



The Appleton Wetland; Its Decline, Cause and Recommended Action

Appendix A: Acronyms, Abbreviations and Definitions

Report prepared by

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A report of this nature has a tendency to use a lot of terminology, acronyms, abbreviations and definitions that are peculiar to specialized fields of work. To help the uninitiated reader we list below terms that we have used in this report along with an explanation of the term.

ANSI	In the province of Ontario an ANSI is an Area of Natural and Scientific Interest that has been designated as such by the Ontario Ministry of Natural Resources. There is an established set of criteria to be met before granting such a designation.
<i>Acer rubrum</i>	Red maple, <i>Acer rubrum</i> : leaves, which turn a stunning shade of scarlet in the fall, can be distinguished in spring and summer from sugar maple and silver maple by the sharp 'V' shape notches that separate the 3-5 lobes on each leaf - other similar maple leaves have a 'U' shaped notch. Tree size and shape, bark and habitat similar to <i>A. x freemanii</i> and <i>A. saccharinum</i> .
<i>Acer saccharinum</i>	Silver maple, <i>Acer saccharinum</i> : leaves are easy to identify by the deep, narrow notches separating 5-7 lobes, and the pale white undersides. In the fall leaves turn pale yellow to brown. Tree size and shape, and bark similar to <i>A. x freemanii</i> and <i>A. rubrum</i> . Habitat is moist to wet sites near streams, swamps and lakes.
<i>Acer x freemanii</i>	Freeman's maple, <i>Acer rubrum x saccharinum</i> or <i>Acer x freemanii</i> : leaves are difficult to distinguish from its parent species, but tend to have narrower notches than the red maple, but wider notches than the silver maple. In the fall leaves turn blotchy red and yellow. Tree size and shape, bark and habitat similar to <i>A. rubrum</i> and <i>A. saccharinum</i> .
AWRG	The Appleton Wetland Research Group of the Mississippi Valley Field Naturalists.
Benchmark	In surveying, a benchmark is a point on a solid surface that is used as an elevation reference. It may be assigned an arbitrary elevation for purposes of local elevation measurements. Its elevation may also be measured relative to a primary geodetic vertical datum with elevation stated in metres above sea level (masl). For Canada see CGVD. Benchmarks established by Natural Resources Canada use a standard brass plaque with a serial number that can be used to look up its precise elevation.
BS	In level surveying, BS is back sight, the reading on a level rod (usually in metric units), as viewed through the telescope of a surveyor's level, with the rod placed on a benchmark or turning point of known elevation (elev ₁). This establishes the HI, or height of instrument, as elev ₁ + BS.
CGVD	The Canadian Geodetic Vertical Datum is a height reference system established by Natural Resources Canada that is a standard for heights across Canada. The CGVD28 is the former vertical datum for Canada. It was adopted by an Order in Council in 1935. The CGVD2013 was officially released in November 2013. It replaces the CGVD28, and for a transition period, geodetic benchmarks are listed with elevations in both systems.
cms	A measure of river flow rate in cubic metres per second, also expressed as m ³ /s.

Elev	The elevation of a solid reference point usually stated in terms relative to a known point, or in absolute terms relative to the sea level of the earth, that is, in metres above sea level (masl).
Flashboard	A board or structure of boards extending above a dam or weir to increase its height and capacity.
Flour Mill	The mill building in Almonte originally established as a water powered mill for grinding flour. It is now converted to a hydro generator station.
FS	In level surveying, FS is fore sight, the result of reading on a level rod (usually in metric units), as viewed through the telescope of a surveyor's level, with the rod placed on a benchmark or turning point of unknown elevation ($elev_2$). This establishes the value of the $elev_2$ as $HI - FS$.
GPS	The term means Global Positioning System – a global navigation system based on 24 or more satellites orbiting the earth at an altitude of 12,000 statute miles and providing very precise, worldwide positioning and navigation information 24 hours a day, in any weather. A typical portable GPS receiver can provide position coordinates of a waypoint with an accuracy of the order of ± 3 metres.
GS	A hydro generator station – as used in this report GS may indicate the hydro generator station housed in the former Almonte Flour Mill.
Ha	The hectare is a metric unit of area defined as 10,000 square metres (100 m by 100 m), and primarily used in the measurement of land. One square kilometre equals 100 hectares.
Ha m	The hectare metre is a metric unit of volume commonly applied to the water stored behind a dam. It is equivalent to an area of one hectare covered to a depth of one metre, or 10,000 cubic metres.
Head	As applied to a hydro GS, the head is the difference in water level between GS water intake and discharge at the tailrace. The power that can be generated is directly proportional to the head.
Headpond	The water reservoir immediately above the intake of a hydro power generator station.
HI	In level surveying, HI is height of instrument, the result of reading on a level rod (usually in metric units), as viewed through the telescope of a surveyor's level, with the rod placed on a benchmark or turning point of known elevation ($elev_1$). This establishes the HI or height of instrument as $elev_1 + BS$.
Hydric soil	Hydric soil is soil which is permanently or seasonally saturated by water, resulting in anaerobic conditions, as found in wetlands.
Lat	Abbreviation for latitude, the position of a point on the earth surface, north or south of the equator, measured in degrees, from zero to 90. One minute of latitude equals one nautical mile. In this report latitudes are generally shown in the form $N dd^\circ mm.mmm'$ (degrees and minutes).
Level rod	A graduated leveling staff or rod is held vertically on each point along a survey line, and is observed through the telescope of a surveyor's level. The reading on the rod at the telescope crosshair gives the elevation of the instrument above the reference point. The rod is usually marked, in a

pattern that is easy to read through a telescope, in metres, decimetres and centimetres. Interpolating visually provides an estimate of millimetres.

Long	Abbreviation for longitude, the position of a point on the earth's surface, east or west of the prime meridian, measured in degrees, from zero to 180. The prime meridian runs from the north to south pole through Greenwich, England. One minute of longitude at the equator equals one nautical mile. In this report longitudes are generally shown in the form W ddd° mm.mmm' (degrees and minutes).
m³/s	A measure of river flow rate in cubic metres per second. Also expressed as cms.
Maple, Freeman's	A maple tree species. See <i>Acer x freemanii</i>
Maple, red	A maple tree species. See <i>Acer rubrum</i>
Maple, silver	A maple tree species. See <i>Acer saccharinum</i>
Marsh	A marsh is a wetland that is dominated by herbaceous plants that are usually emergent through water and rooted in hydric soils, but not in peat. Examples would include cattail marshes. Marshes are typically subject to continuous flooding.
masl	Metres above sea level is a measure of the absolute elevation of an object or surface with reference to an established geodetic vertical datum. In Canada the common reference system was CGVD28. That is now being phased over to a new reference, CGVD2013, and at this time many geodetic benchmark data sheets show elevations in both reference systems. In this report, all elevations use the CGVD28 vertical datum.
Megawatt	The rate of electrical energy transfer with respect to time of one million watts.
Megawatt-Hour	The energy value of electrical generation at a rate of one megawatt for one hour, abbreviated as MWhr.
MNRF	The Ontario Ministry of Natural Resources and Forestry (formerly MNR)
MOECC	The Ontario Ministry of the Environment and Climate Change (formerly MOE)
MRPC	The Mississippi River Power Corporation, a GS immediately downstream from the Enerdu GS in Almonte.
MRWMP	The Mississippi River Water Management Plan – the result of a process started in 2003 and completed in 2006 with the intent of setting water management objectives for the system to balance environmental, social and economic values and considerations.
MVCA	The Mississippi Valley Conservation Authority is the government body appointed to manage the Mississippi Valley watershed with a mandate to balance needs of the public with the needs of the environment.
MVFN	The Mississippi Valley Field Naturalists is an organization with the goal of increasing public knowledge, appreciation and respect for the natural world in Ontario's Mississippi River watershed.
MWhr	Abbreviation for Megawatt-Hour.

NAD27	North American Datum of 1927 (NAD27) – An older horizontal reference system that has been superseded by NAD83. Some existing maps and GPS systems may still be based on this standard.
NAD83	North American Datum of 1983 (NAD83) – The current horizontal reference system adopted as a national georeferencing standard by most federal and provincial agencies in Canada, and endorsed by the Canadian Council on Geomatics (CCOG 2006) is NAD83. This standard is used in most current maps and GPS systems.
OTH	In Almonte, the Old Town Hall, located on the south bank of the Mississippi River at Bridge Street.
PSW	In the province of Ontario a PSW is a Provincially Significant Wetland that has been designated as such by the Ontario Ministry of Natural Resources. There is an established set of criteria to be met before granting such a designation.
Reach	Any length of river under study, with definable features; reaches on the Mississippi River are defined or separated by waterpower facilities, water control structures or obvious natural features that cause a change in the characteristics of the river.
Reach 18	The numbered section of the river in the MRWMP between Appleton and Almonte.
Run of River	A term applied to a type of hydro generator station. A run of river facility has very limited water storage capacity and uses only the natural flows in the river, as they are available, for hydro generation. All flow in the river is passed through the plant, with any excess flow released around the plant when the flow exceeds the capacity of the plant. A true run of river system has the least potential impact on a river system as water is released or discharged at essentially the same volume and rate as it enters the river upstream, and without altering the upstream water level from its natural level. This is also referred to as Run of the River or Run-of-the-River.
SAC	The Standing Advisory Committee of the Mississippi River Water Management Plan
Surveyor's level	A surveyor's level is an instrument consisting of a telescope with a crosshair and a level tube rigidly connected to the telescope. When properly calibrated, and the bubble in the tube level is centred, the telescope's line of sight will be horizontal (i.e. perpendicular to the local vertical). It can then be used to measure the relative height of points using a calibrated rod held vertically.
Swamp	A swamp is a wetland that is dominated by trees that are rooted in hydric soils, but not in peat. Swamps are subject to intermittent flooding but typically have water level 25 cm below ground level during the active growing season.
Tailrace	As applied to a hydro GS, the channel that carries away the water as it exits from the turbines.

TP	In level surveying, TP is a turning point, which is a temporary reference mark on a solid surface that is used as an intermediate level reference along a survey line. The elevation of the first TP ($elev_1$) is determined from the initial known benchmark elevation ($elev_0$) using ($elev_1 = elev_0 + BS_0 - FS_1$). The process repeats with as many instrument setups and TPs as necessary, with each new TP using the previous TP as an elevation reference. That is ($elev_n = elev_{n-1} + BS_{n-1} - FS_n$).
WAAS	Wide Area Augmentation System is a system of satellites and ground stations that provide GPS signal corrections for better position accuracy. A WAAS-capable GPS receiver can give a position accuracy of better than three metres, 95 percent of the time.
Watt	The standard unit of power in the International System of Units (SI), equivalent to one joule per second and equal to the rate of energy transfer in a circuit in which a current of one ampere flows across a potential difference of one volt.
Waypoint	As applied to GPS units, waypoints are locations or landmarks worth recording and storing in a GPS unit. A waypoint may be retrieved later in order to return to a particular location. They may be check points on a route or significant ground features. Waypoints may be defined and stored in the unit manually, or more usually, waypoints may be entered directly by taking a reading with the unit at the location itself. The waypoint position is given in latitude and longitude, or lat and long.
Weir	A barrier across a river designed to alter the river's flow characteristics. In most cases, weirs take the form of obstructions smaller than most conventional dams, pooling water behind them while also allowing water to flow steadily over their tops. In the case of the Almonte weir at the former Flour Mill there are four sections, numbered 1 to 4, starting at the small island near the Old Town Hall and ending at the GS water intake.
WP	See waypoint