NC-CREWS FACT SHEET

North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)

* **What is NC-CREWS?** NC-CREWS is the name of the procedure that DCM uses to assess the functions of wetlands shown on its wetland type maps. NC-CREWS is a watershed based GIS wetland functional assessment model.

* NC-CREWS evaluates only the wetlands that are detailed on DCM's Wetland Type Maps. If the wetlands are not on DCM's Wetland Type Maps then they are not evaluated.

* NC-CREWS evaluates 3 main wetland functions: Water Quality Functions, Wildlife Habitat Functions, and Hydrology Functions. NC-CREWS also evaluates Potential Risk. Potential Risk is an estimation of the relative risk to watershed integrity posed by a specific wetland's loss.

* NC-CREWS rates 39 different parameters for each and every wetland identified on the DCM maps. Of these 39 parameters, 21 measure landscape characteristics and 18 measure internal characteristics of the wetland itself.

Structure

* NC-CREWS uses a hierarchical structure in which individual parameters are rated and successively combined until the wetland's overall functional significance is determined.

* There are four levels of ratings: 1. Overall Wetland Rating, 2. Specific Function And Potential Risk Ratings, 3. Subfunction ratings, and 4. Parameter and Sub-parameter Ratings.

Ratings

* NC-CREWS has three relative rating scores. They are Beneficial Significance, Substantial Significance, and Exceptional Significance.

* Functional assessment ratings for individual functions, subfunctions, parameters, and sub-parameters can be looked at independently. (This is used for identifying the most significant wetlands that perform the specified function, subfunction, parameter or sub-parameter).

Verification

* The NC-CREWS procedure is based on the best wetland science available in the scientific literature and on extensive review by a team of wetland scientists.

* An advisory panel of Wetland Scientists and State and Federal Agencies has reviewed every step of the procedure's development.

* Field visits to nearly 400 wetland sites were made to gather data on functional indicators used in the procedure.

* NC-CREWS has been approved by the EPA as an acceptable GIS method for assessing wetland functions.

NC-CREWS - Overall Wetland Functional Significance Rating Definitions

The Overall Wetland Rating (OWR) for wetlands is based on each wetland's ability and opportunity to provide (1) Water Quality, (2) Hydrologic, and (3) Wildlife Habitat functions.

Exceptional Functional Significance:
A wetland is rated exceptional for its overall functional significance when it performs water quality, hydrologic and/or wildlife habitat functions at well above normal levels. Specifically, a wetland is rated Exceptional when any two of the primary wetland functions (water quality, hydrology, and habitat) are rated Exceptional. Salt or Brackish marshes, estuarine scrub-shrub wetlands; estuarine forested wetlands; unique natural ecosystems or special wildlife habitat areas, wetlands located adjacent to primary nursery areas, and wetlands that contain threatened or endangered species are also rated Exceptional.

Substantial Functional Significance:
A wetland is rated Substantial when the wetland performs the three primary wetland functions at normal or slightly above normal levels. A wetland is also rated Substantial if it is a buffer to a wetland rated Exceptional.

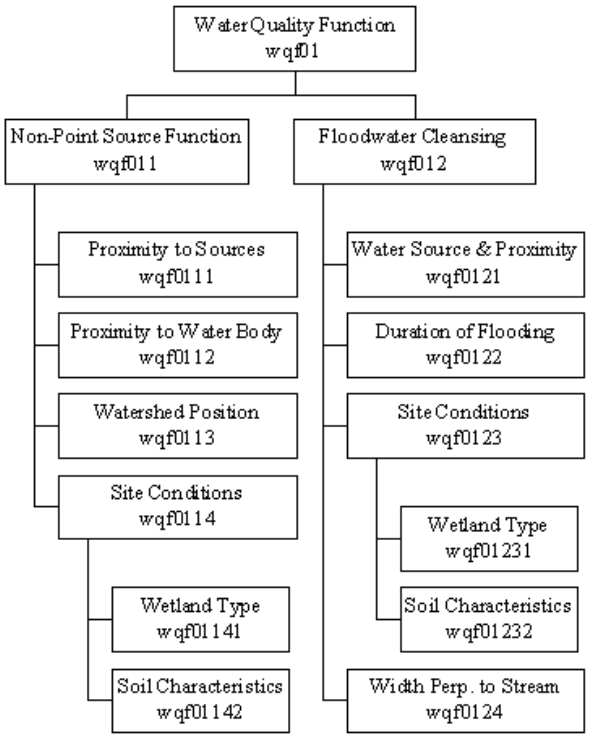
Beneficial Functional Significance:
A wetland is rated Beneficial when it performs the three primary wetland functions at below normal levels or, in some cases, not at all. Although most wetlands perform a variety of wetland functions, all wetlands do not provide all functions. A wetland is rated Beneficial when any two of the primary wetland functions are rated low and none are rated high. Some jurisdictional wetlands may not perform some functions due to degradation or alteration, but may provide other functions at below normal levels.

Non-Wetland:
Places in the coastal zone, considered upland, they are generally agriculture or bare land. Non-wetlands are not rated by NC-CREWS.

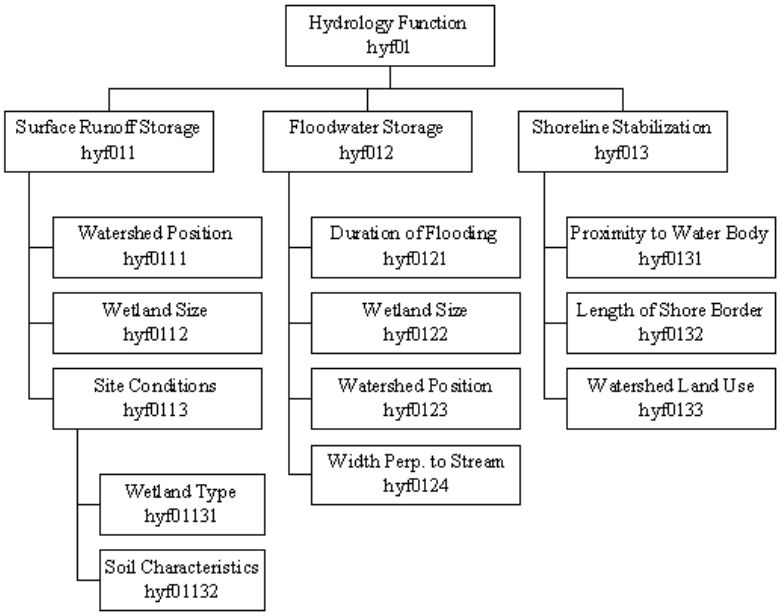
Unable to Evaluate:
Potential wetland areas that are not rated in the NC-CREWS model because satellite imagery indicates that they have been recently altered. Most of these areas were forested wetlands in 1988 but have been cleared according to 1994 satellite imagery.

Potential Risk:
Potential Risk is a measure of the relative risk to watershed and landscape functional integrity posed by the loss of a wetland's functions. Potential Risk is not used to determine a wetland's functional significance. Nevertheless, potential risk is useful when identifying the most significant wetlands within a watershed.

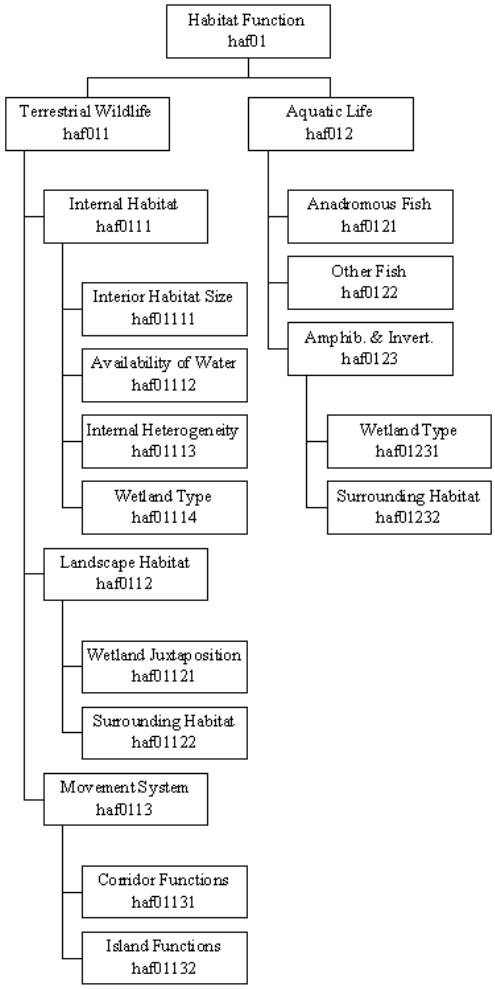
NC-CREWS Water Quality Function



NC-CREWS Hydrology Function



NC-CREWS Habitat Function



NC-CREWS Potential Risk Function