



Keeyask Generation Project Environmental Impact Statement

Supporting Volume Aquatic Environment



June 2012

GLOSSARY



AQUATIC ENVIRONMENT
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Aesthetics: Water quality guidelines that address parameters (*e.g.*, taste, odour and, colour) which may affect consumer acceptance of drinking water.

Axial: Musculature of the trunk and the tail.

Bayline: Refers to communities along the Hudson Bay railroad from Thompson to Churchill.

Bioaccumulation: The accumulation of substances, such as methylmercury, in an organism or part of an organism. Bioaccumulation occurs when a substance is absorbed by an organism at a greater rate than it is lost.

Buffer: An ionic compound that resists changes in its pH (*e.g.*, the buffering capacity of a lake or river).

Carbonaceous biochemical oxygen demand (CBOD): A method-defined test measured by the depletion of dissolved oxygen by biological organisms in a body of water in which the contribution from nitrogenous bacteria has been suppressed.

Catch-per-unit-effort (CPUE): The number or weight of fish caught in a given time period with a specific equipment.

Cestode: A tapeworm.

Chelating: Removing a heavy metal (*e.g.*, lead or mercury) by means of a chelate (a chemical compound in the form of a heterocyclic ring, containing a metal ion attached by coordinate bonds to at least two nonmetal ions).

Condition factor (K): A relationship between length and weight ($\text{fork length} \times 10^5 \div \text{weight}^3$) that can be used to compare the relative condition of a particular species of fish in different bodies of water and within the same body over time.

DELT: 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 a structure due to injury or disease, not including injuries due to predation or fishing), and Tumours (abnormal benign or malignant mass of tissue that does not arise from inflammation) in fish.

Dressed weight: The weight of the carcass of a fish or other animal being prepared for use as meat.

Dystrophic: Acidic, shallow bodies of water that contain large amounts of humus and/or other organic matter; contains many plants but few fish.

Entrainment: Fish (larval or adult) that are drawn into a current and cannot escape.

Epaxial: Dorsal (towards the top fin) trunk muscles.

Epilimnetic: In the water near the surface of a stratified waterbody that normally has high temperatures and oxygen concentrations.

Fetch: Length of water surface exposed to wind during generation of waves.

Fibric peat (Of): Organic soils consisting predominantly of relatively undecomposed plant material, such as sphagnum mosses, with clearly visible plant fragments.

Fulvic acid: A type of humic acid of lower molecular weight and higher oxygen content than other humic acids.

Glaciofluvial: Pertaining to streams fed by melting glaciers, or to the deposits and landforms produced by such streams.

Glaciolacustrine: Pertaining to lakes fed by melting glaciers, or to the deposits forming therein.

Glaciomarine sediments: Materials that are deposited on the sea floor by glacial meltwater.

Gustatory: Relating to taste.

Habitat suitability index (HSI): A numerical index ranging from 0 to 1 representing the capacity of a given habitat to support a selected species. A value of 1 represents optimal conditions for that species while a value of 0 represents unsuitable conditions. HSI models are based on hypothesized species-habitat relationships rather than statements of proven cause and effect relationships. Such models serve as a basis for improved decision-making and increased understanding of species-habitat relationships.

Heterocercal: A caudal fin in which the body extends into at least the base of the upper lobe. Usually, the tail is externally asymmetrical, with the upper lobe longer than the lower lobe (*e.g.*, lake sturgeon).

Humic peat (Oh): Partly or wholly decomposed vegetable matter; humic gleysol soils have a dark-coloured (organic enriched) A horizon.

Hydraulic Zone of Influence (HZI): Reach of river over which water levels and water level fluctuations caused by the operation of a particular project are measureable within the accuracy required for operation and licence compliance.

Impingement: The process whereby a fish (larval or adult) comes into contact with an object (*e.g.*, a screen) and is unable to free itself.

Intermittently-exposed zone (IEZ): The zone that is routinely dewatered downstream of a generating station (*i.e.*, within the 5th and 95th percentile flows).

Labile: Unstable, fluctuating.

Lentic: Pertaining to very slow moving or standing water, as in lakes or ponds.

Limnocorral: A method for performing *in situ* experiments in lakes. Typically consists of a large (several metres), flexible plastic tube that extends from the surface to the bottom of a body of water, is anchored in place and sealed at the bottom to prevent seepage. Isolated samples of water organisms can then be taken from within the limnocorral.

Lotic: Pertaining to moving water.

Lowest effect level (LEL): The lowest level of a stressor that causes statistically and biologically significant differences in test samples as compared to other samples subjected to no stressor.

Meiofauna: The component of the fauna of a river or lake bed comprising small (but not microscopic) animals, such as tiny worms and crustaceans.

Mesic peat (Om): Organic soils that are more highly decomposed and contain less fibrous material than fibrisols/fibric peat.

Methylation: The addition of a methyl group to a metal or organic compound (*e.g.*, conversion of inorganic mercury to methylmercury); in the natural environment, this occurs most often by microbial action.

Nephelometric: Of or pertaining to nephelometry – the measurement of the concentration of a solution, suspension or dispersion based upon its light-scattering properties.

Off-system: Waterbody or waterway outside of the Nelson River hydraulic zone of influence.

Peatland disintegration: Processes related to flooded peat resurfacing; breakdown of non-flooded and resurfaced peatlands and peat mats; and peat formation on peatlands and peat mats and have hydrological connections to a regulated area.

Physiographic: Pertaining to physical features of the surface of the Earth.

Plerocercoid: The infective, immature life cycle stage of some tapeworms.

Probable effect level (PEL): A chemical concentration (*i.e.* dose) in some item that is ingested by an organism, which is likely to cause an adverse effect. The ingested item is usually food, but can be soil, sediment, or surface water that is incidentally (accidentally) ingested.

Project: Keeyask Generation Project.

Proxy: A measured variable used to infer the value of a variable of interest.

Recalcitrant: Resistant.

Recruitment: The number of new juvenile fish reaching a size/age where they represent a viable target for the commercial, subsistence or sport fishery for a given species.

Residence time(s): The time required for a ‘parcel’ of water to flow through a lake. It generally describes the relationship between the size (or volume) of a lake and the streams or rivers that flow into it.

Sediment oxygen demand (SOD): The dissolved oxygen demand from the sediments or substrate of lakes and rivers.

Senescence: The organic process of growing older and showing the effects of increasing age.

Severe effect level (SEL): The concentration or amount of a substance found by experiment or observation that causes severe adverse alteration of morphology, function, capacity, growth, development, or life span of a target organism distinguished from normal organisms of the same species under defined conditions of exposure.

Staging: The tendency of migratory organisms to stop temporarily (stage) at a site during migration; staging areas are stop-over sites where, for example, fish will rest and occasionally forage in preparation for imminent spawning.

Study Area: The geographic limits within which effects on a VEC (valued environmental component) or key topic is assessed.

Sub-adult: For purposes of the EIS, a fish that is older than one year but has not reached sexual maturity. Lake sturgeon sub-adults measured between 200 and 833 mm long (fork length) based on sexual maturity data collected during the spawning season from a well-studied lake sturgeon population on the lower Nelson River.

Thalweg: The deepest part of the channel of a river or stream.

Valued environmental component (VEC): 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 based on cultural values or scientific concern.

Weighted usable area (WUA): The product of an area of habitat multiplied by its habitat suitability index. Weighted usable area combines elements of habitat quantity and habitat quality. A large area of low-quality habitat can produce the same weighted usable area as a small amount of high-quality habitat. Different estimates of weighted usable area can be obtained depending on the ranges of suitability index values used to define varying levels of suitability (*i.e.*, unsuitable, low suitability, moderate suitability, high suitability, *etc.*).