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REVIEW OF GREAT BEAR FISHERY
MANAGEMENT GOALS - VOLUME 1

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Analysis/Review

REVIEW OF GREAT BEAR LAKE FISHERY MANAGEMENT GOALS

Volume 1 August, 1985

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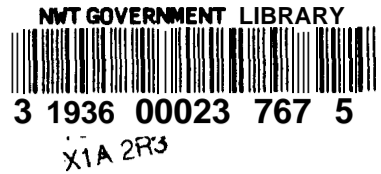
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REVIEW OF GREAT BEAR LAKE
FISHERY MANAGEMENT GOALS
- VOLUME 1 FINAL REPORT-
AUGUST 1985

Western Region
Department of Fisheries and Oceans
Winnipeg, Manitoba

Department of Economic Development and Tourism
Government of the Northwest Territories
Yellowknife, N.W.T.

Department of Renewable Resources
Government of the Northwest Territories
Yellowknife, N.W.T.

Indian and Inuit Affairs Program
Department of Indian and Northern Affairs
Yellowknife, N.W.T.

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Arctic Operations Directorate
Department of Fisheries and Oceans
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Department of Economic Development and Tourism
Government of the Northwest Territories
Yellowknife, N.W.T
X1A 2L9


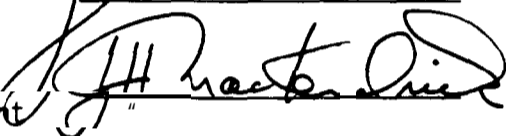
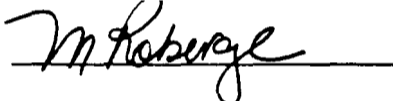
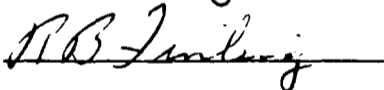

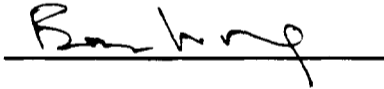
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MEMORANDUM OF TRANSMITTAL

We, the members of the Great Bear Lake Working Group, formed at the request of the Director, Arctic Operations of the Department of Fisheries and Oceans and the Deputy Minister, Department of Economic Development and Tourism, Government of the Northwest Territories, submit herewith our final report. The displayed endorsements indicate the Working Group members are in general agreement with the management goals and strategies proposed in this report.

The Working Group also agreed it is both timely and essential to involve the community of Fort Franklin and the lodge industry more directly in further discussions of the management of Great Bear Lake. We therefore advise the participating Federal and Territorial agencies to implement immediately the recommendation to form a Great Bear Lake Advisory Committee and to use this committee as a forum to achieve consensus on future management initiatives, including those proposed by the Working Group.

WORKING GROUP MEMBERSHIP	SIGNATURE	NOTES, IF ANY (APPENDIX A)
J. Davis, DINA		_____
J.H. Mackendrick, Economic Development and Tourism		_____
M. Roberge DFO		_____
R.B. Tinling Renewable Resources		_____
D. Topolniski DFO		_____
B. Wong DFO		_____

EXECUTIVE SUMMARY

The Working Group has examined the management issues in the Great Bear Lake fishery and recommends the following goals, strategies and management process for consideration in the development of a long-term fishery management program.

RECOMMENDED MANAGEMENT GOALS

- To ensure Great Bear Lake's fish resources are properly protected;
- To ensure fish resources available for harvesting make their greatest contribution to the economic and social development of the people of Canada, especially residents of the Northwest Territories. Benefits will be maximized if the following goals are pursued:
 - * To provide sufficient fish resources for the domestic fishing needs of the Satudene;
 - * To sustain a high quality sport fishery as the best use of lake trout stocks;
 - * To provide resource owners with an economic rent consistent with the value of fish resources used in the sport fishery;
 - * To accommodate the economic development goals of the Satudene, subject to the above-stated resource management goals.

RECOMMENDED MANAGEMENT STRATEGY

- The current, flexible arrangements of the domestic fishery should be continued as the most practical means of providing sufficient fish resources for the domestic fishing needs of the Satudene;
- A **licence** and **licence** fee system should be developed specifically for Great Bear Lake's sport fishery, for both lodge-access and itinerant anglers. As necessary, limitations on **licence** numbers should provide a more direct control on sport fishing effort and harvest than can be achieved with the present regulatory system;
- All anglers should be charged a **licence** fee which better reflects the value of the right of access to a public resource which is proposed to be intensively managed for high quality recreation opportunity;

- The Keith Arm and a portion of the **McVicar** Arm should be reserved for the future economic development plans of the community of Fort Franklin. No lodge-access fishing should be allowed in these areas pending the development of a long-term fishing plan by the community;
- The Department of Economic Development and Tourism should evaluate the suggestions for guide training made by the **Satudene** and the stated willingness of the industry to participate in training programs and, pending their development plans, implement a lodge employment training program for the **Satudene**;
- Future development proposals, for either lodge-access sport fishing or large-scale commercial fishing, should be consistent with the management goals adopted for the fishery. Proponents of development should be required to prepare a formal proposal for the participating Federal and Territorial agencies and their Advisory Committee which addresses the availability of fish resources, the relationship to other uses, and the feasibility of development;
- Small-scale commercial fishery development, based on local sales of surplus fish harvests, should be allowed without formal review. A system should be developed to monitor use patterns of this fishery.

RECOMMENDED MANAGEMENT PROCESS

A more intensive management system will be required to ensure decisions can be made with adequate, timely information. This will require a firm commitment to the research, monitoring and evaluation of the fishery. There is a need to convey this information to all resource users more effectively and to consult with them in order to ensure that management proposals are well founded. There will also have to be ongoing efforts to coordinate Federal and Territorial initiatives for all resource uses, so that the fishery resources of Great Bear Lake are put to their best use and public funds are not wasted. The Working Group recommends:

- Formation of an Advisory Committee to the participating Federal and Territorial agencies, with one member from each of the community of Fort Franklin, the lodge industry, Fisheries and Oceans, Economic Development and Tourism, and Renewable Resources;
- Coordination of financial assistance programs for resource use on Great Bear Lake with the long-term management plans for the fishery;
- Development of a management information system by the Department of Fisheries and Oceans which includes a monitoring system for all resource uses, a commitment to sufficient basic biological investigations and increased enforcement of the fishery.

INTRODUCTION

PURPOSE OF REVIEW

The Great Bear Lake Working Group was formed to inquire into and report on the management options in allocating the fish resources of Great Bear Lake. The terms of reference for the Working Group (Volume 2 Appendix 1) indicated this was to be accomplished by:

Defining the objectives of the Department of Fisheries and Oceans and those agencies likely to be affected by DFO resource allocation decisions, with respect to resource management and economic and social development;

Defining and evaluating current and other choices of the use of the fishery through a review of existing information;

Recommending a long-term management strategy in light of the evaluation of objectives and alternative uses;

Recommending an interim management strategy which will bridge information gaps and any other constraints which may exist but which will ensure the long-term management objectives are met. The interim policy will identify the information requirements for the continuing evaluation of the fishery, including the programs and analysis required for this purpose; and,

Evaluating the available policy instruments and legislation to meet the objectives of the Department of Fisheries and Oceans for each use.

METHODS OF REVIEW

The Working Group included three representatives from the Department of Fisheries and Oceans and one representative from each of the Department of Indian and Northern Affairs, the Department of Economic Development and Tourism, and the Department of Renewable Resources.

The Working Group met to review the goals of each agency and the biological and economic principles of fishery management, so that a consistent framework could be developed to evaluate alternative choices of use. Available information on existing and proposed choices of use was documented, and in the case of a commercial fishery proposal, a preliminary feasibility analysis was done. This material was consolidated in the Working Group's interim report of April, 1984 (Volume 2 Appendix 2). The report was distributed to the community of Fort Franklin, the Travel Industry Association and the Great Bear Lake lodge operators, as well as to senior officials in each participating agency, so that there could be an open discussion of the choices which must be made in planning for the future.

The Working Group met with the community of Fort Franklin in Fort Franklin on April 25-26, 1984 in order to discuss the interim report and to solicit comments from the community on the future management of the lake.

Subsequently, a consultant was retained by the Department of Indian and Northern Affairs to assist the community in its review. Their draft response, "Fish Management in Great Bear Lake", was received by the Working Group February 28, 1985 and is included as Appendix 3 of Volume 2.

The Working Group met with four of the Great Bear Lake lodge operators in Edmonton on May 30, 1984. This meeting was held to discuss the interim report and to solicit comments from the lodge industry on the future management of the lake. Subsequently, the Department of Economic Development and Tourism provided funds for a consultant to work with the lodge operators in their review of the interim report. The Working Group received the response from the Great Bear Lake lodge operators and the Travel Industry Association of the N.W.T. in January, 1985. Their report, titled "Position Paper Great Bear Lake Lodges on the Interim Report Management Plan for the Great Bear Lake Fishery", is included as Appendix 4 of Volume 2.

Upon receipt of the responses from both Fort Franklin and the lodge industry, the Working Group met to consider the advice it would provide in light of the management issues it had raised and the positions and further comments offered by resource users. To facilitate this discussion, the Working Group matched the issues stated in the interim report with the observations of the community and the lodges. This summary of the consultation process, presented in Appendix 5 of Volume 2, proved useful in mapping out the areas where consensus should be readily achieved and where substantive differences yet remain.

This report, which is being released simultaneously to the community of Fort Franklin, the lodge industry and the participating agencies, reflects the Working Group's considered opinion of the most effective management goals and strategies for the Great Bear Lake fishery.

PLAN OF STUDY

Each of several fisheries is addressed, management goals and strategies are recommended from stated alternatives, and the rationale for the Working Group's advice is outlined. Necessarily, the many inter-relationships among uses requires frequent cross-referencing of sections of the report.

An overview of the fishery, including a brief description of resource uses and management issues, is presented first. Those unfamiliar with the fishery or the Working Group's interim report may benefit by referring to Appendix 2 of Volume 2, for a more detailed profile of the fishery.

The first use considered is the domestic fishery, since this fishery is assigned the highest priority in use. The resource management issues in the the lodge-access sport fishery are examined next. The itinerant sport fishery, presently a minor use of fish resources, is addressed in the interest of providing a comprehensive review of management goals and strategies.

The section on community economic development addresses the means to accommodate the development goals of the **Satudene** with the resource management goals for the fishery. Sport fish potential is considered first, taking account of the resource management goal that lake trout stocks are best allocated to this use. Discussion of commercial fishery potential arises from

the Satudene's original request to develop a large-scale commercial fishery.

The final section outlines the consultative mechanisms, the coordination of government programming, and the management systems considered essential if the recommended goals for the fishery are to be achieved.

OVERVIEW OF THE FISHERY

HUMAN AND NATURAL RESOURCES

Great Bear Lake, the fourth largest lake in North America, is situated between latitudes 64° 40' and 67° north and longitudes 118° and 125° west (Figure 1). The lake consists of five arms radiating from a large central area, named Dease, McTavish, Smith, McVicar and Keith Arms.

The Satudene, a term derived from the Slavey words meaning "bear-water-people", is the name given the people who traditionally inhabited all the country around Great Bear Lake. Over the years, the Satudene have been attracted from their nomadic lifestyle to the established permanent residence of the community of Fort Franklin, first developed for the Satudene in 1949. In 1980, the community's population was 545.

The extreme oligotrophic conditions of Great Bear Lake limit the species diversity and productivity of the fish resources. The principal species is lake trout (Salvelinus namaycush), found in greatest densities in areas adjacent to shallows and in depths of 12 m or less. Lake trout have been found to show only localized and generally limited movement in the lake. Lake whitefish (Coregonus clupeaformis) inhabit the bays, and are seldom caught in water over 20 m deep. Walleye (Stizostedion vitreum), burbot (Lota lota), and longnose suckers (Catostomus catostomus) are confined to the periphery of the lake.

RESOURCE USES

Domestic Fishery

Traditional dependence on caribou as a principal source of food obliged the Satudene to a migratory lifestyle and, accordingly, the domestic fishery followed a pattern where camps were established when both good fishing and hunting were possible. The existing outcamps and those slated for reconstruction are shown in Figure 1.

Whitefish has been noted to be the preferred species, although lake trout and lake herring are also of importance. While spot estimates suggest the domestic fishery has declined in recent years because of the Satudene's more sedentary lifestyle, the true extent of change is unknown. Various estimates have been made over time using undocumented methods which may be so varied as to render comparisons meaningless.

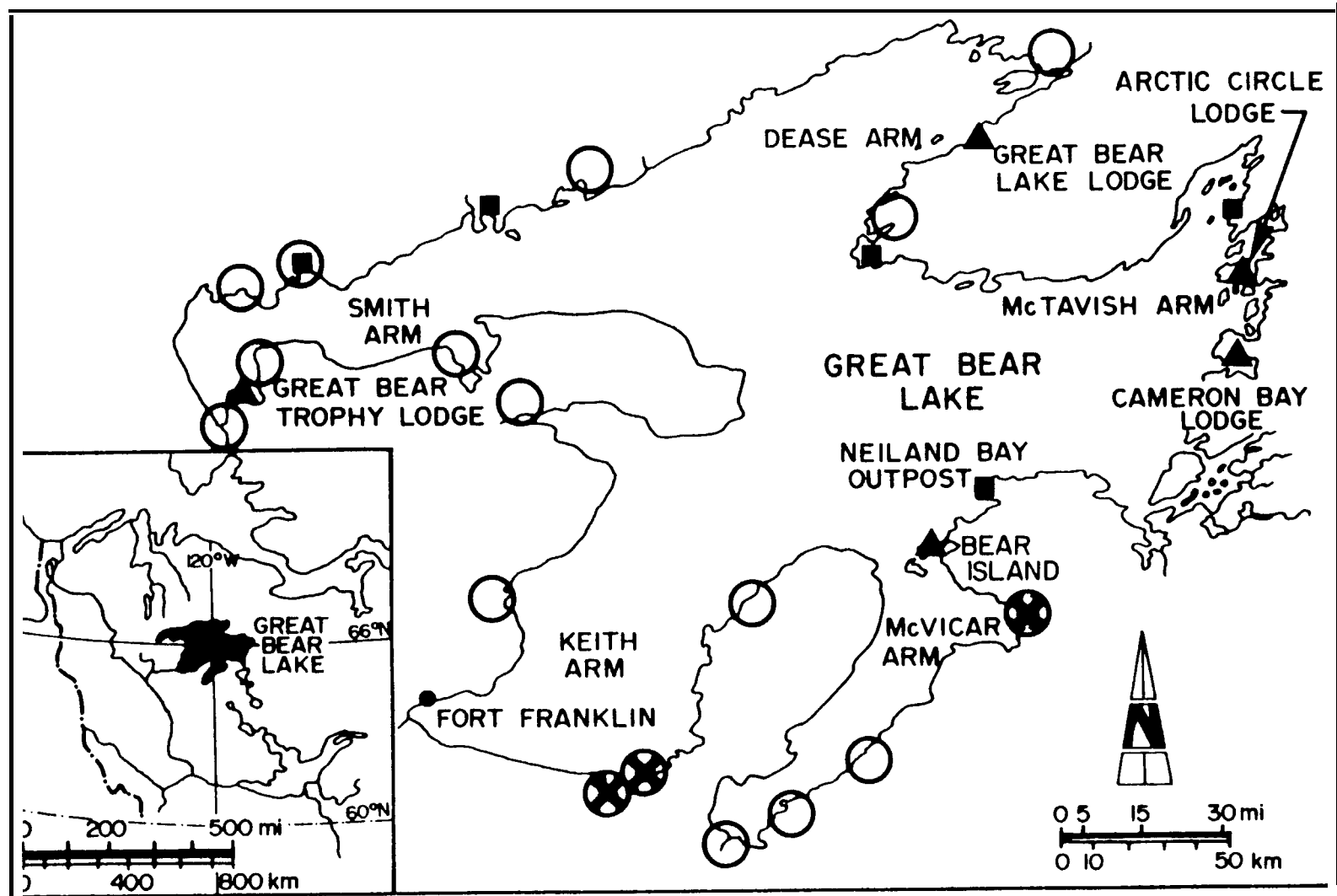


Figure 1. Location of outpost cabins and fishing lodges on Great Bear Lake.

- Active Cabins
- ⊗ Cabins Slated for Reconstruction
- ▲ Fishing Lodges
- Lodge Outposts

Lodge-access Sport Fishery

Great Bear Lake is one of Western Canada's most prestigious sport fishing sites, renowned for the quality of lake trout fishing. Lodge development began in the 1950's, with the majority of lodge investments made in the following decade. The present industry consists of six lodges, with five outpost camps located in more remote parts of the lake. All are presently active, with the exception of the Sah Tew lodge in the community of Fort Franklin. The distribution of fishing lodges is shown in Figure 1.

The five active lodges, ranging in bed capacity from 34-54 beds, are estimated to serve approximately 1 300 guests each year. In 1972, lodge-access anglers were estimated to have harvested 46 897 kg of lake trout, an amount which likely represents an upper limit on harvests in any subsequent period to date. It has been estimated that Great Bear Lake lodges generate gross revenues of approximately \$2 500-000 each year, realizing some \$800 000 in value added in the form of wages, salaries, profits and rents. Included in this amount are wage and salary payments for some 225 individuals employed directly by the lodges. While the residence of lodge staff was not documented by the Working Group, it is thought the majority of staff permanently reside outside the N.W.T.

The management of Great Bear Lake has largely been concerned with the preservation of a high quality sport fishery. Significant management decisions for this sector have included the curtailment of any further lodge development (1965) and the introduction of special catch and-possession limits for lake trout (1974 and 1979). Preserving fishing quality remains the central sport fishery management issue to this day.

Itinerant Sport Fishery

Presently, there is a very limited itinerant sport fishery, so the management issues are not pressing. However, access control for all uses, including the itinerant sector, will have to be considered if Great Bear Lake is to be managed for high quality fishing.

Commercial Fishery

The community of Fort Franklin, in a September, 1982 submission to the Department of Fisheries and Oceans, identified the development of a commercial fishery as a priority project. The community was provided a permit for a limited test fishery in the Keith Arm.

The Working Group, in its preliminary analysis of the development potential for a commercial fishery on Great Bear Lake, concluded that a commercial fishery is not likely to be financially or economically viable under present conditions. This conclusion applied to development for export sales out of the NWT and to inter-settlement trade in the NWT.

The Satudene, in their response to the Working Group's interim report, stated their awareness of the impact a commercial net fishery could have on fish stocks in Great Bear Lake. The **Satudene** also noted that under current economic conditions an export market for Great Bear Lake whitefish may not be economically viable.

MANAGEMENT GOALS AND ISSUES

The need for a review of the management of Great Bear Lake was discussed for some years prior to the formation of the Working Group. Concern with the status of the lodge-access sport fishery, pressures for further development of bed capacity, the indirect effect on the level of domestic fishing activity as a result of funding provided hunters and trappers through the outpost camp program, and the request for a commercial quota were all factors suggesting a review was warranted.

In the conduct of its review, the Working Group accepted stated agency goals which indicated an interest in ensuring that, subject to the requirement that fish resources be conserved, the fish resources of Great Bear Lake make their greatest contribution to **economic** and **social** welfare. Necessarily, differences in viewpoint between national, territorial and **community** perspectives were noted among the participating federal and territorial agencies.

The **general** principle of "best-use" was given some clearer definition through the acceptance of four objectives for a fishery management program, essentially as stated by the Commission on Pacific Fisheries Policy (1982). In the context of the Great Bear Lake fishery, the following goal areas were defined:

1. Resource Conservation

to ensure that the fish resource is properly protected;

2. Maximizing the Benefits of Resource Use

to ensure that fish resources available for harvesting make the greatest possible contribution to the economic and social development of the people of Canada, especially the residents of the Northwest Territories;

3. Returns to the Public

to ensure the fishery provides an economic return to the owners of the resource consistent with the value of the resources used;

4. Administrative Simplicity

to ensure regulation of the fishery is systematic and efficient, and to the greatest extent **possible**, conflicts with private incentives are minimized and the system is more conducive to self-regulation.

These goal statements can be classified as either "fundamental" or "design" objectives. The conservation, economic and social objectives are fundamental, the administrative goal is a design objective. The task in developing a regulatory regime is to strike a proper balance among objectives, keeping in mind the priority to be given each objective. Thus, while the design objective suggests simplicity is the key, pursuit of this criterion to the exclusion of the more fundamental goals of fishery management would not be acceptable.

The task of the Working Group was to translate these conceptual goals into operational terms which best address the circumstances of the Great Bear Lake fishery. This was facilitated to some extent by a review of and adherence to the basic biological and economic principles of fishery management. In its deliberations, the Working Group considered the priority given the economic development needs of the Sahtu and the potential implications of land claim negotiations.

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DOMESTIC FISHERY

RECOMMENDATIONS

Recommended Goals

- The **domestic** fishery of the **Satudene** is assigned the highest priority in use. The first requirement of a management **plan**, subject only to the needs of conservation, is to **ensure** sufficient fish-resources are available for domestic use.

Recommended Strategy

- The Working Group feels the present management strategy is the most practical means of providing fish resources for domestic use and therefore recommends its continued use in preference to a more regulated system of fishing.

RATIONALE

The present management strategy is to rely on very flexible arrangements to provide fish resources for domestic harvesters. The **Satudene** are not restricted in their domestic fishing activity, other than the limitation that, by definition, domestic fishing be for food use but not for sale or barter. At the same time, while there are no regulations which exclude lodge guests from fishing in traditional domestic fishing areas, there has been an understanding these areas would be respected by the lodge operators. **In this way**, any conflicts which may arise from the presence of **lodge** guests in domestic fishing areas have generally been avoided.

An alternative to the status quo is a more regulated system of domestic fishing. This might be achieved by several means, such as the creation of restricted domestic fishing zones, the provision of guaranteed harvest levels, or the use of travel permits to traditional domestic areas. While each **of** these has its advantages and disadvantages, it is necessary to ensure there is a need for such measures and to consult with the **Satudene** regarding their potential.

Acceptance of the recommendation below that the Keith Arm and portions of the **McVicar** Arm be reserved pending the development plans of the **Satudene** will have the coincidental effect of eliminating conflicts between domestic harvesters and lodge clientele in many of the traditional domestic fishing **areas**. **Necessarily**, a decision to reserve this area of the lake **will** also require the **Satudene**, as their development planning proceeds, to consider any trade-offs between domestic fishing and other choices of use.

The Working Group does not support the request of the **Satudene** for the creation of domestic fishing zones within a 10 mile radius of all **existing** outpost **cabins**. **There is** no biological basis for moving to such a formal system, since there is no evidence that angling has adversely affected the **SUpply** of fish resources for domestic needs. There is also no indication of overfishing by domestic harvesters, hence no requirement to consider limits on harvest levels to ensure the conservation of fish resources. The Working Group feels any conflicts that exist are more perceived than real.

Because there is no biological basis for conflict, the Working Group feels the costs of regulation and enforcement may very easily outstrip the benefits of eliminating perceived conflicts in use. A move to regulate for domestic fishing may also make it difficult to consider other development potential, even if these proposals were made by the **Satudene**.

Rather than moving to the regulatory approach at this time, the Working Group feels conflicts can be avoided if each resource use group respects the needs of the other. The Working Group urges the lodge industry to respect all historic domestic fishing areas, including the existing outcamps of the **Satudene** (Figure 1). In this same spirit of cooperation, the Working Group urges the **Satudene**, in their selection of areas and timing of domestic fishing activity, to respect the operational requirements of the lodge industry.

Should there be a reluctance of resource users to respect the needs of each other, there will be no alternative but to move to a system of regulated fishing zones. **But** such a move should be considered in light of it's merits since enforcement can be so costly to resource users and the general taxpayer in relation to the benefits provided.

Acceptance of the Working Group's recommendation for a monitoring system for **all** resource uses (recommendations below) should provide a sufficient information base to evaluate any future conflicts in the traditional domestic fishing areas.

LODGE-ACCESS SPORT FISHERY

RECOMMENDATIONS

Recommended Goals

- The Working Group recommends that, subject to the requirements of conservation and the domestic fishing needs of the Satudene, the management goal should be to sustain the sport fishery as the best-use of the lake trout stocks of Great Bear Lake.
- Great Bear Lake's sport fishery should be managed to maintain the yield of fewer, larger fish in preference to a goal of maximizing the sustainable yields which would provide more, but smaller fish.
- The Working Group recommends, at minimum, the fishing quality goal for Great Bear Lake should be to provide for sustained harvests of lake trout longer than 700 mm.
- The Great Bear Lake sport fishery should be managed to provide a direct economic return for the resource owners.

Recommended Strategy

- The Working Group recommends the development of a Great Bear Lake sport fishing licence system as the most effective means of managing the Great Bear Lake sport fishery for high quality angling.
- In order to ensure the recommended goal for fishing quality be achieved, the Working Group recommends the existing lodges be provided an initial allocation of Great Bear Lake sport fishing licences. This initial allocation should not exceed their present seasonal licensed capacity.
- In order to ensure the recommended goal for fishing quality be achieved, the Working Group recommends the existing restrictions on bed capacity be retained and their intent clarified.
- The Working Group recommends that no further restrictions be considered at this time to resolve conflicts among the lodges over their traditional areas of operation.
- In order to ensure the sport fishery provides a contribution to the costs of management and that an economic rent be earned for the resource owners, the Working Group recommends a licence price be charged which better reflects the value of the right of access to a public resource being managed for high quality recreation opportunity.

RATIONALE

Rationale for goals

Lodge-access sport fishing, presently the largest fishery on the lake, has and no doubt will continue to be the best-use alternative of the lake trout stocks of Great Bear Lake. The requirement of a management plan, once sufficient resources are provided for domestic use, is to address the resource management and economic development issues of this fishery.

There is general agreement among the lodge industry, the community of Fort Franklin and the Working Group that the lodge-access fishery should be managed with the objective of maintaining high quality angling.

Biological investigations of yield-effort relationships suggest the lake could be managed for a range of fishing quality attributes consistent with the resource conservation goal. For example, in its interim report the Working Group indicated the need to choose between a strategy of maximizing the yield of larger fish or of maximizing the sustainable yield, resulting in harvests of more, but smaller fish. The requirement is to select which fishing quality attributes are best and to manage the fishery so that this fishing quality can be sustained.

The Working Group also tried to establish an objective measure of the admittedly subjective concept of "high quality trophy angling". Two alternatives for trophy fishing quality were considered. The first would provide for maximum harvests of lake trout longer than 700 mm, this quality of fishing felt to be consistent with the current levels of fishing effort and harvest. The second would provide for maximum harvests of lake trout longer than 900 mm, a quality of fishing which could only be achieved over time as a result of an estimated 50% reduction in current fishing pressure.

The Working Group, in recommending a minimum fishing quality, has considered the continuity of operation of the existing lodges and the stability of the numbers of lodge clientele as one indication of the market acceptance of the present fishing quality of Great Bear Lake. Despite this, there are also indications that some anglers seek even larger size trophy fish than are generally available. The expansion of fishing activity to more remote areas by fly-outs and through the use of outpost camps appears to give credence to this demand. Ideally, the Working Group would have liked to address the issue and advise on an "economically optimal" fishing quality. This would require assessment of the extent of the demand for trophy lake trout longer than 700 mm and the economic implications of a reduction in fishing pressure to achieve a higher fishing quality. Unfortunately, such analysis is not possible using the information presently available. The Working Group acknowledges it is advising from less than an ideal position. Nevertheless, there was enough general agreement that the minimum quality goal of sustained harvests of lake trout longer than 700 mm should be recommended.

The management process proposed by the Working Group should enable evaluation of the desirability of seeking higher quality fishing. A monitoring system for the lodge-access fishery (recommendation below) and an Advisory Committee which includes representation of the lodge industry (recommendation

below) are considered essential elements of an effective management process. The monitoring system should provide sufficient information to assess whether or not the resource conservation and desired fishing quality goals are being met. Consultation with the lodge industry is equally important in order to assess whether or not changes in angler preferences or industry operating conditions require changes to the goal for fishing quality.

The Working Group, in its interim report, discussed the concept of economic rent from the fishery as an indicator of an economically efficient fishery. In spite of the stated opposition by the lodge industry to any economic measures which would provide a return for the resource owners, the Working Group views the development of a system to provide rent an essential long-term goal for the Great Bear Lake fishery. The recommendations presented in this report, all leading to a more intensive resource management program for the lake, will not be costless. Because of this, it is considered all the more necessary for other than nominal prices to be charged for fishing rights. Economic regulation of the fishery should provide a mechanism to price access to the fishery in a way which ensures management costs are covered and the rent potential is achieved.

Rationale for strategy

The existing management strategy for the lodge-access fishery is to control the numbers and bed capacities of the lodges and to place special catch and possession limits on each angler. The regulation of bed capacity, given assumptions of the normal operating season and normal duration of stay of lodge clientele, has provided an indirect control on angling pressure. The angling regulations limit the harvests by each angler and determine the licence fees to be paid for access to the fishery.

The alternatives to the status quo discussed by the Working Group in its interim report included the use of licences and licence fees, licences and a royalty on trophy fish harvests, and the development of leased fishing rights. In subsequent meetings, there was consideration of the use of zoning and various combinations of the above-mentioned policy instruments.

The Working Group is of the opinion there are sufficient limitations with the status quo that changes are required. The present licence system does not provide an accurate measure of the numbers of lodge-access anglers on the lake, since there is no one to one correspondence between licence sales and lodge clientele. The use of bed capacity as a principal means of controlling fishing effort is considered too indirect a method to ensure the necessary effects if Great Bear Lake is to be managed for high quality angling. Should rotation patterns of the lodges change, the use of bed capacity will be an increasingly ineffective measure. There has been concern with overlap in use both between lodges and the community and among the lodges themselves. The system is also not suited to the monitoring of use patterns or controlling the extent of itinerant angling activity on the lake. Finally, because only nominal prices are charged for a licence, the goal of Fisheries and Oceans to provide an economic rent to the owners of the resource is not being achieved.

While thorough evaluation of the details of a licensing system awaits acceptance of the recommendation in principle, the Working Group did feel it important to describe in general the licence system it proposes and to

highlight some of the considerations which led to the recommendation for a licence and licence fee system.

The proposed licence would be specific to Great Bear Lake and would be required by both lodge-access and itinerant anglers. As an interim measure, the Working Group feels that the licence should provide for catch and possession limits as presently stated in the Northwest Territories Fisheries Regulations. As the management program evolves, it should be feasible to calibrate the regulatory system so that the number of licences and the individual catch and possession limits are consistent with current biological assessments. The price of the licence requires further assessment pending acceptance of the recommendation in principle.

The Working Group evaluated the licence alternative to ensure it would be suited to the goals for fishery management with respect to resource conservation and fishing quality, economic efficiency, economic rent, and the requirements for administrative ease and efficiency.

Resource conservation/preservation of fishing quality - a licence system is considered to be a very effective means to ensure the resource conservation and fishing quality goals can be achieved. A licence limitation scheme would control directly the number of anglers permitted to fish Great Bear Lake. In combination with individual catch and possession limits, it should be possible to respond to changing biological conditions in the fishery.

It will also be feasible to adapt the licence system to aid monitoring of fish harvests and the enforcement of regulations. Tags for retained lake trout could be included with each licence and anglers could be required to attach the tag to lake trout retained as trophy, take-home or shore lunch fish. While there are some obvious practical difficulties in developing a tag system (i.e. how would the department enforce the tagging of fish for shore lunch use?), the Working Group recognized the benefits such a system could offer as a direct and inexpensive control on all fish harvested. The Working Group also felt that most anglers, given their concern for resource conservation, would support the implementation of a tag system.

Economic efficiency/resource rent - an economically efficient non-resident lodge-access fishery is one in which the difference between total benefits (lodge revenues plus licence revenues) and total costs (lodge expenses and resource management costs) is as large as possible. This difference between revenues and expenses, the so-called net economic benefit, is the economic rent of the fishery. Economic rent is the surplus which is attributable to the fact that nature has provided a resource free of charge which contributes to a highly valued recreation experience.

There are some tangible economic indicators which should be used to assess the economic status of the resource management program. An economically efficient lodge-access fishery would provide access to anglers who value the recreation sufficiently that they are willing and able to pay an amount which generates adequate revenues for:

1. the lodges to cover their costs of operation including a normal profit on their capital investments;

2. the resource management agency to cover its costs of managing the fishery;
3. the resource owners to receive an economic return for the fish resources provided anglers.

The Working Group, in proposing the licence and licence fee alternative, is of the opinion the Great Bear Lake fishery is insufficiently valued by anglers that it should be feasible to achieve all of the above-noted economic indicators. While there will be legitimate debate as to whether this can be done immediately or whether it has to be phased in gradually, there should be less debate that for the long-term they are valid goals and should be pursued. Over time, growth in demand and the preservation of Great Bear Lake as a high quality fishing site in a system where few lakes are being managed as intensively as proposed by the Working Group, should contribute to the preservation of an economically valuable fishery.

The principle suggested by the Working Group is that if Great Bear Lake is being preserved as a high quality recreation site those who use the fishery should pay for the benefits provided. While the principle of "user pay" is clear, there is also a need to consider economic regulation of the fishery very carefully. The first concern is that because most of the lodges purchase licences for their clientele as a part of the fishing package, it might be argued a licence fee would be a direct tax on the lodges but not on the anglers. The Working Group suggests this is not a plausible outcome. First, the incidence of the licence fee could be borne by anglers if lodges changed the basis by which their services were offered to exclude licence fees. In the event that the lodges prefer to retain all-inclusive package services the burden of the licence fee can be passed to lodge clientele in the form of higher package prices. In suggesting this course of action the Working Group hypothesizes any price increase will produce a much less than proportional decrease in the number of anglers seeking access i.e. the demand is highly price inelastic in the range of prices which might be considered.

A second concern is that a licence limitation scheme for the lodges may constrain the efficiency of their operations. While there may yet be difficult adjustments for the industry if it becomes evident that a higher quality fishing goal than presently suggested should be pursued, the immediate proposal should pose no problems. The Working Group has proposed each lodge be restricted to serve the number of clientele consistent with their current licensed capacity. In this sense, substitution of indirect controls on beds with the direct controls on licence numbers should be transparent, since the intent (if not the effect) of the bed capacity limitation has always been clear. Because the initial licence allocation will be commensurate with the existing investments in bed capacity, the allocation scheme should not adversely affect lodge operating efficiency.

The Working Group is also concerned with the possible distortions which might arise if the pricing system for Great Bear Lake were developed in isolation of other fisheries in the NWT and in other jurisdictions. However, whereas the industry has expressed the view that a pricing system should be applied uniformly across all lodge-access fisheries in the NWT, the Working Group suggests this is not an acceptable starting point. As in most markets, products of differing quality command different prices. This market principle

should apply to public sector pricing of access to fishing sites as well i.e. high quality sites should command high prices, low quality sites low prices. Hence the need to consider a differential pricing system for the NWT with uniform prices for each class of comparable fishing sites i.e. Great Bear Lake might be grouped with Great Slave Lake, lodges in the Keewatin might be grouped together, lodges in the Hay River-Yellowknife area, etc.

In the event there is a requirement for changes in the allowable fishing effort, the use of the price system to ration limited fishing rights should be considered as an economically efficient means to handle adjustments in the numbers of anglers to be allowed on the lake.

A truly efficient system of rationing scarce fishing rights would also be sufficiently flexible that licence numbers might be transferable among the lodges as a means of responding to changing biological and economic conditions. While the Working Group has noted the desirability of such a system, it is viewed as a refinement of the management process which could be pursued once the basic workings of the licence and licence fee system were better understood.

Administrative efficiency - the appeal of the licence system alternative is that it should be relatively straightforward to implement. A licence system presently exists, so the requirement is to extend and adapt this system to the circumstances of Great Bear Lake. The existence of special licence systems in other jurisdictions, such as the Trophy Lake Licence in the Province of Alberta, suggests the proposed licence system is administratively and operationally feasible. Relative to other alternatives, such as the use of royalties on trophy harvests, the licence alternative is felt to be less costly to administer.

There are many details to be examined if the decision is made to accept the licence system proposal. In addition to the concerns already noted, it would be necessary to select the method by which licences would be distributed, to integrate with the existing licence system to allow for outpost trips to other lakes in the NWT, and to consider alternatives for the licensing of lodge staff. While these are important considerations, the Working Group felt them to be distinct and manageable issues which should not detract from the potential of the licence proposal as a direct control on fishing pressure.

The Working Group stresses the potential of a tag system as an aid to the fishery management and enforcement process. At a minimum, given the emphasis on trophy fishing, it would be useful to consider tags for all retained lake trout of trophy harvest size. Preferably, the tag system could be developed for all fish retained, but given the potential complications of such a system, the Working Group felt it best to proceed slowly and leave such refinements for longer term application. Therefore, the Working Group felt that, at this time, refinements of the licence system such as a trophy tag should not be recommended. The need to keep the system as simple as possible to ensure that it can be administered is the basis for this position. This does not preclude development of the tag system at any future date.

As an alternative, the Working Group prefers continued use of bed capacity restrictions as an indirect control on fishing effort and shore lunch

use by lodge clientele. For this system to work more effectively, the Working Group noted the need to specify in regulations that bed capacity be interpreted as the equivalent of 7 days stay, even if the duration of stay is less than 7 days. This change should serve to clarify the intent of the bed capacity restriction, at the same time achieving the desired effect of providing an indirect control on lodge-access fishing effort and fish harvests.

The Working Group felt that, at this time, the development of any further restrictions on the areas fished by the lodges should not be proposed. Rather, as with the past, the Working Group proposes the informal agreements of the lodges to respect each others areas of operation be continued. In the event that serious problems with this approach are encountered in the future, it will be necessary to consider the regulatory mechanisms to delineate areas of operation for each lodge.

The Working Group, in taking this position, does not support the request of the **Satudene** to "return" to the 1970 distribution of angling. The 1984 estimate of angling activity, excepting the incursions to the Keith Arm, suggested a more restricted fishery than noted in earlier years. However, the Working Group stresses that all reported patterns merely reflect estimates made from periodic checks of **the fishery**. Because they are not the product of a detailed monitoring program, they must be interpreted carefully. Until such time as a monitoring program is put in place which generates hard data on areas fished, the Working Group felt it premature to consider regulation of the distribution of fishing effort as requested by the **Satudene**.

ITINERANT SPORT FISHERY

RECOMMENDATION

- The Working Group recommends that itinerant anglers also be required to obtain a Great Bear Lake sport fishing licence and that the same price, terms and conditions be applied to all anglers.

RATIONALE

In its interim report the Working Group described the need to have some form of direct control on total fishing effort in order to maintain sport fishing quality. For this principle to be applied effectively, it would be necessary to include itinerant fishing activity in total allowable fishing effort and to regulate the fishery accordingly.

The alternative is to leave this fishery unregulated until such time as its dimensions were felt to be significant enough that regulation were warranted.

The rationale in recommending regulation of the itinerant sector is, first and foremost, to establish the means of monitoring the dimensions and trends in use patterns of this sector. Second of all, this system will allow for controls on the harvests of "trophy" fish by itinerants immediately. For the long-term, this system will provide the basis to assess whether or not the dimensions of the itinerant sport fishery are such that itinerant fishing pressure should be included in the overall controls of fishing pressure.

The advantages of controls on this sector, of course must be balanced with the increased costs of administration and enforcement. In accepting the Working Group's recommendation to control the itinerant angling sector, it must be emphasized to the Department of Fisheries and Oceans and the Department of Renewable Resources they will be facing higher program costs.

This proposal may also be resisted by resident anglers who feel they should have unrestricted access to fishing opportunity throughout the NWT at the nominal fees of the present licence. Should this recommendation be accepted, it will be important to convey to resident anglers the rationale in controlling all fishing as a necessary measure to preserve the recreation quality of Great Bear Lake. Uniform pricing of access is felt to be consistent with the concept of ensuring those who benefit from the intensive management of the lake contribute directly to the costs of the management program.

COMMUNITY ECONOMIC DEVELOPMENT

RECOMMENDATIONS

Development Goals

- A fishery management plan should accommodate the economic development goals of the **Satudene**, subject to the above stated resource management goals.

Development Strategy

- The Keith Arm and a portion of the **McVicar** Arm (Figure 2) should be reserved for the future economic development of the community of Fort Franklin. No lodge-access fishing should be allowed in these areas pending the development of a long-term fishing plan by the community.
- The Working Group recommends that the Department of Fisheries and Oceans and the Department of Economic Development and Tourism evaluate the regulatory means of ensuring the Keith Arm and portions of the **McVicar** Arm be reserved so the community of Fort Franklin may pursue its economic development plans.

Sport fishery development

- The Working Group recommends that any further development of the lodge-access sport fishery should be consistent with the management goals for the lake. As well, proponents of development should be required to prepare a formal proposal for the participating Federal and Territorial agencies and their Advisory Committee which demonstrates 1) the availability of a sustainable supply of fish resources to support the development proposal, 2) the relationship to other choices of use i.e. potential impacts on domestic and sport fisheries and 3) the feasibility of the development proposal.
- The Working Group recommends the Department of Economic Development and Tourism evaluate the suggestions for guide training made by the community and the willingness of the industry to provide such training and, pending the development plans of the **Satudene**, implement a lodge employment training program for the community of Fort Franklin.
- The Working Group recommends the Department of Economic Development and Tourism address the concerns raised by the community of Fort Franklin with respect to guide training requirements, plant safety inspections and water safety training for all guides.

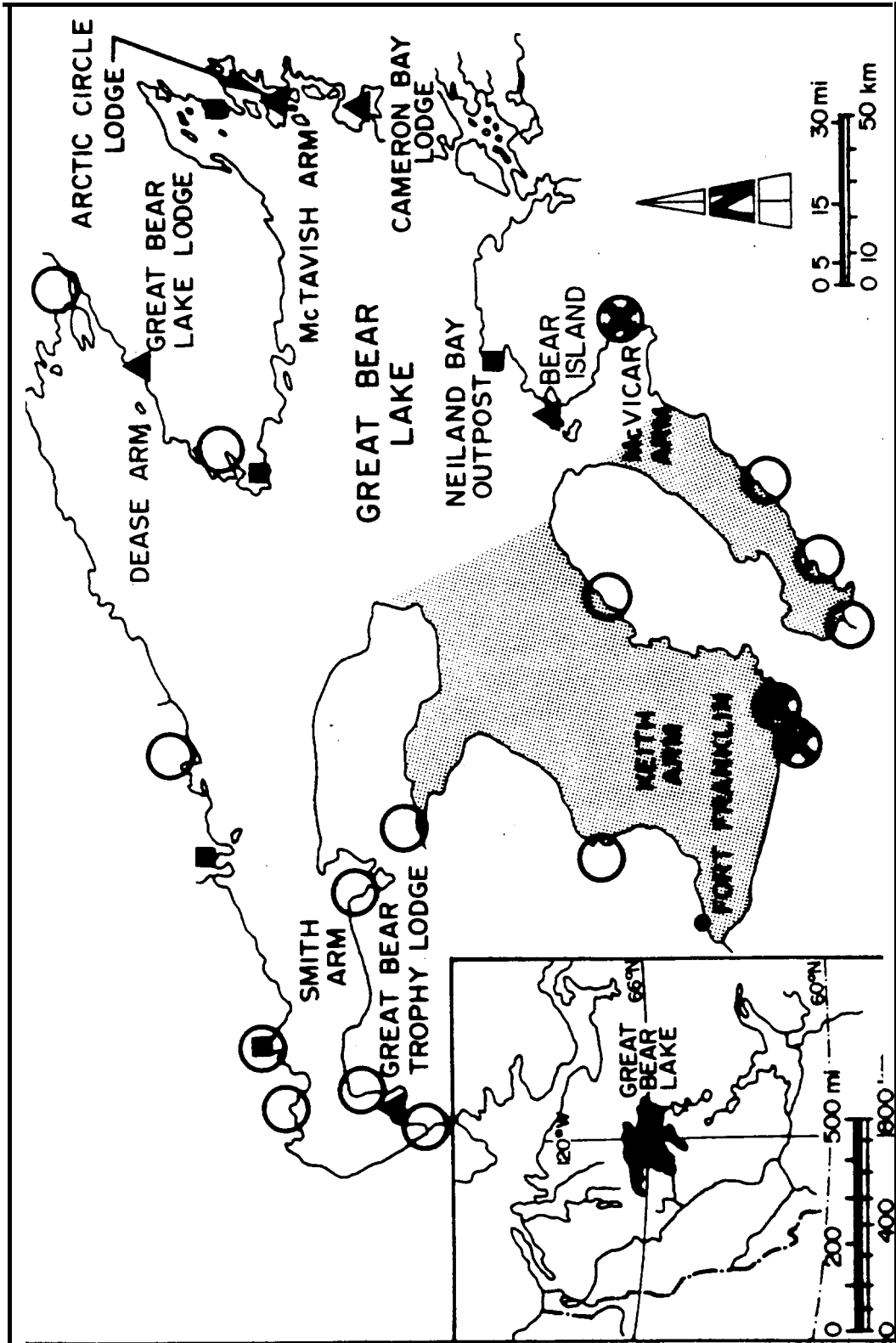


Figure 2. Area proposed to be reserved pending the economic development plans of the Satudene

- Active Cabins
- ⊗ Cabins Slated for Reconstruction
- ▲ Fishing Lodges
- Lodge Outposts

Commercial fishery development

- The Working Group recommends that any development proposal for commercial fisheries for either export or **intra-community** trade be consistent with the management goals for the fishery. Proponents of development should also be required to prepare a formal proposal for the participating agencies and their Advisory Committee **which** addresses the availability of fish resources, the relationship to other uses, and the feasibility of development.
- The Working Group recommends small-scale commercial fishery development, based on surplus fish harvests, should be allowed without formal review.
- The Working Group recommends the Department of Fisheries and Oceans develop a system to monitor use patterns of any small-scale fishery development.

RATIONALE

The Working Group, in its deliberations, accepted the needs of the **Satudene** to derive economic benefit from Great Bear Lake and the priority assigned to those needs by all participating agencies.

Sport fishery

While earlier discussion has focused on the resource management requirements to sustain the existing lodge industry, the following discussion reflects the Working Group's deliberations on how the **Satudene's** economic development goals could be integrated with the proposed resource management goal of allocating lake trout stocks to their best-use alternative in sport fish use.

There are several development alternatives which the **Satudene** may consider as a means of achieving economic benefit from Great Bear Lake's sport fishery. First, as suggested in the Working Group's interim report, there is a need to assess the sport fish potential of the Keith Arm. Depending on the availability of a sufficient supply of fish resources in the Keith Arm and the economics of different scales of investment in bed capacity, it may be feasible to pursue development using some combination of the existing hotel complex, the now-dormant **Sah** Tew lodge, and additional outpost bed capacity elsewhere in the Keith Arm (both Deerpass Bay and **Preble** Bay appear to be attractive angling areas).

The alternative to expansion of bed capacity in the Keith Arm is for the community of Fort Franklin to pursue joint ventures with existing lodges and to propose use of the Keith Arm as a means of augmenting the recreation opportunity.

The possibility of share or outright purchase of an existing lodge operation offers yet another means for the community to become directly involved in the lodge-access fishery.

The need to consider the potential for increased employment and regional income for the north has been a long-standing concern throughout the NWT. The willingness of the lodges to take on a larger percentage of Dene staff if government provides funds for the lodges to do their own guide and staff training is another opportunity which could be considered as a means of creating seasonal employment opportunity for the **Satudene**.

In the event the **Satudene** prefer not to be directly involved in the lodge industry, they will have restricted their development options significantly. Remaining alternatives to obtain benefit from lodge-access fishing may arise through the land claims process. However, any speculation or commentary by the Working Group about the negotiations or their potential outcomes would not be appropriate.

While these are the development alternatives the Working Group identified, it must be emphasized it is for the **Satudene** to consider which are compatible with their long-term interests and to initiate the proposals which they feel best achieve their economic development aspirations.

The Working Group notes with concern the expansion of lodges into areas where, although no formal exclusions exist, there has been general understanding since the decisions made by Commissioner **Hodgson** in the late 1960's that no further development would occur. The community, in its original proposal to develop a commercial fishery, indicated its desire to obtain economic benefit from the lake. In response, the Working Group identified that under present conditions the financial prospects for development were extremely unfavorable. But at the same time the Working Group did encourage the community to consider sport fish potential of the Keith Arm as an alternative, more viable means of obtaining direct economic benefit from the lake. In light of the recent expansion of the lodges into the Keith Arm, the Working Group expresses its concern that development opportunities for the community may be diminished. The reason for this is that while sport fish development is considered a preferred development path, any cropping of the larger sized fish which may be found in these largely unexploited areas may adversely affect the ability of the community to develop a sport fish operation.

The community of Fort Franklin, in its response to the Working Group's interim report, interpreted Commissioner **Hodgson's** decision that there would be no more development of sport fishing lodges on Great Bear Lake to also mean that Keith and **McVicar** Arms would be reserved for their development. Unfortunately, whatever assurances the community leaders may have been given at the time, there is no written record of this policy decision or its intent. Regardless of what was said at the time, the Working Group is of the opinion that if the "spirit" of the **Hodgson** policy was to ensure the community would benefit from the lake, this intention is an objective which Government should endorse.

The review process will provide a sound basis upon which future decisions can be made on the allocation of fish resources for lodge-access fisheries development. The Working Group emphasizes that for the long-term goals of fishery management to be achieved that it is essential that any development proposal satisfy all suggested review criteria.

In its interim report, the Working Group also identified the need to consider the potential for increased employment for residents of the NWT and a shift towards increased purchases of material supplies in the north. The lodge industry has correctly pointed out that regulation to achieve a shift in employment **and regional** income patterns would be economically inefficient **and, therefore, opposed any regulation of the industry for this purpose.** The Working Group shares the view that such regulation should **not** be pursued, our concern being not only with efficiency but also with the constitutionality of such regulations.

At the same time, the lodge industry has acknowledged the need for **increased** local employment and benefits. While the need to ensure that lodge clientele be provided with high quality service, and that past experience in hiring northerners has not always resulted in quality service, the lodge industry has indicated a willingness to take on a larger percentage of Dene staff if Government provides funds for lodges to do their own guide training programs.

The Working Group also notes that for the community of Fort Franklin to achieve economic benefits from Great Bear Lake's lodge-access fishery it will be necessary to obtain training opportunity in all aspects of lodge operation. Only at such time as skills will be improved can a more direct link between lodge activity and community benefits be made. This requirement will exist whichever route the community chooses to follow in developing its economic opportunity, whether employment in existing lodges, development of the **SahTew** lodge, or joint ventures/purchase of existing lodge capacity.

The **Satudene** requested action to address their concerns with guide training, plant safety inspections and water safety training for all guides. This concern was accentuated by reference to the **tragic** drowning of a Great Bear Lake guide during the 1984 season. The Working Group acknowledges the concerns of the **Satudene** and urges the Department of Economic Development and Tourism to examine the issues thoroughly.

With respect to the request of the **Satudene** that guides be trained-in recording and transmitting data, since it is first necessary to agree on the kind of monitoring program to be implemented, the Working Group considers this request to be pending. More problematic is the suggestion that guides be held accountable for ensuring catch and possession limits not be exceeded. Unless guides were legally vested with the right to enforce fishery regulations, it is not practical to suggest guides be held accountable for something over which they have no responsibility. The Working Group felt this idea needs to be developed more clearly before it can be evaluated properly.

Commercial Fishery

The Working Group, in its interim report, conducted a preliminary feasibility analysis of commercial fishing development potential. This **analysis suggested that, under present conditions, a whitefish fishery harvesting** for export markets is not likely to be financially viable. In light of the views offered by the community in response to the interim report, there appears to be agreement that commercial fishery development is not a preferred development option.

The Working Group must **also emphasize that development of a commercial fishery** for inter-settlement trade, while not facing as difficult a situation, must also overcome some significant constraints. The limited nature of markets in regions where alternate sources of supply are generally available, the high costs of transportation from fishing grounds to **Fort Franklin and from the community to other settlements** in the north are considered to be major impediments to development. Accordingly, the Working Group offers the opinion that **commercial fisheries development, whether for export out of the N.W.T. or for inter-settlement trade, is not a preferred development option under present conditions.**

As markets, prices and costs change, the **prospects** for commercial fisheries development may also change. The Working Group recommends the review process to allow for consideration of development potential in the future. This process should provide a basis for decisions on the allocation of fish resources for commercial fisheries development. The Working Group emphasizes that for the long-term goals of fishery management to be achieved that it is essential that any development proposal satisfy **all** criteria. Should it become evident that a proposal cannot meet all these criteria, the merits of pursuing the development will warrant careful scrutiny. **In** the event there is not a sufficient supply of resources, it is clear the development should not be supported. In the event the resources **are** there and the impacts on other uses are not a constraint, but the development is not viable, economic criteria would also lead to a decision that the proposal not proceed. Presentation of this information would indicate to decision-makers the financial and economic costs of pursuing development in order to achieve **social** benefits, a trade-off which they **alone** are in a position to evaluate.

The Working Group also considered small-scale commercial fishery development for local sales. **In proposing that local sales be allowed, the Working Group felt it preferable to make legitimate the peddling of small volumes of fish which presently exists on the lake.** While there can be no unambiguous definition of what constitutes "surplus" fish harvests, it should be clear that such a fishery would relate to small volumes of fish and would require no additional capital investments in harvesting or plant capacity.

In order to establish the dimensions and use patterns in this fishery, the Working Group has recommended the development of a monitoring system for the fishery.

MANAGEMENT PROCESS

RECOMMENDATIONS

Advisory Committee

- To ensure that both Government and resource users are aware of the status of the fishery and the criteria by which decisions regarding resource use and allocation are made, the Working Group recommends that an Advisory Committee be formed to advise the participating Federal and Territorial agencies in the conduct of their fishery management and economic development programs for Great Bear Lake.
- The Working Group recommends the membership of the Advisory Committee should include one member from each of the community of Fort Franklin, the lodge industry, Fisheries and Oceans, Economic Development and Tourism, and Renewable Resources. A non-voting chairperson from within the Advisory Committee should be appointed on a rotating basis and a permanent secretary should be appointed to the Committee.

Coordination of Agency Programs

- To ensure that financial assistance programs for resource use on Great Bear Lake are coordinated with the long-term management plans for the fishery, the Working Group recommends that the participating agencies and their Advisory Committee be fully informed of Federal and Territorial program proposals which relate to Great Bear Lake.

Management Information Systems

- To ensure that a sufficient database is available to assess the status of the lodge-access sport fishery, the Working Group recommends that the Department of Fisheries and Oceans, in cooperation with the lodge industry, design and implement a lodge harvest reporting system as an essential requirement for a long-term fishery management program.
- To ensure that a sufficient database is available to assess how the domestic fishing needs of the Satudene are being met, the Working Group recommends that the Department of Fisheries and Oceans, in cooperation with the community of Fort Franklin, design and implement a domestic fishing harvest reporting system.
- To ensure monitoring of the numbers of lodge clientele who fish Great Bear Lake until such time as the recommended licensing system can be put in place, the Working Group recommends that the Department of Economic Development and Tourism obtain a certified copy of each lodge's guest book including the information on the licence numbers of those guests licensed to fish and a record of all lodge staff licensed to fish.

- To ensure a sufficient understanding of the biology of the fish stocks of Great Bear Lake, the Working Group recommends that the Department of Fisheries and Oceans commit the resources to conduct basic biological investigations of Great Bear Lake in conjunction with the above recommended monitoring program.
- The Working Group recommends proponents of development solicit financial support of Federal and Territorial financial assistance programs, such as the Economic Development Agreement, to expedite the biological investigations necessary for any proposed fisheries development on Great Bear Lake.
- The Working Group recommends that the Department of Fisheries and Oceans commit additional financial resources to the enforcement of the Great Bear Lake sport fishery.

RATIONALE

The Working Group views the completion of its **task as an important first step in the development of a fishery management plan** for Great Bear Lake, but it must be emphasized that the work is no more than a first step in the management process. In order to achieve an effective fishery management plan, there will have to be a firm commitment of the participating agencies to provide sufficient research, monitoring and evaluation of the fishery to ensure that whatever goals are established for the fishery can be achieved. While the Working Group has endeavored to consult with resource users and allowed them to develop their views on the future management of the lake, it is critical they be brought more directly into any further deliberations of a management plan so that consensus on the best course of action can be achieved. It is equally important that the agencies responsible for resource and economic development continue the cooperative efforts they have started with the formation of the Working Group in order that their programs can be effectively coordinated.

The recommendations above are presented as a reflection of the Working Group's views of the minimum, essential elements of a fishery management system for Great Bear Lake. Both resource user groups, as noted in the appendices of Volume 2, seek added commitments to a long-term fishery management program.

Although efforts have been made to keep interested parties fully informed of the deliberations of the Working Group and to provide financial support so they may develop their own positions, both the community of Fort Franklin and the lodge industry have been critical of their limited involvement in the development of a management plan. Insofar as the Working Group has conducted some of the necessary background work, it is now considered timely and essential that resource users be more directly involved in any further discussions of a management plan.

While the full responsibilities of the Advisory Committee remain to be worked out, the Working Group envisions a system where the participating agencies present the Advisory Committee with their program proposals and the

Advisory Committee reviews and comments on the plans. The Committee would also be a good mechanism to incorporate resource users' views about the status of the fishery into future management programs and further development proposals.

The Working Group felt a rotating chairmanship was desirable, given that no single agency dominates the management process for the lake. For such a system to work effectively, the agency or resource user group which has the **chair should be authorized to appoint an alternate to represent their agency or group** for the period they have the chair. A permanent secretary to the Advisory Committee would provide continuity and ensure the orderly reporting of the Committee's deliberations. Fisheries and Oceans has indicated a willingness to absorb this expense.

The need for all levels of government to coordinate the delivery of their programs is an obvious requirement, yet in too many other situations programs have worked at cross-purposes with little net benefit to those whom the programs are intended to serve. Thus, while it is an obvious requirement, the Working Group felt it essential to stress the need to ensure the coordination of government programming with the management process.

Earlier, in its review of each fishery, the Working Group recommended the specific means of coordinating agency programs to achieve the management goals for Great Bear Lake. In this section, special reference is made to the issue of financial assistance programs as an area where close coordination is most essential. Recommendations on the coordination of agency programs are restricted to the issue of financial assistance programs, since this is the one area where cooperation is most essential. Many other opportunities will exist as the management program unfolds and the Working Group is hopeful these opportunities will not escape the agencies participating in this review. For example, once decisions are made on the best means to monitor the fishery, Fisheries and Oceans should be able to cooperate with DINA and GNWT to develop necessary training programs for the community and the lodges. Furthermore, if a decision is made to manage the lake intensively for high quality recreation, this could be integrated with Economic Development and Tourism's marketing and promotion programs to stress Great Bear Lake is an intensively managed, limited-access wilderness recreation area.

A monitoring program for all resource uses is considered to be an essential requirement for effective management of the fishery. The Working Group, while stressing the need for a monitoring program, cannot endorse the specific recommendations of the community of Fort Franklin as to how the monitoring of the lodge-access sport fishery should be done. The Department of Fisheries and Oceans is presently conducting an evaluation of monitoring alternatives, in which some of the lodges on Great Bear Lake have willingly assisted. These alternatives include the use of a guide reporting system (very similar to what the community has proposed) and the use of an angler diary reporting system. While pilot projects have been initiated because they offer cost-effective alternatives to the more conventional creel census system of monitoring, they also pose statistical problems which must be evaluated. It must also be emphasized that the Working Group has not dismissed the use of a rotating creel and biological investigation system as partial and therefore ineffective. A carefully designed sampling program based on periodic, intensive investigations may be a cost-effective and statistically reliable alternative to an enumeration program of angler catch and effort. As the

evaluation of alternatives is still in progress, the Working Group felt it most appropriate to allow the Department of Fisheries and Oceans to complete its studies at which time it should propose how best to proceed.

With respect to the domestic fish harvest reporting system, the Working Group identified the need to gain some better appreciation of the extent of this fishery and how its needs were being met. A domestic reporting system should provide basic information on the number of participants, the fishing effort and harvests by species and areas fished. The working group is concerned that a very intensive domestic harvesting study, as presently is being conducted in other parts of the NWT, would be costly relative to the essential needs for the Great Bear Lake fishery. Accordingly, the Working Group emphasizes its concern that any system developed should be a cost-effective means of obtaining basic information.

The Working Group also emphasizes the need for biological assessments as part of an effective management process. While the Working Group is not recommending the commitment of additional resources for a large-scale research program, there are some basic and essential needs which must be addressed. Present initiatives by Fisheries and Oceans, which have been pursued to augment the rotating creel census program, include the development of data on the size of fish exploited by specific areas of the lake, the development of harvest estimates by specific areas, and the development of data on the size and age of fish communities in the currently exploited areas.

The need to gain an appreciation of the fish communities of the Keith and McVicar Arms will be an essential requirement as the Satudene pursue their economic development planning. To alleviate any financial constraints which may delay the start of needed biological investigations, the Working Group has made reference to Federal and Territorial financial assistance programs, including the Economic Development Agreement, as a means of securing the funds to proceed.

In setting priorities, the Working Group has accepted the advice of Fisheries and Oceans biologists that priority should be given to research-in understanding the basic biology of fishes (i.e. fish community patterns) as well as the specific effects of exploitation on those fish stocks (i.e. catch/release mortality). Evaluation of the effect of landing and releasing lake trout is acknowledged to be important, since there is so much emphasis on catch and release fishing in this fishery and earlier investigations were considered preliminary.

The Working Group, in recommending a higher priority be given to the enforcement activity on Great Bear Lake has mainly considered the increased requirements for enforcement if the proposed licence alternative is to be effective in controlling fishing pressure from both lodge-access and itinerant fishermen. Development of a small-scale commercial fishery will also require added enforcement activity.