



Keeyask Generation Project

Environmental Impact Statement

Supporting Volume

Socio-Economic Environment, Resource Use and Heritage Resources



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1.12 GLOSSARY

Aboriginal Traditional Knowledge (ATK): Aboriginal traditional knowledge is knowledge that is held by, and unique to, Aboriginal peoples. It is a living bit of knowledge that is cumulative and dynamic and adapted over time to reflect changes in the social, economic, environmental, spiritual and political spheres of the Aboriginal knowledge holders. It often includes knowledge about the land and its resources, spiritual beliefs, language, mythology, culture, laws, customs and medicines (Canadian Environmental Assessment Act).

Adverse Effects Agreements: Negotiated agreements with KCN communities that deal with the negative consequences of the planning, construction and operation of the proposed Project, either direct or indirect, which effect or change the physical, chemical or biological quality of the environment and includes, without limitation, risks or injuries to the health, safety, well-being, comfort or enjoyment of the First Nations and their Members and impacts on interests in lands, pursuits, activities, opportunities, lifestyles and assets of the First Nations and their Members.

Allocation¹: A parcel of land assigned to an outfitter or lodge operator to carry out their guiding services.

Angling²: Means fishing by means of a line and hook, or a rod, line and hook.

Areas of Special Interest³: “Candidate sites” which have not been protected in any formal manner but have a high potential to protect groupings of enduring features and associated natural and cultural values.

Bog⁴: A wetland ecosystem made up of in-situ accumulations of peat, either moderately or slightly decomposed, derived primarily from sphagnum moss. Bog water is acidic, usually at or very near the surface and unaffected by the nutrient-rich groundwater found in the adjacent mineral soil.

Borrow area⁵: A small quarry or excavation beyond the limits of road or dam construction, which provide material for use in the construction project.

Churchill River Diversion: The diversion of the Churchill River under the CRD Licence including the Augmented Flow Program which shall also include the construction and operation of the Notigi and Missi control structures and the consequent impact on flows and water levels in the lower Churchill River.

¹ *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

² *Manitoba Fishery Regulations, 1987*. SOR/87-509.

³ Manitoba Conservation, 2010. Protecting Manitoba’s Outstanding Landscapes, Manitoba’s Protected Areas Initiative. Available from: http://www.gov.mb.ca/conservation/pai/pdf/protected_areas_booklet_web.pdf [accessed April 14, 2011].

⁴ Dunster, J., K. Dunster. 1996. *Dictionary of Natural Resource Management*. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

⁵ Dunster, J., K. Dunster. 1996. *Dictionary of Natural Resource Management*. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

Commercial Fishing¹: Means fishing for the purpose of sale or barter or for any other commercial purpose.

Commercial Forest Zone: The geographic area, defined by Manitoba Conservation, Forestry Branch, that is capable of producing trees large enough for commercial harvesting. The Commercial Forest Zone includes most of the Prairie, Boreal Plains and Boreal Shield ecozones. It is also referred to as the Productive Forest Zone.

Commercial Trapping: Means trapping animals for the purpose of selling fur.

Competition²: Utilization by two or more individuals, or by two or more populations, of the same limited resource; an interaction where both parties are harmed.

Concentration³: The density or amount of a material suspended or dissolved in a fluid (aqueous) or amount of material in a solid (e.g., sediments).

Country Food⁴: Country foods include those harvested by hunting, trapping, fishing or small-scale farming, and produce grown in vegetable gardens and orchards or collected from naturally occurring sources (e.g. wild berries).

Covertime⁵: Four broad cover types are recognized: Softwood 'S', Softwood–Hardwood 'M', Hardwood–Softwood 'N', Hardwood 'H'. The first number of the subtype code indicates the type aggregate (0 to 3 : Softwood; 4 to 7 – Softwood/Hardwood Mixed ; 8 – Hardwood/Softwood Mixed; 9 – Hardwood)

Crown closure⁶: Crown closure will be estimated from the photographs by the photo-interpreter. Four classes will be recognized and entered onto the stand description sheet for each township as part of the photo-interpreter type aggregate. Changes of this estimate can be made only under exceptional circumstances (0 : 0 % : 20 % crown closure; 2 -21 % : 50 % crown closure; 3- 51 % : 70 % crown closure; 4 - 71 % and over)

Cutting class⁷: Cutting class is base on size, vigour, state of development and maturity of a stand for harvesting purposes.

¹ *Manitoba Fishery Regulations, 1987*. SOR/87-509.

² Keeton, W. T. *Biological Science*, 3rd ed. W.W. Norton & Company, New York, New York.

³ Manitoba Hydro and Nisichawayasihk Cree Nation. 2003 Wuskwatim Generation Project Environmental Impact Statement.

⁴ Health Canada. *How Health Canada Contributes to Environmental Assessment*. 2010. Government of Canada, Ottawa Ontario.

⁵ Manitoba, Government of. 2007. *Forestry Inventory Manual 1.3, 1996 - 1997*. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

⁶ Manitoba Conservation. 2007. *Forestry Inventory Manual 1.2, 1992 - 1996*. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

⁷ Manitoba Conservation. 2007. *Forestry Inventory Manual 1.2, 1992 - 1996*. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

DELT¹: Acronym for the presence of Deformities (physical blemishes or distortions), Erosion (wearing away of a structure to reduce the size and effectiveness of that structure), Lesions (abnormal changes in the structure of an organism due to injury or disease, not including injuries due to predation or fishing) and Tumours (an abnormal benign or malignant mass of tissue that does not arise from inflammation) in fish.

Direct Environmental Effect²: A direct effect is a consequence of a cause-effect relationship between a project and a specific environmental component.

Duration: describes the temporal boundary or length of time within which the predicted residual environmental effect would last.

Ecological Reserves³: Established under the Ecological Reserve Act, ecological reserves are created to preserve unique and rare examples of plants, animals, and geological features.

Ecosystem⁴: Means an ecological system consisting of living things, including humans and plants, together with their respective environments.

Eco-tourism⁵: Means 1) viewing or studying fish, wildlife or a natural area, and 2) recreational or adventure activities such as canoeing, hiking and horseback riding that take place in a natural area.

Effect⁶: Any change that the Project may cause in the environment, including any effect of any such change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by Aboriginal persons.

Enduring Features⁷: Combinations of soils and surficial geology that are used to represent the biodiversity within Manitoba's 18 natural regions.

Environmental Impact Statement (EIS)⁸: A document that presents the findings of an environmental assessment.

Exploitation: Harvesting or using a natural resource.

¹ North/South Consultants Inc. 2003-2010. Keeyask Generating Station Environmental Studies Program reports. Prepared for Manitoba Hydro.

² Canadian Environmental Assessment Agency 2010. Policy and Guidance Glossary. Available from <http://www.ceaa.gc.ca/default.asp?lang=En&n=B7CA7139-1&offset=1&toc=show>. [accessed April 13, 2011].

³ *The Ecological Reserves Act (Manitoba)*. C.C.S.M. c. E5.

⁴ *The Ecological Reserves Act (Manitoba)*. C.C.S.M. c. E5.

⁵ *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

⁶ *The Canadian Environmental Assessment Act*. S.C. 1992, c.37.

⁷ Manitoba Conservation, 2010. Protecting Manitoba's Outstanding Landscapes, Manitoba's Protected Areas Initiative. Available from: http://www.gov.mb.ca/conservation/pai/pdf/protected_areas_booklet_web.pdf [accessed April 14, 2011].

⁸ Canadian Environmental Assessment Agency 2010. Policy and Guidance Glossary. Available from <http://www.ceaa.gc.ca/default.asp?lang=En&n=B7CA7139-1&offset=1&toc=show>. [accessed April 13, 2011].

Flooding: The rising of a body of water so that it overflows its natural or artificial boundaries and covers adjoining land that is not usually underwater.

Foreign Resident¹: A person who is neither a Canadian citizen nor a resident of Manitoba.

Gathering: Collection plants for medicinal and dietary purposes and other natural products such as firewood, driftwood, or feathers for cultural purposes.

Geographic Information System²: The use of a computer system to overlay large volumes of spatial data of different kinds. The data are referred to a set of geographical coordinates and encoded in computer (digital) format so they can be sorted, selectively retrieved, statically and spatially analyzed).

Guide³: A person who accompanies another person and provides direction and expertise to assist that person in locating, hunting, taking or killing fish or wildlife.

Habitat⁴: The place where a plant or animal lives; often related to a function such as breeding, feeding etc.

High-grading⁵: the practice of selecting only the most healthy or valuable individuals in harvesting a natural resource (as timber or fish).

Hydroelectric: Of or relating to the production of electricity by water power.

Indirect Environmental Effect⁶: A secondary environmental effect that occurs as a result of a change that a project may cause in the environment. An indirect effect is at least one step removed from a project activity in terms of cause-effect linkages.

Interdisciplinary approach: refers to research or study that integrates concepts from different disciplines resulting in a synthesised or co-ordinated coherent whole⁷.

Keeyask Generation Project: The Keeyask Generation Project (the Project) is a proposed 695–MW hydroelectric generating station located near Gull Rapids on Nelson River in the Province of Manitoba

Lake Winnipeg Regulation: Lake Winnipeg Regulation, completed in 1976, allowed Lake Winnipeg to be regulated within certain limits thereby allowing for greater flows into the Nelson River when needed.

¹ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

² Dunster, J., K. Dunster. 1996. *Dictionary of Natural Resource Management*. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

³ *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

⁴ North/South Consultants Inc. 2003-2010. Keeyask Generating Station Environmental Studies Program reports. Prepared for Manitoba Hydro.

⁵ “High-grading”. 2012. Merriam-Webster.com. Available from: <http://www.merriam-webster.com/dictionary/high-grading>. [accessed February 14, 2012].

⁶ Canadian Environmental Assessment Agency 2010. Policy and Guidance Glossary. Available from <http://www.ceaa.gc.ca/default.asp?lang=En&n=B7CA7139-1&offset=1&toc=show>. [accessed April 13, 2011].

⁷ Harvey, L., 2004–9, Analytic Quality Glossary, Quality Research International.

Land Use Categories¹: Zoning categories governing certain prohibited or permitted activities within provincial parks.

Local Study Area: The spatial area within which local effects are assessed (*i.e.*, within close proximity to the action where direct effects are anticipated).

Lodge²: An accommodation facility of a permanent or semi-permanent nature that accommodates nine or more persons.

Magnitude: A measure of how adverse or beneficial an effect may be.

Mean annual increment³: or mean annual growth refers to the average growth per year a tree or stand of trees has exhibited/experienced to a specified age.

Member⁴: Means a person who is a “Member of a band” as defined in subsection 2(1) of the *Indian Act* (Canada).

Merchantable: A tree or stand of trees is considered to be merchantable once it has reached a size, quality, volume or a combination of these that permits harvesting and processing. Merchantability is independent of economic factors, such as road accessibility or logging feasibility.

Mitigation⁵: A means of reducing the significance of adverse effects. Under CEAA, mitigation is "the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means".

Monitoring⁶: A continuing assessment of conditions at and surrounding the action. This determines if effects occur as predicted or if operations remain within acceptable limits, and if mitigation measures are as effective as predicted.

Nature (of effect): Classification of effects such as positive, neutral and adverse.

Non-Commercial Forest Zone: The geographic area, defined by Manitoba Conservation, Forestry Branch, that is predominately not capable of producing trees large enough for commercial harvesting. The Non-Commercial Forest Zone lies north of the provincially designated by forest management administrative boundary areas (Forest Sections and Forest Management Units).

Non-resident⁷: A person who is a Canadian citizen but is not a Manitoba resident.

¹ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

² *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

³ Dunster, J., K. Dunster. 1996. *Dictionary of Natural Resource Management*. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

⁴ *The Indian Act*. R.S.C., c.I-5

⁵ *The Canadian Environmental Assessment Act*. S.C. 1992, c.37.

⁶ Canadian Environmental Assessment Agency 2010. *Policy and Guidance Glossary*. Available from <http://www.ceaa.gc.ca/default.asp?lang=En&n=B7CA7139-1&offset=1&toc=show>. [accessed April 13, 2011].

⁷ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

Outcamp¹: An accommodation facility of a permanent or semi-permanent nature that accommodates fewer than nine persons.

Outfitter²: Means a person who, for gain, remuneration or reward or the hope or expectation of gain, remuneration or reward, provides two or more outfitting services to others in connection with hunting, fishing or ecotourism activities.

Parasite³: An organism that lives in association with, and at the expense of, another organism, the host, from which it obtains organic nutrition.

Pollution: any alteration of the natural environment producing a condition that is harmful to living organisms.

Population⁴: A group of individuals belonging to the same species.

Park Reserve⁵: A temporary designation under the *Manitoba Provincial Parks Act* to ensure that the lands under consideration for provincial park status are not otherwise allocated or used while planning and consultation is taking place.

Pelt⁶: Means the skin or hide of a fur bearing animal that has not been tanned or otherwise processed by chemical or mechanical means.

Productive forestland⁷: Includes all forest land capable of producing merchantable wood regardless of its existing stage of productivity.

Project: The Keeyask Generation Project.

Provincial Forest⁸: Crown Lands reserved for a perpetual growth of timber withdrawn from disposition, sale, settlement or occupancy.

Provincial Natural Park⁹: Crown lands designated to protect natural landscapes as well as to provide recreational and resource use opportunities.

Provincial Park¹⁰: Crown lands designated under the *Manitoba Provincial Parks Act*.

¹ *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

² *The Resource Tourism Operators Act (Manitoba)*. S.M. 2002, c. 46.

³ Manitoba Hydro and Nisichawayasihk Cree Nation. 2003 Wuskwatim Generation Project Environmental Impact Statement.

⁴ Keeton, W. T. *Biological Science*, 3rd ed. W.W. Norton & Company, New York, New York.

⁵ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

⁶ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

⁷ Manitoba, Government of. 2007. *Forestry Inventory Manual 1.3, 1996 - 1997*. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

⁸ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

⁹ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

¹⁰ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

Provincial Wilderness Park¹: This designation preserves representative areas of a natural region, meaning no resource extraction such as logging, mining, or development of hydro–electric power is allowed. The purpose of wilderness parks is to protect natural landscapes in an undisturbed state and provide recreational opportunities that depend on a pristine environment.

Recreational Fishing²: Means fishing by dip netting, seine netting, minnow trapping, angling, bow fishing or spearfishing, but does not include:

- a) fishing by an Indian for food for their personal use or for the use of their immediate family, or
- b) commercial fishing.

Regional Study Area: The spatial area in which effects are assessed (*i.e.*, extending a distance from the project footprint in which both direct and indirect effects are anticipated to occur).

Residual Effect³: An environmental effect that remains, or is predicted to remain, even after mitigation measures have been applied.

Resident⁴: A person living in Manitoba for the last consecutive six months.

Seed orchard⁵: A plantation of trees either proven by analysis to be genetically superior, or a plantation of plus trees that are being tested for superior genetic traits. The seed orchard is isolated to reduce cross-pollination from potentially inferior, outside sources, and is intensively managed to improve the genotype and produce frequent, abundant, and easily harvestable seed crops.

Site index: a classification that describes the potential for forest trees to grow at a particular location or “site”. It relates to the productivity of the site.

Spatial Boundary: The spatial extent of potential environmental effects, traditional and local knowledge, current and proposed land use by Aboriginal groups and ecological, technical and social and cultural considerations⁶.

Sports Fishing: See recreational fishing or angling.

Stakeholders⁷: Are members of the public and special interest groups, federal authorities, provincial or municipal governments, landowners or other parties who have an interest in the proposed project.

¹ *The Provincial Parks Act (Manitoba)*. C.C.S.M. c. P20.

² *Manitoba Fishery Regulations, 1987*. SOR/87-509.

³ Canadian Environmental Assessment Agency 2010. Policy and Guidance Glossary. Available from <http://www.ceaa.gc.ca/default.asp?lang=En&n=B7CA7139-1&offset=1&toc=show>. [accessed April 13, 2011].

⁴ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

⁵ Dunster, J., K. Dunster. 1996. *Dictionary of Natural Resource Management*. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

⁶ Canadian Environmental Assessment Agency. March 2012. Draft Environmental Impact Statement Guidelines proposed by the Keeyask Hydropower Limited Partnership.

⁷ Major Projects Management Office. 2008. Guide to Preparing a Project description for a Major Resource Project. Government of Canada, Ottawa, Ontario.

Stand density¹: A quantitative measure of the number and size of trees on a forest site. Can be expressed as number of trees per hectare, basal area (m²/hectare), stand density index, or weight. Unless specified, stand density would include all trees regardless of age.

Stand Stock Volume Tables: Compiled from provincial volume sampling data, the table is comprised of forest stand volume estimates by type aggregate, diameter at breast height (DBH) class and species for specific areas throughout the province. Volumes are provided at various utilization levels for cutting classes 3, 4 and 5 stands.

Study Area: The geographic limits within which an impact to a VEC is assessed.

Subtype²: This term indicates the species composition in broad groups within the cover type. Subtype is determined by the proportion of basal area of two or three main species in the stand as found on sample plots to the total basal area of all species. To determine the subtype, the basal area of individual species must be computed and rounded off to the nearest ten percent.

The percentage range marked after the species symbol indicates the proportion of the basal area of this particular species in comparison to the total basal area of all species in the type. The second number of the type aggregate code identifies the subtype. Subtype will include non-productive forested land and non-forested land codes. Subtype will also include the Non-Productive Forested Land and Non Forested Land codes.

Timber Dues³: Crown Timber harvested in Manitoba is measured in cubic metres (m³). For each cubic metre of timber harvested, specific dues and charges must be paid. Commercial users must pay three specific charges as per The Forest Act, which include Crown Timber Dues, Forest Renewal Charge and Forest Protection Charge.

Type aggregate⁴: This term is used in reference to all productive stands or potentially productive areas in a Forest Management Unit or Forest Section which have common characteristics as to cover type, subtype, site, cutting class and crown closure.

Traditional Area⁵: An area that has been historically used or occupied for the purposes of subsistence hunting, fishing and gathering.

Trapping¹: Means taking, capturing or killing or attempting to take, capture or kill wildlife by any means or contrivance designed to enclose, capture, hold, ensnare or otherwise restrain an animal, whether that means or contrivance kills the animal or not.

¹ Dunster, J., K. Dunster. 1996. Dictionary of Natural Resource Management. ISBN 0-7748-0503-X. UBC Press. University of British Columbia. Vancouver, B.C.

² Manitoba, Government of. 2007. Forestry Inventory Manual 1.3, 1996 - 1997. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

³ Manitoba, Government of. Manitoba Conservation. 2011. "Timber Pricing" Available from <http://www.gov.mb.ca/conservation/forestry/timber-admin/index.html> [accessed February 20, 2011].

⁴ Manitoba, Government of. 2007. Forestry Inventory Manual 1.3, 1996 - 1997. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

⁵ Notzke, C. 1994. Aboriginal Peoples and Natural Resources in Canada. Captus Press, Concord Ontario.

Valued Environmental Component²: Any part of the environment that is considered important by the proponent, public, scientists or government involved in the assessment process. Importance may be determined on the basis of cultural values or scientific concern.

Veneer³: unconsolidated materials too thin to mask the minor irregularities of the underlying unit surface; ranges from 10 cm to 1 m in thickness and will possess no form typical of the materials genesis.

Wildlife⁴: Means a live or dead vertebrate animal of any species or type that is not a fish.

Wildlife Management Area⁵: Crown lands set aside for the better management, conservation and enhancement of the wildlife resources of the province.

Working group⁶: This term indicates the grouping of subtypes, where the dominant or leading species in the species composition forms the working group (*i.e.*, the jack pine working group contains all the subtypes where jack pine is the leading species in the subtype species composition).

¹ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

² Hegmann, G.C. *et al.*, 1999. Cumulative Effects Assessment Practitioners Guide, Canadian Environmental Assessment Agency, Ottawa, Ontario.

³ Canada Soil Survey Committee, Subcommittee on Soil Classification. 1978. The Canadian system of soil classification. Can. Dep. Agric. Publ. 1646. Supply and Services Canada, Ottawa, Ont. 164 pp.

⁴ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

⁵ *The Wildlife Act (Manitoba)*. C.C.S.M. c. W130.

⁶ Manitoba, Government of. 2007. Forestry Inventory Manual 1.3, 1996 - 1997. Manitoba Conservation, Forestry Branch. Forest Inventory Section. Winnipeg, Manitoba.

APPENDIX 1A
Production (marketed weights) and
Value of the Commercial Fisheries
Located in the Split Lake and Fox Lake
Resource Management Areas
(1960 to 2008)

Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Assean	1965	23,958	14,337	3,219	7,705	1,148	343	-	-	28,325	22,385
Assean	1966	15,262	8,579	896	2,060	432	125	-	-	16,590	10,765
Assean	1968	3,032	3,243	867	1,159	65	35	-	-	3,964	4,437
Assean	1969	1,172	3,489	203	1,007	0	0	-	-	1,375	4,496
Assean	1982	5,159	4,154	1,041	4,682	2,765	2,641	-	-	8,965	11,477
Assean	1983	18,583	17,410	957	5,497	1,638	2,680	-	-	21,178	25,587
Assean	1984	8,806	5,729	1,363	2,152	3,214	3,370	-	-	13,383	11,250
Assean	1985	2,706	3,023	754	3,815	2,705	4,599	-	-	6,165	11,437
Assean	1987	123	135	1,422	12,513	1,192	3,285	-	-	2,737	15,933
Assean	1988	2,735	2,886	1,569	17,238	1,983	5,243	-	-	6,287	25,367
Assean	1989	1,328	1,192	911	3,215	2,348	3,048	1	2	4,588	7,456
Assean	1990	433	212	553	1,719	1,089	2,003	-	-	2,075	3,933
Assean	1991	288	267	1,267	6,662	2,296	4,971	-	-	3,851	11,899
Assean	1996	441	-	356	-	924	-	32	-	1,753	3,984
Assean	2002	154	-	239	-	348	-	35	-	776	2,438
Assean	2004	479	-	1,159	-	2,512	-	1	-	4,151	8,879
Assean	2006	337	-	1,124	-	726	-	68	-	2,255	6,492
Assean	2007	148	-	270	-	494	-	232	-	1,144	2,031
Assean	2008	389	-	83	-	189	-	145	-	806	1,098
Assean Total										130,368	191,346
Assean Average										6,861	10,071
Atkinson	1963	8,987	14,030	2,094	5,556	7,508	4,688	-	-	18,589	24,274
Atkinson	1964	10,305	47,375	5,078	31,909	4,395	2,021	-	-	19,778	81,305
Atkinson	1965	8,529	16,588	2,800	16,758	5,584	3,341	-	-	16,913	36,687
Atkinson	1966	4,067	15,770	1,593	7,552	5,318	5,735	-	-	10,978	29,057
Atkinson	1967	12,495	34,699	4,855	20,897	8,596	14,323	-	-	25,946	69,919
Atkinson	1968	19,433	51,957	2,121	11,342	5,145	6,878	-	-	26,699	70,177
Atkinson	1969	14,016	57,469	322	1,915	463	1,001	-	-	14,801	60,385
Atkinson	1969	5,498	-	50	0	109	-	-	-	5,657	-
Atkinson	1970	9,092	20,700	1,184	6,531	270	702	-	-	10,546	27,933
Atkinson	1970	358	-	29	-	470	-	-	-	857	-



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Atkinson	1971	5,687	11,428	1,263	8,184	225	424	-	-	7,175	20,035
Atkinson	1971	245	-	185	0	109	-	-	-	539	-
Atkinson	1972	3,709	4,507	3,162	11,442	673	389	-	-	7,544	16,338
Atkinson	1973	1,770	2,368	42	187	-	-	-	-	1,812	2,555
Atkinson	1976	819	1,286	386	1,834	563	402	-	-	1,768	3,522
Atkinson	1977	4,593	6,489	57	233	1,599	2,041	-	-	6,249	8,762
Atkinson	1979	9,762	31,664	4,587	33,348	2,732	5,395	1	3	17,082	70,409
Atkinson	1980	11,417	27,729	160	1,413	1,533	2,895	-	-	13,110	32,037
Atkinson	1981	17,115	24,378	2,267	17,562	5,531	9,509	2	12	24,915	51,461
Atkinson	1982	1,880	-	420	-	1,379	no data	-	-	3,679	-
Atkinson	1983	858	1,035	1,413	7,715	1,012	1,689	-	-	3,283	10,439
Atkinson	1984	337	583	869	4,655	611	1,394	-	-	1,817	6,632
Atkinson	1985	8,303	10,821	2,369	11,860	1,238	2,073	-	-	11,910	24,754
Atkinson	1986	12,274	11,009	83	635	1,791	4,769	-	-	14,148	16,413
Atkinson	1989	3,102	2,661	2,051	6,931	3,196	3,878	1	-	8,350	13,470
Atkinson Total										274,145	676,564
Atkinson Average										10,966	32,217
Billard	1966	4,166	5,983	458	1,315	1,644	472	-	-	6,268	7,769
Billard	1969	8,092	27,522	272	1,308	-	-	-	-	8,364	28,830
Billard	1970	8,263	21,727	89	511	-	-	-	-	8,352	22,238
Billard	1971	6,547	16,439	14	77	-	-	7	22	6,568	16,538
Billard	1972	3,897	7,896	6	26	17	11	-	-	3,920	7,933
Billard	1973	6,834	9,960	96	413	-	-	218	49	7,148	10,422
Billard	1975	6,579	15,770	43	182	3,218	3,559	-	-	9,840	19,511
Billard Total										50,460	113,241
Billard Average										7,209	16,177
Bradshaw	1960	862	1,677	-	-	-	-	-	-	862	1,677
Bradshaw	1961	1,179	1,888	-	-	-	-	-	-	1,179	1,888
Bradshaw	1962	2,449	5,808	-	-	-	-	-	-	2,449	5,808



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Bradshaw Total										4,490	9,372
Bradshaw Average										1,497	3,124
Buckland	1967	13,677	9,492	-	-	-	-	1,842	2,557	15,519	12,049
Buckland	1968	8,342	17,840	-	-	-	-	980	2,227	9,322	20,066
Buckland	1969	9,852	34,356	-	-	-	-	-	-	9,852	34,356
Buckland	1970	9,132	24,395	-	-	-	-	198	567	9,330	24,962
Buckland	1971	9,523	24,210	-	-	-	-	88	253	9,611	24,463
Buckland	1982	5,410	7,851	-	-	1,906	1,741	384	702	7,700	10,294
Buckland	1985	526	875	-	-	484	794	10	26	1,020	1,695
Buckland	1987	1,907	-	11	-	758	-	162	-	2,838	-
Buckland	1987	1,611	9,705	-	89	1,741	6,862	83	801	3,435	17,458
Buckland	1988	4,852	10,065	-	-	1,047	2,045	206	452	6,105	12,561
Buckland	1990	676	918	-	-	244	-	21	15	941	933
Buckland Total										75,673	158,838
Buckland Average										6,879	15,884
Butnaw	1968	181	485	68	364	68	91	-	-	317	940
Butnaw	1982	1,080	5,809	-	-	-	-	-	-	1,080	5,809
Butnaw	1993	2,068	3,739	2	7	181	237	-	-	2,251	3,982
Butnaw	1994	2,360	3,755	369	2,254	205	215	15	13	2,949	6,237
Butnaw Total										6,597	16,969
Butnaw Average										1,649	4,242
Caldwell	1971	1,616	4,191	30	143	114	121	-	-	1,760	5,490
Caldwell	1972	1,307	2,648	48	215	-	-	-	-	1,355	3,550
Caldwell	1982	3,549	4,229	241	1,037	699	869	-	-	4,489	16,050
Caldwell Total										7,604	25,090
Caldwell Average										2,535	8,363

Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Campbell	1965	8,261	4,943	1,945	5,818	3,685	1,103	-	-	13,891	11,864
Campbell	1966	6,527	9,373	468	1,343	1,010	299	-	-	8,005	11,016
Campbell	1970	3,559	2,965	186	629	0	0	-	-	3,745	3,594
Campbell Total										25,641	26,474
Campbell Average										8,547	8,825
Christie	1965	1,806	1,081	2,432	7,276	74	22	-	-	4,312	8,378
Christie	1966	876	629	15	56	40	11	-	-	931	697
Christie	1970	802	595	144	635	-	-	-	-	946	1,230
Christie	1971	2,141	2,968	1,228	5,805	-	-	-	-	3,369	8,773
Christie Total										9,558	19,078
Christie Average										2,390	4,770
Cygnets	1961	1,041	-	-	-	-	-	751	-	1,792	no data
Cygnets Total										1,792	no data
Dafoe	1961	513	658	99	317	-	-	-	-	612	974
Dafoe	1963	11,038	17,231	1,692	5,284	8,091	5,052	6,277	3,919	27,098	31,486
Dafoe	1964	3,144	3,854	765	2,111	1,420	653	-	-	5,329	6,618
Dafoe	1966	4,868	10,488	436	2,381	1,583	2,727	-	-	6,887	15,596
Dafoe	1969	2,486	7,558	81	405	860	1,065	475	122	3,902	9,149
Dafoe	1970	5,481	13,090	1,823	8,227	3,673	3,852	5	-	10,982	25,170
Dafoe	1971	1,840	4,582	94	562	953	1,294	-	-	2,887	6,438
Dafoe	1973	651	3,086	110	904	557	1,140	416	791	1,734	5,921
Dafoe	1976	1,469	2,835	2,166	12,843	1,787	2,196	900	760	6,322	18,635
Dafoe	1977	3,002	5,717	2,166	11,154	510	590	1	-	5,679	17,461
Dafoe	1978	3,439	7,600	1,879	10,466	1,941	3,763	2,596	4,915	9,855	26,743
Dafoe	1979	2,842	6,193	644	4,811	1,696	4,235	2,978	3,366	8,160	18,605
Dafoe	1980	3,473	6,123	1,632	12,257	737	1,392	1,026	1,166	6,868	20,938
Dafoe	1982	108	129	33	148	145	137	118	719	404	1,134
Dafoe	1983	6,183	7,439	1,302	6,959	1,623	2,883	3,744	2,226	12,852	19,507



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Dafoe	1984	3,204	5,317	880	868	732	1,373	1	-	4,817	7,559
Dafoe	1985	4,629	6,076	1,343	6,568	1,523	2,789	1	151	7,496	15,584
Dafoe	1987	2,345	2,913	877	7,797	702	1,946	-	-	3,924	12,656
Dafoe Total										125,808	260,174
Dafoe Average										6,989	14,454
Fidler	1960	15,059	19,529	-	-	594	96	-	-	15,653	19,625
Fidler	1961	12,213	41,058	-	-	-	-	-	-	12,213	41,058
Fidler	1962	9,850	26,468	-	-	-	-	-	-	9,850	26,468
Fidler	1963	4,281	6,683	8	15	-	-	-	-	4,289	6,698
Fidler	1964	11,573	31,925	9	40	-	-	30	149	11,612	32,114
Fidler	1965	10,465	20,353	7	45	-	-	9	24	10,481	20,422
Fidler	1966	4,626	15,281	-	-	742	853	-	-	5,368	16,134
Fidler	1967	3,191	8,862	4	10	-	-	-	-	3,195	8,872
Fidler	1968	1,379	5,530	-	-	980	1,043	-	-	2,359	6,573
Fidler	1969	4,300	14,554	-	-	-	-	-	-	4,300	14,554
Fidler	1970	8,246	21,930	-	-	-	-	-	-	8,246	21,930
Fidler	1971	7,753	18,818	45	253	-	-	83	231	7,881	19,303
Fidler	1973	8,432	11,985	-	-	-	-	22	34	8,454	12,019
Fidler	1975	7,975	18,046	16	71	2,436	2,680	-	-	10,427	20,797
Fidler	1985	512	855	-	-	1,019	1,872	2	2	1,533	2,729
Fidler	1986	2,084	3,015	17	212	2,145	2,350	-	-	4,246	5,577
Fidler	1990	2,137	3,101	59	179	1,079	1,976	-	-	3,275	5,255
Fidler Total										123,382	280,125
Fidler Average										7,258	16,478
Gull Lake	1998	80	-	13	-	53	-	60	-	206	256
Gull Total										206	256
Handle	1963	1,005	785	74	116	140	22	428	1,069	1,647	1,992
Handle	1966	1,808	1,298	1,134	3,256	204	59	582	1,003	3,728	5,615



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Handle Total										5,375	7,607
Handle Average										2,688	3,804
Holmes	1961	3,318	3,187	-	-	-	-	-	-	3,318	3,187
Holmes	1962	1,864	1,768	-	-	-	-	-	-	1,864	1,768
Holmes	1965	14,554	8,709	1,451	4,342	415	124	-	-	16,420	13,175
Holmes	1966	13,445	9,654	666	1,914	707	203	4	4	14,822	11,776
Holmes	1967	26,951	18,711	559	777	1,248	347	5	9	28,763	19,844
Holmes Total										65,187	49,749
Holmes Average										13,037	9,950
Holmes-Thomas	1968	19,963	21,350	-	-	-	-	-	-	19,963	21,350
Holmes-Thomas	1969	22,211	74,673	136	718	11	23	-	-	22,358	75,414
Holmes-Thomas	1970	21,650	55,394	40	230	57	39	-	-	21,747	55,663
Holmes-Thomas	1971	18,193	35,417	178	628	0	0	-	-	18,371	36,045
Holmes-Thomas	1972	20,531	26,176	32	149	508	308	-	-	21,071	26,633
Holmes-Thomas Total										103,510	215,105
Holmes-Thomas Average										20,702	43,021
Kiask	1963	922	-	-	-	-	-	999	-	1,921	-
Kiask	1965	4,784	-	-	-	506	-	2,033	-	7,323	-
Kiask	1970	962	-	-	-	-	-	680	-	1,642	-
Kiask	1971	1,290	-	-	-	-	-	357	-	1,647	-
Kiask Total										12,533	-
Kiask Average										3,133	-
Limestone	1969	10,705	31,758	-	-	3,075	4,207	-	-	13,780	35,965
Limestone	1970	2,269	1,758	-	-	475	607	-	-	2,744	2,364



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Limestone Total										16,524	38,329
Limestone Average										8,262	19,165
Little Cygnet	1961	1,040	1,666	-	-	-	-	751	3,126	1,791	4,792
Little Cygnet	1962	1,475	1,399	-	-	-	-	510	1,452	1,985	2,850
Little Cygnet Total										3,776	7,642
Little Cygnet Average										1,888	3,821
Moose & Stephens	1978	1,070	5,360	8	134	559	2,227	123	109	1,760	7,831
Moose & Stephens	1979	2,026	9,548	3	34	5	14	365	345	2,399	9,941
Moose & Stephens	1980	626	2,257	193	758	-	75	418	252	1,237	3,342
Moose & Stephens	1980	255	-	18	-	36	-	79	-	388	-
Moose & Stephens	1981	1,768	2,541	2,548	19,809	2	5	3	5	4,321	22,359
Moose & Stephens	1983	545	3,313	19	129	102	82	45	44	711	3,569
Moose & Stephens	1984	370	2,158	16	120	238	600	15	103	639	2,981
Moose & Stephens	1986	146	787	39	255	113	262	-	-	298	1,304
Moose & Stephens	1989	499	577	193	601	234	227	272	130	1,198	1,535
Moose and Stephens Total										12,951	52,862
Moose and Stephens Average										1,439	6,608
Moose Nose	1968	4,516	4,830	-	-	481	321	-	-	4,997	5,152
Moose Nose	1971	1,643	1,795	-	-	759	369	-	-	2,402	2,164
Moose Nose	1972	2,342	2,033	-	-	877	510	-	-	3,219	2,543
Moose Nose	1973	85	79	-	-	14	10	-	-	99	88

Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Moose Nose	1974	1,288	3,497	-	-	157	209	-	-	1,445	3,706
Moose Nose	1981	1,328	2,525	-	-	128	-	-	-	1,456	2,525
Moose Nose	1983	1,976	3,046	-	-	254	424	-	-	2,230	3,470
Moose Nose	1984	2,011	4,228	-	-	293	616	-	-	2,304	4,844
Moose Nose	1985	16,125	26,479	-	-	946	1,596	-	-	17,071	28,075
Moose Nose	1986	11,215	9,345	-	-	1,348	3,780	-	-	12,563	13,125
Moose Nose Total										47,786	65,692
Moose Nose Average										4,779	6,569
Moosewu	1989	115	93	39	183	118	157	-	-	272	433
Moosewu	1996	916	-	337	-	268	-	110	-	1,631	3,251
Moosewu Total										1,903	3,684
Moosewu Average										952	1,842
Pelletier	1965	5,898	3,529	1,672	5,004	2,033	608	-	-	9,603	9,142
Pelletier	1966	6,643	-	580	-	778	-	-	-	8,001	-
Pelletier	1969	4,187	17,632	-	-	914	932	678	3,831	5,779	22,395
Pelletier Total										23,383	31,537
Pelletier Average										7,794	15,769
Settee	1960	648	525	-	-	77	25	345	1,118	1,070	1,668
Settee	1963	346	324	-	-	118	74	366	800	830	1,197
Settee	1965	4,570	5,469	65	195	828	248	5,650	10,143	11,113	16,055
Settee	1966	-	-	-	-	487	140	4,054	6,986	4,541	7,126
Settee	1967	4,198	2,915	-	-	51	7	420	583	4,669	3,505
Settee	1969	4,188	17,632	-	-	914	932	679	3,831	5,781	22,395
Settee Total										28,004	51,946
Settee Average										4,667	8,658
Split	1960	4,200	6,129	2,109	3,762	-	-	-	-	6,309	9,891
Split	1963	7,613	9,508	1,125	2,107	-	-	196	609	8,934	12,224

Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Split	1964	9,022	5,531	11,837	27,211	2,222	681	1,240	4,749	24,321	38,172
Split	1965	9,964	11,924	6,613	15,828	6,360	1,903	1,029	4,001	23,966	33,656
Split	1966	2,215	3,936	1,401	4,206	298	85	12	45	3,926	8,272
Split	1966	1,313	-	159	-	-	-	4	-	1,476	-
Split	1967	10,493	21,252	4,172	8,508	3,291	1,371	374	519	18,330	31,650
Split	1967	1,203	-	280	-	-	-	-	-	1,483	-
Split	1968	9,510	20,341	2,383	6,372	2,774	1,483	117	282	14,784	28,478
Split	1969	11,091	32,001	2,418	12,366	-	-	-	-	13,509	44,367
Split	1970	1,192	3,353	1,263	6,891	562	449	-	-	3,017	10,692
Split	1972	14,789	29,876	-	-	-	-	-	-	14,789	29,876
Split	1973	19,989	44,711	5,140	-	3,427	-	-	-	28,556	44,711
Split	1974	10,832	29,400	3,745	17,652	-	-	-	-	14,577	47,052
Split	1977	18,581	54,160	8,806	47,415	-	-	-	-	27,387	101,575
Split	1978	16,579	55,284	1,746	11,204	-	-	89	125	18,414	66,612
Split	1979	22,266	-	3,373	-	3,971	-	21	-	29,631	-
Split	1980	17,431	42,912	2,380	23,449	1	3	179	216	19,991	66,580
Split	1981	26,148	52,585	5,372	41,686	2,048	2,979	68	72	33,636	97,322
Split	1982	12,733	20,477	4,923	22,104	8,025	7,935	34	30	25,715	50,546
Split	1983	5,264	8,239	3,006	17,568	3,310	5,461	-	-	11,580	31,269
Split	1984	5,155	3,354	3,617	5,669	5,612	5,884	-	-	14,384	14,907
Split	1985	4,464	6,963	2,521	12,778	3,486	5,929	17	22	10,488	25,693
Split	1986	22,157	30,363	4,976	37,831	10,310	26,486	27	36	37,470	94,714
Split	1987	22,807	46,692	5,851	50,638	14,904	39,600	297	1,255	43,859	138,185
Split	1988	26,498	55,867	6,428	32,079	14,258	27,399	372	1,151	47,556	116,497
Split	1989	17,131	33,465	5,401	18,784	19,246	26,736	182	405	41,960	79,389
Split	1990	10,158	15,732	5,698	17,969	10,242	17,744	204	483	26,302	51,927
Split	1991	11,410	18,567	6,859	34,724	14,987	27,988	10,147	5,643	43,403	86,921
Split	1992	3,663	5,735	3,448	19,477	7,333	14,916	15	89	14,459	40,216
Split	1995	14,337	-	5,945	-	11,127	-	2,408	-	33,817	82,639
Split	1996	21,306	-	9,064	-	17,266	-	10,350	-	57,986	121,227
Split	1997	2,134	-	1,193	-	5,251	-	6,015	-	14,593	20,820
Split	1998	9,378	-	6,396	-	11,427	-	14,466	-	41,667	-



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Split	1998	2,156	-	258	-	4,123	-	1,923	-	8,460	107,412
Split	1999	12,679	-	4,852	-	10,291	-	14,742	-	42,564	83,859
Split	2000	12,383	-	5,786	-	10,387	-	10,445	-	39,001	92,900
Split	2001	10,236	-	17,609	-	14,932	-	8,866	-	51,643	178,838
Split	2002	12,571	-	16,596	-	13,514	-	11,711	-	54,392	177,721
Split	2003	6,038	-	10,843	-	16,209	-	12,240	-	45,330	101,780
Split	2004	7,145	-	12,327	-	21,301	-	5,303	-	46,076	105,474
Split	2005								0	0	0
Split	2006	10,163	-	12,999	-	17,347	-	5,601	-	46,110	104,723
Split	2007	7,498	-	7,870	-	19,444	-	5,501	-	40,313	76,409
Split	2008	5,851	-	1,738	-	5,881	-	1,248	-	14,718	27,710
Split Total										1,160,882	2,682,906
Split Average										26,384	67,073
Spence	1978	7	22	6	28	4,343	8,077	268	118	4,625	8,245
Spence	1979	-	-	-	-	235	450	-	-	235	450
Spence	1981	1	2	-	-	43	61	181	56	225	119
Spence	1982	0	-	-	-	2,319	3,199	689	215	3,008	3,414
Spence Total										8,092	12,228
Spence Average										2,023	3,057
Stephens	1980	1,191	2,280	1,740	16,682	357	732	852	2,654	4,140	22,348
Stephens	1993	256	396	102	512	48	42	-	-	406	950
Stephens	1994	20	20	77	410	-	-	-	-	97	430
Stephens Total										4,643	23,728
Stephens Average										1,548	7,909
Thomas	1965	6,661	-	1,008	-	427	-	-	-	8,096	54,937
Thomas	1965	2,806	9,444	1,660	13,945	358	235	342	1,535	5,166	25,158
Thomas	1966	6,021	4,324	87	185	152	44	-	-	6,260	4,552
Thomas	1967	8,537	5,927	-	-	-	-	-	-	8,537	5,927



Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Thomas Total										28,059	90,575
Thomas Average										7,015	22,644
War	1960	4,513	8,782	29	70	-	-	-	-	4,542	8,851
War	1961	3,450	5,522	-	-	-	-	-	-	3,450	5,522
War	1962	2,236	8,612	707	2,793	347	165	-	-	3,290	11,569
War	1964	86	357	152	815	104	192	-	-	342	1,363
War	1965	2,629	7,078	64	385	-	-	-	-	2,693	7,464
War	1966	136	782	-	-	-	-	-	-	136	782
War	1967	3,192	13,763	64	358	137	38	-	-	3,393	14,159
War	1968	1,909	5,105	196	629	173	162	-	-	2,278	5,895
War	1969	1,851	6,580	-	-	240	185	82	-	2,173	6,788
War	1970	2,853	10,238	46	258	39	28	-	-	2,938	10,524
War	1971	2,325	6,063	92	325	-	-	-	-	2,417	6,388
War	1972	1,634	3,310	72	326	83	47	-	-	1,789	3,683
War	1973	2,805	7,164	-	-	-	-	-	-	2,805	7,164
War	1975	218	633	7	36	21	32	-	-	246	701
War	1979	4,425	14,732	5	34	75	148	-	-	4,505	14,914
War	1980	3,222	8,476	20	197	114	195	-	-	3,356	8,868
War	1981	3,874	7,968	95	744	290	501	-	-	4,259	9,213
War	1982	97	159	19	86	24	21	-	-	140	266
War	1983	2,235	3,593	2	14	136	235	-	-	2,373	3,842
War	1984	2,514	5,345	83	439	50	93	-	-	2,647	5,877
War	1985	2,239	4,340	8	47	-	-	-	-	2,247	4,387
War	1985	216	-	-	-	-	-	-	-	216	-
War	1986	1,781	2,724	-	-	36	52	-	-	1,817	2,776
War	1988	1,448	3,129	4	18	370	677	-	-	1,822	3,824
War	1993	250	387	250	1,256	-	-	-	-	500	1,644
War Total										56,374	146,464
War Average										2,255	6,103

Waterbody	Year	Whitefish		Pickerel (Walleye)		Jackfish (Northern Pike)		Other		All Species	
		Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Total Paymt. (\$2008)	Marketed Weight (kg)	Value (\$ 2008)
Waskaiowaka	1960	151	98	2,954	4,789	-	-	73	119	3,178	5,007
Waskaiowaka	1961	475	609	5,606	10,770	-	-	254	733	6,335	12,112
Waskaiowaka	1965	26,712	15,984	4,844	11,594	370	111	380	682	32,306	28,371
Waskaiowaka	1966	21,182	-	1,392	-	1,227	-	21	-	23,822	-
Waskaiowaka	1966	3,086	18,756	427	5,438	1,126	1,647	-	-	4,639	25,840
Waskaiowaka	1967	15,720	-	2,026	-	-	-	6	-	17,752	-
Waskaiowaka	1967	1,084	21,075	34	2,965	14	4	-	8	1,132	24,052
Waskaiowaka	1968	23,676	12,660	3,099	7,458	-	-	-	-	26,775	20,118
Waskaiowaka	1969	20,868	59,529	1,934	9,768	-	-	-	-	22,802	69,297
Waskaiowaka	1970	19,897	-	1,407	-	1,378	-	7	-	22,689	-
Waskaiowaka	1970	7,462	50,003	629	10,400	2,443	2,398	8	39	10,542	62,840
Waskaiowaka	1971	9,331	-	894	-	2,997	-	5	-	13,227	-
Waskaiowaka	1971	82	-	-	-	-	-	-	-	82	-
Waskaiowaka	1972	3,150	3,830	130	588	516	299	-	-	3,796	4,718
Waskaiowaka Total										189,077	252,354
Waskaiowaka Average										13,506	28,039
Wernham	1965	1,177	704	-	-	462	138	-	-	1,639	842
Wernham Total										1,639	842
Totals Average (annual)		1,578,525		356,555		497,533		172,809		2,605,422	5,510,779
		6,048		1,366		1,906		662		9,982	22,772

* Total Payment is total of initial and final payments. Payments for post-1993 are not species specific. Average marketed weight (n=261). Average value calculated by total payments / number payments which are not null (n=242). Values are indexed to 2008 equivalent dollars.

APPENDIX 1B

Comparison of Fishing Frequency by Lake in Pre- and Post-1997 Periods

Lake	Frequency of fishing pre-1997 (1960-1996) n=36 years		Frequency of fishing in 1997 and later (1997-2008) n=12 years	
		%		%
Assean Lake	14	39%	5	42%
Atkinson (Fox)	25	69%	0	0%
Billard	7	19%	0	0%
Bradshaw	3	8%	0	0%
Buckland	11	31%	0	0%
Butnau	4	11%	0	0%
Caldwell	3	8%	0	0%
Campbell	3	8%	0	0%
Christie	4	11%	0	0%
Cygnets	1	3%	0	0%
Dafoe	18	50%	0	0%
Fidler	17	47%	0	0%
Gull Lake	1	3%	0	0%
Handle	2	6%	0	0%
Holmes-Thomas	10	28%	0	0%
Kiask	4	11%	0	0%
Limestone	2	6%	0	0%
Little Cygnets	2	6%	0	0%
Moose and Stephens	9	25%	0	0%
Moose Nose	10	28%	0	0%
Moose Nose	2	6%	0	0%
Pelletier	3	8%	0	0%
Settee	6	17%	0	0%
Split Lake	32	89%	11	92%
Spence	4	11%	0	0%
Stephens	3	8%	0	0%
Thomas	4	11%	0	0%
War	25	69%	0	0%
Waskaiowaka	14	39%	0	0%
Wernham	1	3%	0	0%
Average	8.1	23%	0.5	4%

APPENDIX 1C

Composite Timber Dues Tables

Table 1C-1: Manitoba Crown Timber Dues for FMU 86 FOR February 2012

Commodity	Short Distance Dues Rate (\$/m³)	Medium Distance Dues Rate (\$/m³)	Long Distance Dues Rate (\$/m³)
Softwood Lumber	\$1.75	\$1.40	\$1.15
Kraft	\$2.92	\$2.12	\$1.34
Newsprint	\$1.75	\$1.40	\$1.15
OSB	\$1.75	\$1.40	\$1.15

Table 1C-2: Other Commodities and Species (April 1, 2010-March 31, 2011)

Other Commodities and Species	Short Distance Dues Rate (\$/m³)	Medium Distance Dues Rate (\$/m³)	Long Distance Dues Rate (\$/m³)
Post and Rails (any species)	\$1.40	N/A	N/A
Hardwood lumber	\$1.75	\$1.40	\$1.15
Tamarack used for any commodity or product	\$1.75	\$1.40	\$1.15
Fuelwood	\$1.75	N/A	N/A
Bio-product	\$1.75	N/A	N/A

The Crown timber dues listed in the above tables have been extracted from the Manitoba Conservation and Water Stewardship website (Manitoba, Government of 2011) and reflect the February 2011 timber dues rates applied to forest products. The rates reflect the influence of the markets' product price index.

Dues rates may change monthly as they are based on commodity prices. Since the commodity value cannot be predicted for the time of clearing nor the product or facility that may process the wood (*i.e.*, kraft mill or private lumber mill) the base rate of \$1.15/m³ is used in this valuation process. This was done in consultation with Manitoba Conservation, Forestry Branch (Epp. *pers. comm.* 2011).

The composite dues rates presented in Table 1C-3 have been developed for the application of the Forest Damage Appraisal and Valuation Policy for Crown standing timber estimated within the Project Footprint (Government of Manitoba 2002).

Table 1C-3: FDA&V Composite Dues Rates for FMU 86

FMU	Softwood Lumber Base Rate	Kraft Base Rate	OSB Base Rate	Hardwood Lumber Base Rate	Larch Cedar Base Rate	Softwood Composite Rate	Hardwood Composite Rate
86	\$1.15	\$1.15	\$1.15	\$1.15	\$1.75	\$1.15	\$1.15

Source: Manitoba, Government of, "2010-2011 Timber Dues Tables-Base Rate" 2011

The rationale for developing the composite dues rates for all softwood and hardwood products, presented in Table 1C-3 lies in the current timber pricing methodology, the uncertainty of predicting the end use of the timber harvested and the influence of a product's timber price index on the dues rate at any point in time in the future. The timber price index is reviewed monthly and timber dues rates are adjusted to reflect market conditions. The distance of the Project from commercial timber processing facilities renders the possibility of salvaging timber, on an economic basis from the Project site, a remote possibility. In addition, the depressed economic conditions within the forest industry since 2007 are projected to remain soft well into the future. However, the demand for softwood timber by the Kraft Mill in The Pas has remained stable.

The composite dues rates, presented in Table 1C-3 for softwood and hardwood, was not developed to reflect the influence of mill demand, distance from mills and market price index on viable market alternatives of the timber harvested. The rates have been developed, in consultation with Manitoba Conservation and Water Stewardship (Epp, Thorpe and Swanson, *pers. comm.* 2011), and along with the estimates of volume, are only approximations. Final dues valuation may occur after the entire Project Footprint has been cleared when volume, product and current market price index can be accurately assessed.

APPENDIX 1D

Forest Damage Appraisal & Valuation Determination

Table 1D-1: Project Footprint Productive Forestland within the CFZ by Covertypes

Covertypes (Ha)				Total (Ha)
S	H	M	N	
754.3	0.0	5.4	23.3	783.0

Notes:
S- Softwood, H- Hardwood, M- Softwood mixed wood, N- Hardwood mixed wood

Table 1D-2: Project Footprint Gross Merchantable Volume (m³) within the CFZ Subject to Valuation

Softwood	Hardwood	Total
40,858.9	5,293.0	46,151.9

Notes:
Project Footprint falls entirely within open Crown land (ownership code =1)

Table 1D-3: Project Footprint Gross Merchantable Volume Valuation (\$)

Softwood	Hardwood	Total
46,987.71	6,086.98	53,074.69

Notes:
Based on timber dues as per Table 1C-1, Appendix 1C

Table 1D-4: Project Footprint within CFZ Forest Renewal Charge Valuation (\$)

Softwood	Hardwood	Total
234,938.57	2,646.52	237,585.09

Notes:
Based on 2009 Softwood forest renewal charge of \$5.75/m³.

Table 1D-5: Project Footprint within the CFZ Fire Protection Cost Valuation (\$)

Softwood	Hardwood	Total
6,894.36	457.61	7,351.97

Notes:
Based on Forest Protection Charge of \$0.17/m³.

Table 1D-6: Crown Land Forest Damage Appraisal and Valuation Summary

Total Area (ha)	Total Softwood (m³)	Total Hardwood (m³)	Soft-wood Dues (\$)	Hard-wood Dues (\$)	FRC Charge (\$)	FP Charge (\$)	Total Valuation (\$)
783	40,858.9	5,293.0	46,987.71	6,086.98	237,585.09	7,351.97	298,011.75

Notes:
FRC- Forest Renewal Charge; FP- Forest Protection Charge

APPENDIX 1E

Potential Salvageable Stands within the Project Footprint

Table 1E-1: Potentially Salvageable Timber within the Project Footprint in the Non-Commercial Forest Zone (Construction Phase)

Vegetation_ Composition	FRI_Type Aggregate	Volume /ha (m ³)			Total Volume (m ³)	
		Softwood	Hardwood	Area (ha)	Softwood	Hardwood
BS10	13134	70.9466	3.4108	163.7	11616	558
BS6TA4	51134	21.659	34.6309	1.6	35	56
BS6TA4	51134	21.659	34.6309	0.6	13	20
BS6TL4	16234	43.1427	2.7758	0.3	11	1
BS7JP3	14134	83.6889	9.2505	3.6	304	34
BS7TL3	16134	52.2341	8.937	4.8	253	43
BS7WB2TA1	53134	62.1419	24.7606	3.6	222	89
BS8JP2	13134	70.9466	3.4108	144.4	10242	492
BS8TA1WB1	13134	70.9466	3.4108	3.2	224	11
BS8TA2	13134	70.9466	3.4108	1.4	103	5
BS8WB1TA1	13134	70.9466	3.4108	8.8	623	30
BS9JP1	13134	70.9466	3.4108	4.3	305	15
BS9TA1	13134	70.9466	3.4108	23.6	1673	80
BS9WB1	13134	70.9466	3.4108	0.6	39	2
JP4BS3TA3	6134	73.1701	8.3623	0.4	30	3
JP4TA3BS2WB1	6134	73.1701	8.3623	6.7	488	56
JP6TA2BS2	6134	73.1701	8.3623	1.4	105	12
JP7BS3	6134	73.1701	8.3623	1.3	98	11
JP8BS2	4134	69.7614	5.1674	7.1	495	37
JP9BS1	4134	69.7614	5.1674	0.2	14	1
TA3JP3WB2BS2	81134	42.2677	55.691	2.0	84	111
TA3WB3JP2BS2	81134	42.2677	55.691	3.5	148	195
TA5BS5	82134	24.5266	55.3449	5.8	142	321
TA5WB3BS2	90134	11.3498	77.0825	9.1	104	704
TA6WB2JP1BS1	90134	11.3498	77.0825	8.9	101	683
TA6WB3BA1	90134	11.3498	77.0825	1.5	17	114
TA6WB3BS1	90134	11.3498	77.0825	15.2	173	1173
TA8WB2/ TS	90134	11.3498	77.0825	0.2	2	14
TA9BS1	90134	11.3498	77.0825	1.1	13	87
WB5JP4BS1	86134	22.5747	40.5295	28.0	633	1136
WB6TA3BS1	92134	11.3498	77.0825	6.9	78	530
WB8BS2	92134	11.3498	77.0825	2.4	27	182
WB8TA2	92134	11.3498	77.0825	7.1	80	546
Total				473.2	28493	7350

Notes:

ha=hectares

Table 1E-2: Standing Timber Volume Affected during the Construction Phase of the Project

Cutting Class	Working Group	Cover Type			Total (m ³)
		M	N	S	
0	Softwood	0.0	0.0	0.0	0.0
0	Hardwood	0.0	0.0	0.0	0.0
1	Softwood	1.1	258.8	10338.9	10598.7
1	Hardwood	0.1	686.6	999.7	1686.4
2	Softwood	0.0	0.0	8484.7	8484.7
2	Hardwood	0.0	0.0	615.4	615.4
3	Softwood	84.1	289.3	11819.5	12193.0
3	Hardwood	45.0	767.7	965.9	1778.6
4	Softwood	162.6	267.7	6645.3	7075.5
4	Hardwood	70.9	421.8	322.0	814.6
5	Softwood	0.0	0.0	0.0	0.0
5	Hardwood	0.0	0.0	0.0	0.0
Softwood Total		247.7	815.8	37288.4	38351.9
Hardwood Total		116.0	1876.0	2902.9	4895.0
Grand Total		363.8	2691.8	40191.3	43246.9

Notes:

M= softwood mixedwood; N= hardwood mixedwood; S= softwood

Table 1E-3: Standing Timber Volume Affected during the Operations Phase of the Project

Cutting Class	Working Group	Cover Type			Total (m ³)
		M	N	S	
0	Softwood	0.0	0.0	0.0	0.0
0	Hardwood	0.0	0.0	0.0	0.0
1	Softwood	0.0	0.0	1158.4	1158.4
1	Hardwood	0.0	0.0	122.8	122.8
2	Softwood	0.0	0.0	88.7	88.7
2	Hardwood	0.0	0.0	4.4	4.4
3	Softwood	0.0	35.0	699.8	734.8
3	Hardwood	0.0	92.9	51.7	144.5
4	Softwood	51.6	53.5	419.9	525.0
4	Hardwood	22.1	84.3	19.9	126.4
5	Softwood	0.0	0.0	0.0	0.0
5	Hardwood	0.0	0.0	0.0	0.0
Softwood Total		51.6	88.5	2366.8	2506.9
Hardwood Total		22.1	177.2	198.8	398.1
Grand Total		73.8	265.7	2565.5	2905.0

Notes:

M= softwood mixedwood; N= hardwood mixedwood; S= softwood

Table 1E-4: Standing Timber Volume Affected during the Construction and Operations Phase of the Project

Cutting Class	Working Group	Cover Type			Total (m ³)
		M	N	S	
0	Softwood	0.0	0.0	0.0	0.0
0	Hardwood	0.0	0.0	0.0	0.0
1	Softwood	1.1	258.8	11497.3	11757.1
1	Hardwood	0.1	686.6	1122.5	1809.2
2	Softwood	0.0	0.0	8573.4	8573.4
2	Hardwood	0.0	0.0	619.8	619.8
3	Softwood	84.1	324.3	12519.3	12927.8
3	Hardwood	45.0	860.5	1017.5	1923.1
4	Softwood	214.2	321.2	7065.2	7600.6
4	Hardwood	93.0	506.1	341.9	941.0
5	Softwood	0.0	0.0	0.0	0.0
5	Hardwood	0.0	0.0	0.0	0.0
Softwood Total		299.4	904.3	39655.2	40858.9
Hardwood Total		138.2	2053.2	3101.7	5293.0
Grand Total		437.6	2957.5	42756.9	46151.9

Notes:

M= softwood mixedwood; N= hardwood mixedwood; S= softwood