in which political and ideological impediments to implementing this paradigm can be overcome. The wholistic forestry paradigm is an extension of work in 'new forestry', woodlot management, and related reforms in the US. It goes beyond these innovations in several ways, which are summarized

below. This summary could also be considered a series of propositions about the conditions under which wholistic co-management of local forests is most likely to occur. The most important aspects of the first three propositions are common to other documented forestry co-management arrangements. The remaining propositions are largely new in this context, particularly the last three.

1. *A local wholistic management plan.* A community oriented towards and identified with its particular geographic place insists on sharing management with government by producing a local forest ecosystem management plan, incorporating the sustainable and integrated management of multiple forest values, including wildlife, fish, soils, water, and various forest plants, in addition to timber. The direct involvement in planning at the community level allows far greater government accountability to be built into planning.
2. *Planning combines traditional local knowledge and values and the science of landscape ecology.* Art Loring brought his experience of ecosystem change through the historical evolution of low-impact to high-impact logging in geographic areas he knew intimately. This recombination of local knowledge, scientific ecological knowledge, and Gitksan traditional understandings allowed a new management paradigm to break through the conventional industrial scientific paradigm for how to manage forests.
3. *The definition of sustainability involves small-scale disturbance* by low-impact logging at the patch level, or partial removal through thinning. Both methods allow new inputs of species or nutrients while conserving basic forest structure and function. The degree of disturbance which can be tolerated (and can play a positive role in fostering diversity and hence ecosystem resilience) is not great in this fragile montane ecosystem, and the limits are to be discovered by adaptive management.
4. *Landscape scale of planning.* The size of Gitksan House territories, their tendency to coincide with watersheds, and the ability of Gitksan chiefs to work together, create the possibility of planning on a large landscape scale in a manner which seldom occurs under current public or private ownership of forest lands.
5. *Management rights of local communities.* The aboriginal rights, established in Canadian courts or by treaty of some local communities, to fish, wildlife and berries give them a unique opportunity, as well as economic and cultural incentives, to protect forest values other than timber. While there is usually broad public concern for the protection of these

- values, a dispersed public often lacks mechanisms to express this concern effectively, or the resources to act upon it.
6. *Development of local skills and capacity.* Training in mapping, inventory, planning, and alternative low-impact logging methods allowed the community to integrate the new paradigm with the practical requirements of the local landscape and local manpower.
  7. *Development of vision, leadership, and political will.* A leader with the experience and ability to work with a team of elders, chiefs, Gitksan leadership, and policy and technical experts was essential to the development of a vision. The leader's willingness to forgo some personal advantages and to take personal risks lent credibility to the effort. By developing the active support and co-operation of these parties, the leader was able to translate his courage to innovate into action. This was particularly critical in the context of a captive agency.
  8. *The ability of leadership to call upon traditional local values.* The development of wholistic forestry principles based on traditional Gitksan values and worldview allows the leader to set an example as a moral as well as a political call on chiefs and elders to fulfill traditional obligations to protect their territories and the resource access to fish, game and other resources of House members.

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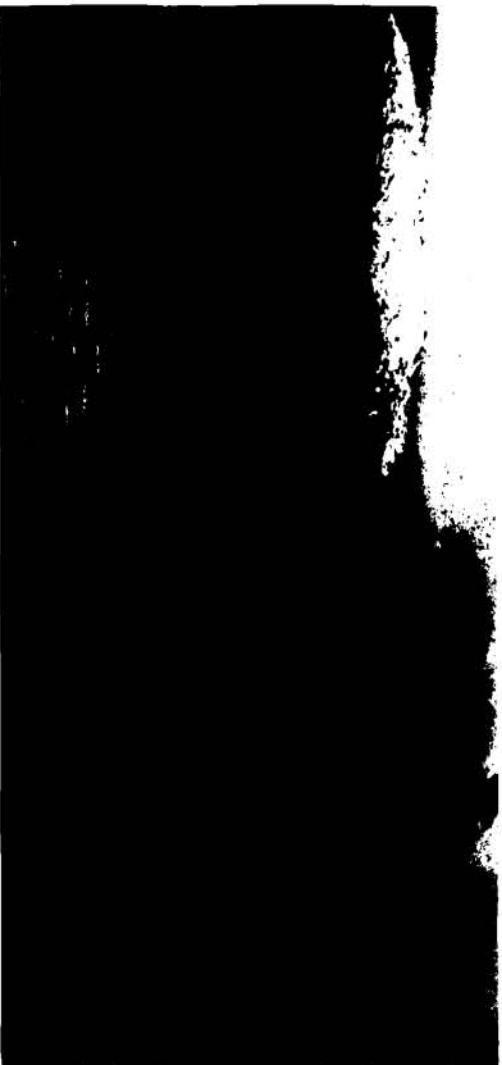
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Summer/Fall 2001 newsletter

## THE LAX'SKIIK INITIATIVE

### SUSTAINABLE DEVELOPMENT THROUGH LOCAL ECOSYSTEM-BASED MANAGEMENT



**T**he Gitksan Lax'skiik have a long-term project underway in their Fiddler Creek territory to demonstrate how an aboriginal group can develop a socially and ecologically sustainable economy in today's world using their own institutions and laws. They intend their efforts to be a model for both aboriginal and non-aboriginal people.

The Lax'skiik or Eagle Clan is the smallest of four Gitksan clans and has its home on the Skeena River between Terrace and Hazelton. The Gitksan territories as a whole extend over 30,000 square kilometres in the Upper Skeena and Upper

Nass watersheds of northwestern British Columbia. They occupy the intersection of three major North American climatic and biotic zones: the Pacific coast temperate rain forest, the interior montane plateau and the sub-boreal Taiga forest. Each House or extended kinship group is responsible for one or more of the discrete land territories that make up the Gitksan territorial mosaic. The Gitksan Lax'skiik are related to Eagle Clan members in Kitsumgalum, Kitselas, the Lower Nass and the coast. Because of severe depopulation, the Gitksan Lax'skiik presently tend to operate as a single House group within Gitksan society.

# this issue

**THE LAX'SKIIK  
INITIATIVE:**  
Progress on  
many fronts

**Phil Burton  
editorial:**  
Bioregionalism in  
a Terrorized  
World

## The Territory

The Lax'skiik have four territories located on the Skeena River south of Gitwangak village and northeast of Terrace. The clan has always acknowledged the spirit in the land by using its territories' resources with respect and based on need. Since the 1960s, however, they have been unable to use the resources and exercise their obligations on their two largest territories because of extensive clearcut logging. This restriction has forced clan members to vigorously defend their remaining territories against further industrial logging practices. In particular, they have focused their efforts on the 25,000 hectare Xsu Gwin Ga'at territory centred on the Fiddler Creek watershed on the west bank of the Skeena River.

The Lax'skiik continue to use the Xsu Gwin Ga'at territory to harvest salmon, ungulates, furbearers, berries, cedar and medicinal plants for their own use. In the past 10 years, they have also operated an inland commercial salmon fishery under a Gitksan agreement with the federal Department of Fisheries and Oceans and a commercial pine mushroom



*Inland commercial salmon fishing at a Lax'skiik fishing site on the Skeena R.*

gathering operation under agreement with no-one. In support of these activities, Lax'skiik members have rebuilt two permanent camps, including cabins, smokehouses, cookhouses, toilet facilities and trails.

Besides resource harvesting, the Lax'skiik also use the territory as a spiritual retreat. Each camp has a sweat lodge where clan members participate in cleansing and spiritual sweats as well as fasts. As an extension of these activities, the Clan has hosted a series of camps and retreats on behalf of local drug and alcohol rehabilitation centres, criminal diversion programs and youth at risk. During the summer months, several dozen young people can be found in the camps, learning about Gitksan language, culture, resource-use and simply how to get along with others.

## Government Consultation

Both resource use and spiritual renewal require a fully functioning forest landscape. Since 1989, the Lax'skiik have been challenging provincial government agencies, principally the Ministry of Forests, over government-authorized resource-use practices. Blockades and legal actions resulted in endless negotiations and some agreements, albeit weak ones. In 1992, the Lax'skiik came to a forest-use agreement with locally-owned Kitwanga Lumber. It called for a switch to selection logging in the Lax'skiik territories close to Gitwangak, with Lax'skiik crews contracted to carry out the logging as well as replant the logged land afterwards. A more comprehensive company plan to fully implement ecosystem-based management was vetoed by Ministry of Forests officials and dropped entirely when the company was taken over by the regional pulp company, Skeena Cellulose Ltd.

In 1995, after further blockades against Skeena Cellulose's loggers on the Xsu Gwin Ga'at territory, the Lax'skiik presented the forests

ministry's Kalum District with a set of territory habitat maps for a number of their important food and spiritual plant and animal species. At the same time, for each of the mapped species, they provided detailed forest use prescriptions that would reasonably enable logging and other activities to be carried out while conserving critical habitat attributes. In response, the ministry produced a document called the Fiddler Total Resource Plan, but this merely prescribed Forest Practices Code measures that were required in any event. In 1999, even the plan's weak provisions were set aside under a district manager's variance order.



*Lax'skiik Wing Chief, Art Loring (Guutsagin)*

The Lax'skiik have a well-documented 12-year paper trail on the province's refusal to consult on and seriously consider well thought out ecosystem-based management plans.

## The Upper Fiddler

Of particular concern to the Lax'skiik is the conservation of wildlife and spiritual values in the Upper Fiddler watershed. Access to this area is through a narrow valley of unstable soils, which also rears significant numbers of endangered coho and is valued low-elevation mountain goat habitat. The area also holds an important grizzly population, the northernmost limits of the endangered tailed frog, as well as a rare high-elevation moose wintering

area kept snow-free by a warm spring. At the centre of this watershed is a spiritual site, Winna Wedda, historically important to the Lax'skiik, and the focus of clan members' plans for the reconnection and education of young Gitksan.



*Northwest Institute directors visit the Xsu Gwin Ga'ta territory of the Lax'skiik*

## **Wildlife Inventory Project**

The Ministry of Forests said it rejected the Lax'skiik habitat prescriptions in part because they were not scientifically validated. In response, the Lax'skiik and other Gitksan groups initiated a five-year wildlife inventory project in 1996, funded by Forest Renewal B.C. and supervised by the Ministry of Environment, Lands and Parks. The project covered the Gitksan west bank of the Skeena from Fiddler Creek to Gitwangak, as well as the Sheadin Creek area in the Babine River watershed. The Lax'skiik approach was consistent with their philosophy of using consultants to teach research and development skills rather than produce reports.

The project methodology delineated animal habitat map polygons (surrogate ecosystem units) using standard forest cover and topographic map databases. The use of each polygon type by selected animal species was then estimated by systematically field sampling transects for animal sign and direct observation. The results could be used to predict

animal habitat use throughout the region beyond the study areas. The information would help forest use decision-making as well as aboriginal rights and title consultation. No such information sources currently exist for the region.

Unfortunately, funding for the project was withdrawn before the work could be completed, but not before the Lax'skiik team had completed 200 kilometres of transects and produced interim habitat maps. The remaining work includes one season's field work to complete a statistically valid set of transects, the analysis, mapping and reporting of the results, and testing the predictive capability of the method in an area in the same biogeoclimatic zone but distinct from the area where the data were collected.



*Cabin at Gitanga'at*

## **Rebuilding Gitanga'at**

Currently, the Lax'skiik are heavily engaged in a three-year building project at the ancient village site of Gitanga'at near the mouth of Fiddler Creek to provide a base from which to further develop their territory plan. The plan has three linked components — the further development of Lax'skiik resource use including selection logging, fishing, hunting and trapping, an eco-tourism project including guests' participation in Lax'skiik activities, and a base from which Gitksan youth at risk can relocate

themselves in Gitksan culture and develop a modest living on the land.

At this point a sweat lodge has been completed, the construction of three log cabins is well under way, the foundations have been laid for a traditional longhouse, and trail building has begun.

## **Future activities**

The Northwest Institute is currently working with the Lax'skiik to assist in developing partnerships in the following areas:

- Environmental Assessments: including the impacts of their ecotourism project (low-impact trails, creek crossings, waste disposal, etc) and engineering of selection logging blocks and access trails.
  - Completion of the Wildlife Habitat Project: including high elevation transects and ground-testing the project's predictive capacity throughout the region.
  - Resource enhancement research and implementation: for example, prescribed burns for edible berries and low-elevation goat habitat.
  - Lodge and trail construction at Winna Wedda as a base for high-elevation wildlife and fisheries research and monitoring, and as a retreat for cultural reconnection.
  - Extension work to the Gitksan, other aboriginal and non-aboriginal groups using the Xsu Gwin Ga'ta territory as a model for ecosystem management implementation.
- Over the past 12 years, the Lax'skiik have collectively put in an enormous amount of time in learning needed skills, developing an ecosystem-based economic development plan and implementing it. Much work has been done and much more remains.



DeIgamuukw: the ultra-short, non-legal summary of what it was all about...

Key issue: ownership and jurisdiction over traditional territories

The original 'ask' ...

1. A declaration that their aboriginal title to the land had never been extinguished and prevails to this day.
2. A declaration upholding the aboriginal jurisdiction of the hereditary chiefs.

The hope...(in addition to the declarations)

1. They would be granted a separate trial for compensation;
2. They would obtain a tool to help force governments to address their concerns;
3. They would gain legal power to influence the activities and tenures of forest companies and other industries operating in their territory.

**Stage 1: Supreme Court of British Columbia**

- The case ran from 1987 until 1990; the longest running trial in BC history.
- Justice Alan McEachren dismissed the entire claim;
- Accepted the Province's argument that all aboriginal title and rights were extinguished prior to 1871;
- Chiefs could not have jurisdiction over their lands because Canada's *Constitution Act* assigned all legislative jurisdiction to either the federal or provincial government.

**Stage 2: British Columbia Court of Appeal**

- Overruled Justice McEachren's decision that all aboriginal rights were extinguished before 1871;
- Rejected the Gitksan and Wer'suwet'en claim for ownership and jurisdiction.

**Stage 3: Supreme Court of Canada** (this is as high as you can go – there are no appeals of a decision made by this court).

December 11, 1997: ordered a new trial for several reasons:

1. Judge McEachren erred by not giving real weight to oral history;
2. the original Gitksan and Wet'suwet'en claim was changed for the Supreme Court of Canada: it was re-framed as a collective claim for aboriginal title asserted by their people as a whole rather than by the individual hereditary chiefs who technically had been representing all the Gitksan and Wet'suwet'en people up to this point;
3. claims to jurisdiction needed to be reconsidered in light of a recent Supreme Court of Canada decision in a case known as *Pamajewon*.

In spite of ordering a new trial, the Supreme Court decided on several very important issues:

- Determined that oral histories as a form of evidence must be accommodated and placed on equal footing with the types of evidence more traditionally submitted to the court;
- For the first time in Canadian courts, they described aboriginal title: "a right in land which includes the right to exclusive use and occupation of the land." The court described aboriginal rights as a spectrum. At one end are rights to carry out certain activities, such as ceremonies, that are not particularly connected to the land. In the middle are rights that involve the use of land or resources (e.g. berry picking or fishing). At the other end is aboriginal title: the right to the land itself. Aboriginal title is unique for several reasons:
  - Belongs to the entire aboriginal community – a collective right;
  - Cannot be used in a way that will destroy its traditional value for future aboriginal generations;
  - Is inalienable – cannot be sold or transferred to anyone except the Crown;
  - Encompasses the right to exclusive use and occupation of the land for a variety of purposes;
  - Includes mineral rights;
  - Has an "inescapable" economic component, (e.g. infringement typically requires compensation);
  - Can be infringed upon by governments if the reason for the infringement is "compelling and substantial" (there is a whole test for what constitutes "compelling and substantial"). Consultation is required to justify an infringement...and that's where the Haida case comes in...but more on that later.
- The court affirmed that the test for proof of aboriginal title is "use and occupancy" of the land:
  - (a) The land must have been occupied by aboriginal people prior to 1846 (the date the Crown asserted sovereignty);
  - (b) There must be "substantial maintenance of the connection between the people and the land", i.e. evidence of continuity between present occupation and the aboriginal people's occupation at the time of sovereignty (does not have to be continuous occupation);
  - (c) The occupation by aboriginal people at the time of sovereignty must have been exclusive; i.e. the aboriginal people must have asserted their right to exclude others from the land. This does not mean everyone else had to be excluded, it means there must have been the intention to retain exclusive control. This, in turn, could be proven by looking at the laws, institutions or customs that governed access, exclusion and other property rights.