GLOSSARY

Abundance: This term expresses the number of individuals of a plant species and their coverage in a phytosociological survey; it is based on the coverage of individuals for classes with a coverage higher than 5% and on the abundance for classes with a lower percentage.

Aboriginal Community: A community where most of the residents are Aboriginal (i.e., Indian, Métis or Inuit) and that has a separate form of government, provides some level of service to its residents, and has clear community boundaries.

Aboriginal Peoples: Individuals who are Aboriginal (i.e., Indian, Inuit or Métis)

Aboriginal Traditional Knowledge (ATK): Knowledge that is held by and unique to Aboriginal peoples. It is a living body 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. The term Traditional Ecological Knowledge (TEK) is often used interchangeably with the term ATK. However, TEK is generally considered to be a subset of ATK that is primarily concerned with knowledge about the environment (Also see TEK).

Access Road: A road that affords access into and out of a "construction" area.

Access Trail: A trail that affords access into and out of a "construction" area.

Access: The ability to enter an area or reach a particular location.

Active Layer: The top layer of soil in a permafrost zone, subjected to seasonal freezing and thawing which during the melt season becomes very mobile.

Activity: Activity in relation to a project means actions carried out for construction, operation and eventual decommissioning; and in relation to human presence, actions carried out for domestic and commercial purposes including hunting, fishing, trapping, forestry, mining etc.

Adaptation: refers to any activity that reduces the negative impacts of climate change and/or positions us to take advantage of new opportunities that may be presented. Adaptation is needed to address the challenges of climate change, and represents a necessary complement to mitigation. Adaptation strives to alleviate current climate change impacts, reduce sensitivity and exposure to climate-related hazards, and increase resilience to climatic and non-climatic stressors (i.e. an increase in adaptive capacity) (Natural Resources Canada, 2007).

Adaptive Capacity: The potential, capability or ability of a system to adapt to climate change stimuli or their effects or impacts. "System" is a broad term and could refer to a region, community, economic sector, institution, and/or private business. Therefore, adaptive capacity is difficult to measure, and while adaptive capacity is most meaningful as a local characteristic, data availability frequently means that it can only be assessed at the national or regional level (Natural Resources Canada, 2007).

Adaptive Management: The implementation of new or modified mitigation measures over the construction and operation phases of a project to address unanticipated environmental effects. The need for the implementation of adaptive management measures may be determined through an effective follow-up program.

Adverse Effects: Negative effects on the environment and people that may result from a proposed project.

Aerial Spray Applicator: Is an agricultural aircraft used for the purpose of spraying pesticides and fertilizers on crops from the air. Often called 'crop dusting'.

Aesthetics: Characteristics relating to the appearance or attractiveness of something.

Afforestation – The establishment of a forest or stand of trees by sowing, planting or natural regeneration on an area not previously forested, or in areas where forests were cleared long ago and other land-use patterns have dominated the landscape for many generations (Dunster et al, 1996).

Aggregate: Soil aggregate consisting of two or more soil particles bound together by various forces.

Agromyzids: Flies from the family Agromyzidae, also referred to as the leaf miner flies. Small to very small flies, usually blackish or yellowish. Leaf miner flies are common insects usually occurring on vegetation. Larvae are mostly leaf miners and generally make a narrow winding mine; some feed in stems and seeds (Borror and White, 1970).

Air Ions: An ion comprised of molecules or molecular clusters bound together by charge. Mobilities are in the range of 10-5m2/Vs to 2 x 10-4m2/Vs. Typical radius is less than 1 x 10-9m (IEEE Std. 1227, 1990).

Alignment: The vertical and/or horizontal route or direction of a linear physical feature**.**

Alluvial: Pertaining to materials (e.g., clay, silt, sand, and gravel) deposited by running water, including the sediments laid down in riverbeds, floodplains, lakes and estuaries.

Alluvium: A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi sorted sediment in the bed of the stream or on it's floodplain or delta, as a cone or fan at the base of a mountain slope. Sediment deposited by flowing water, as in a riverbed, flood plain or delta.

Alternating Current (ac): Is the oscillating (back and forth) flow of electrical current, whereas dc (direct current) is the unidirectional continuous flow of electrical current. AC is the common household electrical current and is used in transmission lines; DC is the form of current produced by battery (e.g., in a flashlight). High Voltage DC (HVdc) transmission is used in Manitoba for some transmission facilities (e.g., between Limestone Generating Station and Winnipeg).

Alternative means of carrying out a project: The various technically and economically feasible ways, other than the proposed way, for a project to be implemented or carried out. Examples include other project locations, different routes and methods of development, and alternative methods of project implementation or mitigation.

Alternative Routes: Options for routing transmission lines which are identified as part of the Site Selection and Environmental Assessment process.

Alternatives to a project: The functionally different ways, other than a proposed project, to meet the project need and achieve the intended purpose. For example, if a need for greater power generation has been identified, a proposed project might be to build a new power generation facility. An alternative to that project might be to increase the generation capacity of an existing facility.

Aluminum Conductor Steel Reinforced (ASCR): A type of phase conductor used in a three phase ac circuit.

Aluminium Conductor Steel Reinforced (ACSR): A type of transmission cable or conductor.

Ampere (A or amp): The unit of measurement of electric current.

Amphibian: Cold-blooded animal of the Class Amphibia that typically lives on land but breeds in water (e.g., frogs, toads, salamanders).

Anchor: A foundation arrangement used to secure the guy wires supporting a transmission tower to the ground.

Angiosperm: A seed borne in a vessel (carpel); thus one of a group of plants whose seeds are borne with a mature ovary or fruit.

Angle Tower: A specifically designed structure needed whenever a transmission line changes direction.

Annual Herb: An herb that lives and grows in a single season.

Anode Grade Coke Bed: A relatively pure carbon bed used for electrode assembly and installation.

Anothomyiids: Flies from the family Anthomyiidae. This is a large group that includes many common flies. Most are similar to a House Fly in general appearance and vary from being smaller to larger than a House Fly. Larval habits vary: many are plant feeders, and some of these are serious pests of cultivated plants; many are scavengers, living in excrement or decaying materials; some are aquatic (Borror and White, 1970).

Anoxic: Deficient in oxygen.

Anthropogenic: A descriptive term used to identify different aspects of nature that have been influenced by human activity or activities (Wildlife Resources Consulting Services, 2011).

Anuran species: Any of several tailless frogs and toads, of the order Anura, with long hind legs.

Aquatic peatland: A peatland adjacent to a water body or waterway. The peat adjacent to the water's edge is usually floating.

Aquifer: A body of rock or sediment that is sufficiently porous and permeable to store, transmit, and yield significant or economic quantities of groundwater to wells and springs.

Aquitard: A confining bed and/or formation composed of rock or sediment that retards but does not prevent the flow of water to or from an adjacent aquifer. It does not readily yield water to wells or springs, but stores ground water.

Archean (Archaic): A term used in Manitoba archaeology which refers to a specific cultural period (ca. 7000 B.P.). A geologic eon (time unit) before the Paleoproterozoic Era of the Proterozoic Eon, before 2.5 Ga (billion years, or 2,500 Ma) ago. The main technological marker that is left in the archaeological record is the atlatl, or spear-thrower.

Arden Ridge: A long narrow elevated ridge with steep slopes and a more or less continuous crest; located near the community of Arden, Manitoba.

Artesian Aquifer: A body of rock or sediment containing groundwater that is under greater than hydrostatic pressure: that is, a confined aquifer. When an artesian aquifer is penetrated by a well, the water level will rise above the top of the aquifer.

Atmosphere-Ocean Global Circulation Model (AOGCM): A form of Global Climate Models (GCM) that can be coupled with land-focused GCM's to provide a greater variety of options in predicting change.

Audible Noise (AN): The measure of noise emanating from a source in an audible frequency. Usually measured in dBA.

Azonal: Soil without distinct genetic horizons.

Basal Treatment: Refers to the application of herbicide to the lower portion of individual woody plants or stems.

Baseline environment: A description of the environmental conditions at and surrounding a proposed action.

Bedrock: The solid rock that lies beneath the soil and other loose material on the Earth's surface.

Benthic Invertebrates: Small animals (without backbones) that live on or in the bottom of waterbodies (e.g., insect larvae, clams).

Berm: An artificial ridge or embankment used to stop vehicle traffic or to block line of sight.

Biological Control: Limiting the growth or numbers of pests such as insects and weeds using natural means or chemicals.

Biological diversity (Canada): Means the variability among living organisms from all sources, including, without limiting the generality of the foregoing, terrestrial and marine and other aquatic ecosystems and the ecological complexes of which they form a part and includes the diversity within and between species and of ecosystems (Department of Justice, 2011b).

Biological diversity (Manitoba): Means the variability among all living organisms and the ecological complexes of which they are part, including diversity within and among species and among ecosystems.

Biological Oxygen Demand (BOD): The uptake rate of dissolved oxygen by the biological organisms in a body of water (Wikipedia, 2011b)

Biome: A large natural area characterized by its dominant forms of vegetation, physical geography and their associated animal life forms. This is largely a reflection of the dominant climate and soils of the region (Wildlife Resources Consulting Services, 2011).

Bipole: In the HVdc transmission context, a transmission system consisting of a transmission line and converter facilities, and comprising both a positively and a negatively energized pole.

Blanket bog: A peatland with an organic layer that is between one and two metres thick.

Blasting: The act of causing an explosion, consisting of a wave of increased atmospheric pressure followed immediately by a wave of decreased pressure

Bog: 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. (Dunster et al, 1996).

Bog Basins: A peatland where vegetation receives nutrient inputs from precipitation only. Peat mosses (Sphagnum species) are the dominant peat forming vegetation in bogs.

Boreal: Pertaining to the north; a climate and ecological zone that occurs south of the subarctic, but north of the temperature hardwood forests of eastern North America, the parkland of the Great Plains region, and the montane forests of the Canadian cordillera.

Boreal Shield Ecozone: As classified by Environment Canada; an ecological land classification consisting predominantly of boreal forest on soils overlying Precambrian shield rock. It extends as a wide band from the Peace River area of British Columbia in the northwest to the southeast corner of Manitoba.

Borrow Area Zone: An area representing the originally anticipated extent of potential borrow area use at the time the quantitative habitat effects assessment was completed.

Borrow pits: The hole left by the removal of material (usually sand or gravel) for construction purposes.

Boulder lag: An accumulation of boulders remaining on a surface after finer materials and smaller rocks have been removed by wind or water.

Broadleaf: Refers to perennial plants from which the leaves abscise and fall off at the end of the growing season.

Brunisolic: An order of soils in which the horizons are developed sufficiently to exclude them from the Regosolic order but lack the degrees or kinds of horizon

development specified for soils of the other orders. These soils which occur under a wide variety of climatic and vegetative conditions all have Bm or Btj horizons.

Brunisols: Soils of the Brunisolic order have sufficient development to exclude the soils from the Regosolic order, but lack the degrees or kinds of horizon development specified for soils of the other orders. The central concept of the order is that of soils formed under forest and having brownish coloured Bm horizons and/or various colours with both Ae horizons and B horizons having slight accumulations of either clay, or amorphous aluminum and iron compounds, or both.

Buffer Zone: 1) An area that protects or educes impacts to a natural resource from human activity; 2) A strip of land along roads, trails or waterways that is generally maintained to enhance aesthetic values or ecosystem integrity.

Buffer: An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

Built-up Area: An area characterized by residential, commercial and/or industrial development including roads, infrastructure, services, etc.

Burning: The act of setting something on fire.

Burntwood Nelson Agreement (BNA): Sets out hiring preferences for the Wuskwatim Generating Project. It includes priority for northern Aboriginal residents, as well as procedures for adjusting wages and certain benefits during the life of the agreement. The agreement also contains provisions relating to the recruitment, referral, placement, training and retention of northern Aboriginal people and facilitates the hiring of northern Aboriginal people by northern Aboriginal businesses.

Calcareous: Composed of, containing or resembling calcium carbonate, calcite or chalk. Calcareous soils containing sufficient calcium carbonate, often with magnesium carbonate, to effervesce visibly when treated with cold 0.1 N hydrochloric acid.

Campbell Beach Ridge: An extensive sand and gravel ridge, most evident in south-western Manitoba that was once the eastern and western shores of Lake Agassiz (ca.11, 100-10,900) (Northern Lights Heritage Services, 2011).

Canadian Shield: The wide area of Precambrian bedrock extending over most of central and eastern Canada.

Canadian Standards Association (CSA): Organization that sets standards and criteria for operation of the project.

Canopy: The more or less continuous cover of branches and foliage formed by the crowns of trees.

Canopy Closure: The degree of canopy cover relative to openings.

Carbonate: A rock made up primarily of carbonate minerals (minerals containing the CO_3 anionic structure).

Carbonate-evaporite: A sedimentary rock that consists of carbonate minerals formed as precipitates from the evaporation of a saline solution, such as saltwater.

Cataclastic: The structure produced in a rock by the actions of severe mechanical stresses that occur during metamorphic rock formation.

Centimeter (cm): A unit of length; 1 cm = 0.01 metre.

Certified Forest Area: Forested areas that are managed in a sustainable fashion based on responsible forest practices and standards.

CF Method: Change Factor method is a simple algorithm that allows for the downscaling of GCM's to a regional level. They should be used for broad-brush, high-level assessment and identification of vulnerable regions.

Charged Aerosols: A gaseous suspension of fine solid or liquid particles with a positive or negative electric charge.

Chernozemic: An order of soils that have developed under xerophytic or mesophytic grasses and forbs or under grassland-forest transition vegetation in cool to cold subarid to subhumid climates. The soils have a dark-colored surface (Ah or Ahe or Ap) horizon and a B or C horizon, or both, of high base saturation. The order consists of Brown, Dark Brown, Black, and Dark Grey great groups

Chernozems: Is a soil common to grassland ecosystems. This soil is dark in color (brown to black) and has an A horizon that is rich in organic matter. Chernozems are common in the Canadian prairies.

Circuit (Electric): The complete path of an electric current or a distinct segment of it (Dictionary.com, 2011b). In the transmission context, circuit refers to the three conductors that transmit the electricity between station terminals. Transmission lines and structures may carry one or more circuits.

Circuit Breaker: Mechanical switching device capable of making, carrying, and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal conditions such as those of a short circuit.

Cladina: A type of ground lichen commonly known as a reindeer lichen within the Family Cladoniaceae that is found in the Boreal Forest of Canada.

Classification: The systematic grouping and organization of objects, usually in a hierarchical manner.

Cleaning Up: The act of collecting and removing equipment, materials, wastes, etc from a "construction" area.

Clearing: The act of cutting and removing trees from a "construction" area. Trees may be cut by machine or hand methods.

Clear-Span Bridge: Small-scale bridge structure that completely spans a watercourse without altering the stream bed or bank, and that are a maximum of two lanes wide. The bridge structure (including bridge approaches, abutments, footings, and armouring) is built entirely above the high water mark.

Climate Change: Is a long-term change in the statistical distribution of weather patterns over periods of time that range from decades to centuries. It includes changes in the average weather conditions or a change in the distribution of weather events with respect to an average, such as the amount and frequency of extreme weather events. Climate change is arguably due to both natural causes (i.e. natural processes of the climate system) as well as human-based environmental impacts (ex. increase in concentrations of greenhouse gases) (Natural Resources Canada, 2007).

Climate Variability: A deviation of the usual (such as the single occurrence of an extreme weather event over a given period of time). Climate variability can be thought of as a short term weather fluctuation superimposed on top of the long term climate change or trend. Cycles of extreme weather events (drought, floods) are not climate change unless prolonged over many decades. Climate variability can vary from relatively rare climate events, to frequent climate events. Low frequency variability refers to phenomena such as El Niño which occur every ten years or longer. High frequency variability refers to meteorological events and their distribution (for example, frequency, duration and intensity) at yearly, seasonal or monthly timescales.

Climax species: Tree species that are present in a forest reaching maturity (in the final stage of succession). These trees come in after the pioneer species and shade out the earlier species.

Closed Stands: See definition for closed and stands.

Closed: Refers to canopy closure. The closure of canopy cover relative to openings.

Cluster Analysis: A multidimensional statistical technique used to group samples according to their degree of similarity.

Coleoptera: An order of insects that comprises the beetles (including weevils), forming the largest order of animals on the earth. The Coleoptera includes many commonly encountered insects such as ladybird beetles (family Coccinellidae), click beetles (Elateridae), scarabs (Scarabaeidae), and fireflies (Lampyridae).

Collective Bargaining Agreement (CBA): Work at the Keewatinoow site will be covered by a collective bargaining agreement (CBA), which is intended to ensure labour stability (i.e. no strikes or lock-outs during construction) and provide cost-competitive wages and benefits. All jobs filled through the job order process will be covered by this agreement which, among other things, sets out wages, employee benefits, work hours, overtime pay and specifies the job referral process, hiring preferences, trainee/apprenticeship ratios, the lay-off process and the grievance process. The CBA is negotiated by the Hydro Project Management Association, which represents Manitoba Hydro and contractors, and the Allied Hydro Council, which represents the construction unions. Parties to the negotiation process have to agree on and approve the conditions of employment (e.g., the hiring preference, referral and hiring system, and on-the-job training provisions) for the project. All contractor employees covered under the CBA will be required to become a union member once they are hired to work on the Project, if they are not already union members.

Collector System: In the Bipole III context, refers to the collection of ac transmission lines used to transmit energy from northern generating stations to the HVdc transmission system.

Collembola: Minute wingless arthropods: springtails.

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 (Plus4 Consulting et al. 2011).

Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Committee established by the *Species at Risk Act* as the authority for assessing the conservation status of species that may be at risk of extinction in Canada.

Community Knowledge: Information held by community members, such as farmers, hunters, fishers and naturalists, who are familiar with the environment in a specific geographic area. Community knowledge may be used in the environmental assessment

of a proposed project. For example, fishermen in a specific area may know where the best "fishing spots" are, and therefore may contribute to identifying potential fish habitat.

Community-Type: A group of vegetation stands that share common characteristics, an abstract plant community.

Complexed: Pertaining to two or more defined soil units that are so intimately intermixed geographically that it is impractical because of the scale used to separate them.

Compliance Monitoring: A broad term for a type of monitoring conducted to verify whether a practice or procedure meets the applicable requirements prescribed by legislation, internal policies, accepted industry standards or specific terms and conditions (e.g., in an agreement, lease, permit, license or authorization).

Compound leaf: A type of leaf with a fragmented blade, with divisions reaching the mid-rib (Botanical Online SL, 2011).

Conductor Stringing: The process of suspending the conductor from insulators attached to the transmission line towers or structures.

Conductor: Any material that will readily carry a flow of electricity. In the context of transmission lines, each of the two conductors or conductor bundles comprising a dc circuit, or the three comprising an ac circuit, is referred to as a conductor.

Confidence Interval (CI): An estimate using a range of values (an interval) to predict the expected value of an unknown parameter, accompanied by a specific level of confidence, or probability, that the estimate will be correct (i.e. that the interval will in fact contain the true value of the parameter) (Statistics Canada, 2009).

Confined Aquifer: An aquifer that is bounded above and below by formations of distinctly lower permeability than that of the aquifer itself. An aquifer containing confined ground water. See artesian aquifer.

Coniferous: A cone-bearing plant belonging to the taxonomic group Gymnospermae.

Conservation Data Centre (CDC) Ranking: A Manitoba Conservation status rank assigned to a species by the Conservation Data Centre on the basis of the species' province-wide status. Species are assigned a numeric rank ranging from 1 (very rare) to 5 (demonstrably secure).

Conservation: Any of various efforts to preserve or restore the earth's natural resources, including such measures as: the protection of wildlife, the maintenance of

forest or wilderness areas, the control of air and water pollution and the prudent use of farmland, mineral deposits, and energy supplies.

Construction Camp: The temporary housing and support of workers for the purpose of constructing.

Construction: Includes activities anticipated to occur during Project development.

Contaminant: As defined by *The Manitoba Dangerous Goods Handling and Transportation Act*; "any solid, liquid, gas, waste, radiation or any combination thereof that is foreign to or in excess of the natural constituents of the environment and that effects the natural, physical, chemical or biological quality of the environment; or that is or is likely to be harmful or damaging to the health or safety of a person."

Contamination: The act or process of contaminating or changing the level of a contaminant in the natural environment.

Converter Station: The terminal equipment for a high voltage direct current transmission line, in which alternating current is converted to direct current or direct current is converted to alternating current.

Corona Discharge: An electrical discharge around a conductor that can electrically charge air molecules to become air ions.

Corridor: A band of land within which one or more alternative routes can be identified.

Country foods: Traditional foods from the land, such as wild animals, birds, fish, plants and berries.

Cover: Vegetation such as trees or undergrowth that provides shelter for wildlife. Also, the surface area of a stratum of vegetation as based on the vertical projection on the ground of all above-ground parts of the plant. Also, the material in or over-hanging the wetland area of a lake or stream providing fish with protection from predators or adverse flow conditions, e.g., boulders, deep pools, logs, vegetation.

Cover type: Four broad cover types are recognized – Softwood 'S', Softwood-Hardwood 'M', Hardwood-Softwood 'N', Hardwood 'H'. The first number of the sup-type code indicates the type aggregate (0 to 3 - Softwood; 4 to 7 – Softwood/Hardwood Mixed ; 8 – Hardwood/Softwood Mixed; 9 – Hardwood) (Plus4 Consulting et al., 2011).

Cree Nation Partners (CNP): A partnership formed in 2001 amongst Tataskewayk Cree Nation and War Lake First Nation.

Cretaceous - The final period of the Mesozoic era, spanning the time between 145 and 65 million years ago.

Critical habitat: An area of habitat or the place in which an organism lives that is essential in providing the requirements needed for a specific species to live.

Cryoboreal: Refers to species characteristic of the colder parts of the Boreal Zone.

Cryosolic: An order of soils proposed for adoption in the Canadian taxonomic system. Cryosolic soils are mineral or organic soils that have perennially frozen material within 1 m (3 ft) of the surface in some part of the soil body, or pedon. The mean annual soil temperature is less than 0°C (32°F). They are the dominant soils of the zone of continuous permafrost and become less widespread to the south in the zone of discontinuous permafrost; their maximum development occurs in organic and poorly drained, fine textured materials.

Cryosols: Soils of the Crysolic order are formed in either mineral or organic materials that have permafrost either within one metre of the surface or within two metres if the pedon has been strongly crysturbated (churning of the ground surface by frost action) laterally within the active layer, as indicated by disrupted, mixed or broken horizons. Cryosols have a mean annual temperature of less than or equal to 0 degrees Celsius.

Cultural Ecology: The study of human interaction with ecosystems to determine how nature influences and is influenced by human social organization and culture.

Cumulative effects assessment: An assessment of the incremental effects of an action on the environment when the environmental effects are combined with those effects from other past, present and future actions.

Cumulative Environmental Effects: The environmental effects that are likely to result from a project in combination with the environmental effects of other past, existing and reasonably foreseeable future projects or activities. For example, one might consider the effects of siltation on fish and fish habitat during construction in combination with the effects of local agriculture and fishing activities.

Current: The rate of motion of electrical charge through a conductor.

Cycle: In the context of ac electricity, cycle is used in reference to the repeating event of reversal of current flow; the number of such reversals per unit of time is the frequency.

Danger Trees: Danger trees are trees located outside a cleared transmission line right-of-way but which may pose a risk of contact or short circuit with the line or structures.

Dangerous Goods: Any product, substance or organism that, by its nature, is able or likely to cause injury, or that is included in any of the classes listed in the Dangerous

Goods Handling and Transportation Regulation 55/2003 and Classification Criteria for Products, Substances and Organisms Regulation 282/87.

Dark Geese: Includes Canada, White-fronted, Brant and Cackling geese (subspecies of Canada goose).

Deciduous: Refers to perennial plants from which the leaves abscise and fall off at the end of the growing season (Cauboue et al. 1996).

Decommissioning: Planned shut-down, dismantling and removal of a building, equipment, plant and/or other facilities from operation or usage and may include site clean-up and restoration.

Degradation: The diminution of biological productivity or diversity.

Deleterious Substances: Any substance that, if added to any water, would degrade or alter the quality of that water so that it becomes toxic or harmful to aquatic organisms and habitat.

Demobilizing: The removal of personnel, machinery and materials and other support infrastructure and services from a site after construction is complete.

Detritus: Parts of dead organisms and cast-off fragments and wastes of living organisms.

Development: as defined under *The Environment Act* – Any project, industry, operation or activity, or any alteration or expansion of any project, industry, operation or activity which causes or is likely to cause: a) the emission or discharge of any pollutant to the environment, or b) an effect on any unique, rare or endangered feature of the environment, or c) the creation of by-products, residual or waste products not regulated by *The Dangerous Goods Handling and Transportation Act*, or d) A substantial utilization or alteration of any natural resource in such a way as to pre-empt or interfere with the use or potential use of that resource for any other purpose, or e) A substantial utilization or alteration of any natural resource in such a way as to have an adverse effect on another resource, or f) The utilization of a technology that is concerned with resource utilization and that may induce environmental damage, or g) A significant effect on the environment or will likely lead to a further development which is likely to have a significant effect on the environment, or h) A significant effect on the social, economic, environmental health and cultural conditions that influence the lives of people or a community insofar as they are caused by environmental effects (Manitoba Laws, 2011).

Dicotyledon: One of the two divisions of the Angiosperms; the embryo has two cotyledons, the leaves are usually net-veined, the stems have open bundles, and the flower parts are usually in fours or fives.

Diptera: A large order of insects having a single pair of wings and sucking or piercing mouths; includes true flies and mosquitoes.

Direct Current (dc): Electrical current that flows in one direction only.

Direct effect: An environmental effect that is a change that a project may cause in the environment; or change that the environment may cause to a project. A direct effect is a consequence of a cause-effect relationship between a project and a specific environmental component.

Directly Negotiated Contract (DNC): A type of contract that is non-tendered and directly negotiated between parties of interest.

Disjunct: Marked by separation of or from usually contiguous parts or individuals.

Distribution System: The poles, conductors, and transformers that deliver electricity to customers. The distribution system transforms high voltages to lower, more usable levels. Electricity is distributed at 120/240 volts (V) for most residential customers and 120 to 600 V for the majority of commercial customers.

Disturbance: A disruption in the normal functioning of an organism or system.

Diurnal: A species whose most active period takes place between sunset and sunrise. *See also* crepuscular (Wildlife Resources Consulting Services, 2011).

Dolostones: A carbonate sedimentary rock that is crystalline in form and generally light colored. Dolostone is often found in montane areas or alluvial plains.

Domestic Well: A water well used to supply water for the domestic needs of an individual residence or systems of four or fewer service connections.

Downscaling: Derivation of scenario data with more appropriate (i.e. smaller) scales. It takes raw data outputs from GCM simulations and uses algorithms to sophisticated statistical downscaling to derive results usable at smaller scales.

Draining: The act of making land drier by providing channels for water to flow away.

Drilling: The act of boring a hole in something (ground or bedrock) with a device such as a drill.

Drumlin: A smooth hill formed by deposits of glacial till; the long axis parallels the direction of former glacial flow.

Drumlinoid: Refers to the family of streamlined landforms characteristic of large areas of beds of former glaciers and ice sheets.

Dystric Brunisol: Acid Brunisols (see definition for Brunisol above) that lack a well-developed mineral organic surface horizon; Dystric Brunisols occur widely, usually on parent materials of low base status and typically under forest vegetation.

Earnings*:* Refers to total income received by persons 15 years and over during calendar year 2005 as wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income (MMM Group Ltd. 2011)

Easement: The permission or right to use a defined area of land for a specific purpose such as transmission line rights-of-way. Transmission line easements give Manitoba Hydro the right of access to the right-of-way to construct, operate and maintain the transmission line.

Ecodistrict: A subdivision of an ecoregion and cartographical delineation of distinct ecological areas, identified by their geology, topography, soils, vegetation, climate conditions, living species, and water resources.

Ecological Land Classification: The Canadian classification of lands from an ecological perspective, an approach that attempts to identify ecologically similar areas.

Ecoregion: A geographical area characterized by a distinctive regional climate as expressed by vegetation (Cauboue et al. 1996).

Ecosystem: A functional unit including the living and the non-living things in an area, as well as the relationships between those living and non-living things. For example, a decaying log comprises the ecosystem for a microbe because the log provides everything that the microbe needs to survive and reproduce.

Ecozones: An area of the earth's surface representing large and very generalized ecological units characterized by interacting abiotic and biotic factors; the most general level of the Canadian ecological land classification (Cauboue et al. 1996).

Ectoparasites: A parasite that affects the external surfaces (including external surfaces of the gills) of an organism.

Electric and Magnetic Field (EMF): EMFs are invisible lines of force surrounding any wire carrying electricity, and are produced by all electric tools and appliances, household wiring and power lines. The strengths of EMFs depend on the voltage level and the amount of current flow. Fields fall off sharply with increasing distance from a

transmission line; electric fields are easily blocked by vegetation, buildings or other obstacles, while magnetic fields are unaffected by such objects. Electric fields are measured in volts per metre. Magnetic fields are measured in milliGauss.

Electric Current: See Current.

Endangered: A species facing imminent extirpation or extinction (COSEWIC, 2010).

Engineering Procurement and Construction (EPC): A contract outlining the construction activity.

Enhance: To improve by increasing in number or quality.

Environment (Canada): The components of the Earth and includes: a) Land, water and air, including all layers of the atmosphere, b) All organic and inorganic matter and living organisms, and c) the interacting natural systems that include components referred to in paragraphs a) and b) (Department of Justice 2011a).

Environment (Manitoba): Means a) air, land, and water, or b) plant and animal life, including humans.

Environmental Assessment (EA): Process for identifying project and environment interactions, predicting environmental effects, identifying mitigation measures, evaluating significance, reporting and following-up to verify accuracy and effectiveness leading to the production of an Environmental Assessment report. EA is used as a planning tool to help guide decision making, as well as project design and implementation.

Environmental Component: Fundamental element of the physical, biological or socio-economic environment, including the air, water, soil, terrain, vegetation, wildlife, fish, birds and land use that may be affected by a proposed project, and may be individually assessed in the environmental assessment.

Environmental Effect: In respect of a project, a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*, b) any effect of any change referred to in paragraph a) on i) health and socio-economic conditions, ii) physical and cultural heritage, iii) the current use of lands and resources for traditional purposes by aboriginal persons, or iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or any change to the project that may be caused by the environment; whether any such change or effect occurs within or outside Canada (Department of Justice, 2011a).

Environmental Impact Statement (EIS): A document that presents the findings of an environmental assessment in response to specific guidelines or terms or reference. The term EIS is often used in the context of an assessment by a review panel and in the environmental assessment regimes of other jurisdictions.

Environmental Management System (EMS): Part of an organization's overall management practices related to environmental affairs. It includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining an environmental policy. This approach is often formally carried out to meet the requirements of the International Organization for Standardization (ISO) 14000 series.

Environmental Monitoring: Periodic or continuous surveillance or testing, according to a pre-determined schedule, of one or more environmental components. Monitoring is usually conducted to determine the level of compliance with stated requirements, or to observe the status and trends of a particular environmental component over time.

Environmental Protection Plan (EnvPP): Within the framework of an Environmental Protection Program, an Environmental Protection Plan prescribes measures and practices to avoid and minimize potential environmental effects of a proposed project. A "user-friendly" guide for the contractor and Manitoba Hydro that includes: information such as a brief project description; updated construction schedule; summary identifying environmental sensitivities and mitigation actions; listing of all federal, provincial or municipal approvals, licenses, or permits that are required for the project; a description of general corporate practices and specific mitigating actions for the various construction and maintenance activities; emergency response plans, training and information; and environmental/engineering monitoring plans and reporting protocols.

Environmental Protection Program (EPP): Provides a framework for delivery, management and monitoring of environmental protection activities in keeping with issues identified in the environmental assessment, regulatory requirements and public expectation.

Environmentally Sensitive Site (ESS): Locations, features, areas, activities or facilities that were identified in the Bipole III Transmission Project EIS to be ecologically, socially, economically or culturally important or sensitive to disturbance and require protection during construction and operation of the project.

Eolian Dunes: dunes created from the deposit of highly wind erodible soils

Epiphyte: A plant growing on another plant structure for physical support.

Epiphytic Algae: Algae that grows on another, using it as a physical support but not obtaining nutrients from it.

Ericaceous: Belonging or relating to the heath family, a group of evergreen shrubs and small trees that includes the heath, heather, blueberry, rhododendron, azalea and arbutus.

Erosion: Natural process by which the Earth's surface is worn away by the actions of water and wind.

Esker: A long winding ridge of stratified sand and gravel that is formed from drift deposited in tunnels running through a glacier.

Eutric: A great group of soils in the Brunisolic order. The soils may have mull Ah horizons less than 5 cm (2 inches) thick, and they have Bm horizons in which the base saturation (NaCI) is l00%.

Evaluation: The determination of the significance of effects. This involves making judgements as to the value of what is being affected and the risk that the effect will occur and be unacceptable.

Evaporite: A chemical sediment or sedimentary rock that has formed by precipitation from evaporating waters.

Extensive discontinuous permafrost: Where permafrost covers 50 to 90% of the landscape and is usually found in areas with mean annual temperatures between -2 and -4 °C.

Extirpated: The extinction of a species within a given area, with the species still occurring within the remainder of their range (Wildlife Resources Consulting Services, 2011).

Fee Simple Lands: Is the absolute title of a land. The land is free of any claims against it (Farflex, 2011)

Feet (ft.): Plural for foot. A foot is a linear unit of length equal to 12 inches. One foot equals 0.3 metres.

Feller Bunchers: A type of harvester used in logging. A motorized vehicle with an attachment that can rapidly cut and gather several trees before felling them.

Fen: A type of wetland fed by surface and/or groundwater; water chemistry is neutral to alkaline and sedges are the dominant vegetation.

Fibric: Descriptive of organic soil material containing large amounts of weakly decomposed fiber whose botanical origin is readily identifiable.

Fibrisols: Organic soils consisting predominantly of relatively undecomposed plant material, such as Sphagnum mosses, with clearly visible plant fragments.

Filamentous algae: Algae that form filaments or mats attached to sediment, weeds, piers, etc.

Fill: Natural soils that are manually or mechanically placed; soil or loose rock used to raise a grade.

Fish Habitat: Spawning, nursery, rearing, food supply and migration areas upon which fish depend (*Fisheries Act*).

Fish Habitat: Spawning, nursery, rearing, food supply and migration areas upon which fish depend (*Fisheries Act*).

Flat Bog: Flat bogs are not confined by a discrete basin and, therefore, occur in broad, poorly defined lowland areas. These bogs are not found on sloping terrain. The surface is more or less uniform and featureless and the depth of the peat is generally uniform across the entire peatland. (The Canadian Wetland Classification System, 1997).

Flora: A list of the plant species present in an area.

Follow-up Program: A program for: a) verifying the accuracy of the environmental assessment of a project, and b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project (Department of Justice, 2011a).

Footprint: The surface area occupied by a structure or activity.

Forb: A broad-leaved, non-woody plant that dies back to the ground after each growing season.

Forest: A relatively large assemblage of tree-dominated stands.

Fossorial Species: Is one that is adapted to digging and life underground.

Foundation: The surface or subsurface base that is in direct contact with the ground and supports a structure.

Fragmentation: The breaking up of contiguous blocks of habitat into increasingly smaller blocks as a result of direct loss and/or sensory disturbance. Eventually, remaining blocks may be too small to provide usable or effective habitat for a species.

Freshet: the occurrence of water flow from a sudden rain fall or snow melt

Furbearer: Referring to those mammal species that are trapped (e.g., marten, fox, etc.) for the useful or economic value of their fur.

Game Hunting Area (GHA): Designated areas in Manitoba in which game hunting is regulated by species, quota, means, etc.

Gap Dynamics: The formation and replacement of patches or gaps in a landscape, as in the fall of trees and growth of new trees in that opening

Gas Insulated Switch (GIS): Electrical switchgear that uses gas (typically SF6) as the insulating medium (as opposed to air or oil); refer also to stations designed to use GIS equipment.

Gauss (G): A common unit of measure for magnetic fields. There are 10,000 Gauss in one Tesla.

Generating Station (GS): A structure that produces electricity. Its motive force can be provided in a variety of ways, uncluding burning of coal or natural gas, or by using water (hydro) power. Hydroelectric generating stations normally include a complex of powerhouse, spillway, dam(s) and transition structures; electrical energy is generated by using the flow of water to drive turbines.

Generator: A machine that converts physical energy, such as the flow of water over a dam, into electrical energy.

Geographic Information System (GIS): A computerized information system which uses geo-referenced spatial and tabular databases to capture, store, update, manipulate, analyze and display information.

Geological overburden: Material overlying a useful mineral deposit or desired bedrock anchor.

Glaciofluvial: Descriptive of material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and may occur in the form of outwash plains, deltas, kames eskers, and kame terraces.

Glaciolacustrine: Pertaining to, derived from, or deposited in glacial lakes; especially said of the deposits and landforms composed of suspended material brought by meltwater streams flowing into lakes bordering the glacier, such as deltas, kame deltas, and varved sediments.

Glaciomarine: Pertaining to materials that are deposited on the sea floor by glacial meltwater, by debris flows from the surface of a glacier or by melting icebergs.

Gleysolic: An order of soils developed under wet conditions and permanent or periodic reduction. These soils have low chromas, or prominent mottling, or both, in some horizons.

Gleysols: An order of soils developed under wet conditions and permanent or periodic reduction. They occur under a wide range of climatic conditions; Gleysolic soils may or may not have a thin Ah horizon over mottled gray or brownish gleyed material. They may have up to 40 cm of mixed peat or 60 cm of fibric moss peat on the surface.

Grading: The act of levelling or sloping the ground evenly by mechanical means (i.e., grader).

Graminoid: A plant that is grass-like; the term refers to grasses and plant that look like grasses, i.e., only narrow-leaved herbs; in the strictest sense, it includes plants belonging only to the family Graminaceae.

Granite Gneisses: Gneiss composed of a high degree of granite.

Granite Outcrops: exposed granite rocks that weather in a characteristic pattern and provide a unique habitat.

Granite: A common, coarse-grained, light-coloured, hard igneous rock consisting chiefly of quartz, orthoclase or microcline and mica.

Granular: In the context of construction materials, refers to materials composed of granules or grains of sand or gravel.

Grassland: Vegetation consisting primarily of grass species occurring on sites that are arid or at least well drained.

Greenhouse Gases (GHGs): Gases e.g., methane, carbon dioxide, chlorofluorocarbons emitted from a variety of sources and processes that contribute to global warming by trapping heat between the Earth and the upper atmosphere.

Greenstone Belt Formation: Elongated areas of metamorphosed volcanic and sedimentary rock lying within broad areas of granite and gneiss in the Precambrian Shield.

Greywacke Gneisses: Gneiss consisting of any of various dark gray sandstones that contain shale.

Gross Domestic Product (GDP): The total monetary value of all goods and services produced domestically by a country

Ground Electrode: In the context of HVdc bipoles, the ground electrodes provide a ground or earth return system both for minor imbalances of current between the positive and negative poles during normal operation and, in the event of a pole outage, for current from the operating pole (i.e., monopolar operation). Shallow ring electrodes are anticipated to be used for Bipole III. These typically are a large metal ring about 300-800 metres in diameter buried approximately three metres in the ground and surrounded by a highly conductive bed of coke.

Groundwater: Water that occurs beneath the land surface and fills the pore spaces of soil or rock below saturated zone.

Groundwater Recharge: The natural or intentional infiltration of surface water into the zone of saturation.

Groundwater Table: The upper surface of the zone of saturation in an unconfined aquifer.

Grouted Anchors: Generally consist of steel elements (bars or strands) grouted with a mixture of water, cement and sand, in a drilled hole. Guys with grouted anchors provide resistance to movement of a structure.

Grubbing: The act of removing roots from soil using a root rake, harrow or similar device.

Guideline: Non-mandatory, supplemental information about acceptable methods, procedures and standards for implementation of requirements found in legislation, policies and directives.

Guyed Suspension Steel Lattice: A steel structure that is based on a single foundation at the centre point of its base and stabilized typically by four guywires.

Guyes or Guy Wires: Supporting wires that are used to stabilize some transmission line structures.

Gymnosperm: A seed plant with seeds not enclosed in the ovary, the conifers are the most familiar group.

Habitat Local Study Area (LSA): The Habitat LSA is smaller in scale to the Landscape and Regional Study Areas and focuses on the physical and environmental features that constitute a species' habitat.

Habitat: The place in which an animal or plant lives; the sum of environmental circumstances in the place inhabited by an organism, population or community. Habitat

for a particular species is identified with a species prefix (e.g., fish habitat, jack pine habitat, moose habitat).

Hazardous Substance: Any substance which, by reason of being explosive, flammable, poisonous, corrosive, oxidizing or otherwise harmful, is likely to cause death or injury

Hazardous Waste: As defined by Manitoba Regulation 175/87: a product, substance or organism that is a source of danger and that meets the criteria set out in the Classification Criteria products, Substances and Organism Regulation, Manitoba Regulation 282/87, and that is intended for treatment or disposal, including recyclable material.

Hectares (ha): A metric unit of square measure equal to 10,000 square metres or 2.471 acres.

Herb (Herbaceous): A plant without woody above-ground parts, the stems dying back to the ground each year.

Herbaceous plants: A non-woody vascular plant.

Herbicide: A product used to destroy or inhibit plant growth.

Heritage Resource: A heritage site, heritage object and any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (*The Heritage Resources Act*).

High Voltage Direct Current (HVdc) Transmission System: A high voltage electric power transmission system that uses direct current for the bulk transmission of electrical power. Direct Current flows constantly in only one direction (frequency of change or oscillation is 0 Hertz [Hz]).

High Water Mark (Ordinary) (HWM): The visible high water mark of any lake, stream, or other body of water where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river stream, or other body of water a character distinct from that of the banks, both in vegetation and in the nature of the soil itself. Typical features may include, a natural line or "mark" impressed on the bank or shore, indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics.

Holometabolous Taxa: Belonging to the insect subclass Holometabola; composed of all insects that undergo a complete metamorphosis; a larval a pupal stage occurs between the embryo and adult stages.

Horizons: A specific layer in the soil which parallels the land surface and possesses physical or chemical characteristics which differ from the layers above and beneath.

Horizontal fen: Horizontal fens occupy broad, ill-defined depressions. They occur on gentle slopes and are characterized by featureless surfaces. They are usually uniformly vegetated by graminoid, shrub or tree species. Some patterns, such as water tracks or somewhat drier treed "islands" may be present. Peat thickness varies from 2 to 3 m, depending on the topography of the underlying mineral substrate. Fibric peat is commonly found over mesic peat (The Canadian Wetland Classification System, 1997).

Horizontal peatland: A flat, featureless peatland where the water table is close to the surface.

Humic: A great group of soils in the Gleysolic order. A dark-colored A (Ah or Ap) horizon more hat 8 cm (3 inches) thick ins underlain by mottled gray or brownish gleyed mineral material. It may have up to 40 cm (16 inches) of mixed peat (bulk density 0.1 or more) or up to 60 cm (24 inches) of fibric moss peat (bulk density less than 0.1)on the surface. This group includes soils formerly classified as Dark Gray Gleysolic and Meadow.

Hummocky: A very complex sequence of slopes extending from somewhat rounded depressions or kettles of various sized to irregular to conical knolls or knobs (CSSC, 1998).

Hydraulic Conductivity: A measure of the capacity for a rock or soil to transmit water; generally has the units of feet/day or cm/sec.

Hydrocarbon: An organic compound that contains only carbon and hydrogen; derived mostly from crude petroleum and also from coal tar and plant sources (diesel fuel, fuel oil, gasoline and lubricating oils are complex mixtures of hydrocarbons); excessive levels may be toxic.

Hydrology: The science dealing with the properties, distribution and circulation of water.

Hydrophilic: Water loving; the property of a substance that is polar and is soluble in water.

Hydrostratigraphic: Refers to the layers of aquifers and water-bearing deposits occurring within a given area. The hydrostratigraphy can be mapped and is predictable based on ground-water models.

Hymenoptera: One of the largest orders of insects, comprising the sawflies, wasps, bees, and ants. The name refers to the heavy wings of the insects, and is derived from the Ancient Greek (humen).

Ice Bridge: A temporary crossing of a winter road over a lake or river crossing.

Igneous: A rock formed by the crystallization of magma or lava.

Igneous intrusive: An injection into pre-existing rocks of new rocks or minerals formed by the cooling and hardening of magma or molten lava. Basalt and granite are examples of igneous rocks which may intrude into older existing rock formations.

Impact: General term referring to the overall effect of a project including. Accepted use includes Environmental Impact Statement, Economic Impact and Cumulative Impact.

Impermeable: Relating to a material through which substances, such as liquids or gases, cannot pass.

Inch (in.): A unit of length equal to one twelfth of a foot. One inch equals 2.54 cm.

Incorporated Communities: Communities that form part of a municipality, city, town or village with its own government (Wikipedia, 2011).

Indicator Species: species, groups of species or species habitat elements that focus management attention on resource production, population recovery, population viability or ecosystem diversity; these species often have narrower habitat requirements that can be used to indicate the relative suitability of habitat for other species that share a similar preference e.g., marten is primarily a denizen of mature or overmature forest dominated by spruce (Wildlife Resources Consulting Services, 2011).

Indicators: Anything that is used to measure the condition of something of interest. Indicators are often used as variables in the modeling of changes in complex environmental systems. In an environmental assessment, indicators are used to predict changes in the environment and to evaluate their significance.

Indirect Effect: 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. For instance, a river diversion for the construction of a hydro power plant could directly result in the destruction of fish habitat causing a decline in fish population. A decline in fish

population could result in closure of an outfitting operation causing loss of jobs. Thus, the river diversion could indirectly cause the loss of jobs.

Induction Effect: In a molecule, a shift of electron density due to the polarization of a bond by a nearby electronegative or electropositive atom.

Infiltration: The flow of water downward from the land surface into and through the upper soil layers.

Infrastructure: The basic features needed for the operation or construction of a system (e.g. access road, construction camp, construction power, batch plant, etc).

Ingress: In the forestry context, refers to the establishment of natural regeneration in an opening (Plus4 Consulting et al., 2011).

Integrated Resource Management Team (IRMT): A regional management team organized to review natural resource issues. The IRMT is made up of members of Manitoba Conservation – director, assistant director, chief natural resource officer and resource managers representing forestry, wildlife, parks and lands' interests – and Manitoba Water Stewardship's fisheries manager.

International Electrotechnical Commission (IEC): An organization that sets and publishes standards.

Intertill: Layers of soil or granular deposits which lay between layers of till (c.v.).

Invertebrates: Animals without a spinal column.

Invasive: Invasive species are plants that are growing outside of their country or region of origin and are out-competing or even replacing native plants.

Isostatic Rebound: The rise of land masses that were depressed by the huge weight of ice sheets during the last glacial period, through a process known as isostasy.

Isothermal: A process or change taking place at a constant temperature.

Kame Moraine: A short ridge, hill, or mound of stratified drift deposited by glacial meltwater.

Kettle: A small depression usually found on the outwash plain of a glacial area and sometimes containing a small lake. As glaciers retreat, large blocks of ice detach and fall to the ground, embedding themselves to a certain degree

Keystone (Management) Species: species that have an effect on many other species in an ecosystem disproportionate to their abundance or biomass - can be predators, prey,

plants, mutualists and habitat modifiers (e.g., beaver, pileated woodpecker) (Wildlife Resources Consulting Services, 2011).

Kilometre (km): The unit measure of length equivalent to 1000 metres; one kilometre = 0.62 miles.

Kilovolt (kV): The unit of electromotive force or electrical pressure equivalent to 1,000 volts (V).

Kilowatt Hour (kWh): The unit of measure of electrical energy equivalent to the use of 1,000 watts for a period of one hour (e.g., ten 100-watt light bulbs switched on for one hour would use one kWh [or 1,000 watts for one hour]).

Lacustrine: Referring to freshwater lakes; sediments generally consisting of stratified fine sand, silt, and clay deposits on a lake bed.

Landscape Local Study Area (LSA): Landscape LSA is a study area at the landscape level within and immediately surrounding the project site. Landscape pertains to the visible features of an area of land. It is a larger-scale area than the Habitat LSA.

Lay-down Area: An area that has been cleared for the temporary storage of equipment and supplies. Lay-down areas are usually covered with rock and/or gravel to ensure accessibility and safe manoeuvrability for movement and off-loading of vehicles

Leaflets: Each one of the fragments, similar to a leaf, making up a compound leaf (Botanical Online SL, 2011).

Lepidoptera: An order of insects, of which the wings are four in number, covered by minute imbricated (overlapping) scales; as butterflies and moths.

Lichen: Is a complex group of plants depending on a close association (symbiotic relationship) between a fungus and algae.

Likely Occurring: In terms of species assessments, the concept of likely occurring relates to the probability of a species being found within a given area based on certain qualities or characteristics (i.e., general species distribution information, the types of habitat they are known to occupy).

Line Conductors: Conductors or conductor bundles suspended from transmission line structures.

Linear feature: A geographic feature, such as a trail or road, which can be represented by a line.

Littoral Zone: Zone between the high and low tide marks.

Load: The power requirement (usually measured in kilowatts) of an electrical system or piece of electrical equipment at a given instant.

Loamy: Loam soil is rich, friable (crumbly) soil with nearly equal parts of sand and silt, and somewhat less clay. The term is sometimes used imprecisely to mean earth or soil in general. Loam in subsoil receives varied minerals and amounts of clay by leaching (percolation) from the topsoil above.

Long-Term Effect: Effect which persists long after restoration or mitigation activities have been carried out.

Luvisolic: An order of soils that have eluvial (Ae) horizons, and illuvial (Bt) horizons in which silicate clay is the main accumulation product. The soils developed under forest or forest-grassland transition in a moderate to cool climate. **Luvisols:** Soils of the Luvisolic order generally have light-coloured, eluvial horizons and have illuvial B horizons in which silicate clay has been accumulated. These soils develop characteristically in well to imperfectly drained sites, in sandy loam to clay base saturated parent material under forest vegetation in subhumid to humid, mild to very cold climates. Mineral soils where clay particles from the upper layer have been transported to the layer below to the extent that a Bt horizon has developed.

Macroinvertebrates: A small animal generally visible to the unaided eye, usually larger than 0.5 mm. These animals do not have a backbone.

Magneto-telluric Testing: A form of onsite engineering field investigation.

Manitoba Agriculture, Food and Rural Initiatives (MAFRI): Manitoba provincial department focussing on agriculture activities

Marsh: Tract of low wetland, often treeless and periodically inundated, generally characterized by a growth of grasses, sedges, cattails and rushes.

Marshalling Yard: An open area used to stock-pile, store and assemble construction materials.

Mega Volt Amperes (MVA): Volt-ampere is the unit of apparent power in an ac circuit, and is equal to the real power (in watts) in a dc circuit. A Mega Volt-Ampere (or MVA) is one million volt-amperes.

Megawatt (MW): The unit of electrical power equivalent to 1,000,000 watts.

Mesic: Descriptive of soil organic material at a stage of decomposition intermediate that of fibric and humic materials.

Mesisols: Soils of this great group are at a stage of decomposition intermediate between Fibrisols and Humisols. Mesisols have a dominantly mesic middle tier or middle and surface tiers if a terric, lithic, or hydric contact occurs in the middle tier. A mesic layer is an organic layer that fails to meet the requirements of either a fibric or a humic layer (Agriculture and Agri-Food Canada, 2010).

Metallic Return: A conductor used for carrying return current between converters at opposite ends of the system. To enable partial operation in the event of certain types of outage in a bipole, the system may be designed to allow the current in the operating pole to be returned via the second pole conductor.

Metamorphic: Rocks that have been transformed by extreme heat and pressure.

Metasedimentary: Sedimentary rocks which have been deposited, and the undergone subsequent metamorphosis, and thus can be classified as neither fully sedimentary nor metamorphic.

Metre (m): A unit measure of length; one metre = 3.28 ft.

Microinvertebrates: Organisms that are less than 1 mm (0.04 inches) long and are best viewed through a microscope.

Midwest Reliability Organization (MSO): A non-profit organization dedicated to ensuring the reliability and security of the bulk power system in the north central region of North America, including parts of both the United States and Canada (Midwest Reliability Organization, 2007).

Mile (mi.): A unit of length equal to 5,289 feet. 1 mile equals 1.6 Kilometres.

Millimetre (mm): A metric unit of length equal to one thousandth of a metre.

Mitigation monitoring: A type of monitoring program that may be used to verify that mitigation measures were properly implemented and that such measures effectively mitigate the predicted adverse environmental effects.

Mitigation: In respect of a project, 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 (Department of Justice, 2011a).

Mixedwood: Forest stands composed of conifers and angiosperms each representing between 25 and75% of the cover.

Monitoring: Continuing assessment of conditions at and surrounding an activity. This determines if effects occur as predicted or if operations remain within acceptable limits and if mitigation measures are as effective as predicted.

Monocotyledon: A class of the Angiosperms; the seeds have a single cotyledon, the floral parts are in three or multiples of three, the leaves have parallel veins, and the vascular bundles of the stem are scattered and closed.

Monopolar: In the event of an outage of one pole in a bipole transmission system, partial operation may be maintained by using the ground electrodes for earth or ground return to maintain current flow in the energized pole.

Moraine: An accumulation of heterogeneous rubbly material, including angular blocks of rock, boulders, pebbles, and clay that has been transported and deposited by a glacier or ice-sheet.

Mycetophilids: (plural form of mycetophillidae) Are Fungus Gnats. They have simple antennae and a humped thorax. The larvae feed on decaying vegetation and fungus (The Canadian Biodiversity Website, 2011).

Natural Resource Officer (NRO): Officers under the provincial government authority that uphold the Provincial Parks Regulations.

Neotropical Migrant: A bird species that breeds in North America during the spring and early summer and migrates south to Mexico, the Caribbean and Central and South America for the winter.

Nephelometric Turbidity Units (NTU): A unit of measurement to determine turbidity, as total suspended solids.

Net merchantable: The commercially useable volume of wood fibre within an area. It includes all trees with a diameter at breast height of 9.1 cm and greater and includes the application of the regions specific cull factors as determined by Manitoba Conservation.

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) (Plus4 Consulting et al. 2011).

Non-Soil: The collection of soil material or soil-like material that does not meet the definition of soil. It includes soil displaced by unnatural processes and unconsolidated material unaffected by soil-forming processes, except for the material that occurs within

15 cm (6 inches) below soil as defined. Non-soil also includes unconsolidated mineral or organic material thinner than 10cm (4 inches) overlying bedrock; organic material thinner than 40 cm (16 inches) overlying a hydric layer; and soil covered by more than 60 cm (24 inches) of water in the driest part of the year.

Non-vascular Plant: A plant without a vascular system (eg. Mosses and lichens).

North American Reliability Electric Corporation (NERC): Develops and enforces reliability standards; assesses adequacy annually via a 10-year forecast, and summer and winter forecasts; monitors the bulk power system; and educates, trains and certifies industry personnel (NERC, 2011).

Northern Affairs Community: An Aboriginal or northern community served by the Manitoba department of Aboriginal and Northern Affairs (Manitoba Aboriginal and Northern Affairs, n.d.)

Northern Flood Agreement (NFA): A land compensation agreement between the Government of Canada, Manitoba Hydro Electric Board (presently Manitoba Hydro), the Northern Flood Committee and the Government of Canada as a result of the impacts to First Nations' land caused by the Churchill River Diversion Project. The Northern Flood Committee is a corporation acting with the financial support of Canada that was incorporated by the Indian Bands of Nelson House, Norway House, Cross Lake, Split Lake and York Factory (Manitoba Hydro, 1977).

Optical Protection Ground Wire (OPGW): Provides both lightning protection for a transmission line and communications for line control and protection.

Ordovician: A geological period 510 to 439 million years ago that saw the origin of land plants from their aquatic algae ancestors.

Organic: Of, relating to, or derived from living matter. Also refers to an order of soils that have developed dominantly from organic deposits.

Oribatid: Any of a superfamily (Oribatoidea) of small oval eyeless nonparasitic mites having a heavily sclerotized integument with a leathery appearance.

Oribatid mites: Are one of the orders of "true mites" (Acariformes), known as "chewing mites. Oribatida are one of the most numerically dominant arthropod groups in the organic horizons of most soils, where their densities can reach several hundred thousand individuals per square meter.

Overburden: The soil (including organic material) or loose material that overlies bedrock.

Paleozoic: A geologic era that is marked by the culmination of all classes of invertebrates except insects and the appearance of seed-bearing plants, amphibians and reptiles.

Parameters: Any set of physical, chemical or biological properties, the values of which determine the characteristics or behaviour of a system.

Passerine: Birds from the order Passeriformes; generally songbirds and perching birds. For the purposes of assessment, passerines are birds that do not belong to the other VEC groups outlined (Wildlife Resources Consulting Services, 2011).

Pathogenic: Able to cause disease.

Peat Plateau Bog: Composed of perennially frozen peat and sharply defined; the surface sits about one metre higher than unfrozen fen that surrounds it. The surface is relatively flat, even and covers large areas. Peat plateau bogs appear to have developed under non-permafrost conditions and which subsequently became elevated and permanently frozen. Collapse scars are commonly found with peat plateau bogs. These bogs are common in areas of discontinuous permafrost.

Peat Plateau: A generally flat-topped peatland, elevated above the surrounding area by ground ice that may or may not extend downward into the underlying mineral soil.

Peatland Disintegration: Net reduction in peatland area and/or volume. Peatland disintegration can result from a variety of influences such as climate warming, fires or flooding.

Perched Groundwater: Groundwater supported by a zone of material of low permeability located above an underlying main body of groundwater.

Perennial: Plants that have a lifecycle of 3 or more years.

Permafrost: A condition where soil temperature remains below 0°C for at least two consecutive years. Perennially frozen material underlying the solum, or a perennially frozen soil horizon. Permafrost is subdivided into continuous and discontinuous permafrost, while sporadic permafrost is confined to alpine environments.

Permeability: The degree to which fluids or gases can pass through a barrier or material such as soil.The capability of soil or other geologic formations to transmit water. See hydraulic conductivity.

Photosynthesis: The conversion of light energy to chemical energy; the production of carbohydrates from carbon dioxide and water in the presence of chlorophyll by using light energy.

Physical Activity: Any proposed activity not relating to a physical work. Such an activity is identified as a project for the purposes of the Act if it is explicitly listed in the Inclusion List Regulations.

Physical Work: Anything that has been or will be constructed (human-made) and has a fixed location. Examples include a bridge, building or pipeline. Natural water bodies, airplanes and ships at sea are not physical works.

Physiography: Physical geography, i.e. the study of physical features of the surface of the Earth.

Phytophagous: Feeding on plants, especially referring to insects or other invertebrates.

Podzol: Is a soil commonly found under coniferous forests. Its main identifying traits are a poorly decomposed organic layer, an eluviated A horizon, and a B horizon with illuviated organic matter, aluminum and iron.

Policy: Basic principles and corresponding procedures and standards by which an organization is guided.

Plot: A vegetation sampling unit used to delineate a fixed amount of area for the purpose of estimating plant cover, biomass, or density.

Population Indicator: Species that reflect the dynamics or presence/absence of other species e.g., species x is always associated with species y and z and population dynamics of species x is the same as in y and z (Wildlife Resources Consulting Services, 2011).

Porosity: The ratio of the voids or open spaces in soil and rocks to the total volume of the soil or rock mass.

Potable Water: Water suitable for human and animal consumption.

Potentially salvageable timber: Timber that is of sufficient size (stem diameter and length) to be useable for commercial or non-commercial purposes, exclusive of economic and logistical considerations.

Precambrian bedrock: Extremely stable bedrock composed of ancient crystalline rocks whose complex structure attests to a long history of uplift and depression, mountain building and erosion. This bedrock was formed in the Precambrian era, which began with the consolidation of the earth's crust and ended approximately 4 billion years ago.

Pre-construction: Includes all project activities (surveying, staking, mapping) that lead up to but do not include project construction, including all field studies (aquatic, plant, wildlife) and related public liaison activities.

Preferred Route: The best balanced choice of route based on public input, biophysical, socio-economic, and cost and technical considerations. Preferred routes are generally identified during a Site Selection and Environmental Assessment process.

Premature Mortality Rates (PMR): PMR is an indicator of the rate of early death (i.e., death before average life expectancy) in a population and is highly associated with morbidity and self-rated health, as well as with socio-economic risk factors for poor health. In Manitoba, premature mortality rates are calculated as the number of deaths that occur before age 75 per 1,000 residents.

Proglacial: Immediately in front of, or just beyond the outer edge of, a glacier; proglacial refers to lakes, streams, deposits, and other features produced by or derived from glacial ice.

Project (Canada): Means: a) In relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work, or b) Any proposed physical activity not relating to a physical work that is prescribed or is within a class of physical activities that is prescribed pursuant to regulations made under paragraph 59(b) (Department of Justice, 2011a).

Project Activity: Elements of a project component that may result in environmental effects or changes. Example project activities include clearing, grubbing, excavating, stockpiling, reclaiming, etc.

Project Component: A component of the project that may have an effect on the environment. Example project components include access road, construction camp, wastewater treatment facility, etc.

Project Description: Any information in relation to a project that includes, at least: (a) a summary description of the project; (b) information indicating the location of the project and the areas potentially affected by the project; (c) to the extent possible, a summary description of the physical and biological environments within the areas potentially affected by the project; and (d) the mailing address, e-mail address and phone number of a contact person who can provide additional information about the project (*Canadian Environmental Assessment Act,* Federal Coordination Regulations).

Project Footprint: The land and/or water surface area affected by a project. This includes direct physical coverage and direct effects. Consequently, an project footprint may be larger than its physical dimensions if off-site activities are involved.

Proponent: A person who is undertaking, or proposes to undertake a development or who has been designated by a person or group of persons to undertake a development in Manitoba on behalf of that person or group of persons (Manitoba Laws, 2011).

Prostigmatid: A suborder of mites belonging to the Trombidiformes, which contain the "sucking" members of the "true mites" (Acariformes).

Prostigmata Mites: A suborder of mites belonging to the Trombidiformes, which contain the "sucking" members of the "true mites" (Acariformes). Many species are notorious pests on plants. Well-known examples of prostigmatan plant parasites are species of the gall mites and the spider mites.

Protected Area: As defined by the World Conservation Union, a protected area is: an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.

Protected Species: Plant and animal species protected under the *Species at Risk Act* (Federal) or *The Endangered Species Act* (Manitoba).

Provincial Road (PR): Secondary route of travel in Manitoba. PRs are numbered from 200-632. It is not uncommon for these routes to be gravel (Wikipedia, 2010).

Provincial Trunk Highway (PTH): Primary route of travel in Manitoba. PTHs are numbered from 1-200 (Wikipedia, 2010).

Pteriodophyte: A division of the plant kingdom; the sporophyte is vascular and independent of the gametophyte at maturity; generally they have stems, leave and roots.

Quadruped: An animal having four feet, as most mammals and reptiles; often restricted to the mammals (Joro Consultants Inc. and Wildlife Resources Consulting Services, 2011).

Qualitative Analysis: Analysis that is subjective.

Quantitative Analysis: Analysis that uses environmental variables represented by numbers or ranges and is often accompanied by numerical modeling or statistical analysis.

Quarry: An open excavation or pit from which stone, gravel or sand is obtained by digging, cutting or blasting.

Quaternary: Noting or pertaining to the present period of earth history, forming the latter part of the Cenozoic Era, originating about 2 million years ago and including the Recent and Pleistocene Epochs (Doctionary.com, 2011a)

Radio Interference (RI): Any modification to the reception of sound or picture signals that makes them unacceptable.

Raptor: A predatory bird species with the physical traits adapted for grasping prey, sharp talons, and tearing flesh, hooked beak. The group of birds termed raptors includes the owls, falcons, eagles and hawks (Wildlife Resources Consulting Services, 2011).

Rare Species: Any indigenous species of flora that, because of its biological characteristics, or because it occurs at the fringe of its range, or for some other reasons, exists in low numbers or in very restricted areas of Canada but is not a threatened species (Cauboue et al. 1996).

Rareness: Noun of rare, refers to scarcity, see also rare species.

Recharge: Water added to an aquifer or the process of adding water to an aquifer. Ground water recharge occurs either naturally as the net gain from precipitation, or artificially as the result of human influence. See artificial recharge.

Recycling: Diversion of materials from the waste stream for reprocessing into new products (e.g., newspapers).

Redox: A reversible chemical reaction in which one reaction is an oxidation and the reverse is a reduction.

Reduction: Decrease in waste produced at its source in order to minimize the amount required for off-site treatment or disposal.

Reference Periods: are typically three decades in length. The reference periods of 1961-1990 and 1971-2000 are often used in impacts and adaptation assessments, and to quantify anomalies in the future. These reference periods are of sufficient length to adequately represent the climate of the period, and are used to compare fluctuations of climate between one period and another.

Reforestation: The natural or artificial restocking of a previously forested site with forest trees.

Regeneration: The renewal of a forest crop by natural or artificial means.

Region: Any area in which it is suspected or known that effects due to the action under review may interact with effects from other actions. This area typically extends beyond the local study area.

Regional Study Area (RSA): Largest study area on the basis of fire history, waterbody and small-scale surface materials mapping, and the extrapolation of available detailed habitat mapping.

Registered Trap Lines (RTL): Is a system imposed for the management of commercial harvesting of furbearers. A person (line holder) is granted the exclusive right to harvest furbearers in a certain area, along a registered trapline (Manitoba Conservation, n.d.).

Regosols: Regosolic soils do not have an Ah or dark-colored Ap horizon at least 10 cm thick at the mineral soil surface. They may have buried mineral-organic layers and organic surface horizons, but no B horizon at least 5 cm thick.

Regosolic: An order of soils having no horizon development or development of the A and B horizons insufficient to meet the requirements of the other orders.

Regulatory: Pertaining to legislated requirements (i.e., statues, laws, regulations).

Rehabilitation: To restore a disturbed structure, site or land area to good condition, useful operation or productive capacity.

Reliability Based Design (RBD): Any design methodology that incorporates the principles of reliability analysis (the consistent evaluation of design risk using probability theory) either explicitly or otherwise.

Remediate: To return to the state prior to alternation; to remedy.

Repeater Stations: A station containing one or more repeaters (communications). Also known as relay station.

Reptiles: Cold-blooded animals of the Class Reptilia that includes tortoises, turtles, snakes, lizards, alligators and crocodiles.

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

Resilience: Is defined as the amount of change a system can undergo without changing state. The concept of resilience introduces two related concepts that are important for adaptation: *coping ranges,* and *thresholds*. 'Coping range' refers to the variation in climate that a system can absorb without incurring significant impacts. Adaptation actions will adjust the coping range, and similarly affect resilience. A 'threshold' is the point at which significant impacts are incurred (i.e. the coping range is exceeded) or the system undergoes a change of state (i.e. resilience is overwhelmed). Defining thresholds within natural systems is a key objective of a many climate change impact studies, while understanding thresholds in human systems can be key to guiding adaptation decisions (Natural Resources Canada, 2007).

Resource Management Area (RMA): An area to be jointly managed by a Resource Management Board established by agreement between Manitoba and a First Nation or a local Aboriginal community.

Restoration: The return of an ecosystem or habitat to its original community structure, natural complement of species and natural function.

Reuse: Subsequent use without significant treatment of a material remaining after being used in a previous process.

Re-vegetating: Adding vegetative cover by planting, seeding or other means on a disturbed site.

Right-of-Way (ROW): Area of strip of land controlled and maintained for the development of a road, or transmission [or distribution] line (including construction, operation, and maintenance of the facility).

Riparian Ecosystem: The ecosystem located between aquatic and terrestrial environments identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

Riparian: Refers to terrain, vegetation or simply a position adjacent to or associated with a stream, flood plain, or standing body of water.

Risk: A state of uncertainty where some of the possibilities involve a loss, catastrophe or other undesirable outcome. Quantitatively, risk is proportional to both the expected losses which may be caused by an event and to the probability of this event. The greater loss and greater event likelihood result in a greater overall risk.

Root Collar: Position on a plant where there is a junction with where the roots begin to grow and the stem begins.

Round Weight: The weight of a whole fish before processing or removing any part.

Salinity: Generally, the concentration of mineral salts dissolved in water. When describing salinity influenced by seawater, salinity often refers to the concentration of chlorides in the water. See also total dissolved solids.

Salt flat: The dried-up bed of a former salt lake, sometimes called a salt prairie.

Salt Marsh: A marsh that is affected by the daily or seasonal influences of brackish to saline water.

Saturated Zone: The zone in which all interconnected openings are filled with water, usually underlying the unsaturated zone.

Scenario: "A coherent, internally consistent and plausible description of a possible future state of the world" (Parry and Carter, 1998). A scenario is not a prediction but rather, a representation of one of any number of possible futures. Scenarios define a range of possible futures that facilitate consideration of the uncertainty relating to different development pathways, with implications for future climate, social, economic and environmental change (Natural Resources Canada, 2007).

Sciarids: Flies from the family Sciaridae, also referred to as dark-winged fungus gnats. Sciarids are common insects usually found in moist shady places. Most species are 5 mm. or less, and dark-colored. Larvae feed in fungi, decaying vegetation, or on plant roots; a few species are pests in mushroom cellars (Borror and White, 1970).

Scoping: An activity that focuses the environmental assessment of a proposal on relevant issues and concerns, types of effects, alternatives for consideration, timeframe, methodology, and establishes the boundaries of the assessment.

SD Technique: Statistical Downscaling techniques such as linear regression works in conjunction with the CF method to generate outputs that can be used at a regional to local level. For example, to study low flows in the River Thames at Kingston in the UK using baseline (1961 – 1990) and climate change conditions (projects to 2020's, 2050's and 2080's). Using this method, results were consistent with observed trends. They should be used for exploring detailed impacts arising from subtle changes in the temporary sequencing and persistence of daily events.

Secchi Disc: Is a circular disk used to measure water transparency in oceans and lakes.

Sectionalization (Sectionalizing): Cutting and reconnecting (or reterminating) a transmission circuit at a station.

Sediment: Material, including soil and organic material that is deposited on the bottom of a waterbody.

Selective Clearing: Removal of specific or selected trees and vegetation, rather than all vegetation (e.g., at sensitive sites).

Self-Supporting Suspension Lattice: A steel structure supported on four separately founded legs.

Sepals: is part of a flower on a plant. It is a green leak-like piece of the calyx (Botanical Online SL, 2011).

Septage: Partially treated waste stored in a septic tank.

Serotinous: A pinecone or other seed case that requires heat from a fire to melt their resins open and release the seed (Plants of the Western Boreal Forest and Aspen Parkland, 1995)

Setback: Prescribed distance between a pollution sources or disturbance and a resource or ecosystem that needs protection.

Sequencing Batch Reactor: An industrial processing tank used for the treatment of wastewater. It works by bubbling oxygen through the wastewater, reducing the Biological Oxygen Demand and Chemical Oxygen Demand (Wikepedia, 2010b).

Shore: The narrow strip of land in immediate contact with the sea, lake or river.

Shorebird: Any bird that frequents the shoreline between the ocean or large lakes and the land, particularly a bird of the suborder Charadii, such as sandpipers, plovers or snipe.

Short-Term Effect: When the recovery of the affected population and area is expected to occur within one generation.

Shrub: A perennial plant usually with a woody stem, shorter than a tree, often with a multi-stemmed base.

Significance: A conclusion about whether adverse environmental effects are likely to be significant, taking into account the implementation of appropriate mitigation measures. Significance is determined by a combination of scientific data, regulated thresholds, standards, social values and professional judgment.

Silvicultural: The branch of forestry dealing with the development and care of forests.

Site: The place or category of places, considered from an environmental perpective, that determines the type and quality of plants that can grow there.

Site Selection and Environmental Assessment (SSEA): Site Selection and Environmental Assessment process used to select a site or route for a transmission facility (i.e, a station or a transmission line) and assess any potential environmental impacts of that facility on the biophysical environment and socio-economic conditions.

Snag: A standing tree which is three metres or greater in height and either partially dead, dead, or dying. This is further classified into hard snags and soft snags. A hard snag is a tree in which the wood is predominantly sound (possibly merchantable), covered in bark, and retaining its branches. A soft snag is a tree in which the wood is largely decayed, containing little to no merchantable timber. These trees are of particular importance to a

variety of wildlife species, particularly cavity nesters (Wildlife Resources Consulting Services, 2011).

Snipe: A long-billed brownish shore bird with striped back that inhabits marshes and ponds.

Sodicity: The level of exchangeable sodium and its influence on soil.

Solution Features: Solution features are common phenomena within Chalk areas. Classical theory states that solution features are formed entirely by dissolution of the Chalk as a result of chemical weathering, probably during the Quaternary period.

Spatial Boundary: The area examined in the assessment (i.e., the study area).

Spawning Habitat: Areas suitable for the deposition of eggs and the incubation of the eggs.

Special Concern: A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events (COSEWIC, 2010).

Specific Yield: The ration of the volume of water a rock or soil will yield by gravity drainage to the total volume of the rock or soil.

Species: A group of organisms having a common ancestry that are able to reproduce only among themselves; a general definition that does not account for hybridization.

Species at Risk Act (SARA): The federal Act which provides for the legal protection for wildlife species listed under 'Schedule 1' of that Act.

Species at Risk: Means an extirpated, endangered or threatened species or a species of special concern (Department of Justice, 2011c).

Species of Conservation Concern: Includes species that are rare, disjunct, or at risk throughout their range or in Manitoba and in need of further research. The term also encompasses species that are listed under the Manitoba Endangered Species Act (MBESA), or that have a special designation by the Committee on the Status of Endangered Wildlife. In Canada (COSEWIC) (Manitoba Conservation, 2011).

Species: A group of organisms that can interbreed to produce fertile offspring.

Splicing: Connecting two or pieces of linear material, like cable, together.

Split Lake Resource Management Area (SLRMA): Formed by a Comprehensive Implementation Agreement between Tataskweyak Cree Nation and Manitoba in 1992 the area covers about 4,150 ha in northern Manitoba.

Sporadic Discontinuous Permafrost: Where permafrost cover is less than 50 percent of the landscape and typically occurs at mean annual temperatures between 0 and -2 °C.

Staging (area): An area where birds congregate to rest and occasionally feed, generally during spring and fall migration (Wildlife Resources Consulting Services, 2011).

Stand: A collection of plants having a relatively uniform composition and structure, and age in the case of forests (Cauboue et al. 1996).

Standards: Descriptions of targets or goals used to measure the success of procedures. They may be general or specific.

Start-up Camp: The initial housing and support of workers prior to development of a main construction camp.

Static Cryosols: Occur on well to moderately well drained sand and gravel deposits. They are termed Static because there is little cryoturbation (churning of the ground surface by frost action). They occur on uplands such as plateaus or summits (usually as angular blocks with no small sizes in the upper part), where they would likely be classified as Regosolic Static Cryosols, because they lack a B horizon.

Static: Showing little, if any, change.

Step Down Distributor Supply Centre (DSC): A sub-station design, generally consisting of three-phase transformers and associated distribution equipment, used to step down (transform) electrical current at input power sources which allows voltage to be compatible with equipment.

Stewardship: Refers to general environmental care and protection.

Stratigraphy: The science of rocks: It is concerned with the original succession and age relations of rock strata and their form, distribution, lithologic composition, fossil content, geophysical and geochemical properties-all characters and attributes of rocks as strata-and their interpretation in terms of environment and mode of origin and geologic history.

Stratum: A distinct layer within a plant community, a component of structure.

Stripping: The act of removing the natural soil and organic covering from an area by mechanical means.

Study Area: The geographic limits within which environmental effects are assessed.

Sub-Conductor: Any one individual conductor within a conductor bundle.

Subsidence: The gradual settling of the ground when permafrost thaws and the soil previously held up by the ice collapses.

Substation: An assemblage of equipment for switching and/or transforming or regulating the voltage of electricity.

Substrate: The medium on which plants grow.

Suckering: The growth of a plant that produces new shoots at the base or below ground traveling out from the plant base

Sullage: Waste from household sinks, showers and baths.

Surface permafrost: Permafrost that occurs within the top 2 m of the surface materials.

Surveying: The measurement of dimensional relationships, as of horizontal distances, elevations, directions, and angles, on the earth's surface especially for use in locating property boundaries, construction layout and mapmaking.

Sustainability: Capacity of a thing, action, activity or process to be maintained indefinitely in a manner consistent with the spirit of Manitoba's Principles and Guidelines of Sustainable Development.

Sustainable Development (SD) (Canada): Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (Department of Justice, 2011a).

Sustainable Development (SD) (Manitoba): Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Swing Out: Movement of a transmission line conductor caused by wind.

Switchgear: Refers to the combination of electrical disconnects, fuses and/or circuit breakers used to isolate electrical equipment.

Switching Facilities: A substation used to terminate transmission lines operating at the same voltage, and enable individual lines to be taken out of service or connected to other lines to redirect or control the flow of power.

Switchyard: An area within a substation used for switching (see Switching Station).

Synchronous Compensators: Allows for strengthening of the system, supporting the Bipole III converters, voltage control, and adding system inertia for stability.

Tangent: Straight sections of structure type.

Taxon (Taxa): Any unit used in the science of biological classification, or taxonomy.

Tectonic: Pertaining to the structure or movement of the earth's crust.

Temporal: Pertaining to time.

Tenthredinid: Flies from the family Tenthredinidae, also referred to as common sawflies. This is the largest family of sawflies, with about 800 N. American species; it contains most of the species the general collector will encounter. The sawflies are 5-20 mm; some are black, some brownish, and some are brightly patterned. They are usually found on flowers or vegetation. Larvae of most species are external feeders on foliage; a few are leaf miners and a few are gall makers. Some members of this group cause considerable damage to cultivated plants and forest trees (Borror and White, 1970).

Termination: End point. The time when something ends or is completed.

Terrestrial: Pertaining to land as opposed to water (Cauboue et al. 1996).

Terrestrial Communities: Living on or in the ground, or related to the ground.

Terric: Unconsolidated mineral substratum underlying organic soil material; prefix in the soil classification; denotes a condition where a mineral contact occurs within the control section of organic soils or organic cryosols - thus is only used with organic soils at the subgroup level of the soil classification.

Terric Organic: Descriptive of an unconsolidated mineral substratum underlying organic soil material.

The Manitoba Endangered Species Act (MESA): Enacted: 1) to ensure the protection and survival of endangered and threatened species in the province; 2) to enable the reintroduction of extirpated species into the province; and 3) to designate species as endangered, threatened, extinct or extirpated. Additions or deletions to list of species under each designation are recommended by the Endangered Species Advisory Committee.

Thermokarst: The landscape which results from permafrost-thaw induced subsidence and is characterized by irregular surfaces of marshy hollows and small hummocks.

Threatened: A species likely to become endangered if limiting factors are not reversed (COSEWIC, 2010).

Three Phase Circuit: An electrical circuit comprising three conductor wires suspended by insulators from the overhead crossarms of transmission structures.

Threshold: A limit or level which if exceeded likely results in a noticeable, detectable or measurable change or environmental effect that may be significant. Example thresholds

include water-quality guidelines, acute toxicity levels, critical population levels and wilderness criteria.

Thyristor Valve: A high voltage thyristor valve is a solid-state semiconductor device that is the basic component of a high voltage direct current transmission system.

Till: An unstratified, unconsolidated mass of boulders, pebbles, sand and mud deposited by the movement or melting of a glacier.

Timber: The wood of growing trees suitable for structural uses; the body, stem or trunk of a tree.

Tipulids: Flies from the family Tipulidae, also referred to as crane flies. Tipulids are mosquito-like, with very long legs. This is a large group, with nearly 1500 North American species. Many of its members are very common flies. Most species are 10-25 mm. and brownish or gray; a few have dark markings on the wings. Larvae live in water or in moist soil, and generally feed on decaying plant material. Adults are most common near water or where there is abundant vegetation. Crane flies do not bite (Borror and White, 1970).

Topography: The surface features of a region, such as its hills, valleys or rivers.

Towers: The transmission line structures which provide support for the conductors to ensure clearance from the ground. Towers are may be either free standing or guyed and are typically a steel lattice design.

Traditional Activities: Hunting, trapping, fishing and food gathering by Aboriginal peoples whether for subsistence purposes or not.

Traditional Ecological Knowledge (TEK): A body of knowledge built up by a group of people through generations of living in close contact with nature. Also see aboriginal traditional knowledge.

Traditional Use Areas: The use of a geographical area by indigenous peoples throughout the span of their existence.

Transformer Station: A transmission station which includes power transformer, to convert power to the appropriate voltage for delivery to regional subtransmission or distribution facilities, or to the higher voltage required for economical and efficient transmission over longer distances to a load centre

Transformer: An electrical device, commonly located in substations, used to transform (convert) power from one voltage level to another.

Transmission Line: A linear arrangement of towers and conductors which carries electricity from generating stations and transmission stations to load centres like communities and industries to meet electrical needs**.**

Transmission System: The towers, conductors, substations, and related equipment involved with transporting electricity from generation source to areas for distribution—or to the power systems of out-of-province electrical utilities.

Transmission: A process of transporting electric energy in bulk from a source of supply to other parts of the electrical system (e.g., load centres like large communities of major industrial customers).

Transmissivity: The product of hydraulic conductivity and aquifer thickness, a measure of a volume of water to move through an aquifer. Transmissivity generally has the units of ft2/day or gallons per day/foot. Transmissivity is a measure of the subsurface's ability to transmit groundwater horizontally through its entire saturated thickness.

Treaty Land Entitlement (TLE): Refers to land owed to certain First Nations under the terms of the Treaties signed by the First Nations and Canada between 1871 and 1910. Each Treaty provided that Canada would provide reserve land to First Nations based on population size; however, not all First Nations received their full allocation of land. In 1997, the Manitoba Treaty Land Entitlement Agreement was signed by the TLE Committee of Manitoba Inc. (representing 20 First Nations), Canada and Manitoba.

Tributary: Any secondary stream or river that flows into a larger waterbody.

Trophic: (trophic level): A functional classification of species that is based on feeding relationships (e.g. generally aquatic and terrestrial green plants comprise the first trophic level, and herbivores comprise the second.).

True bugs: Insects in the order Hemiptera. They are usually characterized by a scutellum, a triangular-shaped section on the back.

True Colour Units (TCU): A unit for measuring colour.

Trihalomethanes (THM): Is a chemical compound often found used as solvents or refrigerants in industrial applications. THM's are also environmental pollutants and are carcinogenic (Wikepedia, 2011c).

Turbic: Having cryoturbative features (mixed soil material, disrupted soil horizons, involutions (swirl-like patterns in soil horizons), organic intrusions, frost heave, separation of coarse from fine soil materials, cracks, patterned surface features such as

earth hummocks, frost mounds, stone circles, nets and polygons), either at the surface or within 100 cm from the soil surface (*in Cryosols only*).

Turbic Cryosols: Are mineral soils that have permafrost within 2 m of the surface and show marked evidence of cryoturbation (churning of the ground surface by frost action) laterally within the active layer, as indicated by disrupted or mixed or broken horizons, or displaced material or a combination of both.

Umbrella Species: Species with large area requirements. Conservation of these species should automatically conserve a host of other species e.g., grizzly bear (Wildlife Resources Consulting Services, 2011).

Uncertainty: The lack of certainty or a state of having limited knowledge where it is impossible to exactly describe existing state or future outcome, more than one possible outcome. In environmental assessment not knowing the nature and magnitude of environmental effects or the degree to which mitigation measures would prevent or reduce adverse effects.

Unconfined Aquifer: An aquifer which is not bounded on top by an aquitard. The upper surface of an unconfined aquifer is the water table.

Unconsolidated: Not compact or dense in structure or arrangement; i.e., "loose gravel."

Understory: That portion of the trees or other vegetation in a forest stand that is below the main canopy level.

Understory: Vegetation growing beneath taller plants such as trees or tall shrubs.

Ungulates: Any of a number of mammals with hooves that are superficially similar but not necessarily closely related taxonomically.

Unincorporated Communities: A region or area of land that is not part of any municipality (Wikepedia, 2011a).

Unsaturated Zone: The zone below the land surface in which pore space contains both water and air.

V and KG blades: Blades on tracked dozers used for conventional clearing of the right-of-way.

Valued Environmental Component (VEC): Any part of the environment that is considered important by the proponent, public, scientists, and government involved in the assessment process; importance may be determined on the basis of societal or cultural values, or scientific interest or concern (Manitoba Hydro 2011b).

Varved: A layer or series of layers of sediment deposited in a body of still water in one year. Varves are typically associated with glacial lake deposits and consist of two layers: a lower, light-coloured layer that consists primarily of sand and silt, and a darker upper layer that consists primarily of clay and organic matter.

Vascular Plant: A plant having a specialized system of channels for carrying fluids (water and dissolved materials).

Vascular Plant: A plant having a vascular system.

Vegetation: The general cover of plants growing on a landscape.

Vegetation Type: In phytosociology, the lowest possible level to be described.

Velocity: A measurement of the speed of flow.

Veneer bogs: A thin type of bog occurring on gently sloping terrain underlain by generally discontinuous permafrost.

Veener: A mantle of unconsolidated materials too thin to mask the minor irregularities of the underlying unit surface. A veneer is generally less than 1 m in thickness.

Vernal: Appearing or occurring in the spring.

Vertisolic: An order of soils that occur in heavy-textured materials (>60% clay, of which at least half is smectite) and have a shrink-swell character. They lack the degree of horizon development diagnostic of soils of the other soil orders, and the surface (Ah) horizon, when dry, has a massive structure and is hard. It consists of the Vertisol and Humic Vertisol great groups.

Volt: The unit of measurement of electric pressure which causes current to flow.

Vulnerability: Refers to the degree to which a system is susceptible to, and unable to cope with, the adverse effects of climate change. The IPCC further defines vulnerability as a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity (Natural Resources Canada, 2007).

Warm Blooded Invertebrate: An animal lacking a backbone that internally regulates their own body temperature. Body temperature is kept at a relatively constant level, regardless of ambient temperatures.

Waterbird: A bird commonly associated with water, e.g., waterfowl, terns and gulls.

Waterbody: Any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent, or occurs only during a flood. This includes, but is not limited to, wetlands and aquifers.

Waterfowl: Ducks and geese (game birds that frequent water).

Watershed: The region draining into a river, river system or other body of water.

Water Quality: Description of the chemical, physical, and biological characteristics of water, usually in regard to its suitability for a particular purpose or use.

Water Table: See groundwater table.

Watt: The unit of measurement of electrical power. (See kilowatt and kilowatt-hour)

Wetland: Land that is saturated with water long enough to promote hydric soils or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation, and various kinds of biological activity that are adapted to wet environments.

White Geese: Includes Snow, Blue and Ross geese species.

Whorls: A group of three or more leaves arising from one point (Wildflowers Across the Prairies, 1984).

Wildlife: Free-ranging animals which live in the wild, natural or undomesticated state.

Work Camp: A temporary place to house workers when a construction site is far from their place of residence.

ya: Abbreviation for 'years ago'.

Xerophyte: Plants that grow on dry sites.