# New Hampshire Fish & Game Department
# Spatial Data Notes

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|---|---|
| **DATA LAYER:** | Salt marsh habitat of New Hampshire |
| **COVER NAME:** | nh_coastal_dslv (public distribution copy called "saltmarsh") |
| **COVER CONTENTS:** | salt marsh habitat polygons |
| **COVER TYPE:** | Poly |
| **SOURCE:** | NH Coastal Program |
| **SOURCE SCALE:** | 1:24,000 and 1:9600 aerial photography (August 2004) |
| **SOURCE MEDIA:** | digital |
| **COORDINATE SYSTEM:** | NH Stateplane feet; horizontal datum NAD83 |
| **TILE:** | State |
| **AUTOMATED BY:** | Normandeau Associates, Inc. for the NH Coastal Program |
| **STATUS:** | Complete |
| **LAST REVISION:** | December 2008; attributes revised December 2009 |

## General Description of the Data

- Development of this coverage provides general salt marsh habitat locations within the state of New Hampshire. The dataset delineates emergent tidal wetlands within the coastal zone of NH, including the Atlantic coastline from the Massachusetts to the Maine border, the NH side of the Piscataqua River, Great Bay and its tributaries up to the head of tide, and the NH Isles of Shoals. In general the cover types are based on the US Fish and Wildlife's wetland classification system developed by Cowardin et al. in 1979. The purpose of the project was to map all emergent tidal wetlands, with an emphasis on the invasive Phragmites (Phragmites australis) and purple loosestrife (Lythrum salicaria). Cattail (Typha angustifolia and occasionally T. latifolia) were delineated in large stands.

- Condition analysis was completed for incorporation into the NH Wildlife Action Plan. Funding for the Plan was provided by State Wildlife Grants administered by the US Fish & Wildlife Service.

## Item definitions for SALTMARSH polygon attributes:

| ITEM NAME | WDTH | TYPE | N.DEC | DESCRIPTION |
|---|---|---|---|---|
| FGID | 5 | I | 0 | (*unique, sequential ID number*) |
| ACRES | 8 | N | 1 | area (acres) |
| HECTARES | 8 | N | 2 | area (hectares) |
| AREA_M2 | 8 | N | 1 | Total size of area/unit (square meters) |
| PERIM_M | 8 | N | 1 | Total perimeter of area/unit (meters) |
| SHAPEINDEX | 5 | N | 1 | Shape index (value of 1 is nearly square) |
| NEARDIST | 8 | I | 0 | Distance to nearest neighboring area/unit (meters) |
| PROXINDEX | 5 | N | 1 | Proximity index |
| DIST20HA | 8 | I | 0 | Distance to nearest salt marsh area > 20 hectares in size (m) |
| SUMHA1KM | 10 | N | 2 | Hectares of saltmarsh within 1 km |
| INVASIVES | 1 | C | 0 | Y or N, invasive plant species occurrence(s) |
| INVASV_PCT | 5 | N | 1 | Percent of polygon with invasive plants present |
| IFESMEAN | 2 | I | 0 | Integrated Fragmentation Effects Surface score (Zankel, 2005) |
| ROADDENS | 5 | N | 2 | Density of all DOT roads (km/km2) |
| IMPERV_PCT | 5 | N | 1 | Percent impervious surface |
| EOSELCOUNT | 5 | I | 0 | Count of selected animal species occurrences in polygon[1] |
| EO1KMCOUNT | 5 | I | 0 | Count of selected animal species occurrences within 1km |
| A_RICH_BUF | 3 | I | 0 | Species richness of rare animals within their dispersal distances from the polygon (2009) |
| A_RICH_POL | 3 | I | 0 | Species richness of rare animals within polygon (2009) |

## Item definitions for SALTMARSH polygon attributes: (continued)

| ITEM NAME | WDTH | TYPE | N.DEC | DESCRIPTION |
|---|---|---|---|---|
| P_RICH_POL | 3 | I | 0 | Species richness of rare plants in polygon (2009) |
| C_RICH_POL | 3 | I | 0 | Richness of natural communities in polygon (2009) |
| BIO | 8 | N | 2 | Raw biological score (high score = high quality) |
| LAND | 8 | N | 2 | Raw landscape score (high score = high quality) |
| HUMAN | 8 | N | 2 | Raw human impact score (high score = low impact) |
| COND | 8 | N | 3 | Raw habitat condition score (high score = good condition) |
| PRIORITY | 50 | C | 0 | WAP Priority (state and regional rank) |
| CONS_AC | 10 | N | 2 | Conservation (acres) |
| CONS_PCT | 5 | N | 1 | Conservation (percent) |

**NOTES:**

[1] Selected set of species included: common tern, sharptail sparrow, seaside sparrow, osprey, willet

BIO Condition score = ($P\_RICH\_POL_R$*.25) + ($C\_RICH\_POL_R$*.25) + ($EOSRICH1KM_R$*.25) + ($EOSELRICH_R$*.25)
where all biological variables are positive indicators of biological quality and subscript denotes percentile rank, thus "good" sites score high (maximum percentile rank=100) and "poor" sites score low (minimum percentile rank=0).

LAND Condition score = ($HECTARES_R$*.34) + ($PROXINDEX_R$*.33) + ($DIST20HA_R$*.33)
where all landscape variables are positive indicators of landscape integrity and subscript R denotes percentile rank, thus "good" sites score high (maximum percentile rank=100) and "poor" sites score low (minimum percentile rank=0).

HUMAN Condition = ($IFESMEAN_R$*.25) + ($ROADDENS_R$*.25) + ($INVASV\_PCT_R$*.25) + $IMPRV\_PCT_R$*.25)
where deleterious human impact variables have been transformed so that all variables are positive indicators of ecological integrity and subscript R denotes percentile rank, thus "good" sites score high (maximum percentile rank=100) and "poor" sites score low (minimum percentile rank=0).

COND The condition index = (BIO+LAND+HUMAN)/3 as defined above

The list above represents the complete set of attributes developed for the WAP habitat data layer. Only select attributes are distributed in the public release version WAP data layers. For more information, please contact the NH Fish and Game Department, Wildlife Division, 11 Hazen Dr, Concord NH 03301
Phone: (603) 271-2461 E-mail: wildlife@wildlife.nh.gov

The fields: A_RICH_BUF, A_RICH_POL, P_RICH_POL and C_RICH_POL, provide species richness counts (number of different species potentially present in the habitat polygon) from the NH Natural Heritage Bureau as of December 2008. Care must be taken in interpreting these counts as most areas of NH have never been surveyed for biodiversity elements. See *Important Background Information for Interpreting Species Richness Counts based on NH Natural Heritage Bureau Data* for details.

**LITERATURE AND DIGITAL DATA CITED:**

NH Natural Heritage Bureau BIOTICS database January 21, 2009 (species/community richness)

Sperduto, D.D. and W.F. Nichols. 2004. *Natural communities of New Hampshire*. The NH Natural Heritage Bureau and The Nature Conservancy. 229pp.

Zankel, M. 2005. Integrated Fragmentation Surface for the State of New Hampshire. The Nature Conservancy, Concord NH. Unpublished report to NH Fish and Game Department.