Integrated Resource Planning Feasibility Study

B.R. LeDrew and E. Norris

A Manuscript Report Prepared for the
Canadian Environmental Assessment
Research Council
September 1988

TABLE OF CONTENTS

INTRODUCTION

This document reports on a workshop held during February 1988 in Corner Brook, Newfoundland and the preparatory meetings associated with it. As well it provides, from the authors' perspective, an evaluation of the exercise.

The workshop, sponsored by the Canadian Environmental Assessment Research Council (CEARC) and the Department of Fisheries and Oceans (DFO), was designed to develop and test a process to resolve conflicting resource use priorities. The term "Integrated Resource Planning" has been applied to this process, and there appears to be general agreement that the process would apply in situations where a number of resource use activities are ongoing or proposed. Thus, IRP could serve to address issues such as cumulative impacts, and might function to avoid the single proponent approach characteristic of environmental impact assessment processes.

The Policy for the Management of Fish Habitat recently developed by DFO provides for the participation of that agency in resource management planning exercises. The concept of a mock negotiation process was conceived as a means to develop and test IRP as a concept. The agencies invited to participate were asked to fulfill two roles: first to act the part of negotiators addressing resource conflicts; and second to act as critics and evaluators in helping with the development of the process.

A specific watershed with a number of potential resource use conflicts was selected and a series of preparatory meetings held followed by the day and a half long workshop. As will be seen, the workshop did not proceed as planned, however this was not entirely unexpected, and perhaps as a consequence of this outcome a number of useful observations and conclusions can be drawn.

IRP WORKSHOP

PREPARATION

The Steering Committee for this exercise comprised representatives from the two sponsoring agencies: Dr. Gordon Beanlands, Executive Secretary, CEARC (Chairman); Mr. Leslie Dominy, DFO, Ottawa; Mr. Patrice LeBlanc, DFO, Gulf Region; and Mr. Robert Wiseman, DFO, Newfoundland Region.

Support to the Steering Committee was provided by Mr. John Mactavish who was contracted as Chairman of the Workshop, and by LeDrew Environmental Management (LEM) Limited which was retained to organ& and report on the Workshop. In addition to three regular meetings, a number of telephone conference meetings were held by the Steering Committee to provide guidance to the study team.

The Steering Committee's first task was to identify a subject watershed. While it was felt that the exercise could likely be undertaken using any watershed in Canada, criteria were developed to help in selecting one which would provide a good example. It was felt that the choice should be a reasonably small watershed where resource use conflicts are apparent and where sufficient &ta and information are available. Further, it became apparent that it would be best to select a watershed that is currently neither the subject of a major resource conflict, nor is undergoing any form of resource conflict resolution.

A number of candidate locations were considered before selecting the Lloyds River watershed in the Exploits River system, Newfoundland. The watershed appeared ideal in meeting the requirements of a study area although some of the central resource use conflicts have now been resolved or left dormant. In order to reinforce the "mock" nature of this exercise it was decided to proceed with the Lloyds River watershed in the 1974 setting. The legislation/mandate of today's resource agencies, and their current resource base knowledge would be applied to the unsettled debate over conflicting resources which prevailed at that time. A description of the watershed and the associated resource conflicts are presented in Appendix 1.

Concurrent with the selection of a suitable watershed was the need to obtain the cooperation and participation of a number of resource agencies. Through the Workshop Chairman a series of formal invitations were issued to senior executives from a group of resource agencies selected to represent the major potential conflicts. A total of five agencies accepted the invitation to participate:

- Department of Fisheries and Oceans - (Salmon Enhancement)
- Newfoundland and Labrador Hydro - (Hydroelectric Energy)
- Department of Forestry, Province of Newfoundland and Labrador - (Forestry)
- Department of Culture Recreation and Youth, Province of Newfoundland and Labrador - (Wildlife and Parks)
- Department of Environment (now Environment and Lands), Province of Newfoundland and Labrador - (Water Resources and Environmental Impact Assessment)

A number of individual meetings were held with each of the resource agencies to explain the required level and nature of participation. Each agency was requested to provide a negotiator (Senior Manager) and a support team comprising one to three resource managers.

Each support team was requested to compile a background document in preparation for the Workshop. In turn they were provided with background material on Integrated Resource Planning, the ration- ale for the workshop and guidelines on the required background documents. As well, at the suggestion of Mr. David Jeans (Department of Environment) each participant received a copy of the report of the National Task Force on Environment and Economy.

The submissions prepared by each negotiation team served to present the mandate of each agency and describe (in a local and provincial context) the resource base in the study area. As well, each agency was asked to describe its plans for management and exploitation of the resource for which it was responsible. To assist in the development of this material, a series of two meetings were held between the Workshop organizers, the Steering Committee, and the negotiating teams. The package of material prepared by each agency is included as Appendix 2.

WORKSHOPREPORT

The Workshop was held from the evening of February 10, until noon on Friday February 12, 1988 at the Glynmill Inn, Comer kook, Newfoundland The twenty-five (25) persons attending (Appendix 3) included the organizers (5), the negotiating teams (15), and observers (5).

During the formal plenary sessions the Chairman and the five negotiators were seated around a central table. Each of these participants had a microphone to amplify and record their comments. Seated behind each negotiator at separate tables were the support teams each comprising from one to four individuals.

The Steering Committee and observers sat at another set of tables toward the back of the room. Visual aids included 1:50,000 scale topographic mapping of the Lloyds River watershed; 1:250,000 of the Exploits River watershed; and 1:1,000,000 of the Island of Newfoundland.

Table 1 presents a chronology of events in summary format. The original agenda for the Workshop (Appendix 4) was not followed. The discussion evolved from a mock negotiation session on the Lloyds River watershed into a broader policy discussion of Integrated Resource Planning. Several of the negotiation team support members did, however continue on with a discussion of the Lloyds River watershed as a separate exercise. The Workshop proceedings are therefore organized into a section on the negotiations related to Lloyds River, and another section documenting the broader discussion on IRP policy. Reference to Table 1 will be helpful for the reader to appreciate the actual sequence of events.

Opening Comments (Session 1)

Dr. Gordon Beanlands, Executive Secretary to CEARC, in opening the Workshop explained that IRP has been proposed by DFO as a means to deal with resource policy conflicts. It is a national level initiative, first to be tested at this Workshop using the Lloyds watershed as a study area. The Workshop is not expected to resolve all the issues concerning the study area, rather it is intended to provide a means to evaluate the IRP process.

Mr. Leslie Dominy, on behalf of DFO, provided background on the need for this process. DFO, in fulfilling their mandate often find themselves in an antagonistic situation with reference to other resource users, in part because the Fisheries Act is not very clear with respect to integration and accommodation of other resource users and uses. The new Fish Habitat Management Policy goes beyond the Act in that it recognizes Integrated Resource Planning as a strategy within that policy. DFO hopes to gain a better definition of IRP as an approach that resource agencies can take and in which DFO can participate.

The Workshop Chairman, Mr. John Mactavish, in welcoming the participants emphasized that each negotiating team should approach the exercise as a proponent and with this perspective, try to accommodate the interests of the other resource agencies.

Mr. Bevin LeDrew presented an overview paper on the Lloyds River study area (Appendix 5). The paper provided backgroundon the development of DFO Policy for the Management of Fish Habitat, and presented a definition of Integrated Resource Planning as proposed by DFO. The major portion of the presentation dealt with a description of the Lloyds watershed, including present and potential resource uses and opportunities for "Resource Benefit Integration". Two matrices were presented to highlight the areas of major interaction between various resource use activities.

TABLE 1. IRP WORKSHOP CHRONOLOGY

Wednesday, 10 February:

	6:00pm	-Registration.
Session 1	8:00pm	-Introductory statements by Steering Committee and Workshop Chairman.
	8:45pm	-Lloyds River overview (B.R. LeDrew).
	9:30pm	-End of Session 1.

Thursday, 11 February:

Session 2	8:40am	-Chairman's opening comments. -Opening position statements from each negotiator. -Discussion to identify resource conflicts.
	10:00am	-Break.
Session 3	10:15am	-Identification of issues.
	11:00am	-Break.
Session 4	11:15am	-Discussion of issues - (access).
	12:30pm	-Lunch.
Session 5(a)	1:40pm	-Discussion of resource management planning.
	2:25pm	-Break.
Session 5(b)	2:50pm	Decision to discuss IRP process; list of discussion topics developed.
	3:30pm	-Break. -Negotiation team support staff convene separate discussion.
Session 5(c)	4:00pm	-Discussion of IRP process.
	4:30pm	-The Alberta experience with IRP (Dr. Barry Sadler).
	4:50pm	-Discussion.
	5:30pm	-End of Thursday Sessions.

Friday, 12 February:

Session 6(a)	9:00am	-Recapitulation by Chairman.
	9:15am	-Discussion of the Report of the National Task Force on Environment and Economy - led by Mr. David Jeans.
Session 6(b)	9:40am	-Presentation on Lloyds River watershed negotiation session (Rick McCubbin, Ed Hill and Martin Goebel).
	10:25am	-Break.
Session7	10:45am	-The PEI Experience with IRP (Joseph Arbour).
	11:40am	-Concluding Statements.
	12:00pm	-End of Workshop.

Lloyds River Watershed Negotiation (Sessions 2,3,4, and 6b)

This section of the report deals with the early plenary sessions held on Thursday morning during which the negotiators attempted to comply with the proposed agenda. It also includes a report on the discussions held by support staff who convened a separate meeting once the decision was made by the negotiators to broaden the scope of the Workshop discussion.

Position Statements (Session 2)

The Chairman started the session by asking each negotiator to provide an opening statement explaining the mandate of their agency and outlining their resource utilization plans for the Lloyds River watershed. Questions on each presentation were to be confined to points of clarification.

Mr. Jim Inder (Wildlife, Parks), in reviewing past involvement with impact assessment processes noted that his agency often felt they became involved too late in projects, and their involvement often required a disruption of ongoing research and management activities. As well, his agency is often at a disadvantage in that its planning capability is considerably less than that of others, such as Hydro.

Specific management objectives were outlined. The Lloyds River watershed has a present density of less than 0.7 moose per sq. km.. The Department has an objective of reaching a density of 2 to 3 moose per sq. km. in the study area. There is no resident population of caribou in the area, however two herds pass through the watershed in their migrations. The area could support about 1,600 animals seasonally.

Rare and endangered species are a concern in the region: The Pine Marten is quite rare in the province. There are about 20 in the study area. As well, the Arctic Hare, another species now rare to the island, is known to occur in the study area.

The Parks Division considers parts of the watershed to be of significance. The 19 sq. km. area of the King George IV delta is proposed as an ecological reserve. As well; the area from King George IV Lake to Lloyds Lake has been proposed as a waterways park. This would require a 1 km. wide buffer zone along the water system and would probably encompass 250 sq. km., including the water. Finally, there is some interest in creating a natural environment park in the area.

In conclusion, Mr. Inder expressed concern about the ability to deal with issues and confine discussion just to the watershed area. He felt that throughout the discussions, the participant's would often have to consider matters at the provincial level.

Ms. Karen Brown (Fisheries) presented a summary of the fishery potential in the Lloyds River watershed, and placed it in the context of the Exploits River Salmon Enhancement Program, The resident species are landlocked salmon, brook trout and arctic char. Within the Lloyds River watershed the potential annual production based on available habitat is over 18,000 kg. Flowing water habitat is greatly preferred by these species, and the availability of suitable habitat can be considered the key to the Exploits River Salmon Enhancement Program. The ongoing efforts to develop the Atlantic salmon run to the Exploits River had their origins in 1956 with the transfer of the Rattling Brook salmon run. This successful transfer has been followed by a large number of enhancement activities such that by 1974 DFO had an investment of $4.45 mil-

lion in the Exploits River Salmon Enhancement Program, with an annual run of 10,000 to 12,000 fish being produced.

The objective of DFO is to complete the Atlantic Salmon Enhancement Program with a sustained run of 100,000 fish of which 37,000 will be produced by the Lloyds River watershed. The projected annual value of the Exploits River run from commercial and recreational catches would be $1.4 million.

Mr. David Jeans (Environment, Water Resources) described the dual role of his department, both as a water resource manager, and as an "honest broker" with regard to the Environmental Impact Assessment Process. [N.B. The Department has now been reorganized as the Department of Environment and Lands by incorporating the Lands Branch from the Department of Forest Resources and Lands. Mr. Jeans comments reflects the Department as previously constituted.] Concerning the water resources within the area, the department does not produce development plans but is concerned with maintaining present uses of water and in ensuring that maximum benefit to the province is realized through water use activities. In general the department has established priorities for water use, i.e. domestic, municipal, irrigation and agricultural, industrial and commercial, water power, and recreational, in that order of priorities. Exceptions to this general ranking can occur.

With regard to the Environmental Assessment Process, Mr. Jeans observed that Integrated Resource Planning is regarded as a means to resolve concerns prior to conducting an impact assessment, and not as a means to circumvent that process.

Mr. Leo Cole (Hydro) described the responsibility of Newfoundland and Labrador Hydro for meeting the electric power generation and transmission requirements of the province. Planning is ongoing to anticipate and determine the means to meet changes in these requirements. As a result of current projections, Hydro is expecting an electrical energy deficit starting around 1991- 1992. The most attractive long term energy source for the province is an interconnection with the generating capacity in Labrador. However, due to uncertainties associated with this interconnection, Hydro must investigate the existing possibilities on the Island in order to meet short term energy deficits. Of these, the most attractive is a diversion of the Upper Lloyds River watershed in the Bay d'Espoir watershed. This will increase the energy capability of the existing generating plants in the Bay d'Espoir watershed by approximately 240 million kilowatt hours (kwh). The capital cost is estimated to be in the order of $30 million, resulting in a unit cost of energy of less than 20 mills per kwh. The proposed diversion represents the cheapest source of energy within the province, and perhaps within North America today.

The project itself requires no generating station as the energy would be produced at existing power plants in the Bay d'Espoir system The diversion of King George IV Lake would be achieved by construction of a dam and diversion canal into the adjacent watershed. The level of King George IV Lake would be raised approximately 9.5 m and result in flooding of 14 sq. km. of land. Approximately 17 km. of road would be constructed for access, and it would take 18 months to complete the project.

In recognizing that this project represents a number of resource conflicts, Hydro is prepared to cooperate with other agencies in achieving an acceptable resolution to such issues.

Mr. Robert Mercer (Forestry) pointed out that all of the land in the Lloyds River watershed area is under long term lease to Abitibi Price Limited and the company has long term ownership rights to all the timber

and mineral resources in the area. Hence the Department of Forestry has only indirect control, mainly through taxation.

The study area is within Forestry Management District 13 rind contains approximately 3.4 million hectares of merchantable timber stands (i.e. greater than 60 cubic metres per hectare or 10 cords per acre). The forest is mature to over-mature, and has been heavily damaged by spruce budworm and hemlock looper infestation. Most stands have a mortality rate in the range of 20-25 per cent; this is projected to reach 70 per cent within two years.

Provincial Forestry forecasts a deficit in wood supply for the Island of Newfoundland by the year 2000, and in some areas yield deficits have already be sustained. Out of an annual commercial harvest of 1.2 million cubic metres of wood, 400,000 come from Crown lands. Management Area 13 forms about 8 per cent of the supply for the mills at Stephenville and Grand Falls. Of this, 165,000 cubic metres is to be cut from the study area. The department would like to increase this to 250,000 cubic metres.

As a result of insect infestation, three (3) strategies are pursued - harvesting of dead trees, a spray program, and silviculture. The first two methods address the present situation, and only silviculture is addressing the long term (40-50 year) problem. The viability of the industry however depends upon standing stocks available today.

In conclusion, Mr. Mercer observed that the Department of Forestry is an advocate of integration and wise use of resources, however his agency is responsible for a single resource. They appreciate that the management of each resource must recognize the needs of other agencies, but it was pointed out that the only legitimate process of conflict resolution available in the province today is the Environmental Impact Assessment Process, and this process provides a mechanism for bilateral discussion only.

Identification of Issues (Session 3)

The Chairman directed the discussion to the identification of issues for negotiation, i.e. areas of conflict with respect to resource use plans. Again, the Chairman used the approach of asking each negotiator to make a statement and allowing questions of clarification following each presentation.

Mr. Inder opened the discussion by pointing out that while preservation is often viewed as wishing to set aside all natural areas for wildlife, in reality only 0.6 per cent of the province's land (3.4 per cent of the Island) has been proposed for such exclusive use. Mr. Inder went on to question Ms. Brown as to the physical changes which DFO would render in the Lloyds system. It was pointed out that no facilities would be required in the watershed itself. It was concluded that there is no conflict evident between DFO and Wildlife/Parks. Likewise there did not appear to be any conflicting resource uses with the Department of Environment.

In response to a question by Mr. Inder, Mr. Cole described the planning process in Hydro. A short term (5 year) and a long term (20 year) plan are developed by Hydro. Emphasis is given to the requirement to meet immediate or short term energy deficits.

Mr. Mercer was asked if the new Forestry Act would address timber ownership and its use by paper companies or other agencies. Mr. Mercer pointed out that the purpose of the Act was to prescribe a land base for long term timber management purposes.

Ms. Brown asked Mr. Inder what activities would be allowed in the Waterway Park. This, he replied would depend on the type of park development. The aim is to keep the area as natural as possible, however the restrictions which apply to an ecological reserve would not be imposed, and recreational activity would be permitted.

Ms. Brown described a number of potential conflicts which had been identified by her agency, however none of these were considered insurmountable. The proposed hydroelectric diversion presents a problem of lost habitat as a consequence of reduced flow in the Lloyds River. As well the diversion canal presents the possibility of losing smolt from the Lloyds River watershed. However, mitigation strategies can be employed to address these two concerns.

With respect to forestry operations, DFO would require a 15 metre wide riparian zone along stream banks, however selective cutting would be permitted, as long as the vegetation cover was maintained.

Mr. Jeans then inquired as to the flow needed to sustain habitat levels in the Lloyds River following any diversion. Ms. Brown advised that the present information indicates that approximately 40 per cent of the mean annual flow would be required.

Mr. Jeans sought clarification from Mr. Mercer and it was pointed out that, in the short term, the province is timber poor because of the infestations of the spruce budworm and the hemlock looper, whereas in the long term it is land base rich. With proper management (including silviculture) it could be expected that the area of land required for forestry would be greatly reduced.

Mr. Cole compared the cost of electric power from Labrador with the cost of energy from the Lloyds watershed. Labrador power will cost between 40-50 mills, compared with 20 mills per kilowatt hour for energy from the Lloyds watershed. Mr. Cole pointed out that the plans for the hydroelectric diversion clearly resulted in resource conflicts, but that his agency was prepared to offer mitigation and/or compensation up to the limit of economic viability far the project.

Mr. Cole stated that there would be some loss of moose habitat and Mr. Inder indicated that, while generally the area supports two moose per sq. km., some regions, such as the delta may represent critical habitat.

Mr. Cole suggested that the loss of forested areas could be compensated by salvaging timber and funding of silviculture. Mr. Mercer replied that current cutting plans might render the issue of salvage irrelevant as the area is due to be harvested in the near future.

Mr. Mercer (Forestry) then challenged Wildlife on the issue of whether that agency would be required to carry out an Environmental Impact Assessment on its plans to increase wildlife populations since such an increase can have a negative impact on forest resources. Mr. Inder pointed out that the approach of his agency would involve permitting populations to increase naturally and would not result in any alteration to the environment, hence an EIS did not seem appropriate.

In reply to another question, Mr. Inder pointed out that any proposed waterway park would comply with the Environmental Impact Assessment process, and would be registered.

Mr. Mercer emphasized that his agency could deal with multiple use activities, but exclusive zones (preservation) are difficult to resolve. He saw no major difficulties between forestry activities and fisheries enhancement. The 15 metre riparian zone would be acceptable. With regard to Hydro's plans, there would be an interest in discussing the route of any proposed access roads to determine the timber along the route.

The Chairman asked a series of questions of each negotiator in an attempt to identify discussion issues. He asked Mr. Cole whether there were plans for additional generation capacity in the Bay d'Espoir system which would make the Lloyds diversion more attractive, and in reply it was indicated that feasibility studies had recently been completed for three (3) other projects, all of which lie in the Bay d'Espoir watershed,

Mr. Mactavish asked if there were plans for pesticide application for the study area. Mr. Mercer replied that the area had been sprayed in part already and could be sprayed again in the future.

Mr. Jeans expressed concern with respect to water quality for treatment plants and water supplies downstream. Presently the water quality is generally good in the system with the exception of areas immediately below municipal sewer outfalls. A flow reduction of 10 per cent as a consequence of the proposed diversion would affect contaminant levels proportionately.

Discussion of Issues (Access) (Session 4)

The Chairman proposed that three main issues be discussed: access; exclusive use; and land/water requirements. It was proposed that these would address the potential conflicts and the negotiators were asked if they felt this was a sufficient basis far further discussion. It was agreed that access would be addressed first as it is a topic which appears to have a high potential for the integration of plans.

Mr. Mactavish suggested that the discussion could include items such as: access into the proposed buffer zone; the means to address wildlife concerns in route planning; and control over ownership of roads. For example, would it be possible, in planning access, to develop a collaborative system to take the interests of all parties into account, and to optimize these interests.

Mr. Inder stated that, from a Wildlife perspective, while there are certain areas in which they want to limit access, for other areas access is needed to utilize the wildlife resource, especially the big game species. The use of ATVs has changed the situation in that there is less dependence on roads for access. Such usage also has the adverse impact of damaging habitat. Integrated Resource Planning would be helpful in planning roads to ensure that the least damage is done to wildlife and critical habitat areas. It must be recognized, of course, that roads are built to gain access to one or more resources. The incremental costs (eg. for road routing) to accommodate multiple use raises the question of how these costs are to be properly assigned.

It was noted that at present road construction, (except for logging haul roads), is subject to the provincial EIS process.

Mr. Mercer pointed out that the forestry roads system is important to gain access to areas of infested trees so they can be harvested expeditiously. Wood from the upper Lloyds River watershed should go to the mill at Stephenville (on the west coast of Newfoundland), while existing access connects with the Grand Falls mill. Abitibi-Price Ltd. proposes to complete a road connection to Stephenville in 1988. This project would be subject to the provincial EIS process.

The discussion then intensified as participants focussed on the perceived lack of an effective consultation process with respect to road plans. The various processes (Interdepartmental Land Use Committee - ILUC, Federal Environmental Assessment and Review Process - EARP, and the provincial Environmental Impact Assessment Process) were discussed with many examples cited to illustrate their various weaknesses. It was pointed out that none of these processes provide for or require resolution of conflicting or competing interests among all resource users, but are each proponent oriented. Nevertheless some resource agencies (eg. DFO) make it a practice to carry out a series of discussions on their plans with different resource agencies.

The Chairman summarized the discussion by observing that a review of the processes discussed may be in order to address shortcomings. He also noted that the shortage of funds available to some resource agencies severely limits their ability to carry out planning exercises, or to gather baseline &ta.

Mr. Inder closed off the session by pointing out that the public consultation process is an important factor, not yet discussed, and which adds an entire new dimension to planning processes.

Support Staff Negotiation Report (Session 6b)

[Following the conclusion of the first morning session, the negotiators decided to redirect the Workshop toward a general discussion of process and policy. Several of the negotiation team support staff (Hydro, Fisheries, and Environment) decided to convene separately and, utilizing the material prepared by them for use at the W&shop, continue the mock negotiation on the Lloyds River watershed This session was held on Thursday afternoon and reported to the Workshop the following morning. The presentations made by Mr. Ed Hill (Newfoundland and Labrador Hydro,) Mr. Martin Goebel (Department of Environment,) and Mr. Rick McCubbin (DFO) represent the record of discussions which took place. As a preface to their presentation the group acknowledged that the exercise represented only a portion of the resource interests and consequently it could not be expected that all potential conflicts would be resolved.]

Hydro and Fisheries spent considerable time discussing their respective undertakings and the potential implications of their plans on each other's resource. This discussion focussed on cost benefit analysis and the implications for resource development, particularly because of the impact which the previous diversion of the Victoria Lake watershed has had on the financial viability of the Exploit's River Enhancement Program.

Following a period of negotiation, Fisheries and Hydro reached a tentative agreement on the following items:

- (1) Hydro would provide and maintain fish passage facilities in the Lloyds River dam;
- (2) Hydro would install and maintain an effective fish barrier at the entrance to the diversion canal to minimize the loss of anadromous smolt to the Bay d'Espoir system;
- (3) Hydro would install a water control structure at the mouth of the diversion canal to divert flows from the Bay d'Espoir system to the Exploits River during the smolt migration period. This generally spans the period of mid-April to the end of May, which coincides with the peak of the hydrograph.

  A research program will be undertaken to refine this period and minimize the required flow diversion from the Bay d'Espoir system. The impact of this mitigation measure on the feasibility of the Upper Lloyds River Diversion must be evaluated before ratification.
- (4) Hydro would release water at the Lloyds River Dam to protect downstream salmonid habitat. The range of water release discussed was 10 per cent Mean Annual Flow (MAF) to 40 per cent MAF. It was agreed that the quantity of water released will depend on resolution of the amount of water diverted from the Bay d'Espoir system during the period of smolt migration.
- (5)The option of a hatchery and water release was discussed, but dismissed by both parties.

Hydro and Fisheries agreed that development of the Lloyds River system to achieve their respective goals appeared to be possible, however final agreement depends upon the resolution of the water release issue.

Martin Goebel indicated that the Hydro - Fisheries agreement was not entirely satisfactory from the perspective of the Water Resources Division. Time constraints and the lack of certain technical information halted discussion before consensus could be reached.

The negotiation which took place was not an Integrated Resource Plan in Mr. Goebel's view as all participants were not present, and achieved only an agreement between two parties. What happened illustrated the need far IRP as the bilateral agreement would have destroyed the ecological reserve, did not consider the rights of the landowner (Abitibi-Price), and made no mention of wildlife at all.

The negotiations lacked a common denominator. Mr. Goebel found it troublesome that there were no units to compare one resource with another, there was no means for Fisheries to demonstrate that it can realize a benefit equivalent to the value of the concessions received from Hydro.

Another lesson that came out of the negotiations is that one cannot restrict this process to a single watershed. It became clear very quickly that outside factors must come into play. One has to look beyond a particular project in order to incorporate future priorities. Mr. Goebel concluded that IRP must deal with multiple objectives and these objectives must have a common basis.

Mr. McCubbin agreed that the discussion had became bilateral, and emphasized the necessity for more than a two dimensional relationship. He also agreed on the need to, and problem of, placing a value on renewable natural resources.

The presentation ended with Mr. Hill pointing out that the participants recognized during their discussions that they were falling back into the EIS system of "proponent" negotiating with the "regulator" to reach a mutual agreement, and that this is not Integrated Resource Planning. He added that Hydro recognized the problem of equating Hydro dollars with other resource dollars. Mr. Hill felt that, over the last few years, Hydro has developed a balanced approach to recognizing the value of these other resources, and that a reasonable attempt is made to accommodate these stakeholders.

Discussion

Dr. Beanlands began the discussion by picking up on an earlier statement by Mr. Martin Goebel, i.e. that there had to be some logically structured "analytical fix" as a means of dealing with social issues and values. He suggested that the literature was full of attempts to get such a fix, but it just does not work.

He suggested that the boundary defined for the IRP exercise was wrong. The Lloyds River watershed is site specific; a broader more encompassing boundary is required. Also, experience is lacking in dealing with multilateral negotiations, as we are all accustomed to the bilateral process.

Mr. Jeans found that the presentation demonstrated to him that IRP does not work at the level of a single project. He put forth that it must be applied in the broad sense where trade-offs in other areas are possible. Dr. Beanlands observed that if the overall Fisheries and Hydro objectives for the province had been on the table, the outcome would have been different.

Mr. Cole re-emphasized the importance of putting a dollar value to a resource so that it can be compared to the merits of a hydro-electric development. The other agencies always have difficulty placing a figure on what it would cost their resource if Hydro were to go ahead with a development. Mr. Kiell pointed out that in most situations, the economic analysis would favour Hydro because of the dollar value, but if you were to take some other currency, i.e. jobs created as a result of resource activity, the outcome may be somewhat different. Mr. Goebel concurred and added that the value of resource is often determined by spinoff, but you have to ensure, again, that you do have a common denominator.

Mr. Cumew made the point that there is a danger in relying solely on economics since this approach does not take into consideration the best use of the land base, butmerely the benefits that accrue from its use.

Mr. Mercer observed that the (mock negotiation) process had served to crystallize issues, but was not a useful tool for resolution of differences as the required decisions must be made at the Cabinet level

IRP Process Presentations

The Alberta Experience . Dr. Barry Sadler

There is a remarkable similarity between the issues being discussed at this Workshop and those addressed by a recent international IRP meeting. Both meetings have agreed that, with proponent driven, site specific processes, (with the exception of the proponent,) all everyone gets to do is make objections rather than address the objectives. How then do you move from this site specific, reactive process to a more proactive area-wide process?

There appear to be two approaches - a "low ground" and a "high ground". The low ground is a communications forum - a show and tell process - which is limited in moving the agencies away from objections to objectives. It appears that this Workshop is agitating towards the "high ground" approach, i.e. developing a framework whereby the specific objectives of each agency are spelled out, while moving toward a process for delivery of these objectives. It is in this context that the Alberta Eastern Slopes experience may provide a starting point for modelling a possible approach.

In the mid 70's the Alberta government realized they had to get away from the site specific process and move towards some reconciliation of very different objectives for a similar area. This they found they could not do without some clear knowledge of what was there and what their real interests were - what they should keep and what they were willing to give up. First, each agency defined their objectives and then contributed this to a zoning process which covered some 40,000 square miles. Certain areas were designated as more suitable for "conservation" and others as more suitable for "utilization".

The next stage of the process was finding a forum whereby each separate department actually sits around a table and works out an integrated plan. As an example, one area may be suitable for both forestry and wildlife. To achieve this, limits might need to be set for forestry use. The process works through a negotiation forum where accommodation is simply hammered out within any given area that has been predesignated as having high potential for the agencies involved.

Conflicts still occur which need resolution when you get crossover areas between such resources as a mine or a hydro reservoir, but at least the process ensures that the conflicts are crystallized and each agency has a clear understanding of the others' objectives. In this way the negotiation process is facilitated. It also tends to make the Environmental Assessment Process, which is then site specific, that much easier.

This has been a ten year process for the Alberta government and has now reached the point where government can make their decisions that much easier. Essentially it came down to three steps: first, develop a land base inventory - the supply; secondly, determine demand through public consultations under the Public Inquires Act; and finally, leave it to the Director level to develop a system of allocation of uses. At this last step, the system is used as a basis for negotiations.

Discussion

When asked if there were existing resource users at the time when the process was established, Dr. Sadler replied that 75 per cent of the land was being utilized and this created many conflicts. Uses which were determined to be "bad" for the area were phased out. Such an example was a lease far oil and gas which was withdrawn after the existing lease was fulfilled.

When asked how the Alberta process would apply to the Lloyds River watershed, Mr. Sadler indicated that it would serve to crystalize the conflicts, and where two resources (eg. forestry and wildlife) have high potential, an effort would be made to produce trade-offs. The authority of the process rests in the referral of unresolved issues to Cabinet. Departments with resource management responsibilities thus have an incentive and direction to work on resolving conflicting plans for resource uses. Unresolved issues are referred from the Director level to ADM's, and only if necessary, to Cabinet. Mr. Mercer asked whether the Alberta process was not set as applying to a specific area and with an assigned lead agency. Mr. Sadler agreed, but indicated that the process has expanded to apply to all public lands in Alberta.

In reply to a question from Mr. Cole, it was indicated that the EIS process is still there and is still required. Dr. Beanlands then asked whether the agencies present felt that their resource management plans were well enough developed to provide a basis for such a planning exercise as was carried out in Alberta

Mr. Ken Cumew felt that with respect to wildlife, while there are some holes, there is a sufficient base of information available to suggest broad scale integration. Mr. Hustins for Parks indicated that while many elements are in place, there is a lack of detail available on systems and areas. Mr. Mercer indicated that a series of plans have been drawn up for the 18 forest districts in the province. Some are now dated and the last one was completed in 1980. These are currently being up&ted to 1988. For water resources Mr. Jeans stated that the available data on water quantity are reasonably good, but density is low. Water quality &ta have only been monitored since 1986. For Fisheries, Ms. Brown indicated that all salmon rivers have been inventoried for habitat. There is relatively poor information on resident species populations, but quite good information on anadromous (sea-run) species such as Atlantic salmon. Salmon enhancement plans are in place for the best 25 systems. Mr. Cole indicated that Hydro has good inventory information and a five year capital works plan which includes generation facilities and transmission lines.

Dr. Beanlands summarized that based on the comments provided, every agency appeared to be in an expansionary mode, and this meant that the need for integration will be even more necessary in the future. There appeared to be general agreement that such a capability is required.

The Chairman noted that the Report of the National Task Force on Environment and Economy which has been endorsed in principle by the First Ministers, includes a commitment for each government to develop a Conservation Strategy. Mr. Jeans advised that this report is now the subject of a Cabinet submission to the government of Newfoundland and Labrador.

The PEI Experience - Mr. Joseph Arbour

This brief presentation is intended to provide the background on how a conservation strategy came about in PEI, the theme of which is "Sustained Development".

The integrated process in PEI originated through the Canadian Wildlife Federation and the idea of a World conservation Strategy which was developed early in the 1980's. This approach required that there should be national conservation strategies. Much of the support far this idea originated from outside government. A variety of groups on the Island realized that the basic i&a of this concept was good.

The strategy eventually became a framework centered around a committee of government and non-government people, the majority of whom were non-government. The framework was not an action plan but a method far crystallizing the major concerns in some areas and identifying the common elements which tie these concerns together. This strategy has been adopted by the provincial Cabinet so they are now the ones responsible far what happens to the implementation of the strategy.

In order that both federal and provincial levels of government became involved in this strategy, a Memorandum of Understanding (MOU) on Conservation and Development was developed,based upon each government's statement of intent.

The Working Group which was initially established had problems at their early meeting very similar to those of this Workshop. They had great problems with the idea of conservation and development, and with the definition of "Sustainable Development". They eventually focused on how to develop the resources without degrading them.

The implementation of the MOU on Conservation and Development was through a Coordinating Committee. This is a committee of people at the level of Deputy Minister, Assistant Deputy Minister, or Directors. They are appointed by their ministers and have the responsibility of meeting at least once a year to develop Federal-Provincial programs. Each program is evaluated to establish the linkages and relationships between resource activities. The Coordinating Committee makes recommendations for action or for adjustment of programs.

The process also looks for opportunities which might otherwise be missed when the different sectors do not communicate. Overall, it provides an opportunity for resource agencies to get together and deal with the problem at the source.

The "Round Table" (proposed by the National Task Force on Environment and Economy) would be an umbrella for this process. To date, program changes have been incremental, starting with small changes in wording but it is the first step in co-ordination.

PEI is the only Province where Cabinet has adopted a Conservation Strategy policy; Alberta has a process for the concept and the Ontario government recognizes the strategy. The strategy is really just the first step. The mechanism for implementation could be anything, and the MOU is simply the device selected by PEI.

Development of a Planning Forum (Session 5)

On Thursday afternoon the Chairman asked the negotiators whether they wished to continue the specific discussions related to the Lloyds River watershed, or to broaden the discussion to deal with the process of Integrated Resource Planning. Each negotiator presented their thoughts and it was agreed that they would hold a discussion on approaches for developing an Integrated Resource Planning process in Newfoundland.

Several speakers made the point that, at present, there appears to be no forum at the planning stage for consultations. Agencies meet to discuss resource conflicts when the planning is well under way, and, as pointed out by Mr. Inder, this is often much too late. He wondered whether the municipal planning approach could be applied on a provincial scale. Mr. Jeans commented that, while the Department of Municipal Affairs encourages any municipality to develop plans which have input from all involved resource agencies with interest in the planning area, it is often difficult to get these plans accepted because of the competing interests. There are very few that have received endorsement by the Minister.

Mr. Jeans suggested that consideration could be given to establishing a Newfoundland Integrated Resource Planning Agency (NIRPA). This would provide for Integrated Resource Planning at the most senior levels of government, and comprise ministers or deputy ministers from federal and provincial levels of government. Mr. Inder agreed that a master planning approach which would allow agencies to share and compare long and short term plans is a useful concept.

Following the round table discussion a list of topics was drawn up to facilitate further discussions:

- Planning Time Frame
- Planning Boundaries
- Scope
- Authority
- Policy Or Law
- Public Role
- Implementation/enforcement
- Structure/membership
- Resource Requirements
- Information-sources, Level, Access
- Plan Integration.
-

The subsequent discussion touched on most of these topics but did not follow this listing as an agenda. The record of discussion has, however, been organized into comments made on each of the identified topics and therefore is not in chronological order.

Planning Time Frame

It was pointed out that there is a real problem of the compatibility of time frames. It was suggested that agreement be reached, for example on short term plans as encompassing a common time frame, eg. five years.

Planning Boundaries

Similarly, the planning boundaries of different agencies are based on different criteria and there appear to be no simple solutions to these differences.

Scope

It was suggested that the process would be required to address all land use issues. The process should be a means to share resource plans, not to integrate them. To this extent it would operate much like the ILUC (Inter-Departmental Land Use Committee) which tries to identify conflicts but not resolve them. ILUC, however only functions on a project basis.

Authority

There is considerable reticence to giving strong authority to the process, especially where it might conflict with existing legislation. There appeared to be consensus that the process would be a forum for generation of ideas, not assessment and approval of plans, and not a process whereby participants are bound by formal statements.

Policy or Law

Mr. Cole expressed concern over the possibility of entrenching a consultation process in law. Major cliff&ties were foreseen should such a process take precedence over existing legislation on resource utilization, for example the legislation under which Hydro operates.

Public Role

A caution was expressed that the public could perceive a planning process, such as this one, as compromising their opportunity to participate in decisions.

Mr. Jeans referred specifically to the Report of the National Task Force on Environment and Economy. This report envisioned a "Round Table" of senior officials that would include representation from the public. For example, Hydro's plans to meet generation needs for the whole province would be reviewed with senior level people, private sector individuals, and the public to make recommendations to government. Through this process, Hydro would know which plans were sensitive to the public long before any EIS process was begun. It was suggested that the feedback received would be useful in planning by each resource agency.

Implementation/Enforcement

The discussion on this topic raised the question of the means to ensure adherence to any plans developed by the process. One means of ensuring compliance might be through public participation in the process.

Structure/Membership

It was generally agreed that all resource agencies should be represented, and consideration given to the involvement of social agencies as well. If the "Round Table" model as recommended by the Canadian Council of Resource and Environment Ministers (CCREM) were followed, participation would need to be broadened to include the private sector and representatives from the public.

The level from which membership was drawn also needs to be considered. A tiered structure with a senior overseeing group and sub-committee comprising technical staff might represent a workable model.

Resource Requirements

An exercise would need to be undertaken to identify the financial resources and data sets required to implement an Integrated Resource Planning process.

Information - Sources, Level, Access

Each resource agency would need to provide its resource inventory and describe its planning process so that this information could be shared and compared with all participants.

Plan Integration

There would need to be some structure in place representing a hierarchy of involvement so that certain plans and activities would be included in the process, and the more difficult conflict issues would continue to be referred to the EIS process.

IRP and The Report of the National Task Force on Environment and Economy (Session 6a)

Mr. David Jeans on behalf of the Department of Environment made an offer to take the lead in the formation of a committee in the style of a "Round Table" as envisioned in the Report of the National Task Force on Environment and Economy. This document suggests that all provinces create a forum at the Cabinet level and comprising representation from all sectors of government and industry. Whether this would include federal as well as provincial representation is yet to be determined. As well, decisions as to the level of participants and the agencies involved have not yet been discussed, but these will be among the items decided following Cabinet endorsement of the concept.

Mr. Mercer commented that the Interdepartmental Land Use Committee (ILUC) already has a conflict resolution mechanism, but that it has not been used. Mr. Jeans pointed out that the concept of the "Round Table" is to provide an opportunity for a diverse group to discuss issues, rather than to replace existing conflict resolution mechanics, and to exert influence upon senior decision makers

It was suggested by Mr. Inder that this Workshop appears to be settling on a technical level of committee members. There needs to be some connection between this technical committee and Cabinet.

Mr. Mercer pointed out that ILUC is provided with its mandate and functions at the Director level, and that this is supposed to be a conflict resolution process. Unfortunately the first level of problem solving appears to be too senior, i.e. deputy minister.

Dr. Beanlands observed that communications appears to be the crux of the issue, but that some structure, however slight, would appear to be necessary.

Concluding Remarks (Session 7)

Prior to the adjournment of the Workshop, the Chairman provided an opportunity far each person to make any concluding comments.

Mr. Inder commented that the Workshop objectives were unclear, partly because of the lack of a well developed agenda The inability of some agencies to contribute complete plans also contributed to the difficulty of completing the exercise as planned. Almost everybody was unhappy with confining discussions to the small area of the Lloyds River watershed, and therefore the discussion broadened to a provincial sphere. A positive element of the Workshop is that it really focussed on the need for an "early warning/communication" system. An organizing committee lead by Provincial Environment would be worthwhile.

Mr. Cole observed that the Workshop served to make each agency aware of the lack of communication that exists between them. A consultative committee would address future development in the province and it is to be hoped that such a committee comes to fruition. A more concrete agenda was required to ensure success of this Workshop.

Mr. Jeans concurred that the exercise demonstrated the need for greater communication. Integrated Resource Planning is not single project oriented and must be looked at in the broader context.

Mr. Mercer felt that it was unrealistic to have expected to go through an Integrated Resource Planning process within the time frame available. Even the sub-group which negotiated a tentative agreement needed to test that against technical data, therefore the outcome of the Workshop should not have been surprising. Better communications are needed, but at the end of the day somebody has to make decisions. The suggestion that the Department of Environment take the lead role in forming the proposed committee is a positive outcome.

Ms. Brown expressed general agreement with the comments made and added that the lack of a process hampered the efforts to conduct a mock negotiation. At any rate the discussion of process was useful. It is encouraging that the province is taking the initiative and DFO would be interested in participating in the process.

Mr. Rick McCubbin summarized that while there may not have been any solutions reached in the Workshop, a clear identification of the problem has been achieved - lack of communications and of structure to deal with these problems.

Mr. Tom Bird (observer) noted that, although the exercise quickly went to process, it was impressive that agreement was reached on the need for a committee, and that a volunteer to coordinate its establishment came forward. From that point of view the participants should be congratulated.

Mr. Leslie Dominy on behalf of the Steering Committee observed that there is a good opportunity to establish a committee as a result of this Workshop and, while it will not be called "Integrated Resource Planning" that is not important.

Dr. Gordon Beanlands observed that CEARC is trying to improve the process of environmental management. In that context, it might be concluded that managing the resource is not very difficult; managing the

people who manage the resource is. the real challenge. A technical error was made at the start of this exercise in that time and space boundaries were not accurately defined. A map of the province of Newfoundland, rather than a map of the Lloyds River watershed should have been the main display. Nonetheless, a number of achievements have been realized during this exercise. All participants now share an increased understanding of, and a sensitivity to, other resource agencies' problems. It is clear that the Steering Committee had unrealistic expectations. Nonetheless, it is to be hoped that this exercise raised the level of trust somewhat and there appears to be a shared committment to go to the next stage.

Dr. Beanlands offered (to the Province via Mr. Jeans) both moral and financial support from CEARC for this next stage. If the proposed committee starts out as a vehicle simply to further communication and sharing of information, this may be a useful first step. If it then moves into integrated planning, this could well lead to some conflict resolution mechanism. At any rate, and over the longer term, agencies should become more comfortable with each other as a result of such a consultative mechanism.

Dr. Beanlands expressed his thanks to John Mactavish as Workshop Chairman, to Btvin LeDrew for organizing the Workshop, and to all of the participants for the committment of time out of their busy schedule. Their attendance was very much appreciated

CONSULTANTS RECOMMENDATIONS

OVERVIEW

While the workshop itself did not produce a precise set of recommendations, the discussions conducted and the consensus reached on a number of issues are helpful in drawing some conclusions on the feasibility of the IRP concept, and in making recommendations to CEARC and DFO concerning the future implementation of IRP as defined under the Policy for the Management of Fish Habitat. Consequently, the following section draws heavily on the workshop discussion, however it is emphasized that the evaluation and recommendations presented are solely those of the consultant (LEM Ltd.).

While many participants expressed frustration at different times during the Workshop, it is clear that a number of major achievements were realized. There was recognition of the need for broad based consultation and planning; for coordination of data and of planning boundaries; and for the development of valuation processes which can apply to the full range of resources. As well, a commitment was made by a lead agency to start the process of developing a mechanism to address these items.

LEVEL OF INTEGRATION

It is evident that the development of an Integrated' Resource Planning process cannot start at the project level, or with a relatively small area and presumably expand from the specifics of a given situation to produce general principles; rather, general principles and broader issues must first be addressed and resolved. It is not surprising, therefore that the "mock" negotiation approach failed. However in so doing it served to provide a focus on the weaknesses in the present approaches to integration of resource planning. While the more general discussion on process was often unfocussed, it produced general agreement on gaps in the present system and on the need for a broad-based planning process.

Recommendation 1

Provincial (and territorial) governments should be encouraged and supported in establishing mechanisms whereby long-range strategic resource use plans can be developed in a complementary manner and integrated during implementation.

IRP STRUCTURE

The present capability to plan and integrate resource utilization is characterized by a number of weaknesses which were identified during the Workshop:

- **Resource Inventory.** While the data base for most resources is satisfactory to support an integrated planning process, some gaps in information remain. These gaps are not so severe as to impede planning, but should be filled so that an equivalent level of information is available on all resources.

- **Resource Planning.** For each resource, the geographic boundaries (and to a lesser extent, time frames) used in planning are a function of the nature of the resource. These different time frames and boundaries impede consultation and integration of plans.

  There is a significant disparity in planning ability between agencies. Those with the least developed capability are at a disadvantage in negotiations over conflicting resource use, and would be similarly disadvantaged in efforts to integrate resource use.

  Resource agencies are advised too late of the plans of other agencies. As a result, it is difficult to achieve integration of plans.

- **Resource Valuation.** Mitigation measures to resolve resource conflicts need to be based upon some equitable standard whereby the relative value of different resources can be compared, yet no means presently exist to provide fair valuation between different resources.

The Workshop identified as an approach to addressing these gaps, the establishment of a planning body which would: act as a forum for information exchange on resource plans; provide advice to senior levels of government; and work toward integration of resource inventories and resolution of differences in planning boundaries and time frames.

This body was seen as providing an "early warning system" so that each agency would be apprised of potential conflicts and could work toward their resolution at an early stage. The body would include representatives of all resource agencies in the jurisdiction (both federal and provincial), plus selected social agencies. The body would function at the provincial level, rather than by project or within a smaller geographic zone.

There was a strong aversion to vesting this body with the authority to allocate'resource uses, or to supercede any authority now vested in individual resource agencies.

Mr. David Jeans, on behalf of the Department of Environment, volunteered to take the lead in establishment of such a committee. The involvement of the Department of Environment in implementing recommendations of the National Task Force on Environment and Economy makes it the logical choice to function in this lead role. The support offered by senior staff from other provincial government departments, as well as the Department of Fisheries and Oceans and CEARC should provide a helpful impetus to this exercise.

Recommendation 2

In the context of the workshop exercise completed as part of this evaluation, the initiative of the Newfoundland Department of Environment and Lands toward establishing a planning committee should be supported by DFO and CEARC through participation, andothet appropriate means.

IRPINTERRELATIONSHIPS

There are a number of existing processes and ongoing initiatives which address the broad issues of wise resource USC and maintenance of environmental quality. Several of these deserve comment on the degree to which they address the issue of Integrated Resource Planning.

There are many common elements between IRP as developed by the Workshop, and the Conservation Strategy/Round Table concept as recommended by the National Task Force. "Conservation Strategies" are described as a multi-sectoral approach to &fining and implementing sustainable economic development, i.e. development which ensures that the utilization of resources and the environment today does not damage prospects for their use by future generations.

The Conservation Strategy initiative is a broad public policy orientation toward achieving sustainable development. As such, it involves a wide range of participation from government and non-government representatives. To quote the Task Force Report: "the process of conservation strategy development is itself a mechanism for building a consensus to support integrated management of our resources". Thus, it can be concluded that the development of Conservation Strategies form an important impetus to, but do not replace ongoing efforts such as are envisioned by IRP.

The "Round Table" is intended to comprise a diverse group of senior decision makers from government (Cabinet Ministers), private sector (Chief Executive Officers), aboriginal groups and public interest groups (labour, academia, environmental organizations). This process is intended to recommend to First Ministers (i.e. the Premier at the provincial level) and would report its conclusions to the public. As described, it appears that the focus is on finding ways to address and consider environmental concerns whenmaking economic decisions.

Round Tables will function to sensitize leaders to the concerns of other sectors, especially with respect to environmental issues. It is not a decision-making process, per se, and would function more to facilitate or encourage specific measures such as IRP processes.

The Environmental Impact Assessment (EIA) process is well established in Canada with federal, provincial and (increasingly) municipal levels of government having formalized EIA requirements. It responds to applications for specific projects and addresses their environmental acceptability. Other resource users and resource protection agencies are given an opportunity to react to the proposed action. Projects are then approved as proposed, approved with amendments, or rejected by the authorized agency.

An IRP process should be designed to complement, rather than compete or conflict with EIA processes, and this appears to be achievable. Since IRP is a planning exercise, it would apply prior to the develop-

ment of specific projects, and since it is not oriented to a single proponent or a specific project, it could function to assist individual projects by providing a framework within which they could accommodate other resource use plans. In this way individual approvals under the EIA process would be facilitated and the scope of EIS exercises could be more focussed on specific environmental concerns.

The province of Newfoundland and Labrador has an Interdepartmental Land Use Committee (ILUC) which has a mandate to evaluate land use proposals. Limited discussions of ILUC took place during the Workshop, and we are not familiar with its operations. A common complaint is the absence of any conflict resolution process for the Committee. Of all the processes considered, however it appears that ILUC comes closest to IRP. Possibly, an amended or strengthened ILUC could provide an appropriate mechanism for Integrated Resource Planning as envisioned by the Workshop.

Given the existing processes which are in place and the new initiatives under way, it is clear that care must be taken in defining boundaries and scope of the IRP process so that it complements other processes and fills a Specific need. Thus, it is important that the scope of IRP be clearly defined and a common understanding reached of its role.

Recommendation 3

A working definition of IRP should be developed in consultation with agencies responsible for related processes.

THE ROLES OF DFO AND CEARC IN INTEGRATED RESOURCE PLANNING

The Workshop was provided with some insight into the experience of provinces other than Newfoundland and Labrador and the approaches developed. PEI has employed a federal - provincial Memorandum of Understanding to put in place a process for implementing its Conservation Strategy. Alberta developed a valuation system for assigning resource use priorities. Although some would criticize this latter approach as falling short of true integration, (especially in areas where several high value resource uses are proposed), nevertheless these represent efforts to resolve or pre-empt resource use conflicts at the planning stage.

The DFO Policy on the Management of Fish Habitat expresses a willingness to "participate" in Integrated Resource Planning exercises. The funding of this evaluation and the co-hosting of the IRP Workshop represent active, positive efforts toward implementing IRP, but could be seen as somewhat bold, in light of DFO's role as a single resource management agency. As one of the potential participants in any IRP exercise, DFO may not be perceived as an even-handed broker. It may, therefore be appropriate for DFO to adopt a support role to other agencies in the future development of IRP.

As an agency with a broad interest in environmental issues, CEARC (possibly in co-operation with Environment Canada and provincial Environment departments) is in an excellent position to continue these efforts by encouraging all the provinces (and territories) to develop or improve IRP processes so that they meet the definition which would result from implementation of Recommendation 3.

Recommendation 4

CEARC, with support from resource and *environment* ***agencies*** continue ***to encourage the implementation of IRP processes throughout*** Canada

APPENDICES

APPENDIX I:

Description of Watershed and Associated Resource Conflicts.

INTEGRATED RESOURCE PLANNING

CONCEPT FEASIBILITY STUDY

Background Paper on The Study Process

Jan. 05, 1988

TABLE OF CONTENTS

INTRODUCTION

The Department of Fisheries and Oceans, (DFO) recently announced a Policy for the Management of Fish Habitat (Appendix 1). This policy operates under the guiding principle of "No Net Loss" of productive capacity of fish habitat, and in fact is aimed at achieving a net gain.

Within this policy, a strategy has been enunciated which reflects a willingness by DFO to participate with other government departments and resource agencies in resource management planning exercises, and to compromise with other interests so that competing or conflicting resource use priorities can be reconciled through negotiation.

This strategy has been given the term "Integrated Resource Planning" (IRP). In the context of its use by DFO, it can be defined as:

A STRATEGY WHEREBY RESOURCE PLANNING AND MANAGEMENT CAN BE CARRIED OUT BY ALL CONCERNED GOVERNMENT AGENCIES AND PRIVATE SECTOR INTERESTS IN A MANNER WHICH INCORPORATES FISH HABITAT PRIORITIES INTO AIR, LAND, AND WATER USE PLANS.

The strategy of IRP as described by DFO is new, and hence lacks a history of application which can provide a clear understanding of scope and applicability, rules and procedures, relationship to other processes, or a track record of success/failure.

This exercise is intended to bring the IRP strategy into clear focus, and is so doing provide a critical evaluation of its potential. The device which has been selected is to conduct a mock negotiation. The participants in this exercise will be challenged both to play the role of resource managers (a role to which they would be assigned in an actual resource conflict situation), as well as to contribute to the design and evaluation of the exercise. Because participation in both roles is critical to the success of this exercise, and given that the latter role is one which would be difficult, if not impossible to fulf ill in an actual situation, it must be emphasized that this is a simultation exercise.

This project has been funded by DFO and the Canadian Environmental Assessment Research Council (CEARC). Naturally DFO is anxious that the IRP strategy be developed into an effective tool. CEARC is interested in processes for conflict resolution, both to ensure they are compatible with existing processes and because they may offer solutions to some of the weaknesses of existing approaches.

SCHEDULE

The study has a tight, but achievable schedule as shown below:

	1987/88)
Preliminary Consultation	- Nov 20 - 30
Formal Invitation/Response	- Dec 4 - 14
Consultations with Resource Agencies -	
- Individual	- Dec 15 - 31
- Group	Jan 08
Information Preparation by participants	- Dec 15 - Jan 20
Position Papers Submitted	- Jan 22
Review & Group Consultation	- Jan 27
Distribute consolidated Position Papers	- Feb 1
Workshop (Corner Brook)	- Feb 10 - 12
Report/IRP Evaluation	- March 15

References will be made throughout the rest of this text to the action items and activities noted above.

SUBJECT AREA

To ensure that a suitable subject area be selected for this simulation, a number of requirements must be met:

- the presence of a number of potential resource use conflicts;
- the presence of a number of resource management (utilization/enhancement) plans;
- relatively small physical area; and
- not currently the subject of major resource conflict, or undergoing some form of resource conflict resolution (eg Environmental Impact Assessment).

In the early 1970's, a proposal to divert the headwaters of the Lloyd's River into the watershed area for the Bay D'Espoir Hydroelectric Development created a major public response. The concerns expressed by resource agencies, and the objections of public interest groups resulted in the termination of activities related to the diversion project, including a program of environmental assessment studies.

Since that time a number of other activities have proceeded in the area, and Newfoundland and Labrador Hydro has been directed by government not to consider the Lloyds River Diversion Project as a possible means to address energy deficits.

The resource uses/conflicts which could be identified in relation to the Lloyds River watershed include;

Fisheries - The area is targeted for salmonid enhancement as part of the Exploits River Salmon Enhancement Program.

Hydro - Diversion of the headwaters into the Bay D'Espoir system will provide inexpensive energy.

Forestry - Large tracts of prime timber occur in the area.

Parks/Ecology - The delta to King George IV Lake in the headwaters of the watershed is an area of rich wetland whose natural unspoiled beauty represents a major resource.

Wildlife - Big game, (moose & caribou) are exploited in the area.

Water Resources- The Lloyds River provides water for various downstream uses: absorbing contaminants; electric power generation: and to provide domestic and industrial water supplies.

The Lloyds River appeared ideal in meeting the requirements of a study area. In order to revise some of the conflicts which have been resolved or left dormant, and in order to reinforce the "mock" nature of this exercise it has been decided to proceed with the Lloyds River watershed (Figure 1), but to do so in the 1974 setting. The legislation/mandate of today's resource agencies, and their current resource basse knowledge will be applied to the unsettled debate over conflicting proposed resource uses which prevailed at that time.

PARTICIPANTS

The participants in this exercise have been drawn from those agencies responsible for management/protection of the major resources noted in the watershed. Invitations to participate have been extended to the following agencies -

Department of Fisheries and Oceans

Newfoundland and Labrador Hydro

Department of Forest Resources and Lands
(Forest Management Division)

Department of Culture, Recreation and Youth
(Parks Division, Wildlife Division)

Department of Environment
(Water Resources Branch, Environmental Assessment Branch)

Other agencies (eg Crown Lands, Transportation, Mines, Abitibi Price) could have been included in the list of those invited on the basis that they have a significant resource interest in the subject area, however it was agreed by the Steering Committee that a reasonable limit should be placed on the number of participants, given the scope and nature of this exercise.

The agencies invited to participate were asked to provide a senior executive (Assistant Deputy Minister level or equivalent) who would act as the representative of their agency at the

proposed negotiation workshop. Each negotiator would be supported by a small team of (l-3) professionals drawn from the ranks of those with direct resource management responsibility. It is these support personnel who will be most involved in the preparation for the workshop. Their major task will be to prepare the Position Papers required of each agency, and to assist their Negotiator in developing the strategy of their agency for participation, both before and during the Workshop.

RESOURCE AGENCY POSITION PAPERS

Because I.R.P. is based on the principle of integrating various resource activities, each participating agency is asked to provide a body of information. In this way **IRP** differs from Environmental Impact Assessments where one agency provides a body of information (the EIS) and acts as proponent, while other concerned agencies react as intervenors. In preparation for formal negotiations to achieve Integrated Resource Planning, we are requesting that each agency prepare a Position Paper which describes: their authority over the resource in question and how that authority is applied; the (potential and realized) resource value in the study area; and an evaluation/ appreciation of resource conflicts. This last item is intended to provide the basis for defining each agency's negotiating stance.

The following outline of the Position Papers is suggested:

A) Resource Agency Description

This section is intended to provide a description of the resource agency, focusing on its basis or rationale for functioning as a resource manager. Each agency should describe its mandate and identify any legislation for which it is responsible. The policies and programs of the agency which relate to the study area should also be described.

As an example of the size and contents of this section, Appendix 2 contains material prepared by DFO for a similar purpose.

B) Resource Definition

In this section the agency will provide a description and valuation of the resource for which it is responsible.

There is obviously a great deal of variation in the level of knowledge concerning the resources in any given area. For some resources there may be an absence of even the most basic inventory data; whereas for others, detailed inventory and resource management regimes are in place.

For Integrated Resource Planning to work, each agency will need to provide a description of its resource base and the value which can be placed on that resource, both in absolute terms and in relation to the total available resource.

(i) - Stock/Resource Evaluation

- Describe the quantity of resource which exists in the project area.
- Provide this description in terms of standard/common quantities used for the resource in question.
- To achieve a relative perspective, relate this resource to the total available resource in the province.

(ii) - **Exploitation/Utilization** Rates

- Describe the present level and trends in utilization. We suggest this include annual yields for the last five years and projections for the next five.
- Provide a statement on the absolute and relative direct value of this resource. Explain the "currency" used in this valuation. If appropriate, include a consideration of value-added potential.
- Provide, if possible, a projection of the potential maximum level of utilization of the resource in the study area as well as an estimate or measure of the maximum sustainable yield or value of this level of resource utilization.

(iii) Resource Enhancement

Finally, provide a discussion of the potential for resource enhancement or other strategies which exist to improve utilization rates, or the value realized from the resource. Describe and document any firm enhancement plans which have been developed.

(C) Resource Compatibility/Conflicts

This section will address the question of the extent to which other resource exploitation activities can affect or limit the resource for which the agency is responsible. In considering the extent to which other resource activities can be tolerated or permitted to proceed, each agency will be taking the first step in integration of its resource plan. We suggest that, in considering other resource activities, they be ranked with reference to the resource under consideration and categorized as having the potential for:

- no interference;
- minimal interference;
- acceptable interference; or
- unacceptable interference.

This will help to define the opportunity/range of negotiating flexibility for each resource agency and will thus serve as a starting point for formal negotiation. Each participant is encouraged to provide a statement which is factually defensible and which encourages a conciliatory approach to other resource uses.

Consolidation

Once each resource agency has completed their Position Paper, these will be compiled and distributed to all participants so that a common body of information will be available to each negotiation team.

In preparation for the negotiation session, the consultant will prepare an overview of the study area. This overview wil include a consolidated description of the resources in the study area and will attempt to construct a matrix which organizes and presents the full set of conflicts.

Timing is important in the preparation of position papers. Each participant will need time to review the consolidation prior to the negotiation session, and the consultant will need time to prepare the overview, thus position papers must be submitted well in advance of the actual negotiation session.

NEGOTIATION WORKSHOP

As noted, the negotiating workshop is scheduled for February 10, 11, 12, 1988 and will be held at the Glynmill Inn, Corner Brook.

Participants will be expected to make their own travel and accomodation arrangements, however a block of rooms has been reserved at the hotel for the evenings of February 10 and 11. In making room reservations please identify yourself as a participant in the IRP Workshop.

The following general schedule will be followed:

February 10 - 1800 - 2000 - "Registration"
2000 - 2100 - Overview and Scope Definition

February 11 - 0830 - 1230 - Negotiation Session
1230 - 1330 - lunch
1330 - 1630 - Negotiation Session
1630 - 1830 - break for dinner
1830 - 2230 - Negotiation Session

February 12 - 0830 - 1230 - Consensus Building

At the initial session on the evening of February 10 the conflict matrix will be presented and a set of negotiating issues proposed. Some conflicts will be excluded from consideration either because they can be addressed by existing mechanisms, or because they require higher level resolution. The remaining conflicts will be proposed to comprise the agenda for subsequent discussion.

An informal icebreaker reception will also be held on the first evening. The following day (February 11) will be focussed on the actual negotiation process. Sessions will be scheduled throughout the day and, if necessary, evening.

The morning of February 12 will be spent in endeavoring to produce an acceptable consensus on the conflict issues. The aim will be to produce a single agreement which each negotiator feels confident in approving or submitting for approval to his agency (Minister, Board of Directors, etc.).

The workshop will conclude lunch time on Friday, February 12 in time to make flight connections.

The negotiations will proceed at three levels. Plenary sessions will be under direction of the Workshop Chairman. Each agency will be represented by their negotiator who will act as spokesperson for his delegation. Reasonably formal procedures will be followed, with the chair directing the discussion.

Subsidiary discussions will be held between smaller groups where, for example a conflict involves only two or three agencies. These sessions would be less formal and would not necessarily be chaired, unless so requested.

Finally, each negotiating team will wish to meet privately to discuss issues and develop strategies.

Meeting rooms will be provided so that each of three levels of negotiation can be accomodated. A record will be kept of discussions during formal and subsidiary sessions, but not of individual strategy sessions. This record will be used to produce the edited proceedings.

Attendance at the workshop is "by invitation only" and, other than the participating negotiating parties, only a limited number of observers will be invited. The Steering Committee members for the study will be attending, and an invitation extended to a representative from the federal Department of Environment.

DOCUMENTATION

A report on the Study and Workshop will be produced by the consultant under the direction of the Steering Committee, and in consultation with the Workshop Chairman. The final document will include:

- a chronology of events throughout the exercise;
- an edited set of proceedings from the Workshop;
- a critcal evaluation of the process which evolved; and
- a set of recommendations.

The various Position Papers and the Study Area Overview will be included as an appendix to the final report.

APPENDIX 1

DEPARTMENT OF FISHERIES AND OCEANS

POLICY ON FISH HABITAT MANAGMENT

PRESS RELEASE

Fisheries and Oceans | Pêches et Océans

News Release
Communiqué

NH-HQ-86-07%

FOR IMMEDIATE RELEASE
Thursday October 9, 1986

SIDDON RELEASES NEW POLICY ON FISH HABITAT MANAGEMENT: LAYING THE GROUNDWORK FOR STOCK ENHANCEMENT

OTTAWA - The Minister of Fisheries and Oceans, Tom Siddon, today tabled **in** the House **of** Commons a new policy for- the management of fish habitat, which sets as its objective an increase in the productive capacity of the wetlands and waterways that provide the breeding **grounds** for Canadian fish stocks.

"Stock enhancement is a major priority of the federal government," said Mr. Siddon. "A clearly-stated Policy on Habitat Management lays the groundwork for this effort."

"This statement of federal government policy on fish habitat is also an explicit recognition by Canada that fish habitats are important national assets. It is the result of over three years of wide-ranging consultations with the private and public sectors," Mr. Siddon said.

During the course of the consultation process, the Minister and his officials met with such private sector groups as the mining, forestry and hydro-electric associations, as well as with conservation and fisheries groups. DFO officials also met with representatives from other federal government departments and from all the provincial and territorial governments.

"This new policy aims to increase the economic and social contribution that commercial, native and recreational fisheries make to Canadian life," said Mr. Siddon. "The **policy** therefore provides a comprehensive framework for the conservation, restoration and development of fish habitats, and presents strategies for the implementation of the various components."

.../2

Canada

The specific objective of the new policy is the achievement of an Overall Net Gain of habitat productivity. The Cepartment of Fisheries and Oceans will strive to balance unavoidable habitat losses with habitat replacement on a project-by-project basis, thus preventing further reductions to Canada's fisheries resources. It will add to those efforts and work cooperatively towards the objective of Net Gain of fish habitat through integrated resource planning, that is by attempting to reconcile the interests of the many sectors which compete for the use of habitat area. In particular, the federal department will work closely with the governments of the provinces and the territories to eliminate any duplication of effort.

The new policy also places greater emphasis on public involvement in the decision-making process. It calls for consultation with the public on any major decisions, shifts of policy or other actions and issues that could either threaten or enhance fish habitat.

"This policy will lessen our dependence on the strictures and penalties of the law. It will do so by putting a greater emphasis on prevention - through improved consultation and planning - on early detection of incipient problems, and on speedy warnings to potential violators," Mr. Siddon said.

The Minister emphasized that only with the involvement of individual Canadians and the commitment of the private sector will significant progress in achieving the habitat policy objectives be possible.

"More important than the policy itself is the will to make it work," Mr. Siddon said. "Productive fish habitat can be increased by local community projects that will create jobs and in addition, cooperative arrangements such as habitat conservation and development foundations or boards can focus national and regional efforts on important habitat initiatives."

.../3

The new policy applies in those areas of Canada where the federal government has direct management responsibility for the fisheries. In other areas, where provincial agencies manage the fisheries, implementation of the policy will be encouraged through Federal-Provincial agreements.

- 30 -

FOR MORE INFORMATION:

Dr. J.C. MacLeod
Director
Fish Habitat Management Branch
Fisheries and Oceans
200 Kent Street
Ottawa, Ontario
K1A 0E6

Tel.: (613) 990-0201

Les Dominy
Fish Habitat Management Branch
Fisheries and Oceans
200 Kent Street
Ottawa, Ontario
K1A 0E6

Tel: (613) 990-0197

APPENDIX 2

DEPARTMENT OF FISHERIES AND OCEANS

MANDATE AND RESPONSIBILITIES

(AN EXAMPLE OF RESOURCE AGENCY DESCRIPTION FOR INCLUSION IN POSITION PAPERS)

ANNEX 1

DFO MANDATE AND RESPONSIBILITIES

DEPARTMENTAL OBJECTIVE

The objective of the Department of Fisheries and Oceans is: to undertake policies and programs in support of Canada's economic, ecological and scientific interests in the oceans and inland waters, and to provide for the conservation, development and sustained economic utiliration of Canada's fisheries resources in marine and inland waters for those who derive their livelihood or benefit from these resources; and to coordinate the policies and programs of the Government of Canada respecting oceans.

MANDATE

The Department of Fisheries and Oceans' mandate is derived from the Constitution Act, 1867, and the Department of Fisheries and Oceans Act, 1979. Section 91 (12) of the Constitution Act, 1867, gives the Government of Canada exclusive legislative responsibility for sea coast and inland fisheries. The Department of Fisheries and Oceans Act, 1979, defines the Minister's powers as extending to and including:

a) all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, board or agency of the Government of Canada, relating to:

   (i) sea coast and inland fisheries,
   (ii) fishing and recreational harbours,
   (iii) hydrography and marine sciences, and
   (iv) the coordination of the policies and programs of the Government of Canada respecting oceans; and

b) such other matters over which the Parliament of Canada has jurisdiction relating to oceans as are by law assigned to the Minister,

The department's responsibility to manage fisheries includes that for marine mammals and shellfish as well as for fish. The specific legislative basis for the management and protection of fish and marine mammals and their habitats is the Fisheries Act which contains provisions to control the harvesting of various species and to protect them and their habitats from the effects of human disturbances (see section on Departmental Legislation). In fulfilling its responsibility for fisheries, the distribution and abundance of fisheries resources are studied, their habitats identified, research is undertaken on their biology, on ecological processes and on environmental impacts, biological requirements for the protection and sustained usage of fisheries resources are stipulated, the effects of industrial developments are monitored, and the Fisheries Act and its regulations are enforced. Economic research is undertaken and various forms of assistance, including financial and marketing assistance, are provided to the fishing industry.

The department's ocean science mandate is derived from the Department of Fisheries and Oceans Act, 1979 and the Resources and Technical Surveys Act (Government Organization Act, 1966). The department acts primarily as a service and advisory agency applying oceanographic knowledge, data and information to the solution of a variety of marine problems including those arising from the exploitation, regulation and management of arctic hydrocarbon resources and shipping. It undertakes long-term or sustained (and often large-scale) process-oriented research and thereby provides the context within which Industry undertakes site-specific and/or problem-oriented investigations, A major function is the provision of ocean information and advisory services to the regulatory agencies. It has been making significant progress in operating on ice-covered waters. As well, the department has an important support function with respect to environmental emergencies.

The department, has the national responsibility for the provision of hydrographic charts and related nautical productions. The Charts and Publications Regulations of the Canada Shipping Act require that ships navigating in Canadian waters have the latest edition of appropriate hydrographic charts. Adequate chart coverage is a prerequisite to the provision of navigational aid systems by Transport Canada. It has the responsibility for the publication of Tide and Current Tables and of Sailing Directions.

DEPARTMENTAL LEGISLATION

The department administers several statutes of which the Fisheries Act is most relevant. It is the main statute for the management and protection of fish and marine mammal resources and their habitats. Fish and marine mammal resources are managed primarily in accordance with the provisions of section 34 of the Fisheries Act, under which various regulations have been made to control harvesting of different species. The harvesting of fish in the Northwest Territories {NUT) and the Yukon is controlled under the Northwest Territories Fishery Regulations and the Yukon Territory Fishery Regulations. The harvesting of beluga, narwhal, seals, walrus and bowhead whale is controlled under the Beluga Protection Regulations, the Narwhal Protection Regulations, the Seal Protection Regulations, the Walrus Protection Regulations and the Cetacean Protection Regulations respectively.

Section 44 of the Act can be used to protect spawning and breeding areas of fish and marine mammals.

Fish and marine mammal resources and their habitats are protected from the effects of man-made disturbances primarily in accordance with sections 20, 28, 30, 31 and 33 of the Fisheries Act. Specifically, obstruction of fish passage in streams is controlled under section 20 and the Fishway Obstructions Removal Regulations; the need for fish guards on water intakes under section 28; the destruction of fish and marine mammal habitat under section 31; and the deposit of deleterious substances in waters frequented by fish and marine mammals under section 33. This last section is administered in part by the Department of the Environment, but the Minister of Fisheries and Oceans remains accountable to Parliament for the entire Act.

The use of explosives In water is controlled under both the Northwest Tetritorles and Yukon Territory Fishery Regulations. The department has prepared guldelines to assist prospective applicants in preparing requests for authorizations to use explosives in water..

Under section 33,1(i) of the Fisheries Act the Minister of fisheries and Oceans may require specific Information from anyone who is carrying on, or proposes to carry on, any work or undertaking that results in or is likely to result in (a) the deposit of a deleterious substance in water frequented by fish or (b) the alteration, disruption or destruction of flsh habitat. This may Include plans, specifications, studies, procedures, analyses or other information related to the work. Also, under section 4, the Minister may authorire scientific studies to be carried out by people other than DFO staff.

The department administers sixteen other statutes. One of these is the Fish Inspection Act. The Fish Inspection Regulations under the Act provides for control of the quality of fish products for inter-provincialtrade and export. This Act does not apply to marine mammals.

POLICY AND RELATED INITIATIVES

Three initiatives are clarifying how the department discharges its responsibilities in the Arctic. After comprehensive discussions, the department released the Fish Habitat Management Policy. The goals of the policy are to conserve, restore and develop fish habitat, A specific objective is to achieve an overall net gain of habitat. productivity by balancing unavoidable habitat losses with habitat replacement on a project-by-project basis, The policy also places greater emphasis on integrated resource planning, such as Northern Land Use Planning, to reconcile interests of sectors competing for the use of an area of fish habitat, on public involvement in the decision-making process and on public consultation for major issues.

The department also is preparing an explicit statement on its Arctic fisheries policy. The proposal will recognize many current initiatives such as increased participation of resource users in the management of the fishery resources, development of fishery management plans, the importance of fisheries development, and consultation with affected clients, and non-DFO initiatatives such as land claims and Northern Land Use Planning, Departmental clients will be consulted on the proposed policy before it is finalized.

Finally, the department is leading the development of an Arctic Marine Conservation Strategy for Canada. Considerable consultation has occurred with interested groups and consensus has been reached on the purpose and ten principles which form the basis of the draft strategy. The Minister intends to release the draft strategy as a discussion paper in September. The draft proposes several strategies necessary for conserving Canaca's Arctic marine environment and its resources including: establishment of shared management processes; integrated resource planning and management; sustainable development of renewable resources; protection of the quality of the Arctic marine environment; establishment of a system of marine protected areas; the need for research; exchange of infonation; and provision of relevant education and training. The draft strategy recognizes the importance of Northern Land Use Planning for its implementation.

APPENDIX II:

Agency Position Papers

LLOYDS RIVER WATERSHED
INTEGRATED RESOURCE PLANNING
CONCEPT FEASIBILITY STUDY
POSITION PAPERS

January 29, 1988

TABLE OF CONTENTS

-LLOYDS RIVER WATERSHED
INTEGRATED RESOURCE PUNNING
CONCEPT FEASIBILITY STUDY

POSITION PAPER

DEPARTMENT OF CULTURE, RECREATION & YOUTH

PARKS DIVISION

Prepared for the Integrated

Resource Planning Negotiation

Workshop, Corner Brook, Nfld.

February 10-12, 1988 by the

Planning Section, Parks Division

INTRODUCTION

Integrated **Resource Planning (I.R.P.)** is **a strategy whereby planning and management can be executed by government agencies and private sector developers in a manner** which successfully **integrates various resource** activities. **This strategy** is unlike Environmental impact Assessment (E.I.A) where a single agency provides a data base of information and acts as proponent. This position paper has been prepared in response to a negotiation workshop sponsored by the Federal Department of Fisheries and Oceans to test the concept feasibility of I.R.P.

TABLE OF CONTENTS

A. Resource Agency Description

Parks Division is a component of the Provincial Department of Culture, Recreation and Youth. The Division operates from the West Block of the Confederation Building Complex, with regional offices across the Province.

(i) Legislation

Farks Division admini sters two provincial statutes: The Provincial **Parks** Act 1970, and the Wilderness and Ecological Reserves Act, **1980.**

(ii) Mandate

The goal of Farks Division is to provide a wide variety of hign quality outdoor recreation opportunities for residents and visitors, **and to preserve and protect in** perpetuity **provincially significant representative and special natural landscapes and features, and outstanding recreational environments, in a system of provincial parks. Four policy objectives have been approved in association with this goal.**

These are:

1. **Preservation and Protection**
2. **Outdoor Recreation**
3. **Heritage Appreciation and Environmental Awareness**
4. **Tourism**

Parks Division's policy objectives are met through a park **classification** system that includes the following park classes:

1. Wilderness and Ecological Reserves
2. Natural Environment Parks
3. Waterway Parks
4. Natural and Scenic Attraction Parks
5. **Outdoor Recreation Parks**
6. **Park Reserves**

Wilderness Ressrves and Ecological Reserves are planned and **established** in accordance with guide1 **ines** of The Wilderness **and Ecological Reserves** Act.

Wilderness Reserves are intended to provide large tracts of land in which people may hunt, fish, travel and otherwise experience and appreciate a natural environment. Such an area would permit undisturbed interactions among living things and their environment, survival of wildlife species, and protect areas with primitive or extraordinary characteristics. The existing Avalon Wilderness Reserve is such an example.

Ecological Reserves differ from wilderness reserves by designating much smaller tracts of land to protect representative or unique ecosystems, species or natural phenomena for ecological management rather than outdoor recreational enhancement. These areas also provide venues for scientific study of habitat alteration over time and act as standards by which to measure effects of development on other areas of the Province. Ecological reserves also protect rare animal, plant or geological resources and preserve the gene pools of their living organisms to ensure species continuation. Examples of ecological reserves would include the offshore bird sanctuaries or the recently designated Mistaken Point fossil site.

During the planning phase, all Reserve proposals are forwarded to both Federal and Provincial Government departments and agencies for comment (Section 12(1) of Act). Based on comments received, the Wilderness and Ecological Reserves Advisory Council decides whether to proceed with recommending establishment of a Provisional Reserve. If Cabinet approves, public hearings are held prior to a final decision to establish or reject a reserve. If a reserve is established, it is proclaimed in The Newfoundland Gazette.

The Wilderness and Ecological Reserves Act prohibits development activities (e.g. roads, hydro, logging) in both Wildernessand Ecological Reserves. Within Wilderness Reserves, motorized vehicles are prohibited and aircraft landings are restricted. Hunting and fishing are allowed to continue under the applicable Wildlife and Fisheries regulations.

Generally, within Ecological Reserves fishing, hunting, and trapping are not allowed. The removal,. destruction, or impairment of plants, animals and fossils are prohibited, and motorited vehicles, and aircraft landings are not allowed.

Exemption clauses of the Reserves Act, however, permit Cabinet to make regulations that would permit some of the above noted activities to continue. For instance, if traditional fishing activities occurred within an ecological reserve area prior to establishment, and it was determined to not be detrimental, a specific regulation for the reserve would permit it to continue.

Management plans are prepared for both Wilderness Reserves and Ecological Reserves. These detail the reasons for establishing the reserve and provide management guidelines and regulations. Regulations applicable to each reserve are published in The Newfoundland Gazette and in a local newspaper.

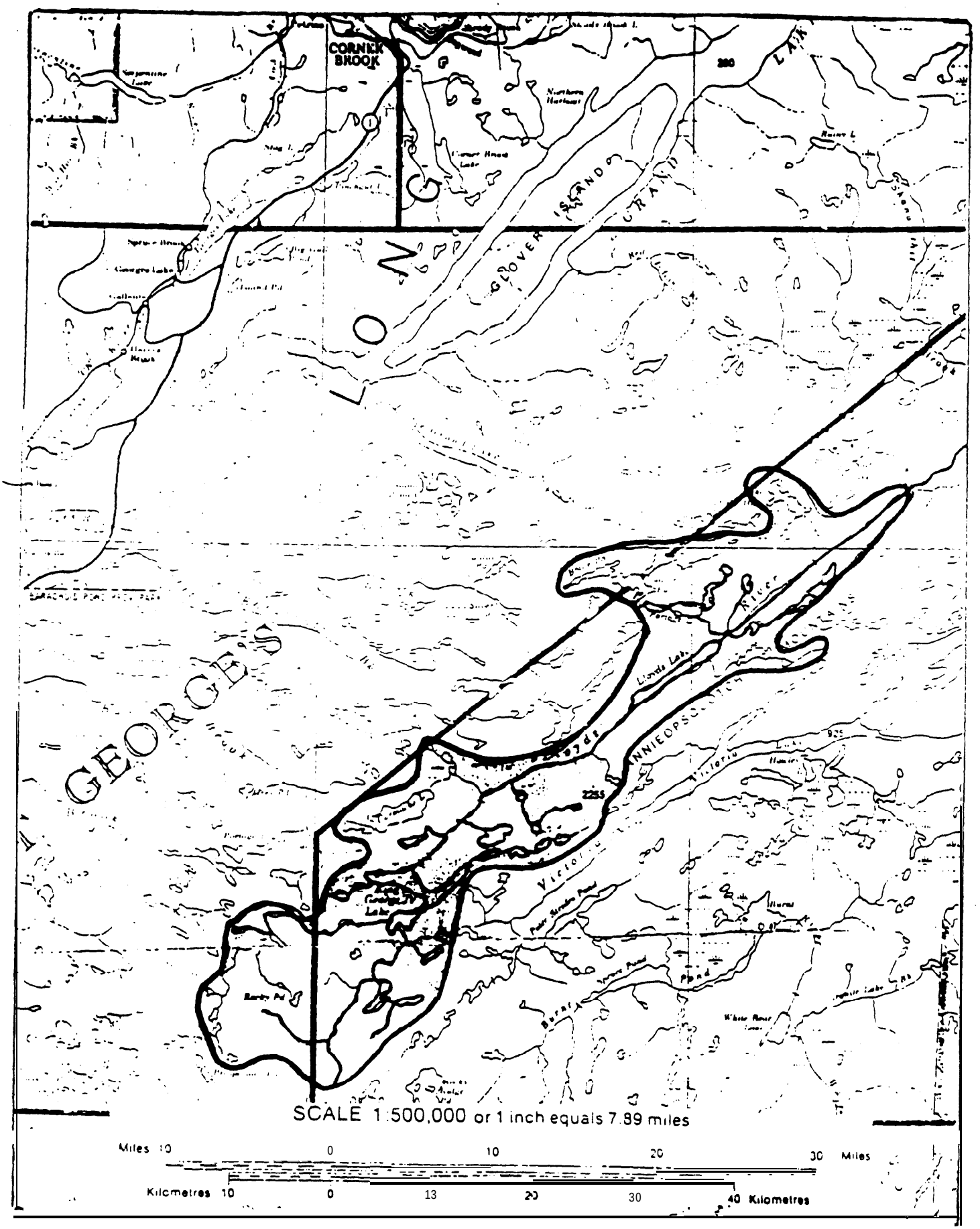
All other classes of parks are established under the Provincial Parks Act. Any proposals for new parks, or proposals to expand or change boundaries of existing parks, are forwarded to I.L.U.C. for approval. Once boundaries are finalized, a metes and bounds survey is undertaken, land acquisition proceedings occur (negotiated purchase and/or expropriation), crown land is transferred under Section 133(1) of the Crown Lands Act and the area is formally proclaimed in The Newfoundland Gazette.

Specific regulations have been gazetted under the Provincial Parks Act. These prohibit removal or disturbance of all natural features and animal and plant species. They also define property protection regulations, fire regulations and permit regulations. Permits are required for vehicles, summer camping, winter camping, and boat hire (at Squires Memorial). A scientific investigation permit is needed for collection of specimens, experiments, or other scientific activities.

B. Resource Definition

(i) Study Area

The Lloyds River is located in the southwest corner of the island (Figure 1), and flows through portions of wilderness for much of it's length. It's physiography is characterized by lcw relief with barren lands dotted by small lakes and streams. The Annieopsquotch Mountains parallel the River for about 16 kilometres of it's length, rising steeply as much as 400 metres above the river valley. From Lloyds Lake to the mouth in Red Indian Lake, the Lloyds flows through a narrow, steep sided valley.



SCALE 1:500,000 or 1 inch equals 7.89 miles

LLOYDS RIVER WATERSHED STUDY AREA

FIGURE 1

(ii) Resource Analysis

The Lloyds/Exploits River system is the largest on the island of Newfoundland. These two rivers and their main **tributary,** the Victoria River, drain a major portion of the southwest **corner** of the Island.

The King George IV Lake site is one of the largest and most diverse undisturbed delta sites on the island portion of the province. It is an extremely rich site due to its alluvial composition, containing a number of vegetative zones characterized by luxuriant growth. This vegetation has in turn attracted a diversified fauna. Most prominent are the waterfowl which utilize the area for breeding, molting and staging.

The Lloyds portion remains relatively unaltered with the exception of resource extraction roads and logging operations. The river valley is rich in natural and scenic resources, particularly at the outflow from King George IV Lake.

Flora

Vegetation along the LloydsRiver is predominantly a black spruce - white birch association, with frequent bogs along the Upper Lloyds. Deciduous species, such as alder and poplar, are common downstream **from** Lloyds Lake. Wildflowers include the pitcher plant, sundew, rhodora and kalmia.

Fauna

Common wildlife species include caribou, moose, black bear, beaver, Canada geese and several species of ducks. Osprey are occasionally observed around the Lloyds Lake river section,

Scenery

Visual diversity along the River is characterized by views of forested uplands mixed with bogs and rock outcrops. The portion above Lloyds Lake, including the King George IV Lake area, offers vistas of rolling hills and stretches of open lake, whereas the lower river sections contain narrow and funnelled views as the valley becomes more incised. The impressive delta which occurs where the River flows into Lloyds Lake offers a visual complexity found at no other point along the waterway.

Visual scars on the landscape include clearcutting and resource roads, some of which run parallel to the shoreline. It is unfortunate that these negative visual impacts occur because they reduce the wilderness and recreational values of the river valley.

Water Resources

The study area is characterized by a variety of water resources which include fast flowing streams, deep, elongated lakes and the rapid-strewn Lloyds River which dominates the watershed. The largest lakes of the area include the King George IV, Cormack, Lloyds Lake, Bottle Pond, Puddle Pond and Lake of the Hills. The Victoria River originates in the headwaters of the watershed but marginally contributes any flow to the Lloyds River system.

These lakes and rivers support diverse riparian resources. Freshwater fish species include Atlantic salmon, speckled trout, ouananiche, Arctic char, eels and other fish. Anadromous fish are unable to utilize the watershed due to the barrier formed by the falls and power dam at Grand Falls. Furbearers dependent upon riparian habitats found in the watershed include beaver, otter, fcx and muskrat.

The combined resource values of the Lloyds River watershed area represent one of the few remaining wildland areas on the Island which has not been utilited for diverse resource harvesting or concentrated infrastructural development such as highways and residential construction. For this reason, it retains high potential for recreational enjoyment and interpretation of its role in the historic seasonal migrations of our aboriginal peoples. Data on recreational and historical use of the area is scant, however, the River has, and continues to play, an important role in the natural and cultural heritage of this Province.

For these reasons the watershed is worthy of careful consideration before any deveiopment schemes for resource extraction are permitted. Parks Division is quick to realize the importance of economic development to the Province, however, such progress should not be at the expense of the few remaining wildlands on the island.

(iii) Resource Utilization

Use of the natural resources of the Lloyds River watershed appears to have been dominated by the logging industry over the past number of years. As interest grows in recreation associated with wildlands, it is likely the Lloyds River will receive increased resource utilization for this purpose. The following land and recreational uses are perceived by Parks Division to occur in the area.

Canoeing and Boating

Many opportunities exist for water based recreation, within the watershed. In 1977, Parks Canada documented the Lloyds/Exploits river system in its brochure, "Wild Rivers: Newfoundland and Labrador". Portions of the system have been canoed over the years by enthusiasts who relish the remoteness of its upper reaches. Power boating and canoeing associated with hunting and sport fishing comprises another recreational use of the resources of the area.

Hunting and Angling

The watershed has for generations supported recreational hunting and angling of the animal and fish stocks. For years a private hunting lodge operated on the eastern shore of King George IV Lake and the watershed does contain recreational cabins.

Camping and Hiking

These forms of recreational activity are severely restricted by poor accessibility. Camping and hiking do occur associated with hunting or fishing or by individuals who use all terrain vehicles along old forest access roads.

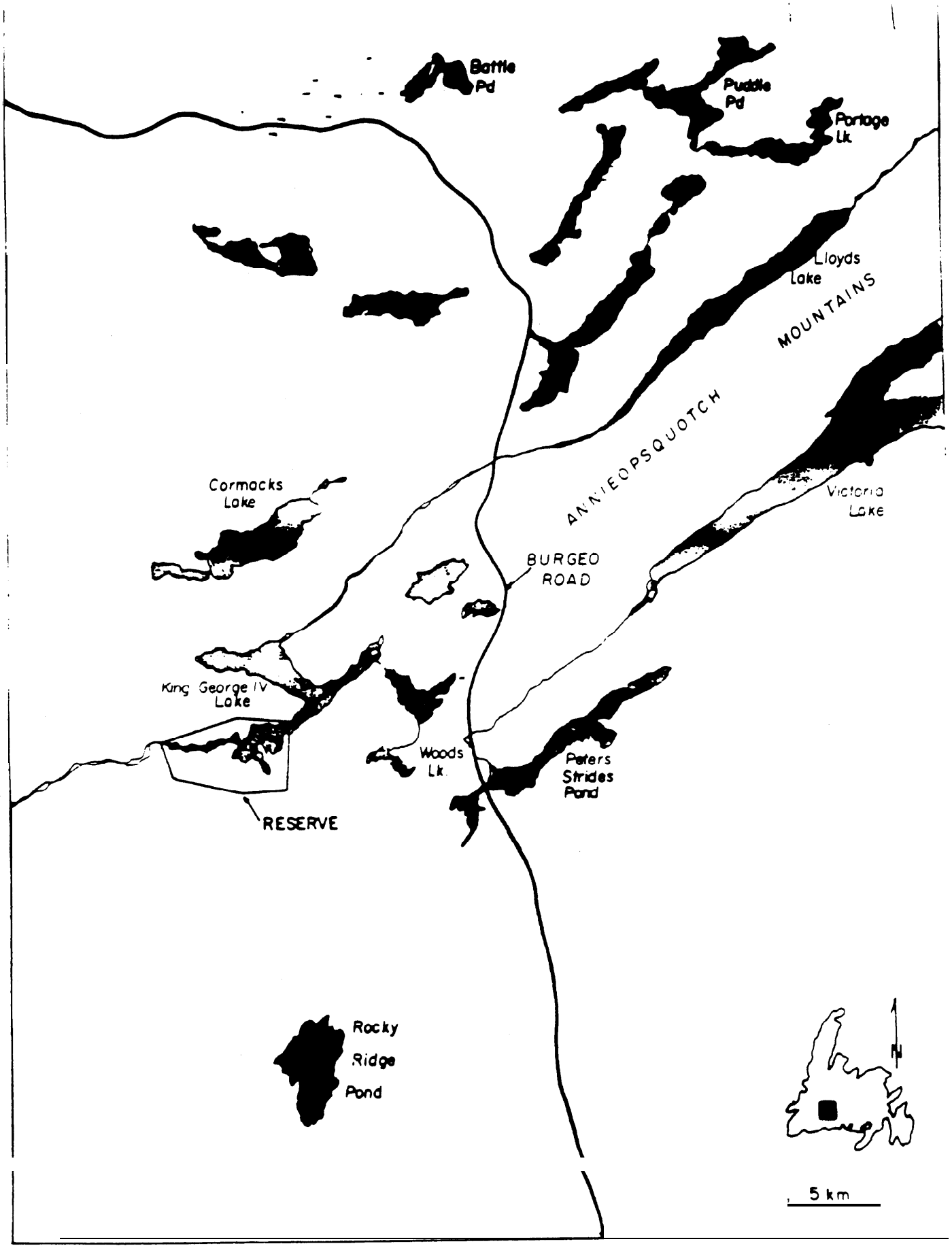
(iv) Resource Enhancement

The following park and reserve programs administered by Parks Division are considered to be complementary mechanisms for enhancement of the natural resources of the study area.

(i) Wilderness and Ecological Reserves

The isolation and relative inaccessibility of the King George IV Lake-Llcyds River area has meant that the land and waters have remained in a more or less pristine condition. This area has great potential for wildernss and ecological reserve designation. In fact, a portion of the watershed (19 km^2) located on the southwestern extremity of King George IV Lake (see Figure 2) has been proclaimed a Provisional Ecological Reserve. This area may be given full Reserve status in the near future, pending Cabinet approval. The area is under consideration to preserve its flora, waterfowl breeding and staging areas, forest types, and to provide an unspoiled area for educational and scientific research.

The King George IV Lake site is one of the largest and most diverse delta sites on the island. This diversity is due partly to its alluvial composition, containing a number of vegetative zones characterized by luxuriant growth. This vegetation has in turn attracted a diversified fauna, most prominant of which are waterfowl.


Battle Pd
Puddle Pd
Portage Lk
Lloyds Lake
MOUNTAINS
ANNIEOPSQUOTCH
Victoria Lake
Cormacks Lake
BURGEO ROAD
King George IV Lake
Woods Lk.
Peters Strides Pond
RESERVE
Rocky Ridge Pond
N
5 km

(ii) Canadian **Heritage River** --

The Canadian Heritage Rivers System (C.H.R.S.) is a co-operative program among the federal, provincial and territorial governments whose aim it is to give recognition to the outstanding and representative river systems in the nation. Rivers are selected for their degree of natural, human **and** recreational values. Preliminary study **of** the **river** indicates that it has relatively high values in all three of these categories. This means it is a possible candidate for designation as a Canadian Heritage River within this program.

(iii) Provincial Parkland

Surveys of the land capability for recreation have been condticted in the watershed. All areas were graded according to their potential for certain kinds of recreation. Shorelines are especially important **in this** scheme, unfortunately **there** are only a few areas of class one (highest rated) shoreline. Class two shoreline is more plentiful, but in certain areas even this is rare. Such is the case with the **King** George IV Lake-Lloyds River area.

The lands surrounding King George IV-Lake probably have considerable potential for a park site, being good for camping, swimming, boating, and related facilities. The entire river or portions may also qualify for designation as a Provincial Waterway Park.

(iv) **Human Heritage Interpretation**

The Lloyds River, and its adjoining waterway, the Exploits, possess a rich aboriginai heritage as part of the nistorical seasonal migration route used by the Becthucks. Evidence of native encampments have been discovered at locations throughout the enitre 193 kilometre length cf the two rivers. This natural heritage resource could form the basis for interpretation programs offered within potential parks or historic sites in the area.

(NOTE: The final portion of this position paper - Resource Compatibility/Conflicts will be prepared at a later date for presentation at the Negotiation Workshop).

DRAFT ONLY-

Newfoundland and Labrador Wildlife Division Mandate and Responsibilities

The mandate of the Wildlife Division can be best summarized vi8 a vi8 the following policy statements or objectives.

(1) To maintain all wildlife species and the ecosystems upon which they depend in perpetuaty.

(2) To maintain all species in the greatest numbers possible consistent with their habitat needs and thus enduring the sustained use (both consumptive and non-consumptive) of these species for the benefit of man.

(3) To generate and promote, the use of humane methodologies for all activities dealing with wildlife.

(4) To foster a social environment that is conducive to effective and balanced wildlife conservation.

The legislative basis to enable the division to carry out its mandate is the Wildlife Act 1970 and subsequent ammendments.

BACKGROUND

The linear boundary of the study area provides some unique challenges to management planning for wildlife species. Practically all wildlife species are adapted to broad habitat types and management boundries are drafted to reflect this. Deviation for this practice, such as the watershed bountry for this exercise, results in the fragmentation of critical components of a species range.

Two planning options exist in such circumstances (1) To deal with area boundries as if they were real topographical features ie. Island biogeography (2) To define management options in relation to activities beyond the actual planning areas. We have selected the Island biogeography approach for a number of reasons. Primarily though is the fact that many resource utilization activities do result in the fragmentation of habitat by creating conditions unfavourable for the dispersal and movement of species. Secondarily data does not now exist or will not exist to allow this I.R.P. process to continue beyond the present study area boundries.

It should be noted however that even in island situations population dynamics are not stable. The amount of interchange or turnover is however dependent on (1) the

amount of suitable available habitat (2) the proximity of the island to a reed source (3) physical barriers to emmigration and Immigration.

These *are* critical factors which will form the basis for many of the policies formulated throughout this plan.

STOCK/RESOURCE EVALUATION

SPECIES: Moose, Alces alces
PROVINCIAL STATUS: common
PROTECTIVE STATUS: controlled harvest - quotas and seasons.

MOOSE HARVEST IN IRMA

In 1974-85 and 1986 335 and 301 moose *were* estimated shot annually on blocks in the IRMA or encompassing the boundary of the IRMA (Tables 1 and 2, Fig. 1). Since 49% of the land area of the grid blocks are actually within the IRMA (Table 3), then one can assume that about 49% (Actually probably 'less) were produced on the IRMA (1100 km'). The moose management areas involved were 11, 12, 17, 19.

The 1974-85 and 1986 estimate represents 21 and 18% of the total moose shot in the five management areas (15,792 km) or 0.30 and 0.29 moose/km^2 in the IRMA which is considerably greater than the average yield per unit area on the total MMA range (0.11 /km^2).

At a value of $2,500 per animal to the outfitter or $3,000 to the province this is an annual value of $1 million annually. In meat value (at 350 lbs X $4/lb. or $1,400/ animal) the moose harvest is estimated at almost $ 1/2 million.

Moose Populations in IRMA

The moose population density in the management areas encompassing IRMA is estimated at 0.65/km^2 (Table 4). In the IRMA section of this region the density is probably similar. Hence, the apparent high harvest rates probably *reflect* ingress and harvests outside the boundary since the IRMA is structured linearly so that the ratio of border to total area is high.

The potential population is approximately 2/km^2 (1 on the barren/tuck/forest complex and 3 on the rich forest area).

Moose Densities

Seasonal densities range from 2-4/km^2 and 0.5/km^2.

Table 1. Total kill for moose management area (MMA) 11, 12, 17, 18, 19 for 1974-86.

Area No.	% Success (Adj)	Total Blocks	Area (km^2)	Total kill (Adj)	Total Moose recorded in MMA		IRMA	% Kill MMA		
					1974-85	1986	1974-85	1986	74-85	1986
11	80	48	2953	596	2587	300	848	114	33	38
12	71	42	2953	141	578	83	90	3	16	4
17	92	41	2826	331	511	219	23	2	1	1
18	75[/*]	55	3939	300*	1580	151	331	36	21	24
19	73	234	3121	305	1602	158	123	20	8	13
Totals/means,	78	234	15792	1673	6858	911	1415	168	21	18

Table 2. No. moose harvested in each 100 km^2 block in each moose management area in 1974-85 and 1986 for the Lloyds integrated resource management area

Area 11	Block No.	No. moose shot 1986	% block in 1 RM area	No. of animals 1974-1985
	0			3188
	1626	1	10	15
	1627	4	10	25
	1635	13	10	81
	1636	9	20	29
	1637	29	50	214
	1644	5	1	38
	1645	9	10	65
	1646	12	50	67
	1647	2	1	18
	1653	3	10	22
	1654	3	90	47
	1655		10	9
	1662	8	30	68
	1663	9	90	55
	1664	3	40	64
	1672	3	50	9
	1673	1	50	22
Total		114		848
Area 12	1627	-	30	3
	1628		50	44
	1629	3	10	23
	1637		10	13
	1638	-	10	7
Total		3		90

Table 2. No. moose harvested in each 100 km^2 block in each moose management area in 1974-85 and 1986 for the Lloyds integrated resource management area

Area 17	Block No.	No. moose shot 1986	% block in 1 RM area	No. of animals 1974-1985
	1628		10	
	1629	1	10	18
	1637	--	10	
	1638	1	40	5
Total		2		23
Area 18	1637	6	30	28
	1638	1	30	43
	1645	0	20	0
	1646	0	40	4
	1647	0	30	40
	1648	9	10	88
	1655	-	40	8
	1656	10	30	120
Total		36		331
Area 19	1654	-	10	-
	1655		50	
	1664	9	50	22
	1665	10	50	32
	1673		40	9
	1674		40	46
	1683	1	10	14
Total		20		123

Table 3. % of each block recorded in the Lloyds' IRMA for each respective MMAC1-9 refers to 10-90% in IRMA = 10 - 90 km2

Block No.	% coverage X 10 for each MMA					Total
	11	12	17	18	19	
26	1					1
27	1	2				4
28		5	1			6
29		1	1			2
35	1					1
36	2					2
37	5			3		10
38				3		8
44	1					1
45	1			2		3
46	5			4		9
47	1			3		4
48				1		1
53	1					1
54	9				1	10
55	1			4	5	10
56				3		3
62	3					3
63	9					9
64	4				5	9
65					1	1
72	5					5
73					4	
74	5			4	4	1%
83					1	1
Total	55	10	7	26	25	1216 km^2

Winter range potential densities probably lie in the area of> l/km for the total range. These total populationr are respectively 2200->4400 seasonal and 1100 potential year-round.

Management Objective: To manage populations at carrying capacity.

The study area contains some of the most productive moose habitat we have within the province. This is essentially contained within the area bounded by the Northeastern Extremity of the study area to the southwestern side of King George IV Lake. The Annieopsquotch Mountains being a notable exception to this and being comparable to the area south west of King George IV Lake.

Management Guidelines

The Management objective will be achieved in the following manner.

(1) Harvests will be restricted to allow an annual increment of 5% until carrying capacity is achieved. At that time harvest will be increased sufficiently to remove 15-20% of the population.

(2) Liasion will take place with the Forestry Division to (a) ensure that forest access roads avoid winter moose yards. (b) that the guidelines be established to limit the size of clearcuts especially within defined wintering areas. (c) to ensure that silviculture practices are compatable with substaining high moose populations.

(3) Resource development activities which result in permit permanant loss of habitat shall be directed to areas of lower productivity wherever possible.

(4) Cabin development shall be restricted to areas of present road access only.

(5) Within the are southwest of King George IV available moose habitat is limited. It is critical that all forest stands within this area be maintained as moose wintering areas. Resource orientated activities will be directed to avoid the winter period in these areas and applications for remote cottages will not be entertained.

SPECIES: Caribou, Rangifer tarandus
PROVINCIAL STATUS: Common
PROTECTIVE STATUS: Regulated hunt (seasons and quotas)

ESTIMATED POPULATION: The rtudy area does not have *a* resident population of caribou per se. Segments *of* the area are utilized on a seasonal basis and are critical to the maintenance of two discrete herds. The area is capable of supporting caribou on a year round basis and it is estimated that it can support a population of 2/km^2.

Management Objectives: To increase caribou population6 to the level of 2 animals/km^2 of total available range. (Note: total available range include6 areas of known historical distributions). To preserve those areas, in a natural setting, that are critical to lend survival ie calving and wintering areas, migration routes and areas of post calving distribution.

Management Guidelines: To achieve the objectives stated above the following guidelines will be followed. (1) It is anticipated that the entire area will eventually be utilized by animals from the adjacent herds, most probable are the La Poile and Buchans herds. Therefore these herds will be allowed to increase until such time as all the available range is occupied. This will result in a net increase in the vacinity of 1600 animals. (2) The area to the east of the study area is the main migration route *of* the Buchans herd. As such the survival of that herd is dependent on the maintenance of unrestricted movement through that area. Efforts will be made to maintain this area in an undeveloped condition. Guidelines for compatable uses will be formulated and instituted.

The area to the west of King George IV lake comprises an area which is significant for post calving fall migration, rutting and in some years calving. As such it is viewed as a critical area for the LaPoile herd. Efforts will be made to maintain the area in a natural setting.

Economic value: Considering the seasonal usage of the area it is difficult to place an economic value on the area. Taking the worst case scenerio resulting from alienation of the area for caribou and resulting in the loss of the Buchans and the LaPoile herds, numbered at 2000 and 9300, this would represent a loss of 22.25 million (value of $2500 assigned per animal) to the province. If we simply consider the potential of the area itself then it would be valued (potentially at $4 million) with an annual return of $600,000. Currently even -with the limited use *of* the area by the Buchans and LaPoile herds some 52 animals are shot annually within the study area for an annual economic return of $130,000.

SPECIES: Pine Marten. Martes americana
PROVINCIAL STATUS: Endangered
PROTECTIVE STATUS: Fully protected
ESTIMATED POPULATION: Provincial 600 Study area 20

Management Guidelines:

(1) To ensure the continued existence of the remaining remant populations on the island.

(2) To determine the limiting factors in marten dispersal.

(3) To increase marten populations and re-establish them to areas of former occupation.

Essentially the area within the planning area bounded in the north by Lake of the Hills, Battle Lake then to the south by Portage Lake and the southern extremity of Star Lake is considered to be high density marten area.

Within this area the following guidelines will be followed:

(1) No new access roads to be permitted.

(2) No commercial forestry operations be permitted within this area.

(3) The area to be closed to all trapping and snaring.

These guidelines shall be followed until such time as the underlying causes resulting in the reduced marten distribution are understood. Mean figure estimates vary from 350-800.

SPECIES: Arctic Hare. Lepus articus
PROVINCIAL STATUS: Rare
PROTECTIVE STATUS: Semi-protected. -No hunting provision making allowance for accidental captures.
ANNUAL HARVEST: NA
ECONOMIC VALUE: NA

Management objective: Maintain the present populations that currently exist.

Management Guidelines: The Management objective will be achieved by continuing and promoting research into the basic ecology of Artic hares. (1) Activities that could result in an increase in predators will be discouraged (2) Whereever possible natural corridors will be maintained between pockets of populations (3) Access to or through Artic hare range will be discouraged.

FURBEARERS, GENERAL

We have little specific data available on the area in relation to furbearers. It is however a highly productive area and one can make some estimates based on provincial statistics.

Last year the fur harvest for the island was valued at one million dollars or $9/km overall. Sixty percent of this value is derived from the forest areas which accounts for approximately 30 percent of the land base. This then would put the fur resource value at $5/km for barrens etc and $20/km for forested areas. The study area consists of approximately 1100 km of which approximately 80% is forested. This then equates to an annual fur return for the area in the vacinity of $19,000.

Management Objectives: To increase fur populations to optimal levels consistent with their habitat requirements.

Management Guidelines: To achieve this objective emphsis will be placed on the manipulation of habitat. Since the Division has little control over the forest activities in the area this will be achieved through intergration of wildlife management strategies into forest management plans. Specifically consideration must be given to the maintenance of stand diversity in terms of species diversity and age structure. Riparian zones should be maintained intact although selective cutting may be applicable in certain areas.

-DRAFT ONLY-

Newfoundland and Labrador Wildlife Dlvlrlon
Mandate and Responsibilities

The mandate *of* the Wildlife Division can be best rummarlzed vls a vis the following policy statement8 or obj • ct 1 ves.

(1) To maintain all wildlife species and the ecosystems upon which they depend in perpatuaty.

(2) To maintain all species in the greatest numbers possible consistent with their habitat needs and thus ensuring the sustained use (both consumpt lve and non-consumptive) species for the benefit *of* man.

(3) To generate and promote, the use of methodologies for all activities dealing with wildlife.

(4) To foster a social environment that is conducive *to* effective and balanced wildlife conservation.

(5) The legislative basis to enable the division to carry out its mandate is the Wildlife Act 1970 and subsequent ammendments.

BACKGROUND

The linear boundary of the study area provides some unique challenges to management planning for wildlife species. Practically all wildlife species are adapted to broad habitat types and management boundrles are drafted to reflect this. Deviation for this practice,, such as the watershed bountry for this exercise, results in the fragmentation of critical components of a species range.

Two planning options exist in such circumstances (1) To deal with area boundrles as if they were real topographical features le. Island biogeography (2) To define management options in relation to activities beyond the actual planning areas. *We* have selected the Island biogeography approach for a number of reasons. Primarily though is the fact that many resource utiliratlon activities do result in the fragmentat ion of habitat by creat lng condlt ions unfavourable *for* the dispersal and movement of species. Secondarily data does not now exist or will not exist to allow this I.R.P. process to continue beyond the present study area boundrles.

It should be noted however that even in island situations population dynamics are not stable. The amount of interchange or turnover is however dependent on (1) the

amount of suitable available habitat (2) tha proximity of tha island to a seed source (3) physical barriers to emmigration
• d immigration.

These are critical factors which will form tha basis for many of tha policies formulated throughout this plan.

STOCK/RESOURCE EVALUATION

SPECIES: Moose, Alces alces
PROVINCIAL STATUS: common
PROTECTIVE STATUS: controllad harvest - quota6 and seasons.

MOOSE HARVEST IN IRMA

In 1974-85 rnd 1986 335 and 301 moose were estimated shot annually on block8 in the IRMA or encompassing the boundary of the IRMA (Table6 1 and 2, Pig. 1). Since 49% of tha land area of the grid blocks are actually within tha IRMA (Table 31, than one can assume that about 49% (Actually probably less) were produced on the IRMA (1100 km). The moose management areas involved were 11, 12, 17, 19.

The 1974-85 and 1986 estimate represent6 21 and 18% of the total moose shot in the *five* management areas (15,792 km) or 0.30 and 0.29 moose/km in the IRMA which is considerably greater than the average yield per unit area on the total MMA range (0.11/km).

At a value of $2,500 per animal to the outfitter or $3,000 to the province this is an annual value of $1 million annually. In meat value (at 350 lbs X $4/lb. or $1,400/ animal) the moose harves is estimated at almost $ 1/2 million.

Moose Populations in IRMA

The moose population density in the management areas encompassing IRMA is estimated at 0.65/km (Table 4). In the IRMA section of this region the density is probably similar. Hence, the apparent high harvest rate6 probably reflect ingress and harvests outside the boundary since the IRMA is structured linearly 60 that the ratio of border to total area is high.

The potential population is approximately 2/km (1 on the barren/tuck/forest complex and 3 on the rich forest area).

Caribou Densities

Seasonal densities range from 2-4/km and 0.5/km .

Winter range potent ial densit ies probably **lie** in the area of **1/km for the** total **range.** There **total population8 are respectively 2200-** 4400 **seasonal** and 1100 **potential year-**round.

Management Objective: To **manage population8 at carrying vaprcity.**

The **study area contain8 some** of **the most productive moose habitat we have within the province. This is** ● **88entially** contained **within the** area **bounded by the Northeastern Extremity** *of* **the study area to the southwestern side** *of King George* **IV Lake. The Annieopsquotch Mountain8** being a notable **exception to this and being comparable to** the ***area*** **south west** *of* **King George IV Lake.**

Management Obj ectives

The Management objective will be achieved in the following **manner.**

(1) Harvest8 will be restricted to allow an annual increment of 5% until Carrying capacity **is** achieved. At that time harvest will be increased sufficiently to remove **15-20%** of the population.

(2) Liasion will take place with the Forestry Division to **(a)** ensure that **forest access** road8 ***avoid*** winter **moose** yards. **(b)** that the guidelines be established to limit the site **ofclearcuts** especially within defined wintering areas. **(c)** to ensure that silviculture practices are **compatable** with **substaining** high moose populations.

(3) Resource development activities which result in permit permanant loss of **habitat** shall be directed to areas of lower productivity wherever possible.

(4) Cabin development **shall** be restricted to areas *of* **present** road access only-

(5) Within the are southwest *of* King **George** IV available moose habitat **is** limited. It is critical that all forest **stands** within this area **be** maintained as moose wintering **areas.** Resource orientated activities will **be** directed to avoid the winter period in these area8 **and applications for remote cottage8 will** not be ent ert a i ned .

SPECIES: Caribou, **Rang** i f er t arandus
PROVINCIAL STATUS: Common
PROTECTIVE STATUS: Regulated hunt (seasons and quotas)

ESTIMATED POPULATION: The study area does not have 8 resident population of cribou per sey. Segments of the area are utilized on 8 seasonal basis and are critical to the maintenance *of* two discrete herds. The area is capable *of* supporting caribou *on* a year round basis and it is ● rtiamted that it can support 8 population of 2/km .

Management Objectives: To increase caribou populations to thm level of 2 animals/km of total available range. (Note: total available range include8 areas of known historical dirtribut ions;) . To preserve those areas, in 8 natural setting, that are Critical to lend survival ie calving and wintering areas, migration routes and areas of post calving diotribut ion.

Management Guidelines: To achieve the objective8 stated above the following guidelines will be followed. (1) It is anticipated that the entire area will evnetually be utilized by animals from the adjacent herds, mort probable are the La Poile and Buchanr herds. There on these herds will be allowed to increase until such time as the available range is occupied. This will result in a net increase in the vacinity of 1600 animals. (2) The area to the east of the study area is the main migration route of the Buchanr herd. As such the survival of that herd is dependent *on* the maintenance *of* unrestricted movement through that area. *Efforts* will be made to maintain this area in an undeveloped condition. Guidelines for compatable uses will be formulated and instituted.

The area to the west of King George IV lake comprises an area which is significant for post calving distribution of fall migration, rutting and in come years calving. As such it is viewed as a critical area for the LaPoile herd. Efforts will be made to maintain the area in a natural setting;.

Economic value: Considering the seasonal usage of the area it is difficult to place an economic value on the area. Taking the worst case rcenerio resulting from alienation of the area *for* caribou and resulting in the loss of the Buchans and the LaPoile herds, numbered at 2000 and 9300, thio would represent a loss *of* 22.25 million (value *of* $2500 assigned per animal) to the province. If we simply consider the potential *of* the area itself then it would be valued (potentially at 54 mi 1 lion) with an annual return of $600,000.

SPECIES: Pine Marten. Martes americana
PROVINCIAL STATUS: Endangered
PROTECTIVE STATUS: Fully protected
ESTIMATED POPULATION: Provincial 600 Study area 20

Management Objectives:

(1) No new access road8 to be permitted.

(2) No commercial forestry operation* be permitted within this • raa.

(3) The area to be closed to all trapping and snaring.

These guidelines shall bo followed until 8UCh time a8 the underlying causes resulting in the reduced marten distribution are understood. Mean figure • 8timate8 vary from 350-800.

SPECIES: Arctic Hare. Lepus articus
PROVINCIAL STATUS: Rare
PROTECTIVE STATUS: Semi-protected. -No hunting provision making allowance for accidental captures.
ANNUAL HARVEST: NA
ECONOMIC VALUE: NA

Management objective: Maintain the present populations that currently exist.

The Management objective will be achieved by continuing and promoting research into the basic ecology of Artic hares. (1) Activities that could result in an increase in predators will be discouraged (2) Whereever possible natural corridors will be maintained between pockets of population8 (3) Access to or through Artic hare range will be discouraged.

FURBEARERS. GENERAL

We have little specific data available on the area in relation to furbearers. It is *however a* highly productive area and one can make some estimates bared on provincial statistics.

Last year the fur harvest for the island was valued at one million dollars or $9/km overall. Sixty percent of this value is derived from the forest area8 which accounts for approximately 30 percent of the land base. This then would put the fur resource value at $5/km for barrens etc and $20/km for forested areas. The study area consist8 of approximately 1100 km of which approximately 80% is forrested. This then equates to an annual fur return for the area in the vacinity of $10,000.

Management Objectives: To increase fur populations to

optimallevels consistent with their habitat requirements.

Management Guidelines: To achieve this objective ● nphrir will be placed on the manipulation of habitat. Since the Division has little control over the forest activities in the area this will be ● chiovod through the interaction of wildlife management strategies into forest management plans. Specifically consideration murt be giben to the maintenance of rtrnd diversity in terms of species diversity and age structure. Riparian zones should bo maintained intact although selective cutting may be applicable in certain areas.

Government of Newfoundland and Labrador

Department of Environment and Lands

Departmental Objectives

The Department of Environment is responsible for the protection and enhancement of the environment, controlling air, water and soil pollution, and managing the water resources of the Province. The Department's main functions include the development and implementation of appropriate water resource management policies, environmental impact assessments of major development projects, industrial /domestic waste disposal as well as the regulation and control of pesticide storage, use, transportation and disposal.

The Department is organised into one administrative division and five technical divisions. X11 of the technical divisions may have a role to play in any integrated resource plan. The five technical divisions are briefly described as follows:

Environmental Investigations is concerned with oil and hazardous chemical spills, pollution complaints and enquiries, administration of The WasteMaterial(Disposal)Act and the processing cf development applications.

Civil and Sanitary Environmental Engineering reviews major municipal water and sewerage works, and advises on solid waste incinerator technology.

Industrial Environmental Engineering programs provide for industrial pollution appraisal, environmental compliance testing, oil and gas pollution contingency plan appraisals, air quality monitoring and acid rain assessments.

Water Resources Management provides for the conservation, development, control, improvement and utilization of Provincial water resources. These activities include hydrometric network expansion, water quality network operation, climatological network expansion and community water supply investigations. Studies relating to the hydrological impact of sanitary landfills, waste disposal sites, road salt usage and agricultural activities are also performed. Urbanization effect studies, hydrologic and watershed modelling, groundwater surveys and investigation and water-well inventories are prepared. Also included is administration of The Well Drilling Act, watershed protection, a flood damage reduction program, and water management plan implementation.

Environmental Assessment delivers programs in environmental assessment, environmental surveillance, environmental monitoring and rehabilitation and pesticides control. Under The Environmental Assessment Act, the division coordinates an inter-departmental process which examines environmental evaluations demanded under the Act from proponents of certain industrial and other undertakings. The environmental surveillance, monitoring and rehabilitation programs examines the progress of major projects and their compliance with the mitigation measures arising from the assessment of these projects; monitors the environmental effects of such projects; and requires appropriate restoration of damaged ecological systems. The pesticides control program involves the processing of applications for licenses to authorize the sale and use of commercial and industrial class pesticides. In addition, inspections of pesticide vendors and monitoring

of pesticide users to ensure compliance with the legislation and conditions of licensing.

While any or all of these divisions may be involved to a lesser or greater degree in the Lloyds River watershed area, Environmental Assessment and Water Resources have been designated as the divisions having major policy and resource utilization concerns. These areas are further described as follows:

1. Environmental Assessment

Mandate

The Division's mandate stems, in part, from The Environmental Assessment Act (1980) and associated regulations (1984). The purpose of this Act Is to protect the environment and the quality of life of the people of the Province of Newfoundland and to facilitate the wise management of the Province's resources.

The Environmental Assessment Division is comprised of three branches:

a) The Environmental Assessment Branch
b) Environmental Impact Management Branch
c) Pesticides Control Branch

Program Implementation

The Environmental Assessment Act administered by this Division requires anyone who plans a project that could potentially have an impact on the natural, social or economic environment to present that project for examination under the terms of the Act and its assoc-

iated regulation. It should be recognized that, at present, the Environmental Assessment Act focuses on projects rather than classes of activities or area wide assessments that consider the impacts of multiple projects or resource areas within a defined area. However, the process is meant to consider a particular project in the context of existing and future activities and resources areas that may affect or be affected by its existence. The kinds of projects and activities that fall under the purview of the Act are stipulated in the reguiations and with certain exceptions (projects contemplated within areas already covered by a development plan of some kind) follow the Standard Industry Classification Manual (Statistics Canada, 1980). A copy of a guideline to the application of this process is appended to this summary document.

In addition to administration of the assessment process a recent amendment to the Act permits the Minister to require proponents of projects to implement environmental monitoring and rehabilitation programs. Monitoring being defined as research activities directed at documenting the effects of projects undertaken while rehabilitation aims at restoring the environment affected by a project to ecologically and socially acceptable conditions. These activities are in addition to the normal surveillance or compliance monitoring activities carried on by the Division. Finally, it should be noted that the Division is pursuing the development of the ability to undertake environmental audits to provide information to feed back into and improve the environmental assessment process as a whole.

2. Water Resources Division

Mandate

The ownership of water is a constitutional matter which basically enshrines control of resources to the provinces. The Department of Environment Act, 1981, provides for regulatory responsibilities as well as development, implementation and evaluation of the approved policies and programs relating to the conservation, devciopment, control, improvement and proper utilization of water resources of the Province including the allocation of the use of all surface, ground and shore waters. Section 26 of the Act is the primary legislative vehicle used to control and regulate alterations of bodies of water.

The Water Resources Division is comprised of 5 branches which are as follows:

a) Surface Water Branch

1. Hydrometric Surveys
2. Water Quality
3. Climatological Network Expansion
4. Water Resources Assessment
5. Protection of Water Supply Areas
6. Hydrologic Impact Studies

b) Groundwater Branch

1. Water Well Record Inventory
2. Water Well Inspection Services
3. Groundwater Studies
4. Groundwater Investigations
5. Groundwater Assessment and Hydrogeological Mapping

c) Water Investigations Branch

1. Approval of Stream Alteration Works
2. Water Investigations

3. Technical Services
4. Flood studies
5. Water Resource Impact Evaluation
6. Dam Inventory and Safety Inspections

d) Water Rights Branch

1. Water Planning and Management
2. Licencing
3. Water use Studies
4. Technical Services

e) Hydrologic Modelling Branch

1. Hydrologic Data Analysis
2. Hydrologic Modelling
3. Water Resources Systems Analysis
4. Special Projects and Technical Services

As a final note on the mandate of the Water Resources Division, a new Water Resources Act is under consideration by Government. When it is passed it will strengthen and be more specific in terms of setting policies and programs for managing the Province's water resources.

Resource Definition

I - Resource Evaluation

The Lloyds River watershed which is defined as all land contributing water ultimately to Lloyds River at a point where it enters Red Indian Lake covers approximately 1036 km². The hydrologic characterization of the watershed is limited somewhat because of a lack of actual stream flow measurement. However, there is a gauging station which has been in operation since 1981 below King George IV Lake. It measures the flow from the head of Lloyds River watershed having an area of 481 km². We can prorate most of the data to the entire basin on the basis of the proportionality of

the areas. A graphical tepresentation of the monthly streamflows below 'King George IV Lake is shown in the figure.

The mean annual quantity of water discharged from King George IV Lake is 673 x 10^6 m^3. Based on the above ratio, the total discharge of Lloyds River into Red Indian Lake is in the order of 1,500 x 10^6 m^3. It should be noted that flows from Red Indian Lake are controlled at the Millertown Dam by kbitibi Price Inc. Flows from Red Indian Lake enter the start of the Exploits River which in turn flows into Notre Dame Bay. The Exploits River Basin at Grand Falls is approximately 8460 km^2, thus one could say for instance that about 13% cf the flow at Grand Falls originates from Lloyds River.

The physical characteristics of Lloyds River arc best described in terms of 3 major sub-basins. The river originates from a series of interconnected ponds and lakes at an elevation above 475 m. The outlet of iiing George IV Lake at elevation 340 m represents the boundary of the first basin. The length of the river in this section is about 40 km and consists of two branches of about equal length.

The next section of river ends at the outlet of Lloyds Lake. This 826 km^2 sub-basin is characterized by a relatively narrow watershed and is roughly bounded by the Annieopsquotch Mountains to the southwest side. The elevation of Lloyds Lake is about 190 m. A major contributing water body is Cormacks Lake.

Thethird sub-basin isthe remaining section above Red Indian Lake at elevation 152 m. The major contributing area is the Bottle Pond - Puddle Pond - Portage Lake System, and further downstream, the Lake of the Hills System. This

section of river is characterized by a relatively low sloping channel.

II - Utilization Rates

As mentioned previously, the total mean annual discharge is about $1,500 \times 10^6$ m^3. Because there is no pricing policy for water, an absolute dollar value cannot be assigned to this resource. In any case such an approach may be unrealistic here unless someone would actually be willing to "buy" the water at that price.

The alternative is to look at how the water of Lloyds River is presently utilized compared with other methods of achieving the same results in terms of the benefits or impacts. Prices for the alternatives are more readily available.

USE	ALTERNATIVE
Power generation at Grand Falls and Bishop's Falls	Oil fired electrical generation
Log Driving	Construction of roads and trucking of logs
Low flow water quality augmentation	Water treatment plants
Flood routing	Storage dams
Recreational Use	Use of other areas
Unique aesthetics of Aquatic Environment	not replaceable
Recreational and commercial fishing	Development of stocks in alternative basins
Drinking water	Wells, pipelines or trucking of water

Not diverting flows out of the basin	flood proofing of homes, businesses and other facilities.

This basically illustrates that by foregoing or making a change to a present use of the water from Lloyds River there will be a cost which would involve the use or construction of an alternative facility.

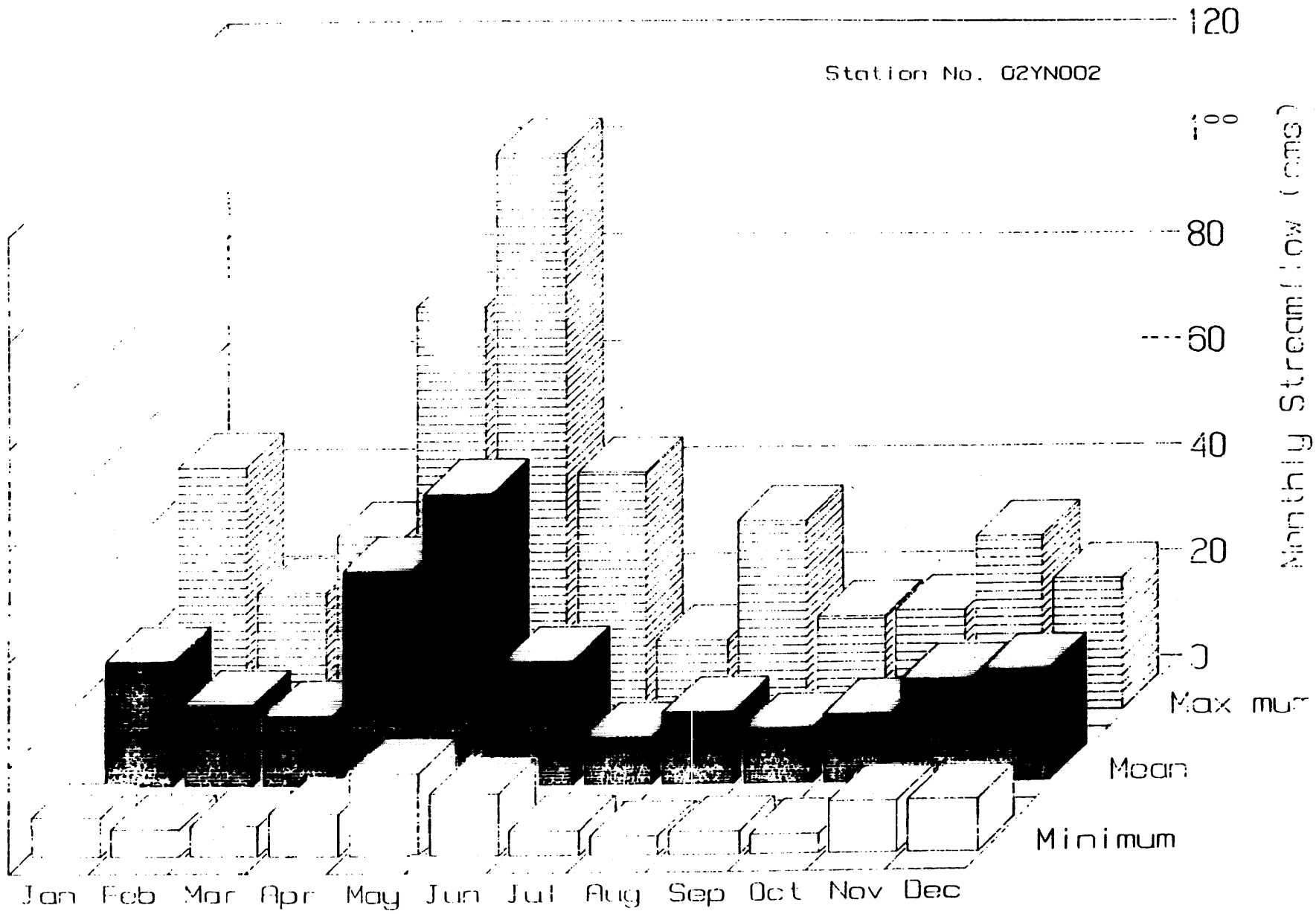
III - Resource Enhancement

This Department has no plans to aiter the present uses of Lloyds River or to enhance the resource.

This position paper was prepared in response to a request to participate in an Integrated Resource Planning exercise to be held February 10 -12, 1988.

Lloyds River below King George IV Lake

Station No. 02YN002



Data compiled from 1981 to 1986.

Drawn by MGG

Department of Fisheries and Oceans

Position Paper

Integrated Resource Planning Workshop

A) Resource Agency Description

i) Departmental Objective

The objective of the Department of Fisheries and Oceans is: to Undertake policies and programs in support of Canada's economic, ecological and scientific interests in the oceans and inland waters, and to provide for the conservation, development and sustained economic utilization of Canada's fisheries resources in marine and Inland waters for those who derive their livel ihood or benefit from these resources; and to coordinate the policies and programs of the Government of Canada respecting oceans.

ii) DFO Mandate

While other government departments contribute to the management of Canada's water-based activities, Fisheries and Oceans is the only federal department whose primary focus is water and the resources it contains.

The Department of Fisheries and Oceans' mandate is derived from the Constitution Act, 1982, and the Department of Fisheries and Oceans Act, 1979. The Constitution Act gives the Government of Canada exclusive legislative responsibility for sea coast and inland fisheries. The Department of Fisheries and Oceans Act, 1979, defines the Minister's powers as extending to and including:

a) all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, board or agency of the Government of Canada, relating to sea coast and inland fisheries, public harbors and navigation in marine and inland waters, hydrography and marine sciences, and the coordination of the policies and programs of the Government of Canada respecting oceans.

b) such other matters over which the Parliament of Canada has jurisdiction relating to oceans as are by law assigned to the Minister.

The direction and extent to which this responsibility is exercised have been determined by judicial interpretation, by agreements with provinces and by the evolution of public policy. Some provinces have been delegated varying degrees of administrative responsibilities. Under the Constitution Act (1982), the federal government has authority for all fisheries in Canada and it retains direct management control of fisheries resources in the Atlantic provinces of Newfoundland, New Brunswick, Nova Scotia and Prince Edward Island; for the marine and anadromous salmon fisheries of British Columbia; for the marine fisheries of Quebec; and for the fisheries of the Yukon and Northwest Territories.

The department's responsibility to manage fisheries includes that for marine mammals and shellfish as well as for fish. The specific legislative basis for the management and protection of fish and marine mammals and their habitats; is the Fisheries Act which contains provisions to control the harvesting of various species and to protect them and their habitats from the effects of human disturbances (see section on Departmental Legislation). In fulfilling its responsibility for fisheries, the distribution and abundance of fisheries resources are studied, their habitats identified, research is undertaken on their biology, on ecological processes and on environmental impacts, biological requirements for the protection and sustained usage of fisheries resources are stipulated, the effects of industrial developments are monitored, and the Fisheries Act and is regulations are enforced.

The department's ocean science mandate is derived from the Department of Fisheries and Oceans Act, 1979 and the Resources and Technical Surveys Act (Government Organization Act, 1966). The Uepartment acts primarily as a service and advisory agency applying oceanographic knowledge, data and information to the solution of a variety of marine problems including those arising from the exploitation, regulation and management of arctic hydrocarbon resources and shipping. It undertakes long-term or sustained (and often large-scale) process-oriented research and thereby provides the context within which industry undertakes site-specific and/or problem-oriented investigations. A major function is the provision of ocean information and advisory services to the regulatory agencies. It has been making significant progress in operating on ice-covered waters. As well, the department has an important support function with respect to environmental emergencies.

The department has the national responsibility for the provision of hydrographic charts and related nautical productions. The Charts and Publications Regulations of the Canada Shipping Act require that ships navigating in Canadian waters have the latest edition of appropriate hydrographic charts. Adequate chart coverage is a prerequisite to the provision of navigational aid systems by Transport Canada. it has the responsibility for the publication of Tide and Current Tables and of Sailing Directions.

iii) Departmental Legislation

The Minister of Fisheries and Oceans has been assigned responsibility for administration of several statutes of which the Fisheries Act is most relevant. This piece of legislation constitutes the main statute for the management and protection of fish and marine mammal resources and their habitats. Fish, shellfish and marine mammal resources are managed primarily in accordance with the provisions of Section 34 of the Fisheries Act, under which various regulations have been made to control harvesting ofdifferent species. Section 34 of the Fisheries Act allows the Governor

in Council to make regulations respecting the conservation and protection of fish, obstruction and pollution of water frequented by fish, conservation and protection of spawning grounds as well as prescribing the powers and duties of persons engaged or employed in the administration or enforcement of the Act and providing for the execution of those duties and powers. In Newfoundland, the harvesting of fish, shellfish, and marine mammals is controlled primarily under provisions of the Newfoundland Fishery Regwlatfons, the Atlantic Fishery Regulations and the Seal Protection Regulations. A key component of the Minister's overall responsibility for fisheries management is the protection of fish and fish habitat from disruptive and destructive activities.

The habitat protection provisions of the Fisheries Act provide the Minister of Fisheries and Oceans with the following powers:

Section 20: The authority to require the construction, maintenance and operation of fish passage facilities at manmade obstructions in rivers; to require financial support for fish hatchery establishments constructed and operated to maintain runs of migratory fish; to remove unused obstructions to fish passage; and to require a sufficient flow of water at all times below an obstruction for the safety of fish and the maintenance of habitat.

Section 24(1): The authority to require that stream channel widths not be obstructed by material of any kind by more than one-third their channel widths or two-thirds of their channel widths at low tide.

Section 27: The authority to prohibit the use of, and/or order the removal of, a weir or other device that unduly obstructs the passage of fish.

Section 28: The authority to require the installation and maintenance of screens or guards to prevent the passage of fish into water intakes, ditches, canals and channels.

Section 30: The authority to prohibit the destruction of fish by any means other than fishing.

Section 31: The authority to prohibit any work or undertaking which is likely to result in the harmful alteration, disruption or destruction of fish habitat, a term that is defined in subsection 31(5) of the Act.

Section 33: Comprehensive power to: protect fish and fish habitat from the discharge of deleterious substances; request plans for developments that may affect fish and their habitat; to develop regulations and modify, restrict or prohibit certain works or undertakings.

Other Sections: Definitions, penaltfes and additional powers are provided in Sections 31(3), 33.1(9), 33.4(1), 34, 52, 53, 55 and 56, among others.

Ffshery Regulations specific to provinces and territories are made pursuant to the Ffsheries Act, and some of these contain habitat protection sections. Specifically, Sections 26-29 of the Neufoundl and Fishery Regulations, made pursuant to Section 34 of the Ffsherfes Act, contain provisions for the protection of fish habitat. The Department of Fisheries and Oceans, Newfoundland Region admfnfsters the Fish Habitat Authorfzatfon System as per its responsibilities under Section 26 of the Newfoundland Fishery Regulatfons, pursuant to Section 31 of the Fisheries Act. In particular, Section 26 provfdes the Minister wfth the right to require that information, plans and specifications for works or undertakings having the potential to deleteriously impact fish habitat are presented to the department. Section 26(2) further states that:

"After reviewing the information and material submitted pursuant to subsection (1), the Minister may:

(a) authorize the applicant to carry on the proposed work or undertaking without modifi cation; or

(b) authorize the applicant to carry on the proposed work or undertaking subject to such modifications or additions to the work or undertaking or such modifications to any plans, specifications, procedures or schedules relating thereto as the Minister considers necessary in the circumstances.

The intent of the Fish Habitat Authorization System is to establish a two-way communication link between DFO and developers such that departmental expertise in fish habitat management and protection can be utilized to protect fish and their habitats against potential impacts of project development.

The Fish Habitat Authoritation System benefits both parties as the referrals keep DFO informed of impending works and undertakings which could affect fish habitat while at the same time providing protection to project developers.

iv) DFO Policy for the Management of Fish Habitat

In 1986 the Department of Fisheries and Oceans announced its policy for the management of fish habitat following public release of a discussion paper in 1983 and a proposed policy and procedures paper in 1985.

The policy objective is to achieve an overall net gain of the productive capacity of fish habitats. This objective is to be realized through three goals; namely, the active conservation of the current productive capacity of habitats, the restoration of damaged fish habitats, and the development of additional fish habitat.

The guiding principle of DFO's Fish Habitat Management Policy is to ensure there is "No Net Loss" of the productive capacity of habitats. The "No Net Loss" principle is fundamental to the habitat conservation goal. Under this principle, the Department will strive to balance unavoidable habitat losses with habitat replacement or compensation in kind so that further reductions to fisheries resources due to habitat loss or damage may be prevented.

It became clear, in the course of the extensive public consultation which led to development of the Policy, that an improved approach was, needed to manage fish habitat and to consider opposing viewpoints prior to makfng decisions concerning fish habitat issues. In particular, it became apparent that Integrated Resource Planning, combined with a more effective integration of habitat and fisheries management objectives, must become more widely applied if effective management of fish habitat was to become a reality.

While the policy clearly reflects the powers of the Fisheries Act and the authority of the Minister vis à vis protection of fish habitat, it also recognizes that there are other legitimate water resource users. In this regard, the Integrated Resource Management concept is viewed as an appropriate mechanism to resolve significant conflicts respecting water and land use.

Historically, resource management agencies and industrial interests have managed and developed their resources to the exclusion of other resource users. Unfortunately, however, each resource, whether it be water, fish, forests or wildlife, are integrally linked ecologically such that any development or government policy that affects one resource has implications for the broader resource base.

v) Research

The Department of Fisheries and Oceans undertakes scientific research for use in developing policies, regulations and legislation regarding the oceans and aquatic life and to provide scientific advice to other government departments, private industry and the public. Scientific research provides the basis for the management of fisheries, fish habitat, and for aquaculture.

The Department's research activities fall, into three broad categories:

a) Biological Sciences: Biological research is conducted on fish, shellfish, marine mammals and plants and freshwater and marine ecosystems. Scientific knowledge and data bases on aquatic resource populations and environmental parameters are needed for conservation, protection, development and enhancement of the fisheries resource and its habitat. As well, they are required for management, allocation and control of commercial, Native, and

recreational fisheries. In addition, biological research provides science-based service in response to the needs of fisheries managers, industry, and other government agencies. Longer-term research projects are conducted to: improve the state of knowledge of marine resources dynamics, and assessment methodologies; develop and transfer aquaculture technologies in response to private sector needs and perceived problems and opportunities; and determine the impact of habitat alteration and pollution on fish and the ecosystem on which such fisheries ecosystems depend.

b) Physical and Chemical Sciences: Departmental research under this heading is responsible for the study of physical properties, processes and phenomena in marine waters; the study of the flux, distribution and behavior of organic and inorganic materials from natural and manmade sources and their impact on fish and the pathways of pollutants through the ecosystem. Data and advice on these matters are provided and technology development is carried out not only in support of the research activities but also for transfer of technology to Canada's ocean industry. These endeavors contribute to issues of climate, fisheries, northern development, offshore oil and gas, coastal engineering, pollution, general shipping, marine emergencies, sovereignty, defence and others. These issues are of direct interest to a wide range of clients in government, private industry and the public sectors.

c) Hydrography: The Canadian Hydrographic Service of the Department of Fisheries and Oceans is responsible for conducting field surveys and gathering relevant tide, water levels and current data for compiling and publishing accurate charts and navigational publications for Canada's navigable waters. Research and development in this category is oriented toward increased accuracy and efficiency in data collection and chart publication. The provision of these navigational charts, related publications and tide and water level data promotes and facilitates safer use of Canada's navigable waters by commercial shipping, the fishing industry, offshore resource developers and the recreational sector.

B) Resource Definition

i) Stock/Resource Evaluation

The resource in question constitutes the headwaters of the Exploits River watershed; the study area being comprised of the Lloyds River watershed above Red Indian Lake (see Fig. 1).

Within the study area there are a total of 43,898 units of river habitat (1 unit = 100 m^2) and 8,750 hectares of standing water. This can be delineated into three main sections: (i) from Red Indian Lake to Lloyd's Lake; (ii) Lloyd's Lake to King George IV Lake; and (iii) King George IV Lake and its upper tributaries (see Table 1).

Table 1. Habitat area, annual production and production value (resident species).

Lloyd's River Watershed Area	River Habitat in rearing units (100 m^2)	Standing water in hectares	Annual production (kg)	Annual value*
Section 1	24,719	2,951	8,160	$80,780.00
Section 2	13,047	2,701	5,745	$56,876 .OO
Section 3	5,332	3,098	4,517	$44,718.00
Total	43,898	8,750	18,422	$182,374 .OO

*recreational fisheries for resident species harvested at maximum sustainable yield.

Good populations of landlocked salmon (Salmo salar), brook trout (Salvelinus fontinalis), and Arctic char (Salvelinus alpinus) are known to exist in the study area and Red Indian Lake. The existence of these salmonid species within the study area has been verified by electrofishing surveys conducted in Lloyd's River by DFO personnel and by lake surveys conducted by consultants.

With respect to the three aforementioned species, their biological requirements are such that they prefer to spawn in river habitat with appropriate water flows, i.e. riffle areas where water velocities range from 0.2 to 0.7 m/s and clean gravel areas ranging in size from 1.5 to 5.0 cm substrate composition. Their eggs hatch in early spring and the juvenile fish spend between 3-5 years in river habitat prior to their migration to ponds and lakes. Consequently, the importance of these nursery and spawning areas to the overall fisheries ecology of a watershed cannot be overstated. Once in this standing water habitat, adult salmonids only return to the rivers to spawn to continue their life cycle. Additionally, past DFO habitat surveys reveal no migrational barriers to salmonids within the Lloyd's River proper or upstream of King George IV Lake.

Data available from unpublished reports (DFO internal files) of similar systems within the island suggest an annual production of 19.64 kg/ha and 1.12 kg/ha for river and standing water habitat, respectively. Extrapolation of this information suggests an annual salmonid production of 18,422 kg within the study area. The respective constituent composition of this 18,422 kg would be comprised of landlocked salmon, brook trout and Arctic char, respectively.

Whilst not within the study area per se, it is expected that resident salmonids within Red Indian Lake utilize the lower Lloyd's for spawning and juvenile rearing habitat requirements. The lower Lloyd's is therefore most likely responsible for a major portion of the recruitment for the resident Red Indian Lake fish population.

ii) Exploitation/Utilization Roles:

No formal exploitation studies have been carried out within the study area; however, the salmonid resources in the area are known to be exploited by recreational anglers. The watershed area downstream of Lloyd's Lake is easily accessed via forest access roads.

Cabins extend from Lloyd's Lake to and including Red Indian Lake from which local residents (Buchan's area) outfit for fishing trips to resident and non-resident clients. A major hunting/fishing lodge was operated on King George IV Lake for many years. The presence of these facilities are a very good indicator of substantial fish resources within the study area.

With the mobility of the general public due to ease of access via all-terrain vehicles and public demand for recreational activities, it is very likely that this resource is being moderately exploited.

The value of the resident species resource, based on $9.90/kg, within the study area, is $182,374.00 annually. For a detailed breakdown of value by study area section, refer to Table 1.

iii) Resource Enhancement

The Department of Fisheries and Oceans has, since the early 1950's, recognized the potential of the Exploits River watershed to produce anadromous Atlantic salmon (Salmo salar). Historically, due to natural obstructions, less than 10% of the watersheds area (11,272 km^2) was accessible to anadromous Atlantic salmon. Prior to enhancement the watershed produced less than 2000 sea-run salmon.

The introduction of anadromous Atlantic salmon into previously uninhabitated areas of the Exploits River began as a result of events that transpired on Rattling Brook, an adjacent river system flowing into the Bay of Exploits (Fig. 2). A hydro development on that river that began in 1956 would have effectively eliminated its run of Atlantic salmon. At that time, it produced the third highest angling catch in insular Newfoundland.

it was therefore decided in 1956 to transfer the entire Rattling Brook adult run to Great Rattling Brook, a tributary of the lower Exploits (watershed area below Grand Falls). This was accomplished between 1957 and 1966. Each year over that period adults were captured by means of a counting fence and transported by tank truck above an impassible obstruction located at Camp I on Great Rattling Brook. A fishway was constructed at Camp I in order to accommodate predicted significant adult returns in 1962 resulting from the first fish transferred in1957. A total Of 1,068 adults were enumerated at the fishway in 1962. Since that time escapements have increased steadily reaching a maximum of 6,556 adults in 1975. To ease migration a fishway was also constructed at Bishop Falls hydro facility.

In view of the success realited by the Rattling Brook transfer, attention was next turned to developing the trfbutaries of the middle Exploits (Fig. 2) encompassing the watershed area between Grand Falls (an impassible obstruction) and a storage dam located at the outlet of Red Indian Lake (also an impassible obstruction). In 1967, a spawning channel was constructed on Noel Paul's Brook, a large tributary of the middle Exploits; fry stocking commenced on that tributary in 1968. Smolt production resulting from fry stocking proved encouraging. Therefore, a partial fishway was completed at Grand Falls in 1973 to capture returnfng adults (essential ly adults are collected at this facility and transferred to a tank truck for transport around Grand Falls). Adult returns were likewise encouraging. In order to improve cost-effectiveness of the project and to justify eventual completion of the Grand Falls fishway, thereby creating a self-sustaining run, it was evident that additional production was required from the middle Exploits. To 1974 the DFO had an investment of $4.45 million in the Exploits salmon enhancement project.

During the period 1957-1974, two additional developments occurred within the watershed area: (1) the construction of a hydro generating station on Sandy Brook; and (2) the diversion of Victoria Lake to Bay d'Espoir for hydro generation. The loss, for enhancement purposes, of these waters significantly eroded the benefit to cost ratio of salmon enhancement within the watershed.

DEVELOPMENT PLAN FOR THE EXPLOITS WATERSHED

1975	Expansion of Noel Paul's incubation facility from 0.5 million to 1.5 million egg capacity to provide swim-up fry to stock tributdries of the middle Exploits.
19764980	Col oniration of middle Exploits with anadromous Atlantic salmon.

Atlantic salmon in the Exploits River require 5 years to complete their life cycle. The young fry, when stocked, remain in freshwater for 3 years then migrate to sea as smolts and spend at least 1 year in the marine environment. They then return as adults to spawn in their fifth year. Consequently, to establish a self-supporting run of salmon (colonization) one must stock fry for a minimum of 5 years.

1980 Middle Exploits has received five consecutive stockings, resulting in a self-sustaining run of anadromous Atlantic salmon.

Attention now turns to Upper Exploits (see Fig. 2) watershed where 60% (by area) of watershed exists.

1981-1983 Conduct test stocking of Lloyd's River to determine if Red Indian Lake will act as barrier to out migrating smolts.

Lloyd's River to receive three consecutive annual fry stockings. Brood for these fry will come from Middle Exploits and fry must be compensatorily stocked back in Middle Exploits to ensure run.

1984 Assess the 1981 test stocking of Lloyd's River. If successful, develop Upper Exploits watershed.

1985 Expand the capacity of Noel Paul's incubation facility from 1.8 million eggs to 10 million eggs. The annual stocking requirement for the Upper watershed is 6,000,000 fry.

Phase 1 construction of Red Indian Lake Fishway. This fishway is proposed to be constructed to pass returning adult fish over Red Indian Lake dam.

19864990 - Five consecutive annual stockings of Upper Exploits watershed.

- Completion of Red Indian Lake Fishway.

- Completion of Grand Falls Fishway.

The habitat within the study area has the potential to produce 36,698 anadromous Atlantic salmon. Of these salmon 60% or 22,019 will be exploited by commercial fishermen at an annual value of $194,648.00. Of the 14,679 that escape into the river, 22% or 3,229 will be harvested by recreational fishermen at an annual value of $242,204.00. The development of the study area for anadromous Atlantic salmon will therefore yield $436,852.00 annually, on a continuing basis. Table 2 details the potential of Atlantic salmon enhancement by section of the study area.

Table. 2. Potential production figures and economic value for Atlantic salmon enhancement within the study area.

Lloyd's River Watershed Area	Total salmon production	Value to commercial fishery	Value to recreational fishery	Total value
Section 1	17,700	$93,883	$116,820	$210,703
Section 2	11,487	$60,927	$75,811	$136,738
Section 3	7,511	$39,838	$50,073	$89,411

The long-term plan for the Exploits River enhancement program should realize in 1990 an annual sustained production of 100,000 anadromous Atlantic salmon. The value of this resource is estimated to be $1,190,400 annually. The total cost of this development is estimated to be $15,000,000.

Water Quality Considerations Pertinent to Fisheries Enhancement Plan

In considering this development, DFO has to take into consideration the quality of fish habitat within the Exploits watershed. To date, two factors have been identified with the potential to degrade the quality of fish habitat. The first is heavy metal contamination (zinc and copper) from base metal mining tailings disposal at the ASARCO mine in Buchans. These tailings are presently disposed, untreated, into Red Indian Lake. The second concern relates to effluent from Abitibi-Price Pulp and Paper milling operations in Grand Falls.

Specific concerns related to these issues are: (1) biological oxygen demand problems from pulp and paper wastes; (2) suspended solids problems (pulp and paper effluent); (3) toxicity problems related to pulp and paper effluent disposal; (4) acute toxicity and bioaccumulation potential of heavy metals from base metal tailings disposal.

Any reduction in present flows in the Exploits watershed (either natural or manmade) can be expected to aggravatethese existing pollution problems within the watershed. This in turn can be expected to compound present and future fisheries development and other industrial and domestic uses of water for the entire- watershed.

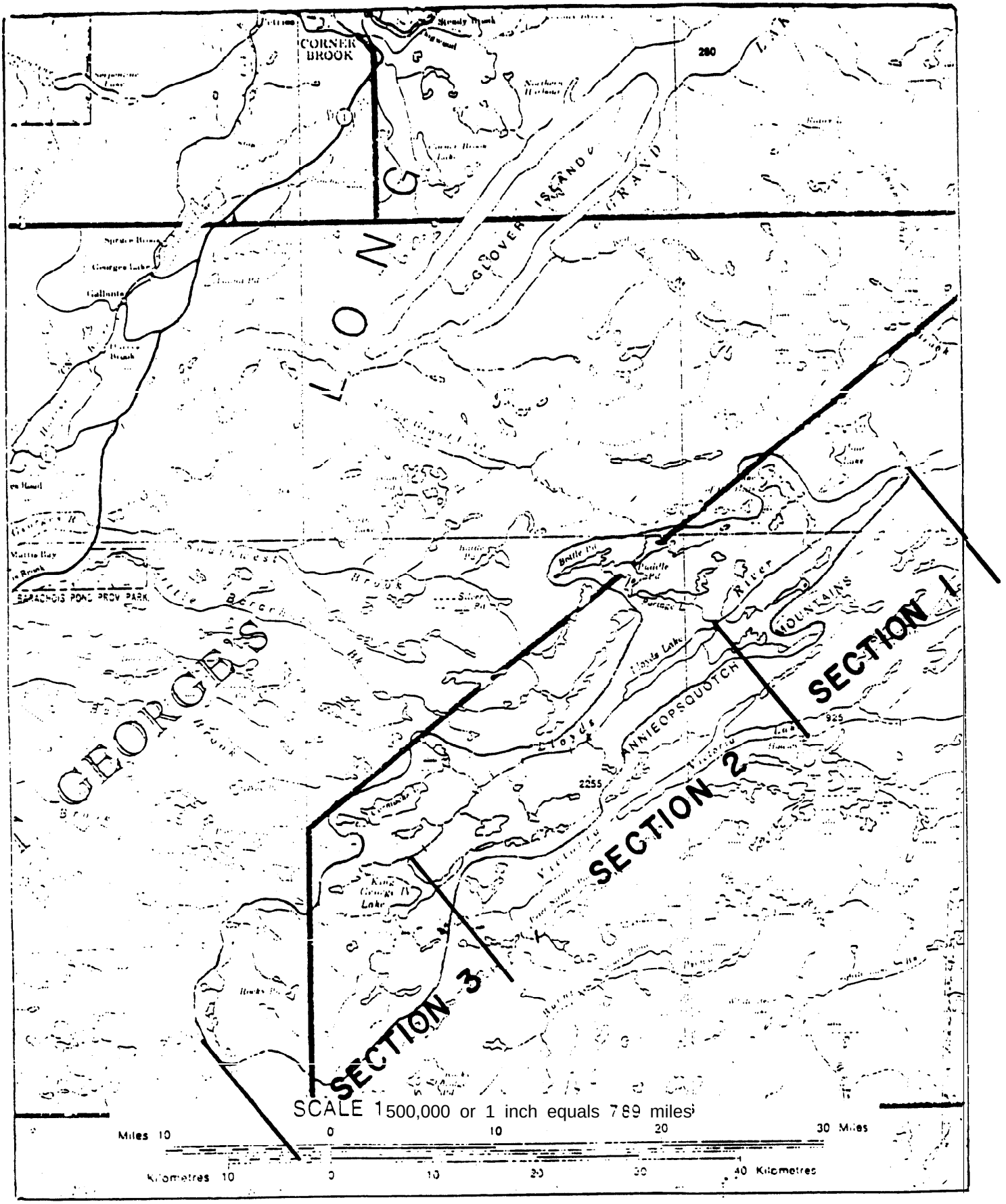


Fig.1 I.R.P. WORKSHOP STUDY AREA - LLOYDS RIVER WATERSHED

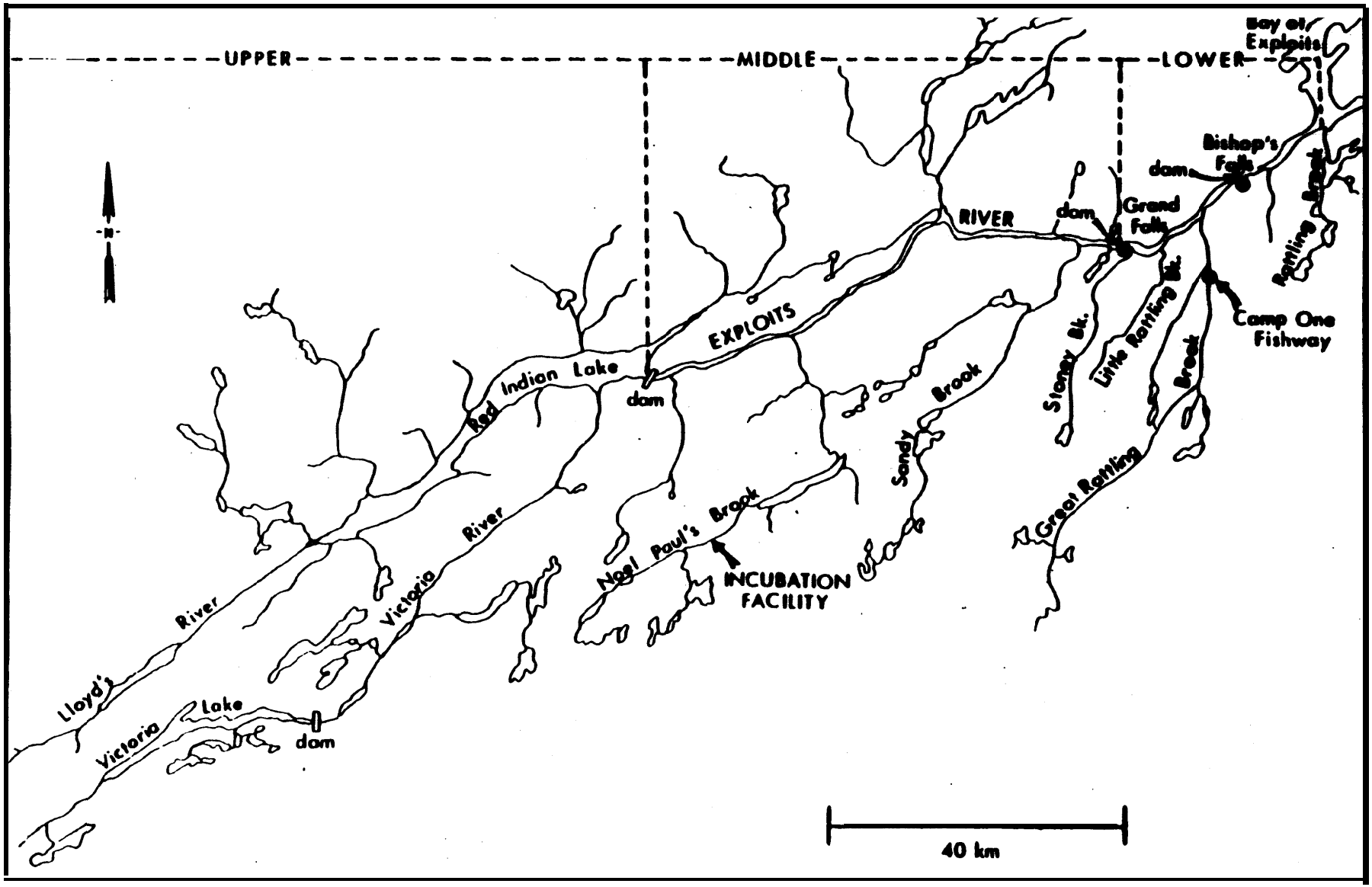


Fig. 2. Detailed map of the Exploits River system.

POSITION PAPER **- DEPARTMENT OF FORESTRY**

LLOYD'S LAKE WATERSHED STUDY AREA

with respect to timber management, the mandate of the Department of Forestry is to supervise, control and direct all matters relating to forest resources and the utilization, protection, conservation, management, surveying, mapping and development thereof.

The Department of Forestry, being a single agency type department, recognizes that its mandate must be exercised in cooperation with other departments and agencies having related resource management mandates.

The Department of Forestry is firmly committed to the concept of multiple use and conservation (wise use). It recognizes the need to reserve certain areas of forest land from forest management activities but it will challenge the proponents of such reserves to demonstrate conclusively the need for such reserves.

The Department's authority to carry out its mandate is contained primarily within two pieces of legislation - the Crown Lands Act, RSN 1970, and the Forest Land Act, 1974. The Crown Lands Act clearly establishes the Department's pre-eminent role within Government to manage the timber resources contained on Crown lands throughout the Province. The Forest Land Act, through the mechanism of taxation, permits the Department to exercise control over the management of the timber resource on private, leased and licenced lands throughout the Province.

The study area - Lloyd's Lake Watershed - is wholly contained on lands controlled by Abitibi-Price by virture of the Act 5 Edward VII, Chapter 10, 1905. Under this Act, Ahitibi-Price was given ownership of the timber, mineral and water resources within the area for a term of 99 years and for

further terms of **99 years** upon the request of the Company. The timber resource within the area is being managed by Abitibi-Price as a source of pulpwood 'for its mills at Stephenville and Grand Falls. In total, the area contains 36,500 hectares of productive forest land and supports **3,712,000 m^3** (solid) of merchantable timber (Table 1).

In the past, it has been the position of Abitibi-Price that it be compensated for the loss of land base. The preferred compensation has always been an area of land equivalent to that being lost. This has frequently been done but as the amount of land base available for such compensation has declined, the Company has taken an alternate approach. In recent land base withdrawal situations, the Company has requested that it be given freehold status to certain areas of licenced lands which it holds near its two pulp mills. This position is being resisted by the Department of Forestry. As an alternative, the Department has proposed financial compensation in the form of a silvicultural grant. This grant would be in an amount sufficient to increase the timber carrying capacity of areas near the two pulp mills to levels sufficient to offset the capacity lost through land base withdrawals. Regardless of the form of compensation, it is to be recognized that compensation will have to be paid to Abitibi-Price for any land base/timber losses. This request for compensation will, by and large, be supported by the Department of Forestry.

In addition to compensation for land base loss, compensation will also be requested for the loss of any capital investment made by the Company or the Department of Forestry within the area. These investments include silviculture and access road construction.

TABLE 1: THE SITE CLASS VOLUMES OF FORESTED LAND WITHIN THE LLOYD'S LAKE WATERSHED

Site Class	Area (Hectares)	Softwood Vol. (Cubic Metres)	Hardwood Vol. (Cubic Metres)	Total Volume (Cubic Metres)
Good	5,082.50	597,160.38	81,803.67	678,964.06
Hight	220.60	11,678.04	2,870.87	14,548.91
Medium	23,861.50	2,149,342.47	207,975.27	2,357,317.71
Poor	7,302.40	613,991.83	47,186.71	661,178.64
All	36,467.00	3,372,172.72	339,836.52	3,712,009.32

INTEGRATED RESOURCE PLANNING STUDY

POSITXON PAPER: NEWFOUNDLAND AND LABRADOR HYDRO

1.0 RESOURCE AGENCY DESCRIPTION

The Hydro Group consists of four distinct Companies: (1) Newfoundland and Labrador Hydro; (2) Churchill Falls (Labrador) Corporation: (3) Power Distribution District: and (4) Lower Churchill Development Corporation. In terms of capacity and assets the Hydro Group is one of the largest electric utilities in Canada and is one of the largest industrial enterprises in the Province of Newfoundland and Labrador.

The parent company, Newfoundland and Labrador Hydro is wholly owned by the Province and is the corporate vehicle through which the Province implements its policies with respect to electrical energy. All activities are performed under the overriding requirement that they be consistent with the financial, energy and development policies of the Provincial Government.

The mission of the Hydro Group is to provide electrical power and energy, on behalf of the people of the Province, at the lowest cost consistent with reliable service, due consideration for the environment, and the safety of our employees and the customers which we serve. Hydro plans, builds and operates generation, transmission, and distribution facilities to fulfil1 this aim.

The total installed capacity in 1987 on the interconnected systems was 7,097 megawatts (MW), of which 1,469 MW were located on the Island (891 MW hydroelectric and 578 MW thermal). The net energy generated on the interconnected systems was 38,616 gigawatthours (GWH); 5.308 GWH were produced on the Island (3,063 GWH hydroelectric and 2,245 GWH thermal). The Hydro Group maintains 3,109 km of transmission lines on the Island, an5 1,039 km in Labrador.

2.0 RESOURCE DEFINITION

2.1 Project Description:

The Upper Lloyds River Diversion Project involves the diversion of water from the Exploits River drainage system into the Bay d'Espoir system. It does not involve the construction of a powerhouse or transmission lines at King George IV Lake. Water from this diversion would be used for the production of addftional energy at existing (and possibly future) plants on the Bay d'Espoir system.

The project would divert the flow from 476 km² of the Upper Lloyds River drainage basin from Red Indian Lake into the Victoria River drainage basin. A dam would be located on the Upper Lloyds River about 1.5 km below King George IV Lake at approximately 48° 14'N 579 50'W. Thi flows above this dam would then be diverted via a canal to Wood Lake in the Victoria River drainage basin (Figure 1).

The dam to be constructed on the Upper Lloyds River would be 21.3 m high. It will raise the water level in Ring George IV Lake from its present elevation of 345.6 m above sea level to a full supply level of 355.1 m, an increase of 9.5 m. A diversion canal approximately 3000 m long would be excavated from the south-east side of King George IV Lake along a valley in a south-easterly direction, through a height of land into Wood Lake on the upper reaches of the Victoria River.

Approximately 10 km of access road would be required between the dam site and Route 480. An additional 7 km would be required between the dam and the diversion canal.

It is anticipated that this development would take about 1.5 years to construct. Clearing of land at the dam site and the diversion canal site would be scheduled to commence in January of the first construction year. Other construction and excavation activities related to all structures would be completed by December of that year. However, filling dead storage would not be Completed until June of year two.

2.2 Project Rationale:

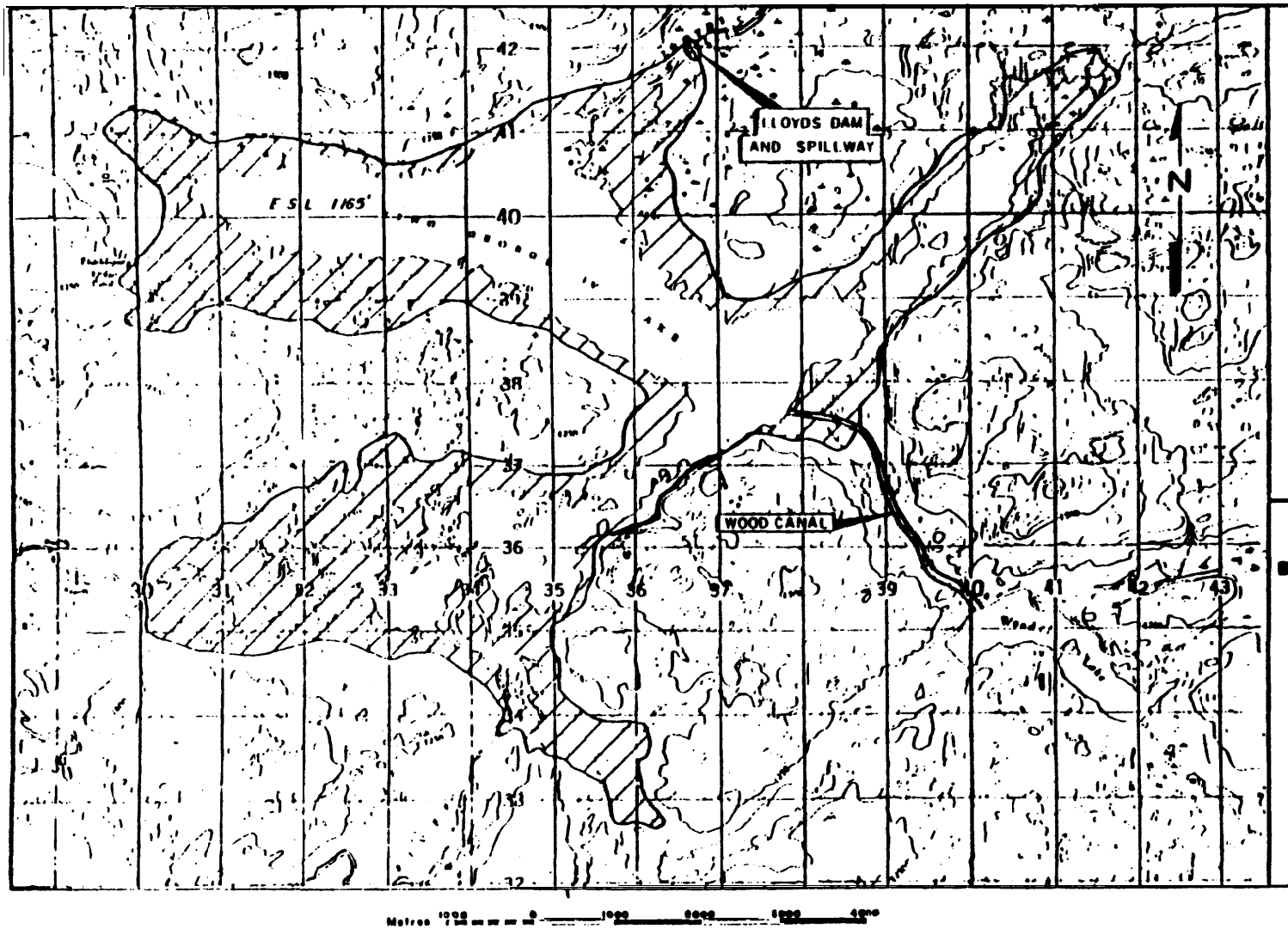
Hydro's interest in the Lloyds River Diversion stems from its exceptional attractiveness as a source of inexpensive energy. The capital cost of the proposed diversion scheme, is in the order of $30,000,000 which would mean unit energy costs of less than 20 mills per

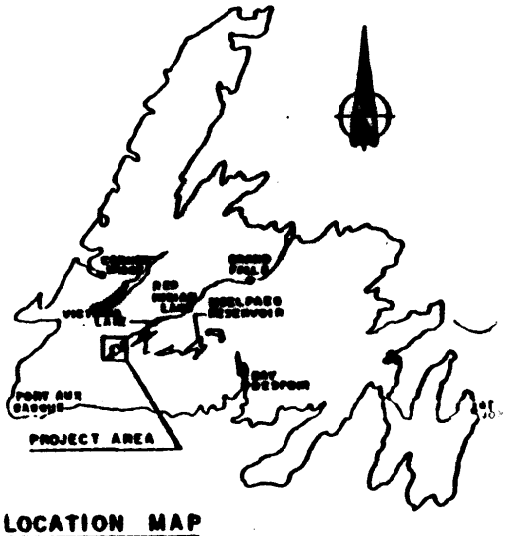
kilowatthour (KWH). This is undoubtedly the cheapest source of undeveloped hydroelectric energy remaining within the Province and probably on the entire North American continent. The average hydraulic and thermal unit energy costs cm Hydro's system are 21.02 mills per KWH and 63.75 mills per KWH, respectively. The average hydraulic mill rate is reduced by the inclusion of the large Bay d'Espoir plant which was constructed in the mid-1960's cad early 1970's. The average unit energy costs for the newer Hinds Lake, Godaleich and Cat Arm Generating Stations are 33,49 and 81 mills per KWH, respectively. Hydro's overall average unit energy cost is 41.03 mills per KWH.

Water from the Upper Lloyds River would pass through the existing Godaleich and Bay d'Espoir Generating Stations and would increase their energy production by 60 GWH and 180 GWH, respectively for a total of 240 GWH annually. To put these figures into perspective, the average annual energy production at Godaleich and Bay d'Espoir Generation Stations is 549 GWH and 2569 GWH, respectively.

Hydroelectric Generating Stations have also been proposssd at Granite Canal, Island Pond, and Round Pond on the Bay d'Espoir system. Water from the Upper Lloyds River would also pass through these plants, thereby significantly increasing their energy production by approximately 24% per year.

As previously noted, the Upper Lloyds River Diversion can potentially produce 240 GWH of *energy* from existing plants. On Hydro's system, any energy and power which is required by the users of electricity, and is not generated at hydroelectric generating stations, is generated at the Holyrood Thermal Generating Station. Therefore, the Upper Lloyds River Diversion would displace approximately 400,000 barrels of Bunker "C" fuel oil annually. At the 1987 average cost of oil to Hydro ($20.55 per barrel) the value of energy from the Upper Lloyds River Diversion would be approximately $8.2 million.





LOCATION MAP

HYDRO

LLOYDS RIVER DIVERSIO
DEVELOPMENT PLAN

Figure :- 1

APPENDIX III:

IRP Workshop Participants

LEDREW
ENVIRONMENTAL
MANAGEMENT LIMITED

P.O. Box 5548, St. John's
Newfoundland, Canada
A1C 5W4
(709) 576-6140

IRP WORKSHOP PARTICIPANTS AND OBSERVERS

Steering Committee

Dr. Gordon Beanlands
Executive Secretary, CEARC
1318 Robie Street
Halifax, Nova Scotia
B3H 3E2

Mr. Patrice **LeBlanc**
Chief, Habitat Resource Development
Resource Division
Department of Fisheries and Oceans
P.O. Box 5030
Moncton, New Brunswick
E1C 9B6

Mr. C. Leslie Dominy.
Chief, Freshwater **Habital** Division
Department of **Fisheries** and Oceans
200 Kent Street, 11th Floor
Ottawa, Ontario
K1A 0E6

Mr. Robert **Wiseman**
Acting Chief, Habitat Management Division
Department of Fisheries and Oceans
P. 0. Box 5667
St. John's, Newfoundland
A1C 5X1

Chairman

Mr. John **MacTavish**
Resource Management Consultants
195 Carleton Avenue
Ottawa, Ontario
K1Y 0J5

Negotiators

Mr. David Jeans
Assistant Deputy Minister
Department of Environment
P. O. Box 4750
St. John's, Newfoundland
A1C 5T7

Mr. Leo Cole
Vice-President, Engineering
Newfoundland and Labrador Hydra
P.O. Box 9100
St. John's, Newfoundland
A1A 2X8

Mr. James Inder
Assistant Deputy Minister
Department of Culture, Recreation and Youth
P.O. Box 4750
St. John's, Newfoundland
A1C 5T7

Mr. Robert Mercer
Acting Assistant Deputy Minister
Department of Forestry
P.O. Box 2006
Corner Brook, Newfoundland
A2H 6J8

Ms. Karen Brown
Assistant Deputy Minister
Pacific and Freshwater Division
Department of Fisheries and Oceans
200 Kent Street, 11th Floor
Ottawa, Ontario
K1A 0E6

Resource Persons

Mr. Martin **Goebel**
Water Resources Engineer
Department of Environment
P. 0. Box 4750
St. John's, Newfoundland
AlC 5T7

Mr. David Taylor
Director, Environmental Assessment Division
Department of Environment
P.O. Box 4750
St. John's, Newfoundland
AlC 5T7

Mr. David **Kiell**
Manager, Environmental Services
Newfoundland and Labrador Hydro
P.O. Box **9100**
St. John's, Newfoundland
AlA 2x8

Mr. Edward Hill
Senior Ecologist Assessment and Research
Newfoundland and Labrador Hydro
P.O. Box 9100
St. John's, Newfoundland
AlA 2X8

Mr. William Wells
Special Projects Officer
Department of Forestry
P.O. Box 2006
Corner Brook, Newfoundland
A2H 6J8

Mr. Richard **McCubbin**
Acting Section head
Habitat Research and Assessment Section
Department of Fisheries and Oceans
P.O. Box 5667
St. John's, Newfoundland
AlC 5X1

Resource Persons (cont'd)

Mr. Richard McCubbin
Acting Section Head
Habitat Research and Assessment Section
Department of Fisheries and Oceans
P.O. Box 5667
St. John's, Newfoundland
A1C 5X1

Mr. Chuck Bourgiose
Management Biologist - Salmon Division
Department of Fisheries and Oceans
P.O. Box 5667
St. John's, Newfoundland
A1C 5X1

Mr. Jerry Pratt
Head, Enhancement and Agriculture Section
Department of Fisheries and Oceans
P.O. Box 5667
St. John's, Newfoundland
A1C 5X1

Mr. Donald Hustins
Director, Parks Division
Department of Culture, Recreation and Youth
P.O. Box 4750
St. John's, Newfoundland
A1C 5T7

Mr. Kenneth Curnew
Environment Biologist - Wildlife Division
Department of Culture, Recreation and Youth
P.O. Box 4750
St. John's, Newfoundland
A12C 5T7

Observers

Mr. Thomas Bird
Associate Chief, Habitat Division
Pacific Region - Department of Fisheries and Oceans
555 West Hastings Street
Vancouver, British Columbia
V6B 5G3

Dr. Barry Sadler
Canadian Environmental Assessment Review Council
1631 Barksdale Drive
Victoria, British Columbia
Z8N 5A8

Mr. Roger Pottle
Environmental Planner
Department of Transportation
P.O. Box 4750
St. John's, Newfoundland
AlC 5T7

Mr. Joseph Arbour
Environment Canada
45 Alderney Drive
Darthmouth, Nova Scotia
B2Y 2N6

Mr. Jim Osbourne
Manager, Environmental Quality and Assessments
Environmental Protection Services
Northwest Atlantic Fisheries Centre
P.O. Box 5037
St. John's, Newfoundland
AlC 5V3

APPENDIX IV:

Registration Information

LEDREW ENVIRONMENTAL MANAGEMENT LIMITED

P.O. Box 5548, St. John's
Newfoundland, Canada
A1C 5W4
(709) 754-2923

INTEGRATED RESOURCE PLANNING WORKSHOP

February 10 - 12, 1988
Corner Brook, Newfoundland

Sponsored by the Department of Fisheries and Oceans
and the Federal Environmental Assessment Review Office

IRP Steering Committee

Dr. Gordon Beanlands, Federal Environmental Assessment Review Office
Mr. Patrice LeBlanc, Fisheries and Oceans, Gulf Region
Mr. Leslie Dominy, Fisheries and Oceans, Ottawa
Mr. Robert Wiseman, Fisheries and Oceans, Newfoundland Region

Negotiators

Mr. John MacTavish, Chairman

Mr. David Jeans, Assistant Deputy Minister
Department of Environment
Mr. David Mercer, President, Newfoundland and Labrador Hydro
Mr. James Inder, Assistant Deputy Minister
Department of Culture, Recreation and Youth
Mr. Robert Mercer, Acting Assistant Deputy Minister
Department of Forestry
Mr. Pierre Asselin, Assistant Deputy Minister
Department of Fisheries and Oceans

General Information

The Integrated Resource Planning Workshop, sponsored by DFO and FEARO, will be held February 10-12, 1988 at the Glynmill Inn in Corner Brook, Newfoundland.

Workshop Objective

To develop and test IRP as a means to resolve resource conflicts. This will be achieved by conducting a "mock" negotiation exercise on the Lloyds River watershed.

Accomodation

A block of rooms has been reserved at the Glynmill Inn at the special rate of $57 for single and $65 for double accomodation. Reservations should be made directly with the hotel prior to February 5, 1988 by telephoning (709) 634-5181. Please indicate that you are with the IRP Workshop.

Transportation

Corner Brook is located 50km from Deer Lake and 77km from Stephenville. For those flying Air Nova free shuttle service between Deer Lake and Corner Brook is available. Air Atlantic patrons may take advantage of the Star Taxi shuttle service from Deer Lake to Corner Brook for a $10 charge. Car rentals are also available. Transportation service from Stephenville is through car rental only.

"Registration"

The Workshop registration will take place from 6:00 pm to 8:00 pm on Wednesday, February 10 at the Glynmill Inn. Information packages will be distributed at this time.

Icebreakers

Two receptions (cash bar) will be held: On Wednesday evening, February 10 a casual reception will be held during registration and following the 8:00 pm to 9:00 pm opening session; and from 5:00 pm to 5:30 pm Thursday, February 11 in the Glynmill Inn.

Meals

On Thursday, February 11, lunch from 12:30 pm to 1:30 pm and dinner from 5:30 pm to 6:30 pm will be provided.

Additional Information

For additional information, please contact:

Bevin LeDrew
or Elizabeth Norris
LEM Ltd.
(709) 754-2923

WORKSHOP AGENDA

Wednesday, February 10
6:00 pm Workshop Registration/Icebreaker Reception
8:00 pm Overview and Scope Definition
9:00 pm Reception (continued)

Thursday, February 11
8:30 am Negotiation Session One
12:30 pm Lunch
1:30 pm Negotiation Session Two
4:30 pm Cocktails
5:30 pm Dinner
6:30 pm Negotiation Session Three

Friday, February 12
8:30 am Consensus Building
10:30 am Process Evaluation
12:30 pm End of Workshop
2:00 pm Steering Committee Meeting
2:30 pm Hotel Check Out Time

LEDREW ENVIRONMENTAL MANAGEMENT LIMITED

P.O. Box 5548, St. John's
Newfoundland, Canada
A1C 5W4
(709) 576-6140

IRP WORKSHOP NOTES

SEATING

The Negotiation Sessions will be centered around a main table at which only the chairman and negotiators will sit.

Support staff will be assigned seating at tables adjacent to their negotiators. Observers and Steering Committee members will also be assigned tables.

NEGOTIATION SESSIONS

During formal negotiations, workshop participants are requested to minimise movements and individual discussions.

ROLE OF CHAIRMAN

The Chairman will lead the discussion during the formal Negotiation Sessions. All comments will be addressed to the chair.

The Chairman will ensure that the schedule is met and that discussions remain relevant to the issue under consideration. At his discretion, he will convene and adjourn the formal sessions.

ILLUSTRATIONS AND DISPLAYS

Any material submitted for discussion will be copied and made available to all negotiation teams.

Illustration material available at the Workshop will include :

1:50,000 scale mapping of Lloyds River watershed
1:250,000 scale mapping of Exploits River watershed
1:1,000,000 scale mapping of Newfoundland.

Should any participant wish to supply illustrations related to resources in the study area, provision will be made for their display.

AGENDA

The Negotiators will be **asked to develop and approve the detailed Agenda. The following schedule is suggested:**

Wednesday, February 10

6:00 pm **- 8:00 pm**	**Registration and reception** (cash **bar) will be held in the anteroom to the main meeting** room. Participants are encouraged to pick up their registration **packages and to view** the seating arrangement at this time.
8:00 pm **-** 9:00 pm	Introductory statements will be made by the Chairman of the Steering Committee, Dr. Gordon Beanlands who will turn the Workshop over to the Chairman, Mr. John Mactavish. An overview paper will be presented to provide the description of the resource setting for the negotiation, and to suggest issues which can form the subject of detailed discussion. Following the presentation, the negotiators and other participants will have an opportunity to ask questions of clarification and make comments on the arrangements for the upcoming sessions.

Thursday, February 11

The entire day and part of the evening will be spent in formal negotiation.

The initial session will be spent on developing a list of negotiating issues. Each negotiator will be invited to make an opening statement in which, as a proponent for a particular resource utilization activity, plans and objectives for the study area will be presented. Each negotiator will be given an opportunity to suggest issues for inclusion on the Agenda.

Based on these presentations and the material submitted previously (Position Papers, Overview Paper) a list of issues will be identified and a selection made of discussion topics. Each topic will be dealt with in turn at **a** formal session. A time limit will be placed on discussion.

Each session will be concluded and adjournment called at the discretion of the chair, either because a successful concensus has been achieved, an impasse has developed, or the deadline reached.

Adjournments will provide a number of opportunities for negotiators to consult with their support staff in order to review progress or to prepare for upcoming sessions. At the reconvening of formal sessions, the Chairman will provide a brief recapitulation.

The evening session will be reserved for review and consolidation of progress made in the negotiations. This will afford an opportunity to consider the relationship between the various issues discussed, and to discuss any issues which have not been satisfactorily addressed.

Friday, Februray 12

The first session will be spent in attempting to document and formalize agreement on those issues where concensus has been reached, or appears close. This may result in the development of a written statement which concludes the negotiation.

Following a mid-morning break, the concluding session will be an opportunity for all participants and observers to express their views on the process, ie their observations, conclusions and recommendations. In order to give all participants and observers an opportunity to speak, the chairman may need to limit the time available to each speaker.

CONTACTS

For information or assistance please contact either Elizabeth Norris or Bevin LeDrew.

APPENDIX v:

Overview Lloyds River Study Area by B.R. LeDrew

INTEGRATED RESOURCE PLANNING OVERVIEW
LLOYDS RIVER STUDY AREA

B. LeDrew

February 10, 1998

TABLE OF CONTENTS

BACKGROUND

The Department of Fisheries and Oceans (DFO), recently announced a Policy for the Management of Fish Habitat. This policy operates under the guiding principle of "No Net Loss" of productive capacity of fish habitat, and in fact is aimed at achieving a net gain.

Within this policy, a strategy has been enunciated which reflects a willingness by DFO to participate with other government departments and resource agencies in resource management planning exercises, and to compromise with other interests so that competing or conflicting resource use priorities can be reconciled through negotiation.

This strategy has been given the term *Integrated Resource Planning" (IRP). In the context of its use by DFO, it can be defined as:

A STRATEGY WHEREBY RESOURCE PLANNING AND MANAGEMENT CAN BE CARRIED OUT BY ALL CONCERNED GOVERNMENT AGENCIES AND PRIVATE SECTOR INTERESTS IN A MANNER WHICH INCORPORATES FISH HABITAT PRIORITIES INTO AIR, LAND, AND WATER USE PLANS.

The strategy of IRP as described by DFO is new, and hence lacks a history of application which can provide a clear understanding of scope and applicability, rules and procedures, relationship to other processes, or a track record of success/failure.

This exercise is intended to bring the IRP strategy into clear focus, and is so doing provide a critical evaluation of its potential. The device which has been selected is to conduct a simulated negotiating exercise. The participants in this exercise will be challenged both to play the role of resource managers (a role to which they would be assigned in an actual resource conflict situation), as well as to contribute to the design and evaluation of the IRP process. Because participation in both roles is critical to the success of this exercise, and given that the latter role is one which would be difficult, if not impossible to fulfill in an actual situation, it must be emphasized that this is a simultation.

This project has been funded by DFO and the Canadian Environmental Assessment Research Council (CEARC). The DFO interest is in developing one of the tools in its Habitat Management Policy. CEARC is interested in the development and testing of new processes for conflict resolution where such processes offer solutions to some of the weaknesses of existing approaches. As well, it may be that IRP can address the relatively new concern over cumulative impacts.

INTRODUCTION

The concept of a simulated negotiation exercise as a means to develop and evaluate IRP requires the selection of a suitable subject area watershed. The exercise requires that the selected watershed meet a number of criteria:

- involve a number of potential resource use conflicts:
- involva a number of resource management plans;
- encompass a relatively small geographic area; and
- is neither currently the subject of a major resource conflict, nor is it undergoing any form of resource conflict resolution (Environmental Impact Assessment).

In the early 1970's, a proposal to divert the headwaters of the Lloyds River into the watershed area for the Bay D'Espoir Hydroelectric Development created a major public response. The concerns expressed by resource agencies, and the objections of public interest groups resulted in the termination of activities related to the diversion project, including a program of environmental studies.

Since that time, a number of other activities have proceeded in the area including a major salmon enhancement project for the Exploits River watershed, of which Lloyds is a part. As well, an ecological reserve has been proposed for a rich delta area in King George IV Lakt in the headwaters of the system.

Newfoundland and Labrador Hydro has been formally directed by government not to consider the Lloyds River Diversion Project as a possible means to address energy deficits.

In general, there are no major current resource conflicts in the area, and while the watershed is somewhat large, in other respects it meets the criteria for selection as the subject of the "mock" negotiations.

In order to revise some of the conflicts which have been resolved or left dormant, and in order to reinforce the "mock" nature of this exercise it has been decided to use the Lloyds River watershed (Figure 1), but to do so in the 1974 setting. The legislation/mandate of today's resource agencies, and their current knowledge of the resource bass will be applied to the unsettled debate over conflicting proposed resource uses which prevailed at that time.

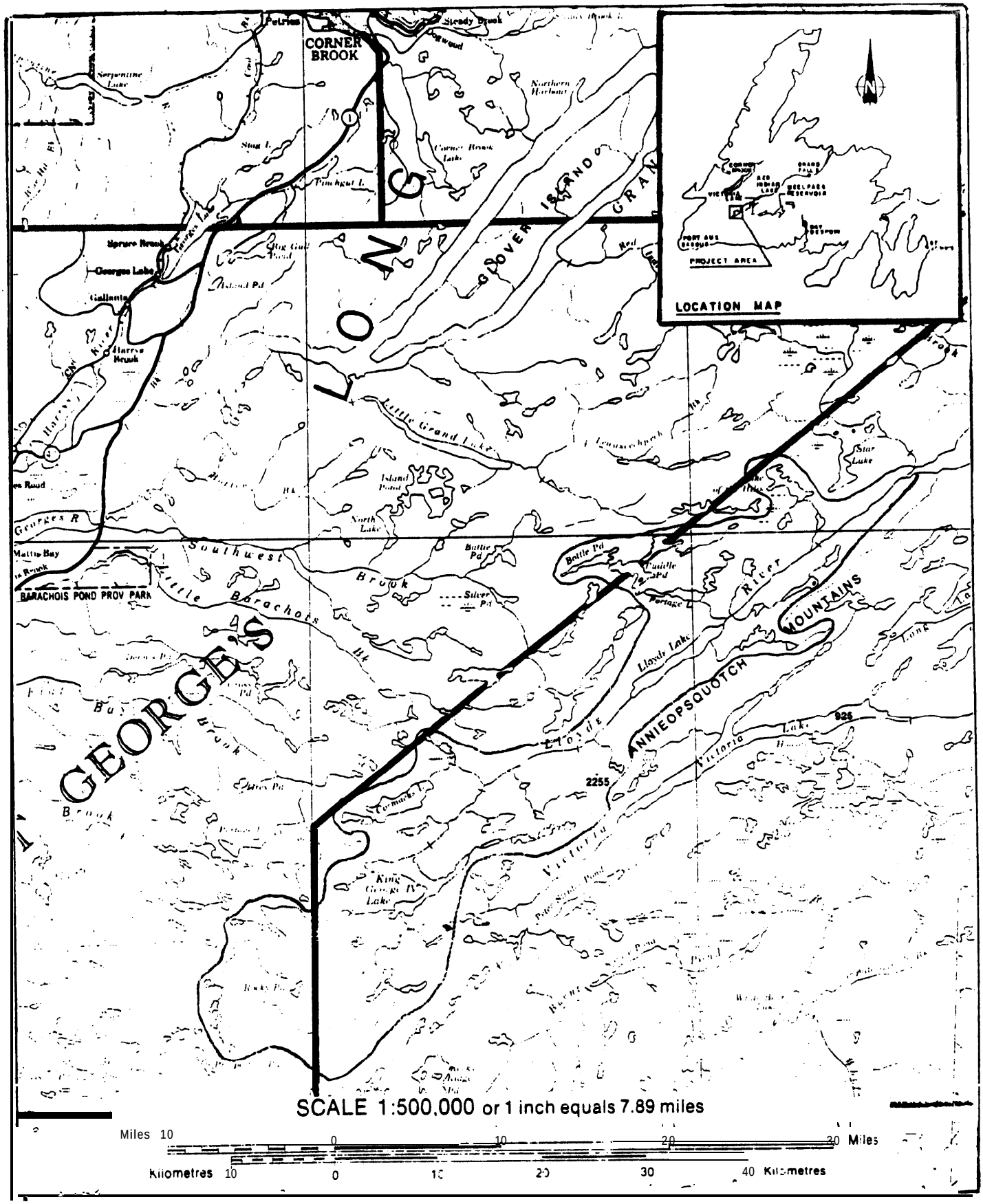


FIGURE 1

I.R.P. WORKSHOP STUDY AREA - LLOYDS RIVER WATERSHED

SCOPE

To place a reasonable limit on the number of participants in the Workshop a total of six agencies were invited -

- Department of Fisheries and Oceans
- Newfoundland and Labrador Hydro
- Department of Forestry
- Wildlife Division, Department of Culture Recreation and Youth
- Parks Division, Department of Culture Recreation and Youth
- Department of Environment

Each agency hss prepared a position paper in which a description of their resource base has been provided. This overview is based on the information submitted by the invited agencies and, while it (hopefully). provides an acceptable overview for the purposes of the Workshop, readers are cautioned that this document does not provide a complete consideration of all the resources in the Lloyds River watershed.

RESOURCE DESCRIPTION

The Lloyds River is a tributary to the Exploits River, the largest watershed in Insular Newfoundland. From its relatively inaccessible pristine headwaters, the Exploits watershed is exposed to increasing resource exploitation and consequent competition for land and water use. Joining in this competition are such activities as: wood harvesting and transportation; hydroelectric generation: mining and mineral processing; pulp and paper production; municipalities; flood routing: hunting; fishing; and tour isn.

The Lloyds River comprises an area of 1033 sq. km. and contributes about 10% of the flow of the Exploits River.

The only proposed public highway in the Lloyds watershed is the proposed Burgeo Road (Route 480) which will cross the river approximate19 10 km. upstream of Lloyds Lake. Private woods roads extend from the area of Red Indian Lake up the river valley to the watershed boundary in the region of Portage Pond.

The Lloyds watershed is characterized by low relief with barrens in the upper watershed. The Annieopsquotch Mountains parrallel the River on 'its southeast boundary rising steeply along the lower stretch of river and forming a boundary with the adjacent Victoria River watershed.

Vegetation is predominantly black spruce-white birch association in valleys, with frequent bogs in the upper watershed. The area comprises 36,500 hectares of productive forest land, two thirds of which is medium class land.

Of note in the watershed is the largest and most diverse delta site on the island of Newfoundland, at King George IV Lake. The delta comprises a rich mixture of alluvial meadows and islinds surrounded by mature forests. The high summer temperatures contribute to produce an area of luxuriant growth which in turn supports a diverse fauna of wildlife and waterfowl.

Wildlife in the watershed area include moose (estimated at a density of 0.65 per square kilometer). Caribou are not resident in the watershed, but the Buchans and LaPoile herds utilize the area on a seasonal basis.

Of particular note is the presence of Pine Marten and Arctic Hare in the watershed. The former are considered endangered and, of the total estimated population of 600, the study area is projected to contain 23 (3%). Arctic Hare are considered rare, and precautions are required to prevent a drop in population numbers.

The water comprising the Lloyds River watershed, provides lentic and lotic habitat (4.4 million square metres of river

habitat: 9000 hectares of standing water) for salmonid fish species (Brook trout, ouananiche and Arctic char).

In addition to recreational fishing for resident species, the are.3 has the potential to support populations of anadromous Atlantic Salmon. The area is psrt of an overall plan for development of a salmon run of 100,000 fish to the entire Exploits River watershed. The Lloyds River will contribute 35,030 adult fish to the run. The commercial and recreation31 take will represent an annual value of approximately $440,000.

The water from the Lloyds River Watershed contributes to the t0ta1 flow in the Exploits. As such it is used for a number of purposes:

- electric power generation at Grand Falls and Bishops Falls
- Log driving
- Drinking water
- Industrial process water - pulp and paper mill
- Dilution of contaminants

During periods of low flow, the contribution of water from the Lloyds River can be important to maintaining water quality in the system. The loss or reduction of this flow has a number of important consequences, including putting at risk the upstream migration of spawning salmon.

During periods of high flow, the Lloyds River contributes to downstream flood conditions and their consequences.

The watershed of Lloyds River is adjacent to Victoria River. This tributary of the Exploits River has been diverted into the Bay D'Espoir Hydroelectric Project. By placing a dam across the Lloyds River just downstream of King George IV Lake, the drainage from 476 sq. km. can be re-directed via a diversion canal into the upper reaches of the Victoria River. This diversion would provide an additional 240 gigawatt-hours of energy at the Godaleich and Bay D'Espoir Generating Stations. The electrical energy thus generated is very attractive at a unit cost of 20 mills per killowatthour. This compares very favourably with an overall average cost of 41 mills per KWH for electricity generated in the island.

RESOURCE BENEFIT INTEGRATION

A number of proposed resource utilization plans involve the exclusion of or interference with other resources. The problems of resource conflicts represent both challenges and opportunities to integrate resource bcnef its.

An area of 19 sq. km. in the King George IV Lake Delte 3rea is proposed to become an ecological reserve. This will provide an unspoiled area for educational and scientific research. Once formally designated, the area would exclude almost all other resource uses including conventional outdoor recreational activities.

The proposed hydroelectric diversion of the Lloyds Riv er watershed wi llrequire flooding of 14 sq. km. of land in the perimeter o f King George IV Lake, of which 900 hectares is considered to be productive forest. The delta area would be inundated. The diversion would decrease the flow into the Exploits Riv er with consequent impacts on lownstream resource uses. The diversion would alter the nature and quality of stream and standing water habitat so that salmonid production lev els would b e reduced.

For the forest industry, the cumulative impact resulting from the alienation of productive land threatens to diminish the

provincial resource base to the point where sustainable yield could fall below the productive capacity of existing operations.

The continuing of pulpwood harvesting operations in the watershed will increase accessibility for hunters and trappers, and will modify habitat. This might result in reduced viability for pine martin and Arctic hare populations.

This brief Listing is not comprehensive, but is illustrative of the issues which have evolved in the competition for land and water use in the watershed. An Integration matrix which endeavours to address all the potential resource conflicts is illustrated in Figure 2. The reduced matrix, with indicated challanges for resource benefit integration, is shown in Figure 3.

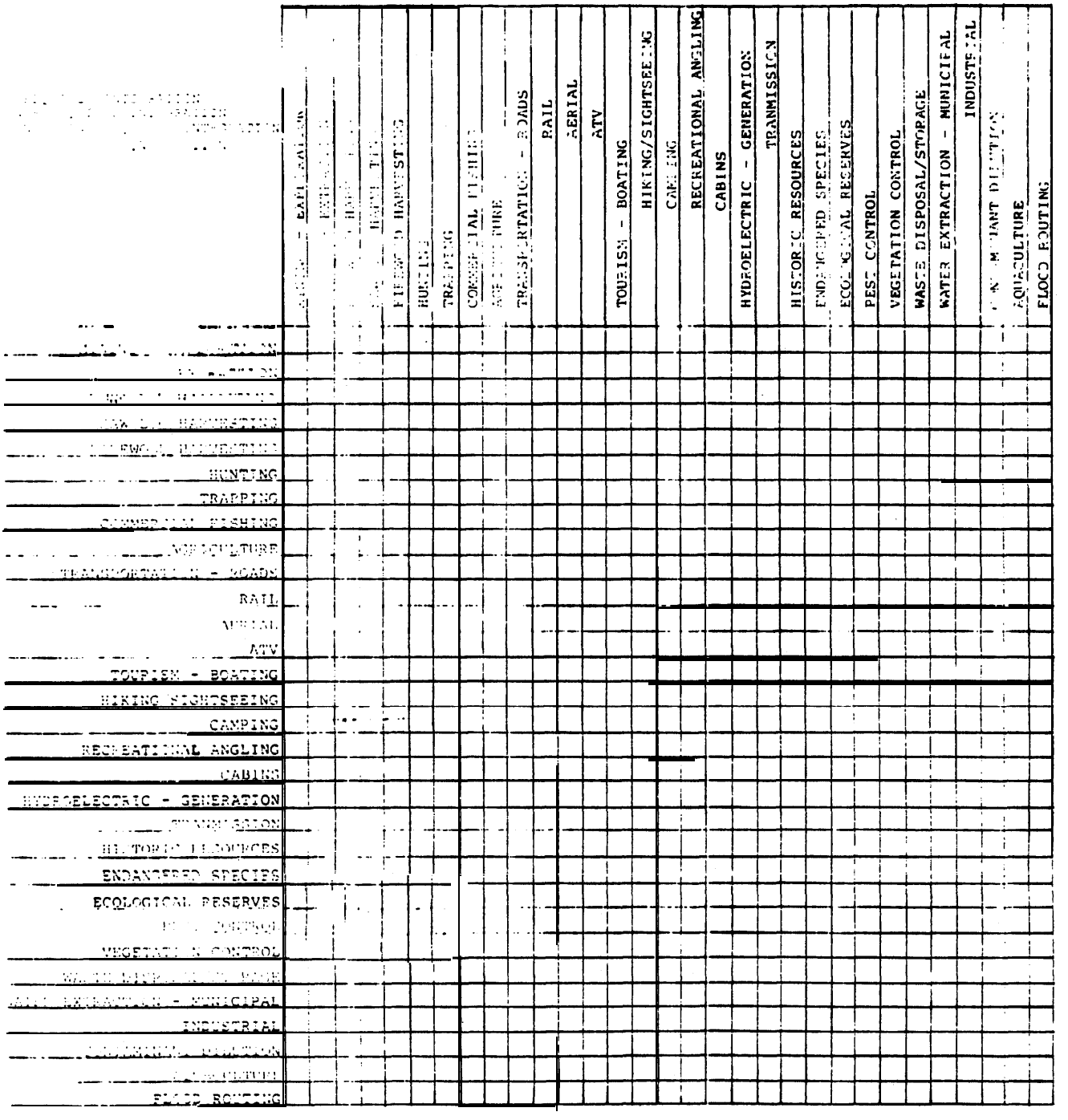
The many issues which are raised by this set of resource uses can be grouped into a small number of broad topics around which the negotiation sessions might be organized. One such set of topics includes:

Access - The area is relatively inaccessible at present. This protects the pristine nature of the watershed and atcomodates some low level, non consumptive resource uses. Conversely it hampers resource access and may impede utilization.

Mitigation/Compensation - Does the concept of payment for lost. resource benefits (actual or potential) have application for any of the conflict areas? What form should or could any such measure take?

FIGURE 2

LLOYDSRIVER WATERSHED. RESOURCE BENEFIT INTEGRATION NEGOTIATION MATRIX



Exclusive use - Some resource plans call for the exclusion of other uses and users. Under these circumstance6 how can resource plans be integrated? Can this issue be dealt with in terms of IRP?

Downstream Water Requirements - Tha existing downstream demand on water use severely limits the flexibility to utilize (by extraction or diversion) the water resources of the study area. How can these water resource uses be considered and accomodated in the IRP process?

Nagotiation sessions might be more meaningful if they address broad issues rather than focusing in turn on each of the specific intersections in the Integration Matrix.

LLOYDS RIVER WATERSHED
RESOURCE BENEFIT INTEGRATION MATRIX

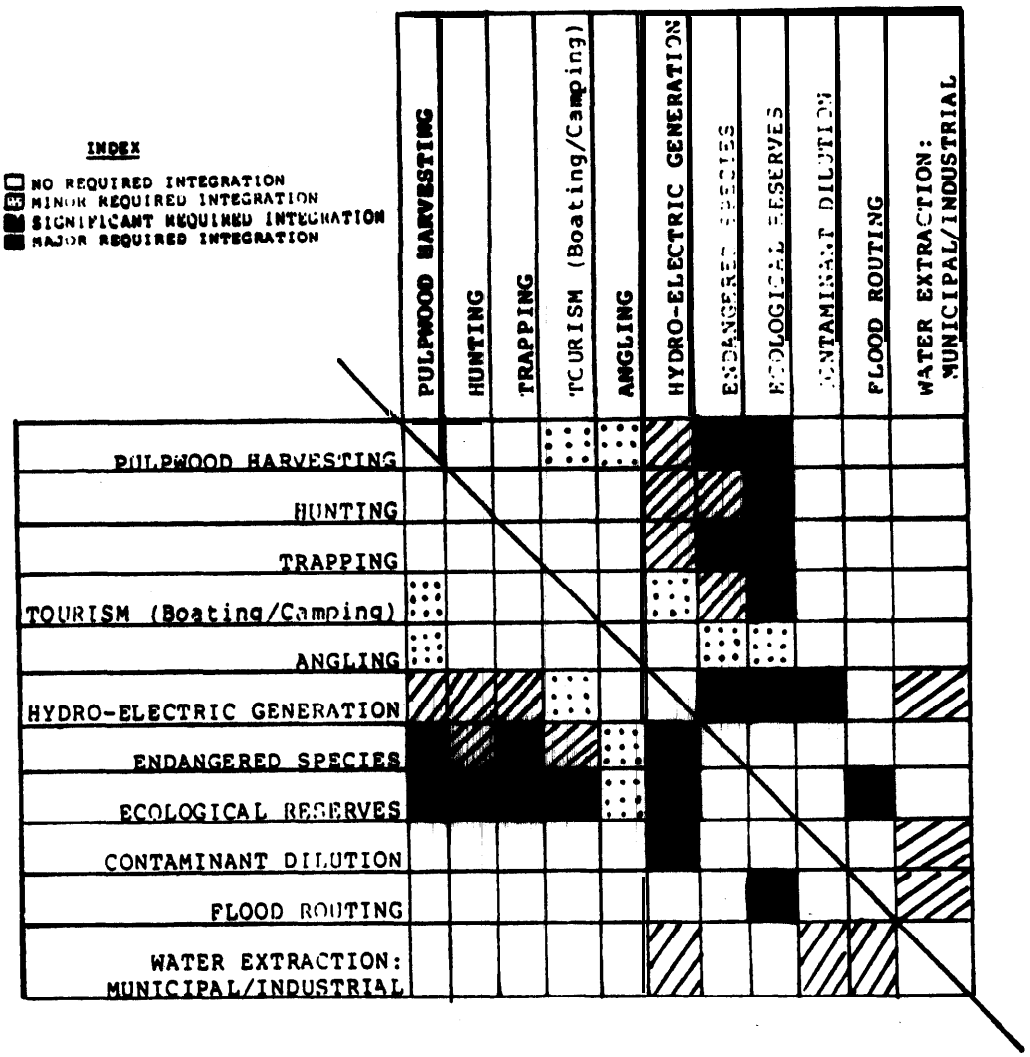


FIGURE 3