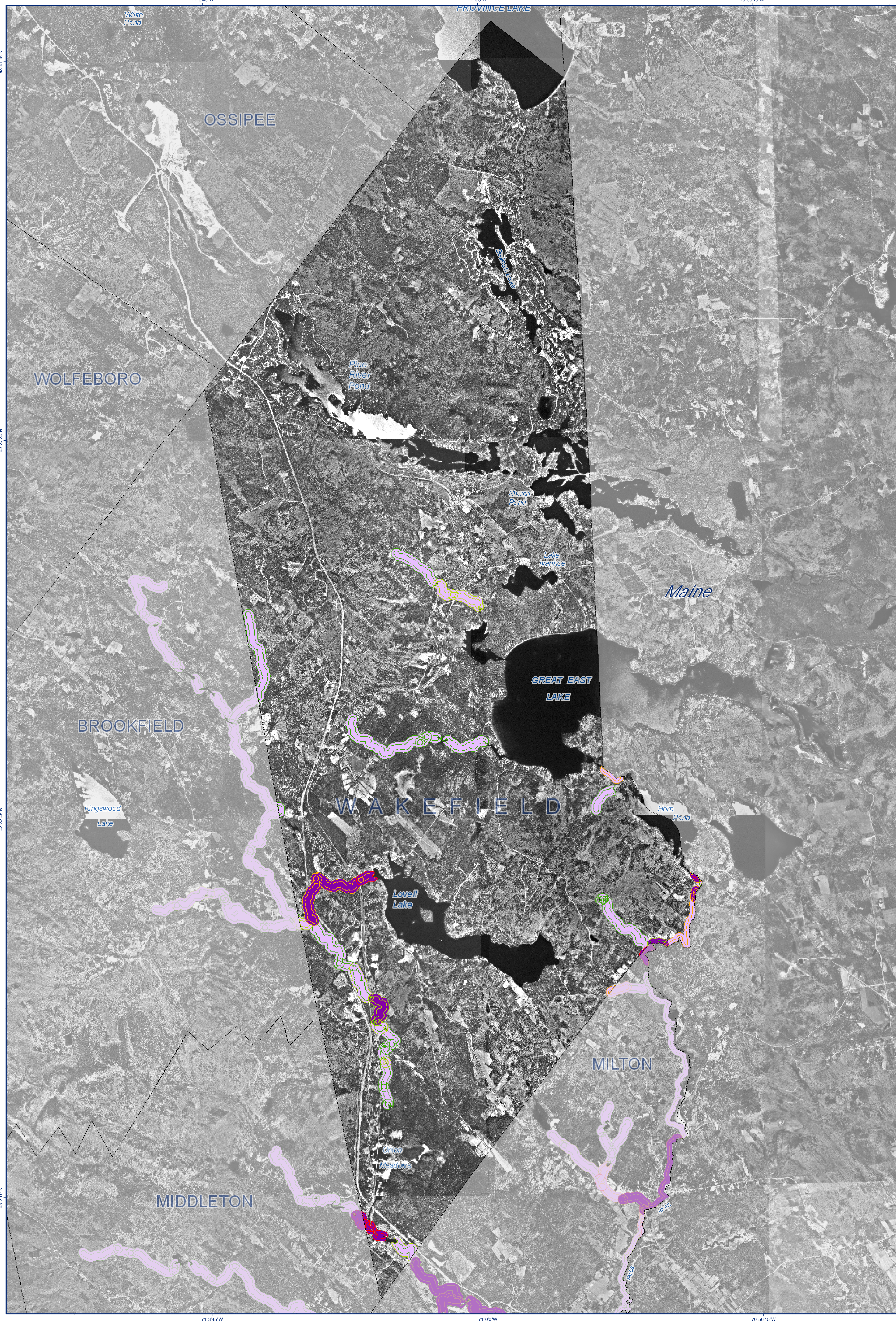


STREAM BUFFER CHARACTERIZATION STUDY



Town of Wakefield, NH

Project Description:

The Complex Systems Research Center at the University of New Hampshire conducted a characterization of 2nd order and higher streams within the Piscataquis/Coastal Basin of coastal New Hampshire. Existing GIS and remote sensing data were used to map a suite of anthropogenic factors, including land use, impervious surface coverage, and transportation infrastructure, within standard buffers around each stream segment. These factors were then analyzed to produce a categorical indicator representing the status of each stream.

Processing began using the GRANIT hydrography data to identify perennial streams/riparian of order 2 or higher. Each stream segment was buffered by 300' to support water quality analysis and by 300' to support habitat analysis, and the buffers were then combined with land use data derived from 1998 USGS Digital Orthophotographs (DOCs). Finally, the bufferland use composites were categorized

based on the degree to which each buffer was impacted by human activity.

Specifically, the buffer categories reflect the percent of land area within each buffer mapped as either developed, transportation, or agriculture, and include:

Category	Decision Rule
Intact	<10% impacted
Mostly Intact	10-25% impacted
Somewhat Modified	25-50% impacted
Altered	>50% impacted

The buffer characterizations are depicted on the map and summarized in the tables below. The map also displays the 300' buffers based on the degree of imperviousness in 2005, and the townwide conservation lands data, and impervious surface coverage by town for 1990, 2000, and 2005, as well as conservation lands acreage by town, are also reported.

Stream Buffer Characterization



Percent Impervious by 300-ft Buffer Segment

Less Than 10%
Greater Than 10%

Conservation Lands

Level 1, 2, or 2A

150-ft Buffer Stream Characterization Data Summary

Town Name	Total Acres	Land Area		Surface Water Area		150' Buffer Area		Percent of Town Buffer Average Categorized as:			
		Acres	% of Town	Acres	% of Town	Acres	% of Town	Intact	Mostly Intact	Somewhat Modified	Altered
Total	75967	70814	93.2	51529	6.8	25279	3.6	2.3	0.7	0.4	0.2

Townwide Conservation Lands Data Summary

Town Name	Acres	% of Land	
		% of Town	% of Land Area
Total	7596	10.0	10.7

300-ft Buffer Stream Characterization Data Summary

Town Name	Total Acres	Land Area		Surface Water Area		300' Buffer Area		Percent of Town Buffer Average Categorized as:			
		Acres	% of Town	Acres	% of Town	Acres	% of Town	Intact	Mostly Intact	Modified	Altered
Total	75967	70814	93.2	51529	6.8	20207	7.3	3.9	1.6	1.3	0.6

Townwide Impervious Surface Data Summary

Town Name	Acres	% of Land	
		Area 1990	Area 2005
Total	44	6.4	7.5

Map Notes:

- Stream reaches were identified, attributed, and buffered based on their stream reaches from confuence to confluence. Town boundaries used to guide the determination of segments at specific locations, e.g. where impervious surfaces existed on one side but not on the opposing bank. These procedures occasionally yielded very short stream segments and therefore relatively small buffers.
- Because only 2nd order and higher perennial streams were analyzed, some discontinuities exist in the data set and thus in the buffers.
- At points of confluence and in other locations where buffers overlapped, the most impacted category was assigned to the overlap area.
- Data were processed for the Piscataquis/Coastal Basin, which includes all or part of all municipalities. Six of these towns - Abou, Dairy, Hammonds, Pittsford, South Hampton, and Wolboro - were not included in the present map set as they have no streams that extend into the Watershed.
- Only 300' buffers were analyzed with respect to impervious surface data due to the 30-meter resolution of the source satellite imagery.
- Conservation lands shown on the map and summarized in the table include only those classified as permanently protected (Level 1, 2, or 2A) in the GRANIT database.

Data Sources:

Stream Buffers were created from 1:24,000-scale New Hampshire National Hydrography Dataset (NHD) stream centerlines (2006). Impervious Surface data was generated from Landsat 5 TM (30m resolution) imagery (1990, 2000, 2005). Land Use data was created from 1998 USGS Digital Orthophotographs. Conservation Lands were based on April, 2006 version of GRANIT data layer.

Map by:
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