

**An Inventory of Mapping Projects in Connection with
Aboriginal Land and Resource Use in Canada**

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At this workshop one of the things we will be doing is taking a critical look at project that have been undertaken in the area of land use mapping and the collection of indigenous environmental and ecological knowledge, and attempting an honest assessment of their contribution to "capturing" or "interpreting" for present and future generations, the knowledge, perspectives, concepts that make up Aboriginal peoples' histories.

The following inventory was prepared to assist us in this task. It was greatly assisted by cooperation from Marty Weinstein, who provided the details and context on projects undertaken in western Canada. It is by no means intended to be exhaustive. In fact, the development of such an inventory could be the subject of an independent project. There are many mapping/oral history exercises that would fall into the "grey" area and, therefore, very hard to identify or retrieve without some laborious sleuthing. Examples would include academics working in Aboriginal peoples' communities on resource management topics and small, localized projects conducted by Native communities themselves. I have tried to identify the substantial efforts that make up what we have come to call - land use and ecological mapping projects.

Recent advancements in computer technology, in particular Geographic Information Systems (GIS) has spawned a whole new interest in land use mapping, and much attention is focusing on lands acquired by Aboriginal peoples through land claims agreements. Unfortunately, in many cases this has been "technology driven" and is not grounded in a complete understanding of the purpose or what is involved in land use and ecological

knowledge mapping. While GIS is an incredibly useful tool, it cannot replace the fieldwork involved in collecting basic information and certainly cannot replace the personal dynamics, good and bad, which characterize the mapping process. It is these personal dynamics which can contribute to a better understanding of what is being revealed through the process of mapping.

INVENTORY

1. Fort George Resource Use and Subsistence Economy Study (1973-1975)

This study was initiated at the request of the James Bay Crees, via the Indians of Quebec Association, in 1973. This was prior to the creation of the Grand Council of the Crees (of Quebec). It was designed to document the extent of dependence on subsistence resources of the Fort George Crees and to document where these resources were being taken for use in the legal proceedings and negotiations that were revolving around the James Bay hydroelectric development project. One of the unique features of this study, is that it attached actual harvest levels to specific geographic areas. This type of approach, over the long term, would make the land use and harvesting information much more interesting for planning purposes.

It was completed after the signing of the James Bay and Northern Quebec Agreement, however data was made available throughout the negotiations. It was intended by the author that the final report, "What the Land Provides", could provide materials for curriculum development, the designing of projects to remediate impacts from the LaGrande Complex and to assist in the implementation of the various regimes created by the Agreement.

2. Aski-Puko - The Land Alone (early 1970's)

This study was conducted by the Federation of Saskatchewan Indians on behalf of the Crees of the Peter Ballantyne and Lac la Ronge Bands in the early 1970's. A report entitled "The Land Alone" on the expected effects of the proposed hydroelectric installations at Wintego Rapids was produced.

3. Northwest Territories Land Use and Occupancy Study (1974-1975)

The Inuit Tapirisat of Canada (ITC) received funding from the Federal government to prepare a land use and occupancy study to support their land claims in the Northwest Territories. The resulting project, the first of its kind in Canada, was carried out in all the Inuit communities of the Northwest Territories. Map biographies were created for up to 100% of the hunters in some communities. Coverage was excellent throughout. Field workers, assisted by translators spent from four to six months in each community. In addition, travel routes, camp sites, place names and other locational information was recorded. Separate ecological maps were made using the group interview approach. All data was recorded at a 1:500,000 scale.

The resulting three-volume report, entitled "Inuit Land Use and Occupancy Project", reviews the the results of this work. The map volume presents the information in aggregated form, focusing on the outer boundary for each species hunted in order to establish the "extent" of use for the purposes of establishing a claim area for negotiations. The information was computerized to create these outer boundary maps. Ecological maps were produced for some communities, for key species. Supporting studies on archeology, the contact period, social structure and language and oral tradition were also produced.

Much more information than is available in the final report, however, exists. All of the original, individual map biographies, occupancy maps and ecological maps, are in the National Archives.

4. The Dene (NWT) Mapping Project (1974 - now ongoing)

Sponsored by the Indian Brotherhood of the Northwest Territories, this project was begun in 1974 in order to create a data base on land use and occupancy in order to support the land claims process.

Data collection continued until 1977. In the early 1980's it was computerized using the technology that was available at the time, and used throughout the 1980's to support claims negotiations and associated activities. Over 600 interviews were conducted and information was manually recorded on large mosaic map sheets. Also gathered, was information on family histories, seasonality of hunting, methods of transport, etc.

Plans are now being made to mount all of the information on GIS. A paper prepared by Michael Asch and Gerry Tychon for the 7th Annual Symposium on Geographic Information Systems in Forestry, Environment and Natural Resources Management, explains that the Dene now plan to expand the use of this information to education and planning.

5. The Labrador Inuit Land Use and Occupancy Study (1976-77)

Following closely on the work in the Northwest Territories, the Labrador Inuit Association sponsored a land use and occupancy study on behalf of the Inuit of Labrador. In fact the research was designed to complement work done in the NWT.

The same methodology was used, creating individual map biographies for hunters in all of the Inuit communities of Labrador. In each of the communities there is a Settler population. They were included

in the research. Supporting essays are also included discussing archeology, prehistory, and Inuit/Settler views on land use, along with a descriptive text of land use and ecological knowledge underlying use for each of the community areas.

The resulting report, entitled "Our Footprints are Everywhere" was released in 1977 and forms the basis of a submission by the Labrador Inuit Association to launch the land claims process.

**6. Nunavik Inuit Land Use and Ecological Mapping Project
(1976 - ongoing)**

Soon after the coming into force of the James Bay and Northern Quebec Agreement (1975) the Inuit of northern Quebec realized that information on their land use and knowledge of the land and resources of Nunavik were required in order to properly implement, from their perspective, the many provisions of this Agreement. No work of this nature had been done prior to the negotiations. The James Bay and Northern Quebec Agreement was a consequence of court action in relation to hydroelectric development in northern James Bay, and therefore did not require that a land use study be done to substantiate the claim as was the case for other Inuit regions in Canada.

Financed entirely by Makivik Corporation, the project was designed and is conducted by its Research Department. In its earlier years, the project sought to interview all harvesters and other knowledgeable individuals in Nunavik in order to establish a base line of information for the region, based on past and present use. This stage of the work was essentially completed in 1980-81. Since that time, efforts have focused on updating the data base and expanding on Inuit environmental and ecological knowledge.

The thousands of field maps produced during the course of the project have been systematically transcribed and digitized, then entered into a GIS system. The maps are all accompanied by written text and

recordings. The data base is completely under the control of Makivik Corporation and each community. Access to the data base is strictly controlled. It is only used with the express consent of communities and individuals involved.

It has been used to develop further land claims positions for the offshore area surrounding Quebec and Labrador, environmental impact assessment, land use planning, wildlife management programs, curriculum development, history projects, etc. In this sense, with the exception of the work that the Manitoba Keewatinowi Okomakanak group is just now starting, this data base is unique in that it is an on going effort and is used for a variety of purposes.

7. Council for Yukon Indians Land Use Mapping Project (mid to late 1970's)

This project was initiated during the early stages of Yukon claims negotiations to establish a geographic data base for the negotiations. The project appears to have been envisioned as a data base for representing environmental interests, rather than to establish the extent of a claim area.

Mapping was Yukon-wide and trained CYI interviewers travelled to villages interviewing elders and other knowledgeable people. A combination of use and knowledge of animal habitat was mapped. Data was aggregated onto 1:250,000 maps covering the entire territory with separate overlays for different types of resource and cultural information. The CYI maintains a map archive from this survey. They now have GIS equipment, but apparently have been having quite a bit a difficulty getting it operational.

8. Northwest B.C. Land Use and Occupancy Study (1978-79)

After the Berger Inquiry effectively closed the Mackenzie valley route for transporting Delta and North Slope gas, the Alaska Highway was proposed as a pipeline corridor. Although hearings were planned elsewhere, none were foreseen for northern British Columbia. The Union of B.C. Indian Chiefs lobbied for, and received funding to study the impacts on Indian communities in B.C. The research took a broad, cumulative approach to impact assessment, looking at existing land conflicts and effects of these conflicts on Indian land and resource use.

The project covered 1 Cree band, 2 Beaver bands and 2 mixed Beaver/Cree bands. The map biography technique was used and the time periods chosen were before/after construction of the Alaska Highway (1942). The objective was complete coverage of all adult men. Maps were drawn directly on 1:250,000 topographic sheets. Additional maps of trails and Indian knowledge of animal habitat were also produced. Maps were also made of settler land use, showing the distribution of resource rights, alienation and the development of industrial resources.

A series of impressive publications resulted from this work, including "Maps and Dreams", Hugh Brody (1982) "Indian Land use and Occupancy in the Peace River Country of Northeastern British Columbia, Marty Weinstein (1979), "Final Submission on the Northwest B.C. Land Use and Occupancy Study, Union of B.C. Indian Chiefs (1980), and a full color version of Indian land use in relation to alienation, industrial development, etc. by W.W. Mair (1980).

9. Nimkish Valley Resource Management Study (1980-1991)

In response to concerns and frustrations surrounding dwindling salmon and forest resources and lack of access to the provincial/federal planning process, the Nimkish Kwakiutl undertook to research and produce its own information on resource use on their traditional lands. The

resulting documentation was used in a variety of public hearings, and meetings with government officials in an effort to identify management problems and to argue for an integrated vision of the Valley and its resources.

The mapping focused exclusively on the resources and habitat, alienation, industrial resource use and settlement. It did not include Indian land use per se. The resulting overlay map set on 1:50,000 topographic sheets included maps of the current status of land and resource rights in the valley; the history of land and resource alienations; human populations; recreation capability; salmon spawning areas; salmon habitat; and a history of logging in the Valley, along with proposed logging plans.

This overlay technique allowed for the identification of major resource conflicts. In a number of instances the maps demonstrated that resource planning done by government agencies was based on faulty or incomplete information. All this information is currently being transferred to a GIS.

10. Pinehouse Planning Project (1982)

The community initiated a resource planning project of its own into order to counter the development assumptions of government agencies which did not take into account the community's land and resource use.

The Northern Village of Pinehouse produced two technical reports in 1987, one dealing with harvest surveys and the other with the contemporary economy of the village. In these reports there is mention of an intention to produce additional technical reports, including one based on land use maps. This may indicate that the field survey contained a mapping program.

11. Ayuukhl Nisga'a (The Laws of the Nisga's) (1982-84)

This project was initiated by the Nisga'a Tribal Council as part of information for land claims negotiations. The Nisga'a had been negotiating their claim to the fishery with the Federal government since the mid 1970's. Council felt that documentation of the Nisga'a system of land ownership and the rules for resource use should be available for possible challenges during the negotiations process.

This project used a different model than that of land use and occupancy to take into account the Nisga'a system of land ownership. Under this system, specific territories and harvesting rights belong to kin groups. Ownership is transmitted to successors via the knowledge of wilp (house) traditions. The prerogative to display this knowledge in public belongs to the chief.

The project produced 8 volumes including an atlas of Nisga'a owned territories and a set of folio maps of place names. These volumes are the property of the Tribal Council and have never circulated publicly.

12. Ross River MacMillan Pass Impact Assessment Study (1982-84)

In the early 1980, AMAX mining proposed to develop some of the major mineral deposits at the northern end of the Ross River territory. None of the impact assessments or environmental reviews took into account the concerns of the Indian residents. Mapped information in Indian land and resource for the region was limited to the CYI resource study. The Band lobbied for funding to conduct its own impact study of the mining proposal.

The mapping part of the research took the form of land use and occupancy mapping using the map biography as its basis. Biographies were divided into 2 time periods: prior to the construction of the Faro mine and

the transformation of Ross River from a trading post into a mixed-ethnic village. It attempted a 100% sample. Results were aggregated by hand onto acetate overlays.

13. From Where we Stand - Fort Mckay, Alberta (1983)

This project was intended to document the Band's land use and economic activities as part of an assessment of past and proposed resource development projects.

The map biography technique was used. Fifty-three adults were interviewed, representing a sample of 50%. Land use maps were produced on a 1:250,000 scale and included travel routes, occupancy, harvesting activities and some information on animal habitats. Another set of maps was produced to show land alienation and industrial resource development on the Band's traditional territory, including oil and gas leases, oil development, access infrastructure and forest tenure.

A report entitled "From Where We Stand" was produced by the Fort McKay Tribal Administration.

14. Kaska Dena Land Use and Occupancy Project (1984 - 1986)

The project was conducted to document the extent of British Columbia Kaska claims in the Yukon and British Columbia. This information was required because of the Council of Yukon Indians claims negotiations in the Yukon. The Kaska have interests in the Yukon, therefore, would have an overlapping claim in accordance with the current federal claims policy.

The project covered 2 bands in British Columbia (Lower Post and Fort Ware), and 1 band in the Yukon (Watson Lake). Mapping was done using the biography technique, and concentrated on use of specific sites for

various types of activities. Mapped data was coded onto a computerized data base and aggregated onto overlays.

15. The Nunavut Land Use Research Project (1985-1990)

This Project was initiated by the Tungavik Federation of Nunavut (TFN) in order to produce information to assist in the process of land selections during the negotiations for the Nunavut Agreement. It sought to identify lands which were of particular importance to the Inuit and develop justification for including these parcels in each community's land quantum.

The maps that had been produced in the Inuit Land Use and Occupancy Project (1974) lacked the detail required for land ownership negotiations. They also lacked any indication of intensity of land use or areas which were known to be important for wildlife.

Research was conducted in each community in Nunavut during 1986 and 1987. Land use information, occupancy, commercial operations, and archeological sites are all documented. Coverage in each community ranged from 40% to 80%.

In association with the Canadian Circumpolar Institute, the "Nunavut Atlas" was published in 1992 and is considered by TFN as a companion volume to the Nunavut Land Claims Agreement which was concluded in December 1991.

16. Manitoba Keewatinowi Okomakanak Inc. (1988 - ongoing)

Manitoba Keewatinowi Okomakanak (MKO) represents 25 Indian bands in northern Manitoba. It maintains a Natural Resources Secretariat to deal with all of its land use and resource planning concerns. The Secretariat has recently developed a mapping-based research project which is supported by a GIS data base. It is being used to support treaty and

settlement agreement land selections, land claims, resource management, planning and environmental assessment. Information drawn from aerial surveys and remote sensing, in relation to existing development projects and impacts, is also regularly inputted into the system.

Similar to the Makivik operation in Nunavik (northern Quebec), it is a permanent project fully owned and operated by an indigenous organization without the direct involvement or support of government or academia.

More recently they have begun to input Indian land use and ecological information. As of 1992, the data base consisted of resource use maps and inventories covering 98,000 sq.kms. of northern Manitoba and the southern Keewatin District of the Northwest Territories, with some 400 individual map biographies. According to MKO, this data base is in constant use in planning/negotiations re: development projects, particularly forestry operations and for communities' own development initiatives. MKO will continue to produce map biographies until the entire area is covered.

17. South Indian Lake (Manitoba) Land Use and Occupancy Study (1989-90)

This study was initiated by a master's student project and later received the support of community organizations, the Fishermen's Cooperative and the Trapper's Association. This distinguishes the work from the other studies listed in this inventory.

The Lake is part of the Churchill-Nelson hydroelectric project and has experienced major impacts from the development. The severe environmental changes from the increased water levels have been well documented by the Freshwater Institute of the Department of Fisheries and Oceans. From the perspective of the community, these impacts include changes to the domestic and commercial fishery, mercury contamination, and increased costs due to navigability problems. As a non-band, non-reserve community, South Indian Lake was not included in the Northern

Flood Agreement. The community's cooperation and interest in this project resulted from this situation.

Forty-seven mapped interviews were conducted of which 36 included map biographies, representing a sample of harvesters. Mapping included use, occupancy, place names and special attention to the fishery. Mapping also included resource and land right alienations by government, including registered traplines, mineral rights, outfitters, leases and Northern Flood Agreement land exchange locations. The product of this research was reported in a thesis by C.J. Hrenchuk, Natural Resources Institute, University of Manitoba.

18. Saskatchewan Chipewyan Bands' Land Use in NWT (1989-90)

This project was sponsored and funded by the Prince Albert Tribal Council on behalf of the Fond du Lac, Black Lake and Hatchet Lake Indian Bands. The project was intended to establish the interest and claim of the 3 bands to lands within the Northwest Territories.

The Study used map biography methods and 91 were produced. A stratified sample method was applied, concentrating on people who have been active hunters during their lives, but including the less active hunters. The objective was 50% coverage.

Interviews were recorded on overlays at a scale of 1:1,000,000. Mapping focused on travel and habitation. Maps were digitized and compiled with an AutoCad program. The study was completed with the publication of a report entitled "Recent and Current Land Use in the Northwest Territories by Chipewyan Bands, Prince Albert" in 1990.

19. The Ecology and Use of Waterfowl in the area of Manitounuk Sound (1991)

Data on waterfowl ecology and contemporary use by the James Bay Crees was collected in connection with proposed Great Whale River hydroelectric development project. The study included mapping of use and Cree knowledge of waterfowl behaviour and ecology. The work was commissioned by the Grand Council of the Crees (of Quebec) as part of a data gathering exercise in anticipation of the environmental review of the Great Whale River hydroelectric project. The review is still in its early stages, and the compatibility of the work in this process remains untested.

20. Whapmagoostui Land Use Study (1991-1993)

This study was commissioned by the Grand Council of the Crees (of Quebec) specifically to provide information on Cree land use and associated activities in relation to the proposed Great Whale hydroelectric development project. Depending on strategies developed by the Crees in their opposition to this development project, it was determined that land use information would be vital for either litigation, environmental impact assessment, negotiations or planning project modifications.

The study documents recent past and present land use and occupancy of the Whapmagoostui Crees and, through supporting text discusses how Crees today make a living from the environment and perceived limits of this use. It is also accompanied by a harvest survey and a community needs assessment, community profiles and a report on archeology and living sites. All of the land use and locational data has been processed on a GIS. The final report is not yet available but is scheduled for spring, 1993. It should figure prominently in the upcoming public hearings on the Great Whale hydroelectric development project conducted as part of the environmental impact assessment.