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**CO-MANAGEMENT: THE EVOLUTION OF THE
THEORY AND PRACTICE OF
JOINT ADMINISTRATION OF LIVING RESOURCES**

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A NOTE ON THE TASO PROGRAM

McMaster University's Research Program for Technology Assessment in Subarctic Ontario (TASO) is a long term program of research to investigate the social, economic and environmental aspects of resource development in northern Ontario.

TASO began in 1982 with research in advance of planned construction by Ontario Hydro of new dam sites and site extensions in the Moose River drainage basin. Since then, the Kierans scheme for impoundment of James Bay to export freshwater to the United States market, the announcement by the Government of Quebec of the second phase of the James Bay project, and the issue by Ontario Hydro of its Demand-Supply Plan for the next twenty-five years, have all focused increased attention on the James Bay watershed.

In 1990, TASO entered a new stage of its research, concentrated on the socio-cultural and economic determinants of sustainable community development in the Cree villages of the Mushkegowuk Council region. The group is studying and analyzing the baseline characteristics of Cree communities, their goals and aspirations, the obstacles to their development, and possible solutions and opportunities for economic growth and independence. TASO members will provide expertise and information about economic and institutional mechanisms that may help the Cree to achieve their joint goals of greater wage and business employment and increased, more secure access to the natural resource base and traditional pursuits.

TASO research reports are available upon request, at a modest price.

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ABSTRACT

The joint administration or cooperative management (co-management) of living resources is the potential solution to the contentious divergence between two alternative systems: centralized, state-level versus local-level and community-based systems of resource management. But co-management does not have a simple prescription. There are "levels" of co-management, from informing and consultation, through degrees of power-sharing between the central government and local resource users.

Studies in the James Bay area indicate that the capability of local-level management or self-management is important not only from a fish and wildlife management point of view. It is also important to the social and economic health of many native communities. Because of the continuing importance of living resources, the economic development of native communities is linked to their ability to manage their own resources. This, in turn, is linked to larger questions of self-government.

CO-MANAGEMENT: THE EVOLUTION OF THE THEORY AND PRACTICE OF JOINT
ADMINISTRATION OF LIVING RESOURCES

One of the most exciting and innovative arenas for policy development in the Canadian North is co-management or joint-administration of living resources. The roles and viewpoints of government departments and of native people regarding resource management have been changing rapidly. As land claims are settled, there will be considerable redistribution of resource management authority since land claims agreements have included provisions for increasingly greater local control over resources¹. But even in areas not subject to native land claims, such as northern Ontario and northern Manitoba, there are new policies favouring more user-group involvement in resource management, cooperative management and devolution in general. To implement such co-management systems, however, there is need for new theory and for the synthesis and evaluation of co-management experience. Yet, very few studies have addressed these concerns.

In this paper we will further explore, using the example of Ontario's James Bay region, the idea that co-management and self-management are not merely matters of wildlife use. Indeed, self-management is at the core of the social and economic health of many native communities, and is tied to larger questions of self-government. Thus, the cooperative management of resources becomes a key issue (since animals have been so important in the traditional economy) in the implementation of principles of

environmentally sustainable, culturally appropriate economic development.

The discussion starts by exploring the role of native groups in the management of the resources they use. The full range of alternative possibilities run from "none at all", to complete self-government that includes sole jurisdiction over resource management. In reality, what have been evolving in the Canadian North are a number of arrangements in between: a sharing of management responsibilities by means of co-management regimes.

COOPERATIVE MANAGEMENT: STATE-LEVEL AND LOCAL-LEVEL SYSTEMS

Co-management basically involves some combination of two "pure" management alternatives: local-level and state-level systems. Several authors have compared and evaluated these two modes of resource management as they apply to the Canadian North². State-level management is carried out by some centralized authority, e.g. the federal government or territorial or provincial government. It is based on scientific data or on best estimates that are deemed most relevant to the resource that is being managed. Enforcement is most often carried out under the authority of government laws and regulations.

Local-level management systems, where they exist, are based on self-regulation. They are decentralized; they tend to be consensus-based and enforced by social pressure. Some government managers do not regard local-level systems as "management"

systems, as they are not based on formal science but rather on customary practice, cultural tradition and the local knowledge of the land and the animals.

Conflicts between the two modes of resource management are not merely philosophical. At one level, they concern the question of land and resource use rights.³ At another level, these conflicts are a symptom of the deep schism between the two parties regarding the validity of native peoples' world view. According to Keith and Simon:

The behaviour of public officials -- most notably of wildlife biologists and marine biologists -- in conservation debates and disputes often displays a detached arrogance, offensive to northern aboriginal peoples by its insistence on Western scientific methods as the sole measure of accuracy, and a thinly veiled disdain for traditional knowledge of northern people.⁴

One of the fundamental challenges of co-management is the mutual recognition of the strengths of each of the two systems of knowledge. In some ways, the two systems converge, and to a significant degree they are complementary.⁵ In practice, local-level and state-level management systems often interact; management decisions may be affected by local knowledge of the users, for example, or more typically, local practice is modified by government regulations regarding a particular resource.

This paper emphasizes some of the advantages of managing resources cooperatively, without advocating co-management as a panacea. Rather than stressing the divergence between local-level and state-level management systems, this paper emphasizes the convergence of the two systems, and the constructive role that

university research can play in bridging the gap between the theory and practice of co-management.

There is no widely accepted definition of co-management.⁶ The term broadly refers to various levels of integration of local and state-level management systems. Co-management will be used in this paper to mean the sharing of power and responsibility between the government and local resource users. A more precise definition is probably inappropriate because there is a continuum of co-management arrangements from those that merely involve, for example, some local participation in government research being carried out, to those in which the local community holds all the management power and responsibility.⁷

LEVELS OF CO-MANAGEMENT

Arnstein's "ladder of citizen participation", a typology often used by planners, is a useful tool to analyse co-management as well.⁸ There are eight rungs on Arnstein's ladder, each corresponding to the degree to which citizens could share power in government decision-making. The two bottom rungs (which Arnstein calls manipulation and therapy) describe levels of contrived participation or essentially non-participation. The three middle rungs (informing, consultation, placation) describe degrees of token power-sharing. The top three rungs (partnership, delegated power, and citizen control) indicate increasing degrees of real power-sharing.

In a similar way, levels of co-management may be indicated as rungs of a ladder (Figure 1). Leaving out the equivalent of Arnstein's "contrived participation", the ladder starts at informing, which is the first level at which the management process is opened up to users. Information is supplied to them on existing rules and regulations, schedules and changes. At this stage, response of users may be sought and facilitated, but more likely, there will be one-way communication, often in technical jargon.

Consultation involves an explicit attempt to obtain the views of users. The community may be consulted about a development project, or change in hunting regulations, or there may be feedback of research results. There is face-to-face contact. Resource users may be heard but not heeded, and perhaps not even understood.

Cooperation is the stage at which there is more than just talk; parties may work on a conservation brochure together. The use of local environmental knowledge and of native research assistants falls into this stage. But typically, the research being carried out follows the government agenda. Locals are involved at a low level as assistants or guides. Nevertheless, the mere fact of cooperating on a project means that there is a softening of attitudes. Mutual disrespect that often characterizes the lower rungs gives way to some appreciation of the abilities of the other party.

The communication stage marks the start of two-way

information exchange. Research agendas or resource management decisions begin to take into account the expressed needs of the community. Local concerns are deemed legitimate and taken seriously. Local knowledge is not merely used to aid research but also to respond to community concerns. Nevertheless, the government agency still retains all powers of decision-making.

Advisory committee is the stage at which effective partnership in decision-making starts. There is an agreement to share both power and responsibility for resource management through joint boards or committees. Such joint bodies often come about as a result of a land claims agreement or to try to resolve a resource management impasse. At this stage, there is a search for common objectives, as is often done in negotiation and mediation. But co-management is often ad hoc and sectoral. The joint committee has advisory powers only; it recommends rather than makes decisions.

Management boards represent a higher rung if they have more than a merely advisory function. At this stage, the community is not only searching for common objectives but also acting on them. Further, local users are involved in policy-making as well as in decision-making. Board decisions are usually binding.

In the last rung, joint decision-making is institutionalized and there is a partnership of equals. The ladder splits into two branches to accommodate two different possibilities: community control and partnership. In situations in which resources are manageable locally (e.g. beaver), most or all management power is

delegated to the community. With such local resources, there is full community control which is legally legitimized by central government. In other situations in which resources cannot be managed locally, as for example with migratory species (e.g. caribou or Canada geese), resource users participate in decision-making as equal partners. This last stage in the co-management ladder follows the principle: "as much local-level management as possible; only so much government regulation as necessary".⁹

CO-MANAGEMENT IN PRACTICE

Few authors have tried to evaluate co-management experience. Table 1 from Osherenko is a summary of seven co-management regimes, five of them from the Canadian North and two from Alaska.¹⁰ Pinkerton's Cooperative Management of Local Fisheries¹¹ covers some of the seven cases in more detail, and provides several more examples of co-management from Pacific coast, two from Atlantic coast and one from Great Lakes area fisheries. Native People and Renewable Resource Management includes examples of wildlife co-management in the Wood Buffalo National Park area and polar bear co-management on Baffin Island.¹² Drolet and colleagues discuss three wildlife joint management cases (eiders, beluga whales, caribou) from Northern Quebec.¹³ Pearse refers to salmon co-management in the Cascapedia River in Quebec, and the creation of a corporation (société) with exclusive authority to manage the river's fishery, as a promising model for creating

property rights to solve the ubiquitous problem of open-access.¹⁴ A new and promising area for co-management applications is the use of local, traditional knowledge in impact assessment.¹⁵

Some authors have included under co-management only those cases in which there is an institutional arrangement between governments and user-groups covering specific geographic regions.¹⁶ Such formal co-management arrangements are no doubt useful for real power-sharing which automatically elevates the relationship to rungs 5 to 7 on the co-management ladder.

There are many cases, however, in which elements of joint management exist also in the absence of formal co-management agreements. These include cooperative research undertaken jointly between government and native parties. There are many examples of this, for example, in the Northwest Territories. In fact, much of co-management undertaken in the mid-1980s by the NWT Renewable Resources Department involved cooperative research.¹⁷

There are other examples involving elements of joint management but which have not been identified as such. A case in point involves the management of musk-ox in Northern Quebec. From 55 musk-ox initially released during 1973-83, a wild herd came into being near Kuujuaq which numbered at least 148 animals in 1985, with 26 percent calves. While the local Inuit of the area have a right to harvest under the James Bay and Northern Quebec Agreement, they seem to be deliberately refraining from exercising this right¹⁸; otherwise, the herd would not have increased as it has done.

Other examples with elements of joint jurisdiction involve habitat management by native groups. In a number of Ungava Bay area streams in which barriers prevented Arctic char from reaching overwintering lakes, the local Inuit have taken the initiative to clear the channel, forming crude but effective fishways.¹⁹ The authors noted that such work is facilitated by the James Bay and Northern Quebec Agreement which gives local hunting and fishing committees the responsibility of looking after community common interests.²⁰

Such initiatives are similar in nature to stream rehabilitation undertaken by community groups under the Salmonid Enhancement Program (SEP) in British Columbia and the Community Fisheries Involvement Program (CFIP) in Ontario. They all fall under the general category of volunteer environmental stewardship, as Lerner calls them,²¹ and help us remember that co-management is not exclusive to native resource users.

Few studies have addressed systematically the benefits of self-management and co-management arrangements. In this paper, we examine this subject in terms of its ecological, social/cultural, and economic dimensions, with special reference to our current project in the James Bay region of Ontario.²²

CO-MANAGEMENT AND CONDITIONS FOR SUSTAINABILITY

Most of the resources used by northern native groups fall in the category of common-property: it is difficult to control

access to these resources and each user of the resource can subtract from the welfare of other users. These two conditions define common-property (or common pool) resources: they also provide clues about how the commons dilemma can be averted: (a) eliminate open-access conditions and institute resource use rights, and (b) protect or nurture local resource management institutions that enable users to make and enforce resource-use rules among themselves.²³ These, then, are the pre-conditions to ecologically sustainable resource use, according to common-property resource theory.

A common feature of many native resource-use systems, from Pacific salmon rivers to eastern Subarctic trapping areas, was the communal control of the resource. It was not, however, "property" in the Western or Euro-canadian sense of the term.²⁴ Holders of beaver trapping areas among the Cree of eastern James Bay, for instance, were not owners of that resource but more appropriately, "stewards".²⁵ These stewards were in charge of enforcing community norms, rules and regulations which were often both comprehensive and detailed.

Lands, waters and animal populations used by northern native peoples are non-exclusive resources, the property of all. They are indivisible and do not lend themselves well to management by instituting private property and individual rights. Rather, these kinds of resources often require collective decision-making and enforcement of the agreed-upon rules among group members.²⁶ Solutions to the commons dilemma require cooperation and rules

that result in win-win outcomes.²⁷

It is not surprising, therefore, that northern native societies such as the James Bay Cree (as well as many other Amerindian groups) are often characterized by communitarianism, strong group coherence, emphasis on social obligations, consensus-based decision-making, high degree of social conformity, and strong social sanctions within group. These are all characteristics that have survival value in societies dependent upon indivisible, non-exclusive resources.

The Cree people of eastern Subarctic Canada traditionally had, and to some extent still have, their own way of managing animal resources. The sustainability of specific animal populations was seen as a function of spiritual reciprocity between hunters' respect and gratitude and animals' love and generosity.²⁸ As long as hunters took what was offered to them in an ethically correct way, animal resources would be renewed and animals would continue to make themselves available to hunters.

Relations among humans closely paralleled those involving hunters and animals, and were based on a similar principle of continuity involving respect and reciprocity. Social relations were governed by the maintenance of respect for the autonomy of others and willingness to share both in hardship and plenty.²⁹

The indigenous land use system in western James Bay is not known in detail. This area, known as the Mushkegowuk region (from the Cree word, muskeg), was home to the hunter-gatherer

forefathers of some 7,000 people who live today in nine communities. The various family groupings had traditional hunting areas. These were not territories with fixed boundaries, and land use was fluid. Ethical principles for hunting provided guidance and restraint. The principle of respect governed agreements regarding the location and activities of hunting groups.³⁰

Hunting leaders, called okimah, coordinated both the hunt and social relations. The okimah were the spokesmen for a generally accepted sense of correct practice, and were respected for their ability to make good decisions regarding this practice. Each hunter's connections with land and animals were the focus of hunting ethics, and the hunting group leaders were the exemplars. The okimah showed leadership but decisions were accepted by consensus; the okimah did not have the right to impose decisions on others.³¹

This traditional land use and hunting leadership system contrasts sharply with the present regime of provincially-regulated and individually-held registered trapline areas. The allocation is done by the Ontario Ministry of Natural Resources which retains the right to re-allocate these hunting-trapping areas without regard to traditional land tenure.³²

On the other side of James Bay, the Cree people of Quebec have at present a very different hunting-trapping territory regime. Each community has an association of hunters and trappers, and each registered trapline area is controlled by a communally accepted hunting leader or steward whose function is

very similar to that of the ancient okimah of western James Bay. The allocation of hunting-trapping lands is done by the community, and old leaders can choose their own successors; this is not a function of the provincial resource management agency. The role of stewards and the hunting-trapping territory system is now legally backed up by the James Bay and Northern Quebec Agreement.³³

In contrast to the western James Bay area, where hunter-trappers have little security of tenure and cannot usually plan ahead, in the eastern James Bay area, community-based management is possible. Harvey Feit has described in some detail several hunting-trapping practices which require that hunters forego short-term benefits in return for long-term sustainability. For example, the rotation of segments of one's hunting-trapping area (commonly used throughout eastern James Bay) is one such practice. Hunting areas which are "rested" by rotation become more productive, and Feit's data show that beaver harvests are significantly higher if an area is rested for two or more years, as compared to those trapped year after year.³⁴

Security of land tenure makes long-term resource management possible, not only for individual stewards but also for associations of hunting leaders. In the mid-1980s, hunter-trappers in Chisasibi noticed that beaver populations in the hunting-trapping territories closer to the community were declining. After conducting a detailed inventory of beaver lodges, the Cree Trappers Association at Chisasibi decided by

consensus to close the beaver season in these areas until populations recovered. This they did, and they enforced among their members the trapping ban until, three years later, the monitoring of lodges showed that trapping could resume once again.

If a few hunter-trappers had ignored or circumvented the ban, this conservation measure would not have worked and a typical "tragedy of the commons" would have ensued. Predictions of the common property resource theory were upheld: such management would work only if (a) access is controlled and resource-use rights are defined, and (b) users are able to make and enforce resource-use rules among themselves.³⁵

By contrast, in the Mushkegowuk region, neither condition is met, and such conservation measures cannot be taken, except by the provincial management agency. A consideration of information requirements and problems of enforcement would favour local-level management over government-level management.

It is partially in recognition of this need for self-management that the policies of the Ontario Ministry of Natural Resources have become more favourable to devolution and co-management. There have been discussions about the possibility of a regional native association, Omushkegowuk Harvesters' Association, playing a more active role in beaver management, and two co-management arrangements are being developed, one involving a caribou herd at the Manitoba-Ontario border on the Hudson Bay coast, and another to secure input from three Cree communities

near the Polar Bear Provincial Park for the ten-year planning review for that park.³⁶

THE CREE'S STAKE IN THEIR SIDE OF THE CO-MANAGEMENT EQUATION

The advantages of self-regulation and co-management are centered around the importance of environmental, social and cultural integration: the core of Cree culture is traditionally based on land stewardship activities, skills and ethics. Supporting and strengthening the value and practice of land skills and ethics directly supports and strengthens Cree leadership qualities and the capacity for self-government, and indirectly supports the Cree's stake in Canadian society.

Leadership in resource management strengthens community leadership, and strengthens the confidence of the community as a whole, partly through peoples' recognition that these activities are competently, successfully done, and partly in response to the recognition by non-Cree experts and administrative authorities, of Cree competence and traditional knowledge.

Cree competence in the management of land resources is central to their traditional culture, which is now partially alienated by external state-level over-regulation, especially the registered trapline system administration which officially began in 1948. In the words of one Cree leader:

... then some land in some areas became overtrapped, and they were frustrated to have to stay in that one spot and not move inland. I hear these complaints all over Ontario. My grandfather signed the treaty, but the freedom

to continue traditional economic harvesting pursuits has not been respected since the treaty. We people should not be governed by MNR people; we should govern our land.

Chief Reg Loutit,
Attawapiskat, 1990.

The imposition of state-level control over land use by the Ontario Ministry of Natural Resources has been compounded by other, more appealing but ultimately alienating factors, such as town-oriented material conditions, including housing, utilities, TV, and other conveniences. From this have grown new urban social activities and values, including school goals and learning styles, and the assumption by some people that the future is a good job, not in the bush.

With setting up the schools, it was like cutting the lifeline (of trapping as a way of life) of the Cree people. (We remember how hard people tried to keep this going...) the people starved and even died, when the government was not looking after them. I do not want to see the end of trapping. Limiting people to territories caused great hardship. Before the trapline designation came into being, they did much better and respected each others' rights.

James Wesley, Cree Elder
Attawapiskat, 1990

But we know that cultures must always adapt, and the important question is whether northern native towns will adapt by cutting themselves off from traditional activities (as with many southern reserves), or keep alive a guiding, stabilizing, meaningful continuity with traditional abilities and their economic benefits, and with respect for social and spiritual values. The connections to the land are essential to this continuity.

Renewing Cree leadership is necessarily a bicultural undertaking. It is achieved partly by work in Canadian-style administrative bureaucracies, such as band councils and the Mushkegowuk Regional Council. It will be further achieved by developing and sustaining effective co-management programs that include economically and environmentally successful land resources stewardship. The Omushkegowuk Harvesters Association is forming with this as a major goal. With the addition of a small core of staff for continuing work on environmental research and information management, perhaps along the lines of the Manitoba Keewatinowi Okimakanak's Natural Resources Secretariat³⁷, the means would exist for the administration of culturally appropriate and scientifically sound co-management of living resources in the western James and Hudson Bay region.

Further, effective land stewardship requires people who are active on the land. Whereas state-level administration simply lacks the needed staff, local-level administration provides a continuing, ample number of competent people. Skills training can be provided easily and effectively by both parties in this sort of co-management. This may be the vehicle for a late recovery from the state-level interventions of traders, missionaries, and other agents, and especially a relief from the Provincial system of registered traplines.

COMMUNITY DEVELOPMENT

The remote Cree communities of the James Bay lowlands are

seeking to promote local economic opportunities and stability. As the Cree perceive them, the basic parameters of community economic development involve reduced external dependence and greater local control, greater access to and use of locally available resources, and protection of Indian culture and traditional pursuits. There is a distinct need to develop and expand the economic base of these native communities with due regard for their social and cultural priorities, and for the contribution of traditional economic activities to the stability of community income and employment.³⁸

These goals have been difficult to achieve, in part because the traditional rules and conventions of Cree resource use have been overtaken throughout much of the twentieth century by regulatory decision-making external to the Cree communities. The jurisdiction of the Ontario Ministry of Natural Resources over provincial Crown lands, for example, has left the Cree dependent on external authority for the development and implementation of the rules of harvesting living resources, and in most cases MNR's rules have supplanted rather than built upon traditional Cree ones. Even though MNR has tried to manage resource use with a comprehensive mandate, its rule-making and field operations have frequently been centralized and bureaucratic, with limited discretion for field officers in the handling of Cree "violators" of government restrictions.

Such external interventions are often found in common property resource cases, because they are thought to be necessary

in the interests of economic efficiency and equity, when local-level management structures have broken down and over-harvesting becomes a threat. There is evidence that this had occurred in the Cree territories of northern Ontario during the 1930s and early 1940s, as a result of incursions by outsiders, before the current trapping territory system was introduced by MNR.

Nevertheless, external authorities are no guarantee of efficient resource use. For one thing, the costs of top-down management tend to be very high, especially in a case where the external manager is distant and lacks on-the-ground expertise. Moreover, to the extent that external authority tends to undermine traditional rules governing access to the resource base, it may be an imperfect and costly substitute for local custom and rules of the hunt in curbing free rider problems; loss of respect or reputation, the traditional curb, was readily enforceable, but has now become less immediate to the "violator" than the penalties for breach of external laws, which are by all accounts more difficult and costly to enforce. Hence, absentee management is likely to impose high transactions costs, induce rent-seeking behaviour on the part of users, and to yield uncertain benefits.³⁹

In any case, the Cree had demonstrated historically their proven ability to coordinate hunting and trapping and to enforce customary rules for exploiting the resource base, using local institutions such as the okimah. Co-management, relying on traditional bush skills and land stewardship, may provide more

efficient management of the resource base. It will certainly be more aware of and compatible with local needs and it may well enhance the level of bush skills in the communities by increasing the number of local people effectively occupied in land stewardship activities.⁴⁰ More effective stewardship will increase compliance with the rules of the hunt, and improve the productivity of the resource base, as evidence from other jurisdictions suggests.

The benefits of greater Cree participation in and responsibility for control of local resources are likely to be both economic and non-economic. Co-management will help to reverse the erosion of traditional leadership among the Cree, and to restore these leaders to positions of greater influence. In the more strictly economic sphere, co-management arrangements will likely give Crees greater scope for making successful applications on behalf of resource-based business opportunities.

In particular, we would expect Cree businessmen and women to take new initiatives with small-scale enterprises, compatible with renewable resource use and with traditional Cree culture. The possibilities extend beyond trapline and hunting activities. Tourism and outfitting, for example, were singled out by the Ontario Royal Commission on the Northern Environment as a priority for northern development. The possibilities of expanded wilderness experience tourism in Polar Bear Provincial Park are already under discussion. Again, the experience in northern Quebec with caribou may commend itself to a co-management regime

responsible for the caribou herd in northern Ontario and Manitoba. Local exchanges of fish, firewood, and game meat may be expanded under a more culturally attuned management system, just as new craft industries could emerge as by-products of such traditional harvesting pursuits (e.g., furs in handicrafts and souvenirs, goose down in clothing and comforters). And, under co-management, the environmental impacts of development projects on local populations can be given greater emphasis; Cree concern about developing uranium deposits in the vicinity of Hawley Lake and the likely problems of controlling the toxic wastes from mine tailings is a case in point.

Co-management is a building block to an expanded, firmer foundation for the local economies of the remote Cree communities of the Mushkegowuk Region, and to the realization of Cree goals of increased self-determination and cultural autonomy.

FUTURE PROSPECTS: CO-MANAGEMENT IN CONTEXT

To summarize, local-level resource management and co-management may be seen as promoting ecologically sustainable use of the environment, social health and cultural sustainability of the local population, and their economic well-being. However in spite of recent shifts in resource management policy, local-level controls and co-management still remain elusive in many parts of the Canadian North. There are a number of reasons why progress has been so slow. We will touch upon a few of these.

First, as the discussion on the Ontario James Bay

(Mushkegowuk) region demonstrates, there is a long history of learned dependency. Local native institutions such as those that governed land use have been rendered relatively ineffective as a result of outside intrusions and, later, centralized resource management that took over local authority and responsibility. Instituting local-level controls once more, will require reversing centuries-old trends and overcoming distrust built up over the years.

Second, regarding comprehensive agreements (in parts of the North not covered by previous treaties), progress has been alarmingly slow. According to the report of the Task Force to Review Comprehensive Claims Policy, between 1973 and 1985, "the federal government and aboriginal groups have spent more than \$100 million on negotiations, yet have produced only three agreements, while twenty-one claims are under, or wait, negotiation."⁴¹

In other parts of the North in which treaties exist, there have been some area-specific or resource-specific co-management agreements. The Beverly-Kaminuriak caribou management regime (Table 1), which is not tied to a modern comprehensive land claims agreement, is a case in point. In other cases, co-management regimes have been attempted but failed. An example is the initiative in northern Ontario to re-define native fishing rights and to institute co-management.⁴²

A major barrier to local-level management of resources by native groups is the interest in the same resources by other,

non-native groups. Under Canadian law, wildlife and fish belong to all citizens. As discussed by Peter Usher in some detail, "Canadian law does not recognize the right of ownership in any wild animal or fish until it is captured." Further, resource management and regulation is the responsibility of the state on behalf of all its citizens.⁴³ But as pointed out, for example, by Asch, many native groups do not consider wildlife as state property: "it would seem that the Dene perceive themselves as "owning" the uncaptured animals on their land, not as individuals but as a collective."⁴⁴

Thus, proprietary interest in "their" wildlife by non-native sport hunters or naturalists makes little sense to many native people (and the interest of animal rights groups makes even less sense). But native groups are not only up against these other claimants, they are also up against scientists who consider the scientific management of these resources as part of their mandate and responsibility:

While it is important that the user-groups participate in the designing of regulations, it is essential that management be based upon facts obtained through scientific research.⁴⁵

Furthermore, scientists have been concerned that rapid population growth in northern native groups may be setting up a Malthusian trap:

At present, because aboriginal hunting rights prevail, there are few limitations on seasons for numbers of animals that can be harvested by natives. However, the native population is rapidly increasing and, with modern technology, has so greatly improved its ability to harvest wildlife that indigenous knowledge of natural history and traditional hunting practices may be inadequate for coping with future

demands on the resource.⁴⁶

It is probably fair to say that the rights of southern non-native Canadians over northern wildlife or the Malthusian concerns of resource scientists are not high on the priority list of northern native leaders. For many, the issue of rights is at the top of the agenda: northern natives are not merely one of the "user-groups" in the managers' parlance, they are the owners of the resources of "their" land. "Devolution" in the sense of government giving rights to native groups is a wrong-headed way of posing the issue. According to one Mushkegowuk region native leader, "I already have rights; you cannot give me rights but you can recognize them." In this view, the issue of co-management is one of the more tangible aspects of sovereignty and the applicability of the laws of the land, over and beyond the boundary of the reserve. Genuine co-management is possible only with native self-government over the land traditionally held by the native group: "co-management has to recognize co-jurisdiction."⁴⁷

In Ontario's James Bay (Mushkegowuk) region, as in much of Canada's North, the local economy is characterized by a combination of land- and animal-based activities, government transfer payments and wage work. Community and regional economic development is likely to succeed only through an understanding and extension of this process. The evolution, not just of more local control, but also of the capability for local control and self-management is a critical part of this process.

Nowhere in the Canadian North does the local population depend entirely on land and animal resources. Many native communities obtain the bulk of their protein from wild resources,⁴⁸ and a mixed economy exists everywhere. Greater local control over resources, common property resource theory tells us, would not lead to resource depletion but more likely to sustainable use. This, in fact, is what has been happening in the eastern James Bay area under the James Bay and Northern Quebec Agreement of 1975. Despite considerable population growth since 1975, and the Income Security Program for hunters, none of the animal populations have declined (except those affected by the hydroelectric project⁴⁹), and many have increased.

Part of the reason for this is that Cree hunting lands are not open-access, and population growth does not automatically translate into larger numbers of hunters who will eventually exceed the carrying capacity of the land, in the simplistic prey-predator sense that some biologists have framed this issue.⁵⁰ Besides, not everyone wants to become a hunter; it is hard work.

The population living largely off the land and supported by the hunters' Income Security Program as provided for by the Agreement, has remained fairly steady. The proportion of the total population living off the land, however, has declined,⁵¹ highlighting the importance of the development of other sectors of northern regional economies. Greater self-management in all aspects of northern native life, and government-local partnership in land and resource management in particular, is likely to help

speed up environmentally sustainable, culturally appropriate regional economic development.

In summary, the potential for development of higher level co-management arrangements for the stewardship of the land resources of western James Bay, and the North in general, is promising in terms of political fairness for native people; it is also practical good sense. Co-management at the joint decision-making level has the potential ability to reverse Europeans' and Canadians' historical tendencies to preempt roles of leadership, expertise, and responsibility for the northern economy.

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NOTES

1. Ian Stirling, "The Future of Wildlife Management in the N.W.T.," Arctic, 43 (1990), pp. iii-iv.
2. Harvey A. Feit, "Conflict Arenas in the Management of Renewable Resources in the Canadian North," in National and Regional Interests in the North (Ottawa: Canadian Arctic Resources Committee, 1984), pp. 435-458; Milton M.R. Freeman, "Appeal to Tradition: Different Perspectives on Arctic Wildlife Management," in J. Brosted et al., eds., Native Power (Bergen: Universitetsforlaget AS, 1985), pp. 265-281; Peter J. Usher, "Indigenous Management Systems and the Conservation of Wildlife in the Canadian North," Alternatives 14:1 (1987), pp. 3-9.
3. M. M. R. Freeman, "Graphs and Gaffs: A Cautionary Tale in the Common-Property Resources Debate," in F. Berkes, ed., Common Property Resources (London, Belhaven, 1989) pp. 92-109.
4. Robert F. Keith and Mary Simon, "Sustainable Development in the Northern Circumpolar World," in P. Jacobs and D. A. Munro, eds., Conservation with Equity (Cambridge: IUCN, 1987), pp. 209-225.
5. H. A. Feit, "Self-management and State-management: Forms of Knowing and Managing Wildlife," in M. M. R. Freeman and L. N. Carbyn, eds., Traditional Knowledge and Renewable Resource Management (Edmonton: Boreal Institute of Northern Studies, University of Alberta, 1988), pp. 72-91.
6. For a discussion of the concept, see Evelyn Pinkerton, ed., Co-operative Management of Local Fisheries (Vancouver: University

of British Columbia Press, 1989).

7. F. Berkes, "The Role of Self-regulation in Living Resources Management in the North," in M. M. R. Freeman, ed., Renewable Resources and the Economy of the North (Ottawa: Association of Canadian Universities for Northern Studies, 1981), pp. 166-178.

8. Sherry A. Arnstein, "A Ladder of Citizen Participation," Journal of the American Institute of Planners, 35 (1969), pp. 216-224.

9. We thank Robert C. Hoover, Brock University, for the use of this expression, which has been adapted from Martin Buber, Pointing the Way (Harper, 1954).

10. Gail Osherenko, "Wildlife Management in the North American Arctic: The Case for Co-management," in M. M. R. Freeman and L. N. Carbyn, eds., Traditional Knowledge and Renewable Resource Management (Edmonton: Boreal Institute of Northern Studies, University of Alberta, 1988), pp. 92-104. See also: Osherenko, "Can Co-management Save Arctic Wildlife?" Environment 30:6 (1988) pp. 6-13, 29-34.

11. Pinkerton, Co-operative Management (note 7).

12. Native People and Renewable Resource Management (Edmonton: Alberta Society of Professional Biologists, 1986).

13. C. A. Drolet, A. Reed, M. Breton and F. Berkes, "Sharing Wildlife Management Responsibilities with Native Groups: Case Histories in Northern Quebec," Transactions of the 52nd North American Wildlife and Natural Resources Conference (1987), pp. 389-398.

14. Peter H. Pearse, "Property Rights and the Development of Natural Resource Policy in Canada," Canadian Public Policy, 14 (1988), pp. 307-320.
15. A forthcoming Background Paper for the Canadian Environmental Assessment Research Council (CEARC) includes traditional knowledge and impact assessment case studies from Baffin Island, Old Crow (Yukon), and two from British Columbia (Patrice LeBlanc, CEARC, personal communication).
16. Osherenko, "Wildlife Management" (note 11).
17. Renewable Resources Department, Regional Biologists' Workshop, Yellowknife, NWT, Nov. 1987. More recent efforts in the NWT include the development of case studies of community-based wildlife conservation in Paulatuk, Sanikiluaq, Clyde River and Old Crow (J.W. Bourque, Deputy Minister of Renewable Resources, GNWT, personal communication).
18. Didier Le Hénaff, Tactical Plan Musk-ox (Quebec: Ministère du Loisir, de la Chasse et de la Pêche, 1986).
19. G. Power and D. R. Barton, "Some Effects of Physiographic and Biotic Factors on the Distribution of Anadromous Arctic Char (Salvelinus alpinus) in Ungava Bay, Canada," Arctic, 40 (1987), pp. 198-203.
20. Ibid.
21. Sally C. Lerner, "Environmental Constituency-building: Local Initiatives and Volunteer Stewardship," Alternatives, 13:3 (1986), 55-60.
22. The project is entitled, "Culturally appropriate economic

strategies for locally and regionally directed community development: The Mushkegowuk Region, James Bay, Ontario." For a summary of findings of the first phase of this project, see Peter George and Dick Preston, eds., "TASO Retrospective: An Assessment of the First Phase of the TASO Research Program 1982-88," TASO Research Report No. 31, McMaster University, Hamilton, 1989, and Peter George and Richard J. Preston, "The TASO Research Program - Retrospect and Prospect," Anthropologica, forthcoming.

23. F. Berkes and D. Feeny, "Paradigms Lost: Changing Views on the Use of Common Property Resources," Alternatives 17:2 (1990), pp. 48-55; F. Berkes, D. Feeny, B.J. McCay and J. M. Acheson, "The Benefits of the Commons," Nature, 340 (1989), pp. 91-93; F. Berkes, ed., Common Property Resources (London: Belhaven, 1989).

24. F. Berkes, "Cooperation from the Perspective of Human Ecology," in Common Property Resources, pp. 70-88 (note 23).

25. Feit, "Self-management" (note 5).

26. See note 23.

27. Robert Axelrod, The Evolution of Co-operation (New York: Basic Books, 1984).

28. Richard J. Preston, Cree Narrative: Expressing the Personal Meanings of Events (Ottawa: National Museum of Man, Mercury Paper in Ethnography 30, 1975); Adrian Tanner, Bringing Home Animals (London: Hurst, 1979); Robert Brightman, Grateful Prey (Berkeley, University of California Press, forthcoming).

29. Ibid.

30. R. J. Preston, "A Sustainable Life Perspective: The Whiteman

View and the Cree View of the James Bay Treaty," American Society for Ethnohistory Conference, Toronto, Nov. 1990.

31. Ibid.

32. There was some attempt to allocate traplines in accordance with traditional practice, but the majority view among the hunters of Moose Factory, Fort Albany and Attawapiskat is that the current system is restrictive and simplistic (ongoing TASO studies by the authors and by Michael Weiler, Mark Schuler and Bryan Cummins, McMaster University).

33. For more details on the trapline system in eastern James Bay, see notes 5, 8, 24.

34. H. A. Feit, "James Bay Cree Indian Management and Moral Consideration of Fur-bearers," in Native People and Renewable Resource Management (Edmonton: Alberta Society of Professional Biologists, 1986), pp. 49-65.

35. See note 23.

36. C. Brousseau, MNR District Manager, Moosonee, Ontario (personal communication).

37. See for example: Natural Resources Secretariat Report, Vol. 1, No. 4, Nov. 1990.

38. See Peter George, "Native Peoples and Community Economic Development in Northern Ontario," British Journal of Canadian Studies, 4 (1989), pp. 58-73, and George and Preston, "The TASO Research Program," Anthropologica, forthcoming.

39. These and related issues are discussed in C. Ford Runge, "Common Property and Collective Action in Economic Development,"

in Proceedings of the Conference on Common Property Resource Management (Washington: National Academy Press, 1987), pp. 31-60. Also, see Oran R. Young, Natural Resources and the State: The Political Economy of Resource Management (Berkeley: University of California Press, 1981), which contains an interesting analysis of the distribution of public lands by the United States government to native peoples in Alaska.

40. The Omushkegowuk Harvesters Association believe that one of the benefits of co-management would be the recruitment and training of young men as trappers. Participation would undoubtedly be made even more attractive if the Ontario Ministry of Skills Development were to provide training grants for apprenticeships in traditional pursuits.

41. Living Treaties, Lasting Agreements. Report of the Task Force to Review Comprehensive Claims Policy (Ottawa: Indian Affairs and Northern Development, 1985), p. i. Between 1985 and 1990, three agreements-in-principle were negotiated but no new agreements signed.

42. F. Berkes and D. Pocock, "The Ontario Native Fishing Agreement in Perspective: A Study in User-group Ecology," Environments, 15:3 (1983), pp. 17-26.

43. P. J. Usher, "Property Rights: The Basis of Wildlife Management," in National and Regional Interests in the North (Ottawa: Canadian Arctic Resources Committee, 1984), pp. 389-415.

44. Michael Asch, "Wildlife: Defining the Animals the Dene Hunt and the Settlement of Aboriginal Rights Claims," Canadian Public

Policy, 15(1989), pp. 205-219.

45. Ian McTaggart-Cowan, Wildlife Conservation Issues in Northern Canada (Ottawa: Canadian Environmental Advisory Council Report 11, 1981), p. vi.
46. Stirling, "The Future of Wildlife" (note 1).
47. Norman Wesley, Mushkegowuk Council, Moose Factory, Ontario, (personal communication).
48. F. Berkes, "Native Subsistence Fisheries: A Synthesis of Harvest Studies in Canada," Arctic, 43 (1990), pp. 35-42.
49. F. Berkes, "The James Bay Hydroelectric Project," Alternatives, 17:3 (1990), p. 20.
50. T. D. Nudds, "Effects of Technology and Economics on the Foraging Behaviour of Modern Hunter-gatherer Societies," in W. C. Wonders, ed., Knowing the North (Edmonton: Boreal Institute for Northern Studies, University of Alberta, 1988), pp. 23-35.
51. Richard F. Salisbury, A Homeland for the Cree: Regional Development in James Bay, 1971-1981 (Kingston and Montreal: McGill-Queen's University Press, 1986). Data on hunter participation may be updated by using the Annual Reports of the Cree Hunters and Trappers Income Security Board, Ste-Foy, Quebec.

FIGURE 1. Levels of co-management. Modified Arnstein ladder for citizen participation.

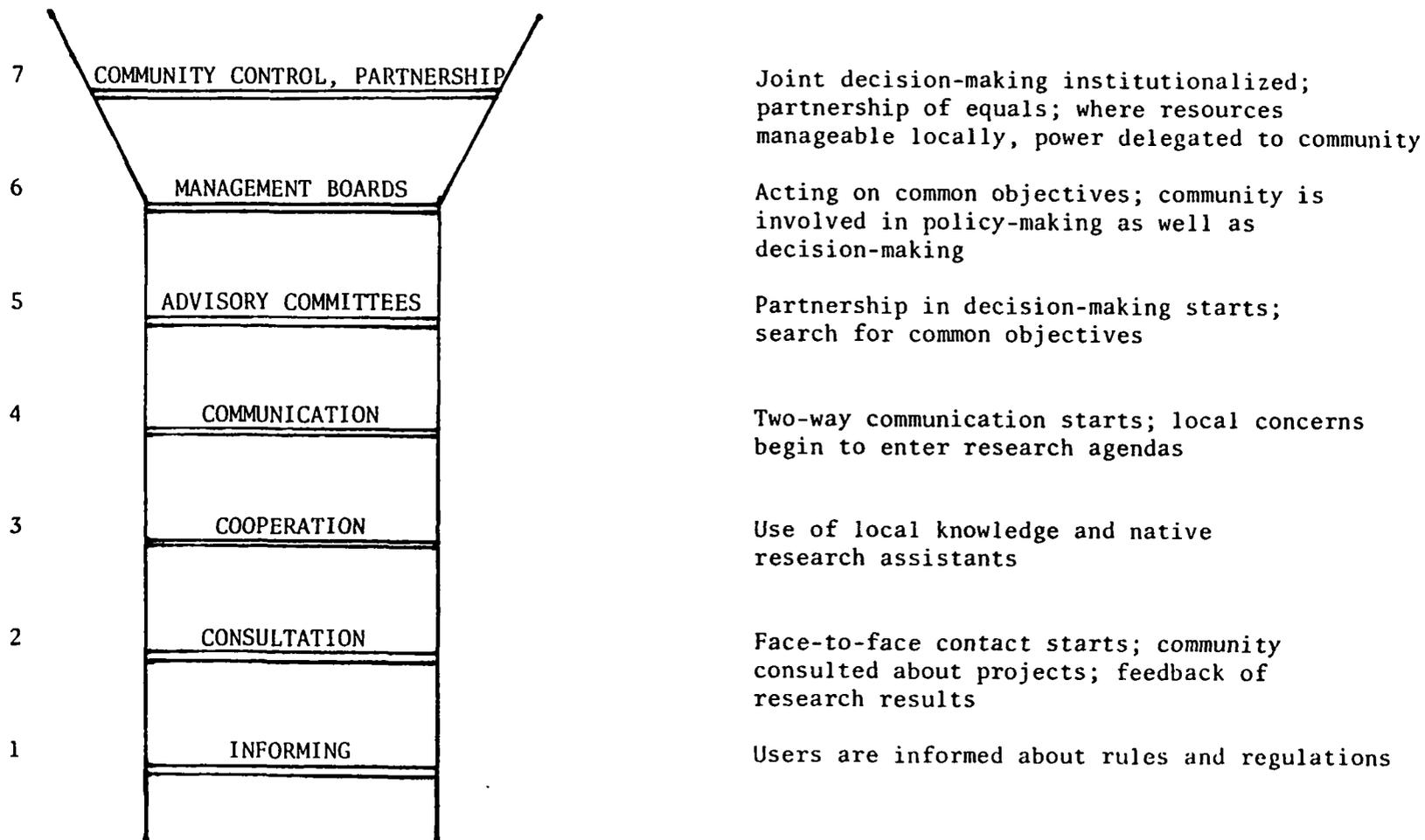


TABLE 1. Co-management regimes for Arctic wildlife.
Source: Osherenko (note 10)

| Regime | Year Created | Wildlife Covered | Location | Participants |
|--|--------------|--|---|---|
| James Bay & Northern Quebec hunting, fishing and trapping regime | 1975 | all marine and terrestrial species | James Bay & Northern Quebec | Province of Quebec (4) * Government of Canada (4) Inuit (3) Cree (3) Naskapi (2) |
| Alaskan whaling regime | 1981 | bowhead whales | Bering & Beaufort Seas; Alaskan whaling communities | National Oceanic and Atmospheric Administration (NOAA) Alaska Eskimo Whaling Commission (AEWC) |
| Beverly & Kaminurik caribou management regime | 1982 | Beverly and Kaminurik caribou herds | central Canadian Arctic | Indian Affairs and Northern Development Canada (1) Environment Canada (1) Manitoba Dept. of Natural Resources (1) Saskatchewan Dept. of Parks (1) NWT Dept. of Renewable Resources (1) Inuit of Keewatin (2) Chipewyan Bands of Northern Manitoba and Cree-Metis community of Brochet, Man. (2) user communities of Saskatchewan (2) user communities south and east of Great Slave Lake in NWT (2) |
| Inuvialuit wildlife harvesting and management regime | 1985 | all fauna in a wild state other than reindeer | Inuvialuit Settlement Region within the NWT; northwestern NWT | Wildlife Management Advisory Council: •Environment Canada (1) •Government of NWT (2) •Inuvialuit Game Council (represents community Hunters and Trappers Committees) (3) Fisheries Joint Management Committee: •Dept. Fisheries and Oceans Canada (2) •Inuvialuit Game Council (2) |
| Beluga management regime | 1986 | belugas (white whales) of eastern James Bay, Hudson Strait, and Ungava Bay | northern Quebec | Dept. of Fisheries and Oceans Canada (DFO) Anguvigaq (regional wildlife organization) Anguvigapiks (local wildlife committees) |
| Canadian Porcupine caribou herd management regime | 1986 | Porcupine caribou herd | northwestern Canada (parts of Yukon Territory and NWT) | Government of the Yukon Territory (1) Dept. of Renewable Resources, NWT (1) Indian Affairs and Northern Development Canada (1) Environment Canada (1) Council for Yukon Indians (1) Inuvialuit Game Council (1) Dene Nation (1) Metis Assoc. of NWT (1) |
| Pacific walrus regime | 1987 | Pacific walrus | Coastal areas of northwestern Alaska | U.S. Fish & Wildlife Service (FWS) Alaska Dept. of Fish & Game (ADF&G) Eskimo Walrus Commission |

*Numbers in parentheses indicate the number of representatives on the regimes' governing boards

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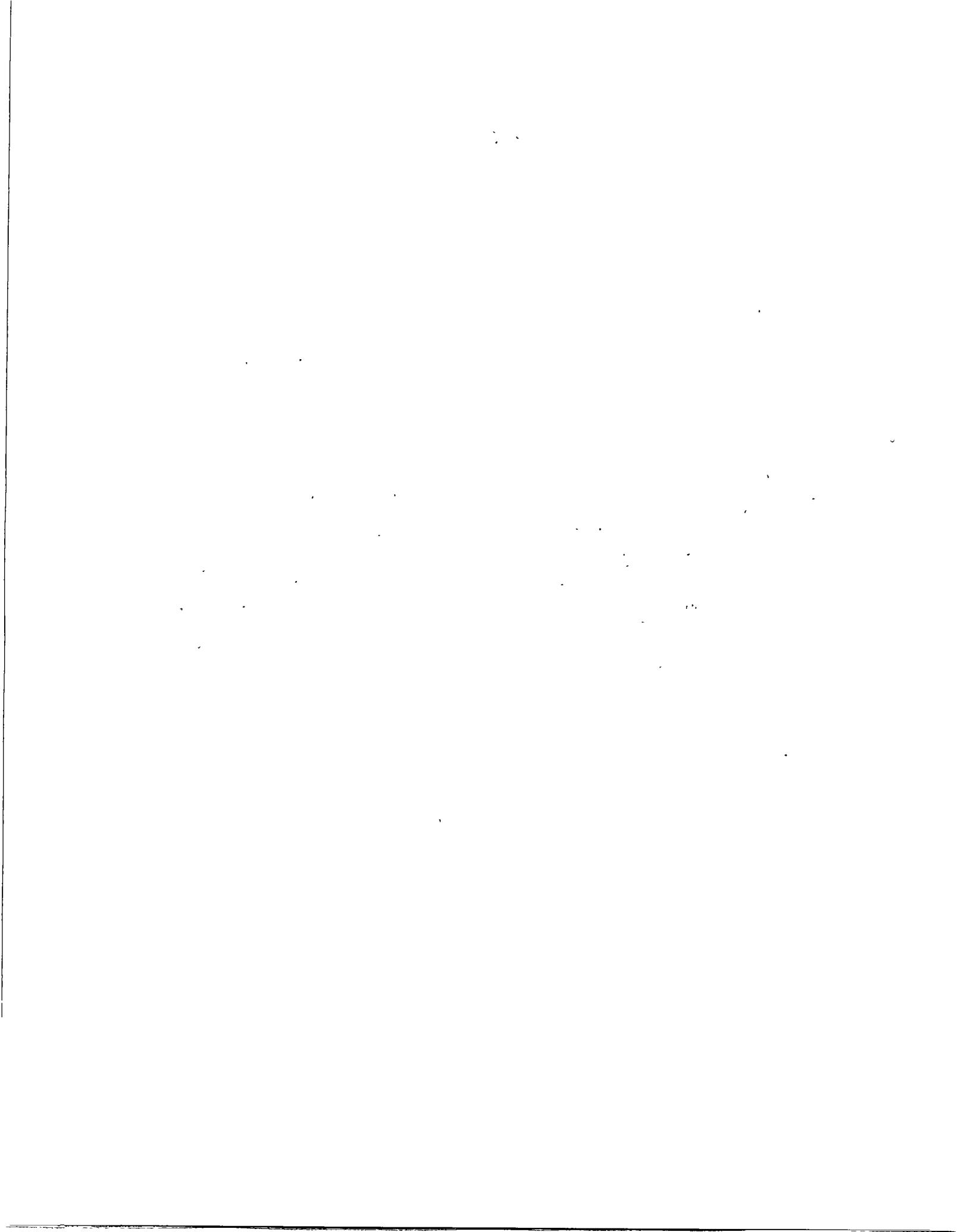
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The joint administration or cooperative management (co-management) of living resources is the potential solution to the contentious divergence between two alternative systems: centralized, state-level versus local-level and community-based systems of resource management. But co-management does not have a simple prescription. There are "levels" of co-management, from informing and consultation, through degrees of power-sharing between the central government and local resource users. Studies in the James Bay area indicate that the capability of local-level management or self-management is important not only from a fish and wildlife management point of view. It is also important to the social and economic health of many native communities. Because of the continuing importance of living resources, the economic development of native communities is linked to their ability to manage their own resources. This, in turn, is linked to larger questions of self-government. (Abstract)



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