

New Hampshire Fish & Game Department Spatial Data Notes

DATA LAYER: Pitch Pine/pine barrens habitat of New Hampshire
COVER NAME: pitchpine
COVER CONTENTS: Pitch Pine habitat polygons
COVER TYPE: Poly
SOURCE: DRED Natural Heritage Bureau (NHB) pitch pine habitat
SOURCE SCALE: 30m raster and 1:24,000
SOURCE MEDIA: digital
COORDINATE SYSTEM: NH Stateplane feet; horizontal datum NAD83
TILE: State
AUTOMATED BY: NH Natural Heritage Bureau, April 2005
STATUS: Complete
LAST REVISION: December 2008; attributes revised December 2009

General Description of the Data

- Development of this coverage provides general pitch pine habitat locations within the state of New Hampshire. Analysis was completed for incorporation into the New Hampshire Wildlife Action Plan. Funding for the Plan was provided by State Wildlife Grants administered by the US Fish & Wildlife Service.
- Potential pine barrens habitat was mapped using known pine barrens occurrences (New Hampshire Natural Heritage Bureau 2005). Six variables were measured for pixels within known occurrences: elevation, slope, landcover, drainage, texture, and a composite index of drainage and texture indicating the location of the pixel relative to large, contiguous areas of appropriate soils conducive to fire spread. For each variable, the range of values that encompassed 85-93% (depending on the variable) of the pixels was selected. Throughout the state, pixels that fell within these value ranges for all six variables were selected as potential pine barrens habitat. Known habitat patches as well as historically known patches were then added to the map.
- The pine barrens map was heavily dependent on the accuracy of soils data and elevation data. While there are some errors in the elevation data, there are likely to be more errors in the soils data. County soil surveys often do not show small inclusions of different soil types within larger polygons. In addition, digital county soil surveys are not available for Belknap and Merrimack Counties or the White Mountains, and drainage and texture data is absent from some polygons of Coos County. For these areas, the STATSGO data set was used (Natural Resources Conservation Service 1994). STATSGO is a map of soil data at a much coarser scale than county soil surveys, and thus is much more prone to error at the fine scales required for accurate habitat maps. Thus, the pine barrens map will be most inaccurate in these areas.
- Information on pine barrens distribution and status was collected from habitat management plans, technical field reports, agency data, and scientific journals.

Item definitions for PITCH_PINE polygon attributes:

ITEM NAME	DESCRIPTION
FGID	<i>(unique, sequential ID number)</i>
ACRES	area (acres)
HECTARES	area (hectares)
CURR_PCT	Percent of area classified by NHB as current pine barrens
PROXINDEX	Proximity index (1km distance)

Item definitions for PITCH_PINE polygon attributes: (continued)

ITEM NAME	DESCRIPTION
ELU30VAR	Variety of Ecological Land Units (ELU30 = elevation, substrate, landform)
IFESMEAN	Mean IFES score (Integrated Fragmentation Effects Surface, TNC Zankel, 2005)
POP00SQMI	Population density in 2000 (persons per square mile)
HU00SQMI	Housing units density in 2000 (houses per square mile)
CA_INDEX	Avg deposition index, rate of cation depletion per ha/per year (Miller et al, 2005)
A_RICH_BUF	Species richness of rare animals within their dispersal distances from polygon (2009)
A_RICH_POL	Species richness of rare animals within polygon (2009)
P_RICH_POL	Species richness of rare plants in polygon (2009)
C_RICH_POL	Richness of natural communities in polygon (2009)
BIO	Raw biological score (high score = high quality)
LAND	Raw landscape score (high score = high quality)
HUMAN	Raw human impact score (high score = low impact)
COND	Raw habitat condition score (high score = good condition)
ECOSUB	Ecoregional subsection
CONDITION	WAP Priority based on COND score
PRIORITY	WAP Priority based on COND score with EO add-ins
CONS_AC	Conservation (acres)
CONS_PCT	Conservation (percent)

NOTES:

Condition of all matrix forest habitats was evaluated using a single, seamless matrix forest condition raster. This raster was used to select areas, or neighborhoods, of each forest type that are at least 100 acres in size, meeting original thresholds (below). If the contiguous area of top-ranked matrix forest habitat was less than 100 acres it was designated Tier 3 supporting landscape.

Tier 1 Top-ranked in NH = Top 10% in NH (by area, for each forest habitat type)
Tier 2 Top-ranked in biological region = Top 50% in subsection (by area, for pitchpine)

PLEASE REFER TO THE DOCUMENT “MATRIX_FOREST_datanotes.pdf” for explanation.

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.

DATA SOURCES:

Complex Systems Research Center. 2001. *New Hampshire land cover assessment – 2001*. 30m raster data. Available from GRANIT, University of New Hampshire.

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

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Spatial Data Notes: PITCHPINE

Miller, E.K. VanArsdale, A., Keeler, G.J., Chalmers, A., Poissant, L., Kamman, N., and Brulotte, R. 2005. Estimation and Mapping of Wet and Dry Mercury Deposition across Northeastern North America. *Ecotoxicology* 14: 53-70.

Digital data describing atmospheric deposition of mercury were provided by Ecosystems Research Group, Ltd. using the methods described in Miller et al. (2005). Digital data describing the risk of calcium and other base cation depletion and limitation in forested ecosystems provided by Ecosystems Research Group, Ltd. using methods described in Miller (2005).

Miller, E.K. 2005. Assessment of Forest Sensitivity to Nitrogen and Sulfur Deposition in New Hampshire and Vermont. Project report dated 12/15/2005. New Hampshire Department of Environmental Services, 29 Hazen Dr, Concord NH 03302. 18 pp.

Natural Resources Conservation Service. Date varies, in progress with last revision in 2002. *Soil Units of Rockingham, Sullivan, Cheshire, and Strafford Counties*. Automated by and available from GRANIT, University of New Hampshire, www.granit.unh.edu

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

The Nature Conservancy (J. Tollefson). 2005. GAP Status Assessment of NH Conservation Lands. Unpublished report to the NH Fish and Game Department.

The Nature Conservancy. 2006. NH Forest Block Model.

V-LATE 1.1 Vector-based Landscape Analysis Tools (Extension for ArcGIS 9). Dirk Tiede, Stefan Lang, Hermann Klug, Tobias Langanke. The development of V-LATE has been financed by the EU project SPIN (Spatial Indicators for European Nature Conservation, Contract No. EVG2-2000-0512, 2001-2004)

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.