

**Department of Environment and Local Government  
Source and Surface Water Management Branch**

**Wetland Ecosystem Services Protocol - Atlantic Canada (WESP-AC)  
A Fact Sheet for New Brunswick**

Nature is complex and varies considerably from place to place. As natural systems, wetlands are no exception. The use of one word to describe a wetland type cannot meaningfully predict what a specific wetland does or how it may benefit people and the environment.

Wetland functions are the natural physical, chemical and biological processes that occur in wetlands. A wetland functional assessment is the standardized procedure used to identify and evaluate wetland functions and values. It is important to note that not all wetlands perform all functions, nor do they perform all functions equally.

The protection and management of wetlands is instrumental to maintaining and improving New Brunswick's resilience against the impacts of climate change. An increase in the frequency and magnitude of extreme weather events are causing damaging storm surges, overland flooding, significant stormwater runoff, and erosion that may put people and infrastructure at risk. In coastal areas this is amplified by rising sea-levels and the diminishment of sea-ice. Wetlands can help protect New Brunswick's communities by providing services or functions such as: water storage and delay to help mitigate flooding, stabilization of shorelines to help mitigate erosion, nutrient retention, and carbon sequestration to help mitigate the effects of greenhouse gases.

***What is WESP-AC?***

Wetland Ecosystem Services Protocol for Atlantic Canada (WESP-AC) is a standardised method for rapidly assessing wetland functions for all types of wetlands in Atlantic Canada. It is a regionalised adaptation of WESP (Wetland Ecosystem Services Protocol), previously customised for use in Alberta, Alaska, and Oregon, and is consistent with other methodologies across various jurisdictions.



WESP-AC consists of a manual and its appendices, three data forms, and an Excel® spreadsheet calculator. The WESP-AC Calculator contains formulas that use science-based models to automatically generate scores which are intended to quantify wetland functions and benefits (i.e., wetland

services). It is a standardized desktop and field evaluation method. It generates a set of scores (zero to ten? scale) and ratings (Lower, Moderate, Higher) for 18 specific wetland functions and benefits.

Surface Water Storage is an example of one of the 18 functions measured within the WESP-AC. Surface Water Storage indicates the effectiveness of a wetland for storing water or delaying the downslope movement of water. Such information is critical when managing for flood mitigation and climate change impacts.

### ***Conducting a WESP-AC Assessment***

WESP-AC is a rapid assessment tool designed to take approximately one to three hours to complete, depending on wetland size, access and the user's prior experience applying the tool and familiarity with the area. It includes the following three forms:

1. Office Form - Requires a desktop review. Aerial imagery and various desktop tools are used to answer questions pertaining to land cover, wildlife access, distance to nearby infrastructure and water bodies.
2. Field Form - Requires a field assessment. The assessor walks as much of the Assessment Area as possible to answer questions pertaining to extent of plant cover and species, hydrology, hydrological connectivity, and soil characteristics.
3. Stressor Form - Requires a combination of desktop review and field assessment. Stressors to wetlands are represented by increased impacts by humans, proximity to roads, increased runoff, potential for contaminants or soil disturbance.

Upon completion of the forms, the results are input into the WESP-AC Calculator which will generate the function and benefit scores for the wetland.

### **How will WESP-AC be used in New Brunswick?**

In New Brunswick, WESP-AC may be required for proposed wetland alterations through the Environmental Impact Assessment (EIA) process, and, dependent on the scope of project, it may also be required through the Watercourse and Wetland Alteration (WAWA) application process.

Through the EIA or WAWA processes, proposed projects are reviewed based on the wetland mitigation sequence that includes avoidance in the planning stage; activity minimization and specific mitigation techniques during the construction phase; and compensation. If the wetland mitigation sequence has been followed, and it is demonstrated that avoidance is not possible, a site-specific assessment of the wetland functions that will be impacted as a result of a project may be required using WESP-AC.

The results of the WESP-AC will be evaluated by Wetland Biologists at the Source and Surface Water Management Branch of the Department of Environment and Local Government (DELG). The information provided in the WESP-AC will guide considerations (as described above) for proposed wetland impacts as well as guide decisions on wetland compensation and restoration proposals.

WESP-AC can also be an important tool used to assist communities in identifying and prioritizing wetlands that provide critical services to combat the effects of climate change in their land use planning. In this context, wetlands are considered as part of the natural infrastructure or natural assets of a community and should be considered for conservation or green areas during the planning stages for new subdivisions or developments. Natural infrastructure is defined as a managed network of natural lands, such as forests, wetlands, and other open spaces, which conserve or enhance ecosystem values and functions as well as provide associated benefits to the community. As natural infrastructure, wetlands serve to improve water quality and increase water retention as well as protect existing infrastructures from flooding, storm surges and coastal erosion.

### **Who can Conduct WESP-AC Assessments?**

WESP-AC must be completed by a wetland consultant, who is a person having a combination of:

- Completed the WESP-AC training course; and,
- Education and/or demonstrated experience in wetland delineation, restoration, hydrology, wetland soils and botany.

WESP-AC assessments are subject to audits and additional requirements may be imposed by DELG.

### **Timing of Assessment**

The recognized period for conducting the field portion of WESP-AC is during the growing season of June 1<sup>st</sup> through September 30<sup>th</sup>, when vegetation can be easily observed and identified. This is consistent with the recognized period, or “season”, for conducting wetland delineations in New Brunswick. It is important to note that due to annual variations in weather patterns and ground conditions, the recognized WESP-AC or wetland delineation season may be extended. Consultants may submit a wetland delineation report and/or WESP-AC report outside of the recognized period provided the three wetland parameters are evident and they are confident the delineation/assessment can be accurately completed (i.e., vegetation is present and can be identified accurately, and there is no snow cover and the ground is not frozen allowing for the assessment of soil). Click [here](#) for more information on the wetland delineation protocol in New Brunswick.

WESP-AC reports are valid for a period of five years; however, a proponent may arrange to re-assess a wetland's functions at any time provided the WESP-AC protocol is followed.

### ***Protocol for WESP-AC Report Submissions***

The following content is required for WESP-AC report submission and any submission that does not meet these minimum requirements may be returned to the applicant or wetland consultant as incomplete.

WESP-AC reports must be submitted to the Source and Surface Water Management Branch of the DELG for provincial records, review, and potential audit. The reports must be submitted in PDF or Word format with accompanying completed Excel® spreadsheet.

The following must be included in a WESP-AC submission:

- Property identification number (PID) of all properties on which the WESP-AC was conducted;
- Applicant's contact information;
- Date of report and date of the WESP-AC assessment;
- Wetland consultant's name, company and contact information;
- Signature of the wetland consultant;
- Type of WESP-AC conducted (tidal and/or non-tidal);
- Site description including the following:
  - a. legible site location drawing or map clearly showing the location of the wetland surveyed on the property (use map legends as appropriate)
  - b. aerial image of the site showing boundaries of the wetland and, if different, the assessment area
  - c. weather conditions at the time of the site visit
  - d. current and historical land use of study area
  - e. watercourses observed onsite
  - f. wetland type(s) and size
  - g. observed vegetation types, class heights and distribution
  - h. observed surface water characteristics
  - i. ground and soil characteristics (i.e., hummocky, upland inclusions, texture, etc.)
- WESP-AC Excel® spreadsheets;
- Site photographs taken from several angles including surface water, if any, and dominant vegetation; and
- List of exotic floral species found within the wetland, in addition to halophytic vegetation for tidal WESP-AC.

The report is to also include a written statement summarizing the results of the WESP-AC scores as well as an analysis of the results.

For additional information, please contact DELG:

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