THE IMPACT OF ECONOMIC DEVELOPMENT IN JAMES BAY, CANADA

The Cree Tallymen Speak Out

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Although there has been a tremendous amount of past and future development in the James Bay region of northern Canada, there has been very little empirical research that examined the impact of economic development on Cree tallymen, who are the senior grassroots managers of this vulnerable ecosystem. This oversight is particularly important because the region is currently facing the possibility of additional large-scale hydroelectric development and there is no existing baseline information on past impacts on Cree tallymen. In addition, tallymen continue to have important cultural significance to the Cree Nation and also broader significance to the field of sustainable management. This article attempts to fill this gap by providing ethnographic research on the impact of past development on Cree tallymen from the perspectives of the tallymen themselves. The author also draws implications for environmental impact assessments in the region and, more broadly, for the future study of ecologically embedded managers such as the Cree tallymen.

Keywords: *sustainable development; ecological embeddedness; cultural change; Cree; hydroelectric development; EIA*

> No wonder we want to keep our land and love our land. That's how we survive—from the land.
>
> —A Cree elder and tallyman

On February 7, 2002, the provincial government of Québec and the Grand Council of the Crees of James Bay entered into an agreement giving Cree consent to Hydro-Québec's proposed Eastmain hydroelectric project and the diversion of the Rupert River in exchange for $3.5 billion in Canadian currency (U.S.$2.27 billion) over 50 years.[1] Despite agreement at the Grand Council and local chief level, there was a significant portion of the local Cree population (31%) and several nongovernmental organizations (NGOs) that opposed the project.[2] Currently, the project is at the environmental impact assessment stage, which will be completed in 2004.

This is not the first economic development project in the region. In the 1970s, James Bay became famous as the site of one of the world's first mega-dams, the James Bay Project. Hydroelectric development was quickly followed by economic development in minerals, forestry, and tourism. But the region is also called *Eeyou Estchee*—the people's land—and has been inhabited by the James Bay Cree for at least 5,000 years (Feit, 1995). Deep cold, followed by a short growing season, are the dominant environmental factors of this ecosystem (Aber & Melillo, 1991). Unpredictable population dynamics are a common characteristic and inappropriate

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resource decisions can result in sudden ecological collapse (Resilience Network, 1997).

Managers in James Bay are not restricted to corporate types. Within this environment, a number of local Indigenous managers grapple daily with its extreme yet vulnerable ecosystem. Notably, the Cree have a sustainable cultural approach to managing their local ecology (Berkes, 1995, 1998, 1999). Cree tallymen—senior hunters and trappers—are the key grassroots leaders in charge of this sustainable approach to management (Whiteman & Cooper, 2000). Tallymen are in charge of traditional pursuits such as hunting, trapping, and fishing within specified areas called traplines that cover the region.

Although there has been a tremendous amount of past and future development, there has been very little empirical research that examined the impact of this economic development on Cree tallymen. This oversight is particularly important because tallymen continue to have important cultural significance to the Cree and also broader significance to the field of sustainable management (Whiteman & Cooper, 2000). This article attempts to fill this gap by providing ethnographic research on the impact of past development on Cree tallymen from the perspectives of the tallymen themselves. The proposed expansion of hydroelectric development also adds practical urgency and relevance to this information because it can provide important yet missing baseline information for the environmental impact assessment process.

My article is organized as follows. First, I provide background information on the James Bay Cree and economic development in the region, including a review of the literature that has examined the sociocultural impacts on the Cree in general. Then, I describe my ethnographic study and present research findings. Next, I discuss implications of these impacts for the Cree tallymen, particularly in light of the proposed James Bay hydroelectric expansion. Finally, I draw some broader implications for the field of sustainable management.

BACKGROUND: THE JAMES BAY CREE

James Bay is a beautiful, subarctic region with many lakes and enormously powerful rivers. It sits at the bottom of the larger Hudson's Bay in Canada's northern region. The Cree Nation of eastern James Bay is composed of approximately 12,000 aboriginal people who live in or near nine permanent village communities. The region is divided into 291 traplines, which are designated family hunting grounds (Cree Trappers' Association [CTA], 1996). Traplines range in size from approximately 230 to several thousand square kilometers; the average trapline size is 1,200 square kilometers (Feit, 1985)—larger than many cities in size. A tallyman manages each trapline, although other trappers and hunters (usually family members) also use the trapline, typically after gaining permission from the tallyman.

Despite its vulnerability to ecosystem collapse, the Cree have successfully lived within this vulnerable and harsh ecosystem for at least 5,000 years. As Francis and Morantz (1983) explain, the Cree developed both a technology and social organization that was suited to the demands of land surrounding them. Instead of changing or attempting to control variability in the natural environment, the Cree learned to adapt successfully despite such extremes (Berkes 1995, 1999). To do so, the Cree rely extensively on traditional ecological knowledge (TEK) as a cultural framework for management (Berkes, 1999). TEK has been defined as "a cumu-

lative body of knowledge and beliefs, handed down through the generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment" (Berkes, 1995, p. 100). TEK is different from most Western conceptualizations of management in that it views the earth and its many entities as alive and interactive, with humans as just one of many ecosystem members (Deloria, 1992).

Cree tallymen, the senior hunters who are in charge of each trapline, are the key grassroots leaders of this management approach. In a previously published ethnographic study of the Cree tallymen, my findings indicated that the tallyman's approach to management was ecologically embedded, a dimension that strongly guided the sustainability of their management practice (Whiteman & Cooper, 2000). My fieldwork indicated that Cree tallymen were ecologically embedded as managers in that they personally identified with the land; adhered to beliefs of ecological respect, reciprocity, and caretaking; actively gathered firsthand ecological information; and were physically located in their local ecosystem for extensive periods of time. A key managerial practice of Cree tallymen was described as "management by walking outside."

Overall, the tallymen's ecologically embedded knowledge, beliefs, and practice formed the basis for their cultural legitimacy as leaders and decision makers about local natural resource management. Although most Cree shared many of the tallymen's ecologically embedded beliefs, few had such ongoing and in-depth knowledge or daily management experience with the local ecology. This was particularly true for Cree who worked in the villages in more "Westernized" jobs at the band council or school.

This earlier article also suggested that the Cree tallymen's approach may be an interesting model for sustainable management by other non-Indigenous business managers, an area that warranted future empirical study. However, with continued pressure from economic development, the tallymen's approach may be significantly compromised.

BACKGROUND: ECONOMIC DEVELOPMENT IN JAMES BAY

James Bay is a place of wilderness. It is also a place of increasingly aggressive economic development. The first recorded meeting between the Cree and Europeans was in 1611 when Henry Hudson wintered in James Bay (Francis & Morantz, 1983). However, the environment was harsh for outsiders and the fur trade did not start in James Bay until the mid-17th century (Francis & Morantz, 1983). During this colonialist period, the Hudson's Bay Company (HBC) laid claim to the region under royal charter in 1668 (Francis & Morantz, 1983).

There was little external government influence in James Bay until the 1930s and 1940s (Feit, 1995) when Beaver Preserves were established by the HBC and the Department of Indian Affairs to combat a severe reduction in beaver populations.[3] By the mid-1930s, the provincial government had outlawed all killing of beaver. The federal government also enacted the Indian Act of 1947. At this point in time, the Canadian Department of Indian Affairs now required one elected chief and council for each fur trading post. Chiefs and band councils also were given the authority by the government to act for the band as a whole (Feit, 1985). Previously, Cree leadership was more egalitarian, with the tallymen playing a more fundamental role (Feit, 1985).

In the 1970s, large-scale hydroelectric development by Hydro Québec entered James Bay (McCutcheon, 1991). Prior to this period, the land had remained largely undeveloped (except for the fur trade and subsistence living) and inaccessible, with outside access restricted to planes and boat transportation (Salisbury, 1986). From an economic development perspective, the James Bay Project is one of the largest hydroelectric projects in the world. James Bay I—the initial stage of the Project—is capable of producing more than 25,000 megawatts of power; the scope and scale of such hydroelectric production is tremendous. The first phase of James Bay I came on-line in 1985. The road infrastructure, built to support the original hydroelectric development, also increased the feasibility of additional natural resource development. By 1997, forestry and mining activities were becoming aggressively pursued in the James Bay territory.

James Bay II was, for many years, "on hold" following an intense public relations battle orchestrated by Native groups (Cree and Inuit) and environmental NGOs (see the documentary *Power* by Isaacson, 1996). Despite this respite, hydroelectric development is again underway. Feasibility studies for the Eastmain 1-A and Rupert diversion project are currently in progress (Canadian Environmental Assessment Agency [CEAA], 2003).

According to the Canadian Environmental Assessment Agency (CEAA), Hydro Québec's plan for the diversion project outlines the following elements:

> the partial diversion of the Rupert River (maximum of 800 m^3/s) into the Eastmain River; the construction of a power plant (maximum of 770 MV) on the Eastmain 1 reservoir; and the addition of structures at the Sarcelle site, at the outlet of Opinaca reservoir.[4]

NGOs report that the "partial" diversion of the Rupert will actually reduce the river's flow by 92%.[5] In total, the project will consist of four dams, 51 dikes, two diversion bays (flooding an area of 395 km^2), 12,000 m of diversion channels, and two permanent access roads. Total costs are estimated at $2 billion Cdn. (U.S.$1.49 billion), with the diversion to be completed by 2007 and the Eastmain 1-A powerhouse online by 2010. In exchange for a revenue-sharing agreement, the Grand Council of the Cree of Quebec (GCCQ) has agreed not to publicly oppose the project.

Ted Moses, Grand Chief of the GCCQ and a chief negotiator for the Peace of the Brave Agreement, explained the Grand Council's rationale for accepting future economic development in the following way:

> What are the real alternatives? Where are we going to get jobs? How are we going to be able to take care of our children? What is going to happen 25 years from now, when we have 25,000 people looking for work and a place to live?[6]

Sociocultural Impact of Economic Development on the Cree

The fur trade resulted in a number of changes in Cree culture and society. Francis and Morantz (1983) suggest that "the fur trade in the seventeenth and eighteenth centuries probably underscored the development of smaller social groups and more individualized ownership of resources among the Indians" (p. 97). Although historically it appears that the Cree spent the winter hunting and trapping in groups up to 50 people, the fur trade tended to reduce group size "since

they required less food resources in a given area and provided a higher per capita yield of furs" (p. 97). In addition, the fur trade appears to have more concretely delineated family hunting territories, although the existence of hunting territories does not appear to be a fur trade invention (Francis & Morantz, 1983). Although historical accounts of the fur trade often position native peoples as passive victims, the fur trade, in many ways, was a partnership of mutual benefit, with the Cree displaying economic independence and shifting trade advantageously between the HBC and the French traders (Francis & Morantz, 1983). However, this is not meant to imply that it was an equal partnership and it remains open to colonialist criticisms.

With the advent of the fur trade, Cree summer settlements became located at the HBC trading posts. Following nomadic hunting patterns, the Cree traditionally had lived in large groups only when fishing was plentiful in the summer. Prior to 1947, the majority of the Cree lived in the bush and village settlements were not inhabited year-round except by a small minority (Salisbury, 1986). After 1947, however, more and more Cree settled into village life. Nevertheless, by 1971, still more than half resided primarily in the bush, although many had accommodations in the village as a secondary residence. Most tallymen continued to primarily reside in the bush.

There is some debate over the influence of the fur trade on the Cree system of land management (see Bishop & Morantz, 1986). The word *tallyman* is English for the Cree word *amiskuchimaaw*, which can be translated as Beaver Boss or steward. The tallymen's name is related to HBC requirements from the 1930s and 1940s that a bush leader "tally" (count) beaver houses within his hunting area. During the 1930s, a system of "Beaver Preserves" was institutionalized by Western organizations such as the HBC and the provincial government. Under the Beaver Preserve system, these tallies were then used to assign annual trapping quotas back to the tallyman (who distributed them across his hunting group). The tallyman's job was also to ensure that the quotas were met but not exceeded.

The Beaver Preserve system appears to have been built on a preexisting indigenous framework (Feit, 1995). Berkes (1995) demonstrates that the management practices of the tallyman could not have arisen from a Western worldview. Although the English designation may come from the HBC, the form of management is not a White invention (Berkes, 1995). Hudson's Bay Company Archives (1947) confirm this:

> Our organization [of beaver preserves] is based on Indian tradition and custom, it meets with approval among the limited number of Indians to whom we have been able to brings its benefits. The main reason for their appreciation is that once the White man's practices of written leases and agreements are disposed of we revert to Indian custom, pattern our organization after their sound, well-established practice and divide our preserves according to the aboriginal plan of land tenure that from time immemorial has served the Indian population. (p. 689)

That is, although the Hudson's Bay managers "appointed" a tallyman, this person was usually a recognized leader in an indigenous system of trapline management. The appointed person, now formally called a tallyman for Hudson's Bay's purposes, was a senior, experienced hunter who was *already* in charge of his family hunting ground—a role he continued to enact despite the overlay of the HBC designation.

Although the development of the fur trade meant that the Cree operated under a dual form of economy (i.e., subsistence and market economies), it did not shift Cree culture away from a reliance on subsistence activities or from their beliefs and practices:

> The Indians [Cree] still brought in as many pelts as they wanted, not the number the company would have liked. European technology continued to be used, but hunting was still (as it is even today) based on age-old methods. . . . The political, social, and religious life of the James Bay people continued outside the direct influence of the Europeans, though it was not unaffected by occurrences in the economic sphere. (Francis & Morantz, 1983, p. 170)

Tanner (1979) also confirms that the traditional beliefs tended to guide all activities that occurred in the bush, including those related to the fur trade. In contrast, the Christian missionaries who arrived at the trading posts in the 19th-century (Feit, 1995; Francis & Morantz, 1983) actively attempted to change Cree ideology by positioning Cree beliefs as "witchcraft."

However, the Indian Act institutionally changed Cree leadership structures. The Indian Act of 1947 was problematic, in part, because "this distribution of authority did not reflect Cree political culture" (Feit, 1985, p. 35). Historically, a chief was the leader who oversaw the "summer settlement" but did not oversee the band throughout the rest of the year. Although the chief was granted certain powers and responsibilities, it was a role that dispersed with the hunters when they separated into smaller hunting groups, "micro-bands" (Salisbury, 1986), in the fall. At this point in time, the hunting group leader (later to be called the tallyman) was in charge most of the year, with the chief exercising influence over a shorter time period and only over the summer settlement.[7] After the Indian Act, which required a permanent year-round chief and band council, the leadership structure began to change, with the chiefs and council receiving more authority.

The leadership role of the chief has changed significantly over time. In the 1980s, Salisbury (1986) notes that Cree chiefs and band managers tended to be younger, more educated, and English-speaking, in comparison with the more senior hunting group leaders, who typically spoke only Cree (this has changed over time with many tallymen now speaking English and Cree). In most cases, the chiefs were respected community members. They were competent at dealing with external, "White" institutions and organizations and were valued as community leaders. Although the tallymen had the opportunity to become more involved in community affairs through the council, their inability to speak English resulted in little ongoing involvement (Salisbury, 1986).

With increased pressure from economic development, the role of the chief intensified. Finally, during the James Bay negotiations, it was the young, English-speaking chiefs (the new administrative elite) who rallied together and successfully led the fight against unapproved hydroelectric development by Hydro-Québec. Their leadership role at this time continued to reflect the Cree respect for competence—these leaders were extremely competent at negotiating with the White world. During this time, these young leaders also sought the advice of older hunters who were competent in the traditional ways (e.g., the tallymen) (Feit, 1985). For the first time, a Cree regional council was born: the Grand Council of the Cree.

When the Cree discovered that the James Bay Project was going to be built on their land, they banded together with the Inuit and launched a large legal and public

relations battle against Hydro-Québec. The Cree and Inuit were partially successful in their fight against economic development—in a joint legal action, the native peoples in the region brought Canada, Québec, and Hydro-Québec to the bargaining table. Land claim rights were subsequently recognized in the *James Bay and Northern Québec Agreement* (JBNQA, 1976) and a large compensation package was provided. However, these efforts also were unsuccessful in that development continued to proceed and became institutionalized in a legal agreement that the Cree have often viewed as questionable (Grand Council of the Crees, of Québec, GCCQ, 1995). According to the GCCQ (1995), "It is the firm view of the Crees that the Agreement was negotiated in 1974-75 under circumstances that were clearly inequitable, highly pressured and, in a number of key respects, unconscionable" (p. 252).

Billy Diamond, first Grand Chief who negotiated the agreement, explained the negotiation process in the following way:

> Our feeling was that no one can buy a way of life and culture with money . . . but we saw the need to limit the damages, seek remedial works and have certain fundamental rights recognized. We decided to attempt to negotiate a settlement. We really had no other choice. . . . Canada made it clear that if we [the Cree] did not proceed with the agreement process, unilateral legislation would have been imposed on us in any case. (Diamond, 1990, cited in GCCQ, 1995, pp. 252-253)

After the JBNQA was signed, Cree regional organizational structures became legally institutionalized with the GCCQ, the Cree Regional Authority (CRA), and the Cree Trappers' Association (CTA), among others. In addition to the Grand Chief, the Grand Council includes the chief and another leader from each community who sit on the Board of Directors, as well as an executive group made up of four regional leaders (Feit, 1995). After the settlement, each village became recognized as a municipality (Salisbury, 1986) and became the permanent home to many of the Cree. The chief and community life became a dominant reality. However, for the people who lived in the bush (in some villages, a sizeable minority), the traditional system of trapline management (with the tallyman as the leader), continued.

Environmental impacts of the James Bay Project were significant. All told, at the end of James Bay I, five hydroelectric reservoirs covered more than 11,000 square kilometers, the seasonal flow pattern of the LaGrande River had been reversed (and the estuary changed from saltwater to fresh), large dead zones had been created around each reservoir with a significant loss of wetlands and increased soil erosion, animal migration routes had been affected (including the drowning of 10,000 caribou in September 1994), and a serious increase in methyl mercury levels in fish and human populations (Berkes, 1990). The mighty rivers of Eastmain, LaGrande, and the Opinaca were changed drastically. For example, the Eastmain river was diverted with 90% of its natural flow disappearing (Messier et al., 1987, cited in Berkes, 1990) into the production of hydroelectricity.

RIVERS
Tears are like rivers;
they never stop flowing.
Rivers are like tears;
they become dry.

—Margaret Sam-Cromarty (1992)

Yet Salisbury (1986) argues that the Cree were able to positively control much of their social evolution following the James Bay Project and the JBNQA. Specifically, he notes improvements in cultural unity, transportation access, communication networks, housing, education, access to the wage economy, and the increased consumption of goods (e.g., snowmobiles, chainsaws, TVs, radio, clothing, etc.). With a multi-million-dollar compensation package, the Cree were called (by some) "the Arabs of the North" (MacGregor, 1989, p. 70).

Another positive outcome of the JBNQA was the implementation of the Income Security Program (ISP), whereby the provincial Québec government provides basic income to Cree families following a traditional lifestyle.[8] This program has been quite successful and the Cree Regional Authority suggests that more people are now pursuing traditional pursuits (hunting, trapping, and fishing), following the implementation of the ISP (W. Iserhoff, personal communication, 1997). Salisbury (1986) confirms this: By 1981, the traditional activity of hunting was more important in Cree villages than a decade earlier, primarily due to the success of the ISP in making subsistence hunting an economically viable occupation. In addition, in a detailed evaluation of the ISP, Scott and Feit (1992) conclude that the program responds well to the needs of Cree harvesters. However, the authors note that the ISP cannot guarantee the maintenance of hunting life; in addition, the Cree must maintain their traditional physical relationship with the land.

Nevertheless, Niezen (1993) has highlighted other negative sociocultural impacts. Following hydroelectric development, there was a rapid movement toward permanent village residency. This swift cultural and geographic shift resulted in high frequencies of suicide, neglect of children, vandalism, and drug and alcohol abuse (Niezen, 1993). He also suggests that this centralization has "decreased the proportion of people in the traditional economy—a situation which has led to social instability in the villages" (p. 510). Infrastructure developments, such as the road network, also increased the availability of drugs and alcohol. In addition, centralization may have increased the need for a cash economy, as motorized transportation became a necessary part of bush life (see Wenzel, 1991, for a discussion of the same point with respect to the Inuit).

During the construction of the James Bay Project, two main permanent roads were built along with numerous temporary (winter) roads (Salisbury, 1986). "By 1981 a major road traversed Cree territory, and all settlements were negotiating for their connection to a road to the outside" (Salisbury, 1986, p. 5). By 1999, all but two Cree communities had a permanent road (excluding Waskaganish and Whapmagoostui). A main highway connecting Nemaska to Chibougamau—the Route du Nord—also had been completed in the early 1990s. While undoubtedly bringing the Cree numerous benefits (e.g., more convenient and cheaper transportation), the road system also opened the territory up to additional development such as mining, forestry, and sports hunting and fishing, which brought additional environmental degradation (e.g., clear-cutting, pollution, illegal hunting, etc.). McCutcheon (1991) also notes that the improved road access brought problems for the tallymen because uncontrolled trapping started to occur in areas adjacent to roads.

Hydro-Québec researchers present a more positive picture in their summary of the research on the impact of hydroelectric development 15 years after the project became operational (Guertin, Demers, & Perusse, 1993). This report, however, focuses on biophysical research on the environment (predominately with supportive research results). The authors admit that for "various reasons" (not provided),

the follow-up studies on the sociocultural impacts were not as systematic as for more biophysical impacts. While acknowledging that the LaGrande complex affected four out of eight villages, and that some traplines were flooded, they conclude that "the evolution of the number of beneficiaries of the income securities programme for Cree hunters and trappers in the most affected communities is similar to unaffected communities" (p. 405). This implies a marginal sociocultural impact. They also emphasize the success of the ISP in promoting, in effect preserving, "a lifestyle which seemed condemned" (p. 406) and highlight the regional Cree infrastructure as a positive outcome of both the Agreement and hydroelectric development.

Furthermore, these authors focus exclusively on the positive benefits of the road network for the Cree, that is, the decrease in the prices of products; increased economic and cultural exchanges with other Cree communities and the south; easier hunting, fishing, and trapping; and improved, more convenient access to remote traplines. Negative impacts, such as uncontrolled access (a precursor to the "tragedy of the commons," see Hardin, 1968), are not identified. Even the increase in recreational hunting and fishing by non-Natives is also viewed as a positive change that creates only limited and localized competition with Cree pursuits.

The only negative sociocultural effect identified in this corporate study is a decrease in employment in the 1980s (and its related social problems) following "diminished growth in the tertiary sector and construction activities resulting from the implementation of the agreement" (p. 406). Not surprisingly, the solution offered by the Hydro-Québec researchers is that "new avenues of development must be opened up" (pp. 406-407). Thus, the implicit message is that the sociocultural effects of development have been positive; the only negative effects (i.e., unemployment) result when development activities are diminished. The possible impacts on Cree tallymen are never researched and therefore mitigation plans are not identified or addressed. The authors conclude that the James Bay Project is a project "in accord with its environment" (p. 387).

In another impact assessment, the same imbalance appears. In "The Chibougamau-Nemiscau Road: Environmental and Social Impact Assessment Summary" (Cree Construction & Ministere des Transports, Gouvernement du Québec, 1990), there is again no recognition of the negative sociocultural impacts (particularly on the role of the tallyman) of the proposed permanent highway. Whereas "active native campsites" are identified as features of "very high resistance" to the road, there is no discussion of how the tallymen and other trappers (who live on and use these campsites) will be affected by a permanent road. Consequently, there is no need for mitigating action.

In summary, previous research on the sociocultural impacts of development tends to treat the Cree as one large homogeneous group and does not adequately investigate impacts on Cree tallymen despite their cultural significance and sustainable approach to management.

RESEARCH METHOD

When I first arrived in James Bay, I originally began to study the impact of hydroelectric development on the Cree people. More specifically, I hoped to examine the human experience of living next to one of the world's largest hydroelectric dams, the James Bay Project. This was my "foreshadowed" research question (Hammersley & Atkinson, 1995). After my fieldwork began, I realized that discus-

sions about development inevitably broadened. By 1995, economic development of the region had expanded into mining, forestry, tourism, as well as hydro-power. These activities seemed to have cumulative and interrelated effects on both the Cree culture and the natural environment, at least from the perspective of the Cree.

Anthropological research confirmed that Cree elders viewed the James Bay Project as just one example of an ongoing relationship with "White men" (Feit, 1985). In addition, discussions about the impact of development tended to be framed against the "way it used to be," that is, the way the land was traditionally managed. In time, it dawned on me that I had no real conceptualization of this traditional management approach and that perhaps this was a critical research question in itself. Eventually, I refocused my Ph.D. dissertation on a description of the traditional ecologically embedded management practices of the Cree tallymen (Whiteman, 1999; Whiteman & Cooper, 2000).

However, the impacts of development remained an important research issue during my fieldwork. This article presents my ethnographic findings on this topic, specifically from the perspective of Cree tallymen.[9] It is based on 18 months of ethnographic fieldwork over a 2-year period, including a 10-week apprenticeship to a well-respected tallyman, Freddy Jolly, who acted as my key informant in this study. Data were collected through participant observation and in-depth ethnographic interviews (Hammersley & Atkinson, 1995).

In addition to participant observation, I undertook a series of in-depth interviews (Fontana & Frey, 1994) with Cree trappers, elders, tallymen, and key members of the local band councils, the CTA, and the Cree Regional Authority. In total, I conducted 31 interviews. Most interviews were in English but some were in Cree, with translation provided by my key informant. My key informant, Freddy Jolly, requested that his real name be used, as has occurred in other anthropological work with the Cree (e.g., Preston, 1982). Others are quoted anonymously. This article also relies on document analysis of Web sites and key documents such as the James Bay and Northern Québec Agreement (JBNQA), among others.

Data analysis was iterative. Rough, broad categorization occurred during my fieldwork and was refined by further data collection. Emergent themes and dimensions were identified through the continual review of notes, interview data, field journal entries, and comparison with other research. Detailed coding work was done outside the field site with the qualitative data analysis software program QSR NU*DIST (Nonnumerical Unstructured Data Indexing Searching and Theorizing). Specifically, all interview data were transcribed and coded using NU*DIST. Handwritten field notes were not transcribed but were coded by hand with the same coding system. Data analysis also relied on ongoing respondent validation by a variety of Cree participants, including Freddy Jolly (Hammersley & Atkinson, 1995).

RESEARCH FINDINGS

Tallymen Talking: "On The Impact of Development"

My field research suggests that cumulative economic development throughout the past 30 years has a direct and far-reaching impact on Cree tallymen. Findings suggest that economic development in the region has resulted in tallymen losing control over resources and management decisions. Furthermore, forestry, mining, and hydroelectric development have resulted in a significant loss of natural re-

sources and environmental degradation and have negatively affected the tallymen's ability to manage. This appeared to have resulted in a gradual lessening of respect for this traditional role among community members. These impacts, in turn, had a strong emotional impact on individual tallymen and to some degree have caused a schism within Cree culture.

Before presenting emergent themes from my data, I first present an extended excerpt of an interview I conducted with a well-respected Cree elder and tallyman, who offers an emotional and representative perspective on the impact of development.

A Tallyman Talks

> I'm going to tell about what they're doing to my land now. How the Whiteman enters our land. Before, in the olden days, there was no Whiteman. It was like the stories I've told you about. Now . . . if you look at my land, our trapline is a huge size. There were a lot of trees during the time of my story. All kinds of trees, different kinds of trees, huge tall trees. Now if you look at my land, it's all flat—clear-cutting. Even the mountains.
>
> Before they cut the trees we had a meeting with the forestry company and told them about places not to cut—the moose yards. There's one place that moose used to hang around, where we used to get our food. That's the main part. That's the part we didn't want to be clear-cut. They didn't even listen to us. They cut all the trees and took them. All over the place. There was a favourite spot for hunting and there were huge mountains but now they're gone. It's all clear-cut. There's only one small part and that's the only place we can go for moose hunting, that's the last part where it's not clear-cut.
>
> The other places that are clear-cut we cannot get anything, not even a moose. Where they were clear-cutting and destroying the ground, taking even what the beaver eats [the branches]. The mess they make, they pollute the water, the lakes. It affects the beaver. The lakes are dirty. The damage they do, and the roads, it affects the animals. Even fish. There's a spot where we used to go fishing. It's really different now. When the lakes are polluted, it goes through the rivers and streams. The fish are different. It affects them through the water, everything goes into the lakes. The beaver too. The beaver moves away, moves out to where it's not affected.
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> I'm the tallyman of my trapline. They don't listen to me even though I tell them. . . . What does *Wahmschtickoosh* [the White man] mean when he says that [the earth is not alive]? The earth is living. And still today, God is giving us life to live.
>
> There's one more thing that I want to say to her [the researcher]. Not to believe in what they [the Whitemen] teach you. Believe in what I believe. (Cree elder and tallyman, personal communication, March 29, 1997, Mistassini, James Bay)

Although each tallyman's story remains unique, there were a number of common themes that emerged from my research. These are presented in more detail below, followed by a discussion.

Loss of Control

The tallymen interviewed felt that a key impact of economic development has been a shift in traditional power and a loss of control over natural resource use. Document analysis and interviews suggest that as a result of the JBNQA, the tallyman's management and leadership function is shared with, and often eclipsed by,

the Cree regional and community leaders as well as with government and corporate decision makers.

Under the JBNQA, the provincial government of Québec has the right to mineral and forestry development in Category 2 and Category 3 land (the Cree retain full rights to Category 1 land, which is the site of the villages and band council). Yet, the majority of Cree traplines are located in Category 2 and 3 designated land, and each of these is managed by a tallyman. Although the JBNQA may have brought about greater regional unity, tallymen felt that it also brought a disruption and splintering of local control over local resources. Previously, tallymen had the cultural right to make decisions about natural resource management on their own traplines. The JBNQA legally shifted authority from the tallymen toward the chiefs and Grand Chief, and formal negotiations for natural resource development required consultation with the Grand Council of the Crees and local chiefs but did not require local negotiations with specific tallymen even when their traplines would bear the brunt of the impacts.

A tallyman summarized this position as follows:

> Both in the Cree society and in non-Native society, I would say that. Yes. In the past, you know when a tallyman had . . . he had a piece of land and the tallyman had the sole responsibility. He had authority over that land. He was able to determine which people can go there and which places they can go. He can put also, you know, a limit of what game can be killed. And today, that's almost impossible because so much development has been focused on the north. You know? No matter what the tallyman tries to do, somehow nobody seems to listen to them and they just go ahead anyway.

Freddy Jolly, my key informant, stated similar concerns publicly in a letter to the Cree magazine *The Nation* (1997):

> There has been a lot of destruction on our lands. Forestry, mining, roads, the hydro projects and more, these have all changed our lands and our way of life. As a Cree, I have cried when they destroyed our lands. As a tallyman, I have tried in so many ways to stop this but nothing has worked. The development and abuse of our lands continues, and the tallyman no longer has the power to save his trapline.

Interview data indicated that this concern was widespread among tallymen.

The road infrastructure, built to support economic development, had also resulted in a loss of control. A past chief of Mistassini provided the following general perspective:

> Even though the tallyman are there, they give orders, they try the best way they can, whatever authority was handed down to them to look after that land, they're trying their best to control it. But because of access roads, and you know, skidoos—now you can have skidoos leave here and head down at 200 miles [per hour] and no problem, they can . . . they're so economical. And you know, they're all over the place. Nobody can control them anymore.

Interviews with tallymen along the Route du Nord confirmed that the road (while convenient) had opened their traplines to outsiders. Although an environmental and social impact assessment of the Route du Nord was undertaken, document

analysis indicated that it did not identify any possible cultural impacts on the tallymen. Yet my field research indicates that the road infrastructure had directly affected the tallymen. A tallyman explained his concern, "These days, you've got access mainly by roads, helicopters, planes, you name it. How is a tallyman able to control all this?"

On the positive side, in an interview with a member of the CTA, the suggestion was made that the introduction of the ISP allowed tallymen to maintain some economic clout because tallymen have control over who lives on the trapline, and therefore, the tallymen indirectly have control over who receives Income Security. But tallymen who were interviewed in my study did not raise this as a key benefit.

Loss of Resources

Participant observation and interview data indicated that the loss of natural resources was a community-wide problem for the Cree Nation. As one tallyman explained,

> They [the development companies] don't even think about Eenou, how they live in the bush. They destroy all the things that Eenou has. How will they survive in the bush when they destroy the land, the animals? They're destroying our money in our Cree bank in the bush.

Other tallymen agreed that development has brought change to the environment:

> Before. Well before for sure it was different from today, that's for sure. Wherever we went before we were able to notice game quite regularly, wherever we went. At that time there was no disturbance. Because we were able to leave our hunting territory in the spring time when we finished hunting and while we were away there was no disturbance in the territory and when we come back in the fall there's . . . because there was no disturbance of any sort, animals roamed around freely and came near the territories where we were hunting before. That's not possible or hardly possible nowadays because there's the access road here through the transmission line, there's Route du Nord, there's transmission lines . . . practically all the transmission lines except for one right at the end which misses my trapline.
>
> Today, the biggest problems are forestry and mining. The mining I say will be a big problem because I can see the damage it causes. They won't be able to eat the fish because of the pollution it's going to face.
>
> Before there were any roads, it was different. It was good hunting. Even there were lots of birds, geese, ducks, partridge. In some of the areas of the river where there is shallow water, you would see a lot of ducks in the water before there were any roads. . . . Just walking along the shores of the river, I killed 46 geese one time. Where the good spots were, where we used to stay, now they're not there. The spot is not very far from the road. It's the road that affects this. It erases off everything. Where the road is, everything has been erased.

Interview data indicated that tallymen were seriously worried about environmental impacts of roads clear-cutting, mining, and the impact of illegal hunting and fishing. Tallymen whose trapline had been affected by hydroelectric development also were concerned about these environmental impacts. Tallymen also noted that sports hunting (particularly illegal) brought additional pressure on the natural environment.

Loss of a Management Approach?

When natural resources were changed significantly through economic development, tallymen felt that their ability to practice traditional management was directly affected—their place of work was destroyed or harmed, as was their ability to teach younger generations. In the face of environmental degradation from economic development, Freddy lamented, "They're destroying our classroom!" Or similarly, in the wake of a proposed hydro-expansion, Freddy said, "[My trapline] will be flooded. All my tools will be under the water." Tools, in this case, being housed in the land itself. In many cases, tallymen felt that financial compensation could not simply mitigate such impacts. "No wonder we want to keep our land and love our land," an important Cree elder and tallyman said, "That's how we survive—from the land."

Economic development and the JBNQA also appeared to have affected the tallymen's "walking outside" approach to management, which my earlier research has found to be key to their sustainable management approach. According to a past chief and tallyman,

> Before the signing [of the JBNQA], the trappers, the hunters that harvested out there on the land, stayed out there on the land. They walked. They canoed. They did everything with their own physical bodies. And since the signing of the Agreement, there's all kinds of subsidies that came out, financial subsidies for gas and ground transportation, air transportation. And since then, a lot of the trappers and the hunters that used to go out there started to, you know, be overweight. We have problems with diabetes.

While Freddy powerfully talked about how his management knowledge came from "walking," he recognized that he no longer practiced this as fully as he had in the past. At the same time, Freddy felt that the TEK from the elders was so powerful because it stemmed directly from this approach: "So whatever the elders say, it comes true. Because like I said, they have seen this. They have walked on this land—it's called James Bay territory."

Nevertheless, participant observation and interviews indicated that tallymen still spent a great amount of time out on the land "touring" and extensively traversing their local ecosystem, more so than most other Cree community and band council members.

> Like me, as a tallyman I travel. I travel all over my trapline in winter and in the summer and in the fall and in the spring. Cause I know. I see. I have five senses. My trapline is like an office to me . . . we never get books, reading the books about animals, all we see is in our land. The tracks of the animals, that's our book.

Loss of Respect

The loss of natural resources, combined with a significantly reduced control over the remaining resources, appears to have led to a loss of cultural respect for the tallyman. The following quote presents this impact and it was confirmed by many others:

> Even with our own people, it's the same thing. Today, I see . . . it's just a title. It's just a title. It doesn't have the authority or the respect it had at one time. Although I'm hoping that by talking about it, and by bringing it to the attention of a lot of

> people, which I do a lot of the time, that eventually there will be a recognition again at a very high level that yes, if anything needs to be done to that land it has to go through the tallyman. Because it's the tallyman that looks after that land.

Loss of cultural respect in turn further impedes the tallyman's ability to control access to resources. A past chief discussed the relationship between control, respect, and economic development:

> I'm going to . . . point my finger at the signing of the James Bay and Northern Québec Agreement. Because ever since then . . . before signing the Agreement, the tallymen were, had a . . . they had authority. They . . . they knew how to traverse the land. They knew all of . . . the whole territory. And they knew just exactly how many people they can allow to come in and hunt on their territory without damaging or impacting whatever animals that were in that territory. So, they had control, complete control over that territory in terms of harvesting, nurturing, and looking after the land basically and promoting respect for that land. And then the Agreement was signed and you know people had money . . . And basically, the authority of the tallyman started dwindling to the extent that . . . I think that it would be fair to say that we're starting to lose respect for the tallyman . . . within the Cree culture as well. It's not a fair statement to make but it's a fact.

Emotional and Spiritual Loss

Although the loss of resources affects all Cree, my data suggest that the impact was magnified for the tallymen who saw themselves as the traditional caretakers of the land. Without an exception, the Cree tallymen in my study voiced a strong personal identification with their land. Freddy summarized this perspective, "When you live in the bush all year long, watching over it, the land speaks to you. So when the tallymen speak, it is the land speaking."

Tallymen perceived the local ecology as a place of work and a place of rest: "There's healing in the mind in the bush." Environmental degradation thus affected both their work and their sanctuary. A loss or degradation of resources was perceived to be a highly emotional and traumatic event. For example, a tallyman from Nemaska explained, "[Development] weakened the trapper. He doesn't have the full strength to go on. . . . It's like you wounded the man when he sees his land, all chopped. It's like the tallyman doesn't have any rights." Similar to many tallymen, Freddy argued that if economic development continued, "There will be a lot of wounded hunters looking back at where they used to live, what they used to do—hunt, fish, trap."

According to one tallyman, there was an urgent need to

> bring out something to awaken the chiefs to what the tallyman is facing in the bush. The hurts. I'm sure the tallymen are hurt a lot but they [the chiefs] don't seem to understand the hurt they're facing because their heart isn't in the bush. There's a trapper that told me that he has got nothing and they're chopping the trees in his trapline. The chief said he was negotiating but he hasn't got anything. It's just words. You have to act upon your faith.

> A WOUNDED HUNTER
> All his senses will be wounded,
> he'll be a wounded hunter.
> He'll be looking back to his land where he was born and

raised,
the hills and mountains will be turned into islands.
He will look back to the rivers and lakes where he used to set his traps and fish nets,
as a wounded hunter.
A wounded hunter will have no more the sound of rapids or the sound of the ice breaking as it floats down the river.
He'll now look back to his land where he had a good time hunting and fishing, as a wounded hunter.
Looking back to his land where his joy was.
Looking back to his land where he used to walk.
Looking back, watching his family laughing while roasting beaver.
A wounded hunter will only have the tears of his past,
a wounded hunter's mind will be different,
he'll be wandering around to a strange land,
a land that is flooded.
A hunter who has been wounded will be wounded the rest of his life,
until he passes away.

—Freddy Jolly, Cree Tallyman (1992; first appeared in the Grand Council/Cree Regional Authority report on the environmental, economic, and social impacts of James Bay II)

A Schism Within Cree Culture

My data suggested that the ongoing economic development has created internal division within Cree culture. Document analysis of the JBNQA indicated that the importance of the "formalized" chiefs (and Grand Chief) as negotiators has shifted spheres of responsibility and significantly affected the traditional leadership control of the tallymen over natural resources. This was a source of great debate within the Cree Nation during my fieldwork. This shift in decision-making authority caused difficulties. As a past Grand Youth Chief explained,

> Before there was a fight between the Cree and the government. Now there's a fight between the Cree, the government, and the Cree amongst themselves. So the people who will win—I don't know who but somebody's going to win. And I feel it will be the people who want to bring back the role of the tallyman, have it recognized and bring back the laws of the trapline.

A number of tallymen elaborated extensively on this. For instance, according to Freddy Jolly,

> It's different [now]. Like in the olden days, they [the chiefs and tallymen] respected each other. They listened to each other. The tallyman. But now, since they signed the Agreement, there's only the Chiefs. The Chiefs want to control the land. The Cree land. But like I said, there's 291 traplines, 325 tallymen. When they signed the [JBNQA] Agreement, they forgot about the tallyman. 'Cause us, as a tallyman, we watch over our land, like trapline R-21, on my side. So, that's how the tallyman is. We watch over. Even when the government comes and have contracts over here or flooding or building the roads or . . . clear-cutting. . . . When

the government wants to do something, it goes to the Grand Council of the Crees, like Board of Directors, the chiefs, all the chiefs in nine communities, and even the counselors, but they forgot about the tallyman. But now, like what they're doing, it's us, the tallyman, the trappers in our trapline, we're the ones that are affected. We're the ones who's suppose to decide whatever the government wants to do up here, up north, 'cause we know our traplines. We walk on our traplines all winter. We hunt. We fish. We trap. So, it's very hard for them to decide 'cause they only sit in the office.

That's why I say, whenever they want to do something up north, first they should talk to the tallymen and their families. They are the ones . . . they should go to first before any chiefs decide or counselors decide or even people in Category 1. 'Cause we are in Category 3. When they signed the Agreement, they call it Category 3 but for me and my family we call it Category 1. That's the Cree land, James Bay territory. Cause when they signed the Agreement, like I said, they make their decisions right inside Category 1 [in the village and band council]. But I want it differently. I want the tallymen to be there. All the tallymen to be there whenever the contracts, or whenever something's going to come up, or a mine. It's us, the tallymen and the trappers, the full-time trappers, it's us—we have to decide if we want this mine or forestry or road to be built, or NBR, or whatever Hydro-Québec wants to do up north. It's us, the trappers, the tallymen who should sit on meetings and talk about this. And that would be equal. And that would be collective, collective voices. But . . . when they signed the Agreement, and the chiefs want to control the land, they don't see all the Land. They only see in the office and papers. But us, the tallymen and the trappers, we know. We know our lands. On our lands, on the ground, that's where we get our food. Under the water, that's where we get our food.

Other tallymen also discussed this issue in detail. According to one tallyman,

I've always wondered to what extent do the chief and council have authority over the land, when they talk about the land? Because if you look at the political level, they look at the categories of land. You know, Category 1 lands under federal jurisdiction and most of their funding for government services come from that. But does it expand beyond that? You know? If there's development in my territory does the chief have the right to say, "Yes, they can go ahead with that." Or . . . does the tallyman? And I question that. And they say, "Well . . . " They always come back to the "collective rights." Will this affect the rights of all the Crees in the James Bay area. No tallyman can go and make a decision or make an agreement with a company, you know, a development company unless if it's a consensus reached by all the Cree communities. . . . I was there in a meeting where there were a lot of other tallymen from other Cree communities and they were talking about the building of the road, the Route du Nord. And I guess the Grand Chief was there, the Chief, his Chief was there also, and they were all being pressured to come up with a decision on the road. Of course [the tallyman] was opposing it. And then of course, the last person . . . you know, said, "So, should we go ahead with this project? All in favour raise your hand."

That's the wrong system that's used in a lot of decision making within the communities, that's a show of hands. [The tallyman] was saying, "You know, I watched around and I see one guy look around and put his hand up. And the other people started looking around and put their hand up." And he asked them, "You're from Waswanipi. You have a trapline over there. Does it affect you, this road? What gives you the right to decide what's happening on my territory?" And that really hit me when he said that, and that's what's been happening a lot. Sometimes it's the chiefs and the counselors of these communities that pressure other people within the community to make a decision on somebody else's trapline or territory.

> And that's why I was saying we have to get approval from the tallyman. They know what their responsibilities are. They're not there to just go after money. Unless they'd be rich by now!

Data indicated that the CTA did attempt to incorporate the tallymen's perspective through a series of General Assembly meetings where the tallymen can give voice to concerns about trapline management. In addition, the local CTA committee worked with the community band council and tallymen were able to approach this committee with concerns. However, this type of input was not perceived by the tallymen to be the same as their past decision-making authority and this was seen as problematic.

According to a past chief,

> Right now there is an organization in place, The Cree Trappers' Association. But, basically, as far as I know, and a number of people I've talked to, they only look after the interests of the trappers, the hunter. You know? And they don't single out the tallyman and put him up here. And that's what they need to do. And if the Cree Trappers' Association won't do that, then the tallymen themselves have to organize themselves and do that. Because it's difficult right now. . . . I mean, I represent [one of the villages] at the regional government but I don't know if individual tallymen accept me to speak on his behalf about what happens in his territory. . . . [The tallymen's] understanding is that "we're the tallymen and whatever happens in our territory, our trapline, we should have a say in it. And the council, they should just stay back and run the community." . . . Then again, the regional government, the Grand Council of the Crees, have a mandate to protect the rights and interests of the territory, so *they* come in and say, "Listen, you want to talk, discuss development, you talk to us." So there's nothing in place that really clearly defines who talks, who has authority over development.

In some cases, my fieldwork indicated that local band officials tried to act as a bridge between development companies and tallymen. But this was not always successful because the companies often did not act on the advice of the tallymen, even when consulted. One tallyman explained,

> One time a chief came to me and they were telling me to show [the forestry company] the good spots where you have big trees. Then they gave me a map and I drew circles where the big trees were. Then they asked me again, where are the moose yards? Also, where do they go for the mating season? There's only two things that they asked me about: the trees and the moose. Then they told me the meeting is finished, and they went. But after, the moose hunters came in. And then, the forestry company came in and cut down the trees.

In such cases, the local band ran the risk of appearing to represent the interests of company officials rather than the tallymen. In part, this is because companies are under no legal obligation to incorporate the tallyman's advice despite band efforts to gain tallyman input.

Summary

James Bay remains the site of old wounds and much environmental, cultural, and legal controversy. The results of my research indicate that the economic development throughout the past 30 years has seriously affected the Cree tallymen. These findings provide important and new baseline information on impacts from

past development. Perhaps most pressing is the tallymen's loss of control over resources, loss of respect as a manager, and conflict within Cree communities. Economic development and cultural power shifts in Cree society as a result of the JBNQA have resulted in a significant loss of control and a decline in the tallyman's traditional managerial role. Tallymen also experienced strong feelings of emotional and spiritual loss as a result. Finally, these impacts on the Cree Tallymen also have resulted in division and conflict within the Cree culture. Notably, a schism between the tallymen as grassroots local managers and the regional authority of the chiefs and Grand Chiefs and council was identified.

DISCUSSION/IMPLICATIONS

There are two key implications that arise from this research. First, this research has urgent and practical implications for the environmental impact assessment of Hydro-Québec's proposed hydroelectric expansion, the Eastmain 1-A and Rupert diversion project. Second, there are broader implications for the study of ecologically embedded managers such as Cree tallymen.

For the Proposed Expansion Project

Although ignored in most of the research on impacts of economic development, the Cree tallymen are an important cultural and managerial group to consider as economic development plans continue. Such impacts should not be ignored because Cree tallymen have traditional cultural importance for the Cree and also have importance at large to the field of sustainable management (see Whiteman & Cooper, 2000).

Last August, the Canadian Environmental Protection Agency (CEAA, 2003) released directives to guide the preparation of the impact statement for the Eastmain 1-A and Rupert diversion project. These were approved by the Minister of Environment and submitted to the Societe de'energie de la Baie-James (SEBJ), a subsidiary of Hydro- Québec. A review of these directives indicates that the Cree in general must be consulted on the EIA and that the traditional knowledge of the Cree also must be incorporated into baseline information for the assessment and also to help identify key issues. However, there is currently no explicit provision in the directives to consult with the tallymen as a group on the proposed project, and there is danger that their views may become subsumed under the Cree in general.

On the positive side, project impacts are supposed to be identified as a whole and also "according to each family hunting ground" (p. 9). The EIA directives require the proponent to describe the environment in terms of "the land regime in effect and the delimitation of Cree hunting grounds and a description of the use and management of their hunting grounds (current system of Cree hunting leaders)" (p. 23). A description of the social environment, including the transformation throughout the past 30 years, is also required and "this portrait must include the point of views of the Crees, the elderly, adults, youth and women on the development and on the health, the social and economic benefits and impacts of development" (p.38). Hydro-Québec "must also describe the changes that have occurred, over the last 30 years, to the traditional use of the hunting grounds" (p. 42).

Consequently, the findings from my study have direct applicability and value for this aspect of the EIA because it provides important baseline information on the Cree tallymen. These findings are particularly relevant given there is very little pre-

vious research on the impact of development on the tallymen who are the leaders of the family hunting grounds (traplines).

After describing the baseline information, the EIA must then describe the impacts of the proposed expansion project (including the proposed new roads) on the Cree land tenure system as well as on their social, economic, and cultural environment. In addition, the Proponent must "identify and evaluate the Project's cumulative environmental and social impacts combined with the effects of other existing works or activities, that have been carried out over the last 30 years, or that are reasonably foreseeable over the next decade" (p. 48). Although my findings suggest that tallymen were still able to actively pursue their traditional management approach, additional economic development and cumulative impacts may seriously compromise their ability to maintain this role in the future. Certainly, my findings suggest that the proposed expansion project should anticipate that there may be additional impacts for the tallymen in terms of a further loss of control, additional loss of resources (particularly for those traplines most affected), greater loss of cultural importance and respect, as well as individual impacts such as emotional and spiritual losses for Cree tallymen. These impacts may significantly compromise tallymen's ability to enact their sustainable management role at the local level, unless properly mitigated.

The EIA directives are important and clearly set the foundation for including an analysis of the direct and indirect impacts on the Cree tallymen from the proposed expansion. However, Hydro-Québec's previous research (e.g., Guertin et al., 1993) has consistently ignored Cree tallymen as an important and distinct group and instead focused on positive benefits for the Cree as a whole. Yet my findings strongly indicate that past development has seriously affected the tallymen and suggest that future development will likely add to these unless proper mitigation plans are enacted. Without effective mitigation measures, a further loss of control, resources, and cultural respect will likely cause undue emotional and spiritual problems for individual tallymen and could irreversibly compromise their ability to enact in sustainable grassroots local management. These potential impacts must be effectively identified and addressed in the EIA for a fair and equitable assessment of the project to be made.

The Loss of an Ecologically Embedded Management Model

The value of the Cree tallymen goes far beyond the individual trapline. Their ecologically embedded approach to management is valuable to other business managers who are struggling to find their own sustainable pathways. Just as archeological sites have cultural value beyond their specific location, so too do the tallymen.

At a basic level, economic development activities such as mining, forestry, and hydro and sports hunting impact the natural capital of the trapline. In addition, my research findings indicate that economic development has resulted in significant social impacts on the tallymen, particularly with respect to a loss of control over resources and the loss of cultural respect for their ecologically embedded management role. Such social impacts are likely to have additional environmental repercussions because the tallymen operate as grassroots environmental stewards (Whiteman & Cooper, 2000).

In the past, they have accomplished this job successfully (e.g., see Berkes, 1995, 1999). But without the tallyman's organized system of trapline management, the ecological sustainability of the James Bay region may be questionable. Currently, tallymen no longer have the authority to determine what happens on their lands—in many cases, the chiefs and Grand Council now make economic development decisions that would historically have been under the tallyman's geographic sphere of control. Without control, sustainable resource management becomes difficult. If tallymen cannot control access to resources or decisions on natural resource development, how can they continue to act as environmental stewards?

The situation is complicated by the confusion about who has the right to negotiate with development companies—the tallyman, the chiefs, the Grand Council of the Crees, or some combination? The new Agreement for the expansion project (and other future economic development), called "Peace of the Brave," does not resolve this issue. Although the Peace of the Brave recognizes Cree ownership of natural resources, it does not recognize the tallymen's traditional decision-making powers, which are superseded by the Grand Council, local chiefs, and the Cree community at large (across all nine villages). This problem is exacerbated by the increasingly open access to the traplines provided by the expanded road infrastructure to be used to support hydroelectric expansion. This may result in a further shift toward "open access," resulting in yet another case of the "tragedy of the commons" (Hardin, 1968).

The proposed Eastmain 1-A and Rupert diversion project will directly affect a number of traplines, and thus directly affect the management practices of the tallymen in charge of these ecologies. This includes trapline R-21, where Freddy Jolly, my key informant, resides and where I extensively studied the tallyman's ecologically embedded approach to management. This project will seriously affect Freddy's trapline: If the EIA is approved, the north section of trapline R-21 will be under the water, flooded by part of the diversion bay. The classroom will be filled, but not with students. The Rupert River, which runs through the rest of the trapline, will be reduced to a small flow. The loss is not simply academic. Real-world sustainable managers, such as Freddy, are not common. Their practical models of sustainable management are extremely useful for learning about social-ecosystem resilience and the role of the sustainable manager (see Whiteman & Cooper, 2000).

Until a comprehensive EIA (one that includes impacts specifically on or for tallymen) is undertaken, the extent of the impacts on the management practices of the tallymen is unclear. However, what is clear is that past impacts have already compromised the tallymen's ability to enact their ecologically embedded approach to management. Although historical development, such as the fur trade, had many impacts on the Cree, the tallymen's ecologically embedded approach was able to survive, partly because it built on this preexisting Indigenous approach to land management.

Yet economic development throughout the past 30 years has ignored this preexisting approach and legally shifted authority away from the tallymen toward less ecologically embedded decision makers. The costs of this for the Cree, for the sustainability of James Bay, and for the world at large are not known. Yet, as the tallymen's approach is lost, so too is the managerial wisdom and practices of this local sustainable manager. The concrete examples of Cree tallymen provide important beacons for practical guidance on sustainable management and must be protected because there are so few other examples.

CONCLUSION

When the late Québec Premier Robert Bourassa unveiled his master plan for the James Bay Hydroelectric Project, "THE WORLD BEGINS TODAY" flashed on screen (Busby, 1991, p. 8). In his dramatic introduction, Bourassa (like many organizational and political leaders) demonstrated his ignorance of (and disregard for) the preexistence of a natural world—the invisible "other" that came into being only when its landscape became ripe for economic development. And predictably enough, for the inhabitants of this "other" world (plants, wildlife, tallymen), another kind of world did begin that day—and the environmental effects of it were immediate and monumental. The social and cultural impacts have taken more time to be recognized, particularly for the Cree tallymen. My study attempts to fill this gap by providing ethnographic research on the impact of past development on Cree tallymen from the perspectives of the tallymen themselves.

This research is important because tallymen continue to have important cultural significance to the Cree and also broader significance to the field of sustainable management (Whiteman & Cooper, 2000). Furthermore, findings from this study provide valuable and essential baseline information for the EIA of the proposed Eastmain 1-A and Rupert diversion project. The ongoing survival of the tallymen's ecologically embedded management approach has value to the Cree and to the world at large—and a comprehensive approach to EIA must recognize that fact.

NOTES

1. See http://www.ceaa.gc.ca/; http://www.menv.gouv.qc.ca/communiques_en/c20030228-eastmain.htm; and http://news.Nationalgeographic.com/news/2002/07/0702_020702_canadianrivers.html, accessed March 3, 2004.

2. See http://www.ottertooth.com/Reports/Rupert/News/rupert-news1.htm, accessed March 3, 2004.

3. The origins of this ecological collapse are not fully clear, although they can be attributed in part to the influence and aggressive activities of White trappers in the area (Feit, 1995). However, Cree trapping activities were also a factor, which points to the fallibility of Cree methods. Yet the Cree were in support of the conservation strategy and some communities had already reached a consensus decision to stop trapping prior to the government's actions (Feit, 1995). Furthermore, there is historical evidence that the Cree practiced beaver conservation in the mid-1800s (Francis & Morantz, 1983). One historical strategy utilized by the Cree was to leave a portion of their lands untrapped. This strategy continues today on many traplines.

4. See the Canadian Environmental Assessment Agency (CEAA) Web site at http://www.ceaa.gc.ca/010/0001/0001/0017/project_e.htm, accessed March 2, 2004.

5. See http://www.firstnationsdrum.com/Winter02/CovPower.htm, accessed March 4, 2004.

6. See http://www.gcc.ca/gcc/eeyoueenou/eeyou_nation_feb.pdf, accessed March 4, 2004.

7. R. J. Preston (personal communication, 1997) notes that many of these chiefs would have, in all likelihood, also been hunting group leaders during the rest of the year.

8. The Income Security Program provides basic income to trapping individuals and families, provided they stay in the bush for a specified period each year.

9. In providing this ethnographic account, I recognize the limits of ethnographic authority. Although I have attempted to provide many direct quotes from the tallymen themselves, this account remains my interpretation of these research findings.

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