University of New Hampshire
Topographic Map Digitization Projects

Thelma B. Thompson
Government Documents and Maps Librarian
University of NH Library
OVERVIEW

- Description of existing New England-New York collection
- Enhancements to New Hampshire collection currently underway
- Future work
Current Collection: Coverage

7 states, ca. 1890-1950

~1575 maps
Current Collection: Map Scales

30-minute
Scale \( \frac{1}{125000} \)

15-minute
Scale \( \frac{1}{92500} \)

7.5-minute
Scale \( \frac{1}{31680} \)

Not included:
more recent 7.5-minute maps at 1:24,000
Current Collection: Specifications and Hardware

- 200 dpi TIFFs, scanned as “quarter quads”
- Most done on HP 4C scanner, some on Microtek ScanMaker 9600XL
- TIFFs converted to JPEG using Paint Shop Pro
- Images adjusted and resized with Photoshop 5.5 and ImageReady 2.0
Current Collection: Collaboration Partners

- **Christopher Marshall**, Amherst, NH: Scanning and initial indexing for personal use (ca. 1998-2001)
- **Meredith Ricker**, UNH Documents Dept.: Acquisition of images, refinement of indexing, pilot rescanning project, user technical assistance and web site maintenance (1998-present)
- **Thelma Thompson**, UNH Map Librarian: User reference assistance (ca. 2000-present)
Current Collection: Initial Funding

- Images and indexing were gift from Christopher Marshall to UNH.
- UNH grant support obtained by Meredith Ricker:
  - Parent’s Assoc, 1997, server $6215
  - Parents Assoc., 1999, larger format scanner, $1399
  - Internal library funding, 1999, server and hard drives, $7950
Current Collection: Current Server & Library Support

- 2004 moved server
- Currently JPEGs are on Dell PowerEdge 2600 server
- File Sizes:
  - TIFFs ~108 GB
  - JPEGs ~ 8 GB
  - HTML pages ~ 8.75 MB
UNH LIBRARY Government Documents Dept.

Historic USGS Maps of New England & NY

About our online Collection
Getting Copies of the Maps

http://docs.unh.edu/nhtopos/nhtopos.htm
Historic USGS Maps of New Hampshire

Alphabetic Town Listing

A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|W|X|Y|Z

Acworth (4)  Laconia (2)
Albany (4)    Lancaster (4)
Alexandria (1) Landaff (1)
Allenstown (1) Langdon (1)
Alstead (2)   Lebanon (2)
Alton (3)     Lee (2)
Amherst (1)   Lempster (2)
Andover (2)   Lincoln (3)
Antrim (2)    Lisbon (2)

Alphabetic Quadrangle Listing

A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|W|X|Y|Z

Alton 15 Minute  Manchester 15 Minute
1919 Reprinted 1929 1905 Reprinted 1911
1957 1941
1946 1953
1950

Ashburnham 7.5 Minute  Mascoma 15 Minute
1946 1927
1950 1932 Reprinted 1937

Ashby 7.5 Minute  Milan 15 Minute
1946 1930
1950
Current Collection: Users

- FACULTY AND STUDENTS
- PROFESSIONALS
- COMMUNITY VOLUNTEERS
- ORDINARY FOLKS
Current Collection: Uses

- **FACULTY AND STUDENTS**: natural resources and environment, history....
- **PROFESSIONALS**: planning, surveying, natural resources and environment....
- **COMMUNITY VOLUNTEERS**: local boards, advocacy groups....
- **ORDINARY FOLKS**: map aficionados, local history, genealogy, curiosity......
Enhancements Underway

- Use ExLibris DigiTool for image management
- Rescan New Hampshire maps and complete all versions up to penultimate (“NH Collection”)
- Retain present quarter quads for rest of New England and New York, creating Dublin Core metadata for each map
Current Collection: DigiTool

University System of NH installed DigiTool in 2006. DigiTool servers are maintained by UNH Enterprise Computing Group. Currently UNH is:

- Ingesting quarter quads
- Generating JPEG2000 files
- Establishing relationships among images
- Extracting technical metadata
New Hampshire Collection: Collaboration Partners & Funding

UNH VP for Research and Public Service, Outreach Scholarship Grant for Phase One, May 2005-Sept. 2006, $7598

Thelma Thompson, UNH Library
Christina Bellinger, UNH Library
Fay Rubin, NH GRANIT data repository
Rick Chorman, NH DES
New Hampshire Collection: Additional Partners

- **GRANIT:**
  David Justice (Information Technologist)
  Robert Hanson (GIS Technician)

- **Library:**
  Eleta Exline (Digital Librarian) and others

- **External Partners:**
  Evans Map Library, Dartmouth College

- ~200 maps rescanned, all versions with changed content
- Scanning the older map series first (primarily 15-minute)
- Different versions: images with collar information for Library, without collar for GRANIT GIS users
New Hampshire Collection: Specifications and Hardware

- **Scanner**: HP Designjet 815 mfp
- **Scanned on black background to minimize “bleed through”**
- **600 dpi RGB tri-band TIFF converted to indexed single-band TIFF using Adobe Photoshop 6.0 and 7.0**
- **Georeferenced using ERDAS Imagine 8.7 Service Pack 2, to NH State Plane, NAD 1983, feet**
Locate maps
Establish Unique ID

For example: 1955HV15DRG29
Challenges:
Inconsistent formats for key dates


CRAWFORD NOTCH

Polyconic projection. North American datum 5000-yard grid based upon U.S. zone system, A

The Maine part of this map made from surveys without spirit level control

BERWICK, ME-N.H.
Edition of 1937

4 Miles

100 Feet

HARD IMPERVIOUSLY SURFACED ROADS
OTHER MAIN TRAVELED ROADS

1935

5000-yard grid based upon U.S. zone system, A

ROADS IMPERVIOUSLY SURFACED
ROADS OTHERWISE SURFACED

1938

DIXVILLE, N.H.
N 4445—W 7115/15
1930

WINNIPESAUKEE, N.H.
N 4330—W 7115/15
1956

927 North American datum
in New Hampshire system

Transverse Mercator grid ticks,

GEOLOGICAL SURVEY, WASHINGTON, D.C. 1971

Lt. Col. 54

317000m. E.
71° 15' W.

ROAD CLASSIFICATION

Light-duty

Unimproved dirt

U.S. Route

State Route

NEMO, June 9, 2006, Revised 9/06
Winnipesauke, 1956

Crawford Notch, 1896
Establish Unique ID

For example:

1955HV15DRG29

- Year: 1955
- Historic image: H
- Vegetation: V
- Extent: 15’
- Image type: DRG
- GRANIT 15’ Quad No.: 29
Scan maps
Georeference images
Clipped vs. Unclipped Images
Current Project Status

- 200+ quads scanned and georeferenced
- 17 additional maps in process
- Metadata preliminary standards determined
Plans for Immediate future

- Complete 15’ maps for the rest of the state
- Create FGDC metadata for GRANIT
- Crosswalk to Dublin Core metadata for Library
- Make clipped images available through GRANIT
- Ingest Library unclipped images into DigiTool
Future plans

- Obtain funding to scan all older 7.5’ NH maps
- Contribute NH 15’ TIFFs and metadata to USGS collaborative project for national-level topographic map collection
- Determine how best to integrate old and new library collections and adapt/create optimal web access
Acknowledgements

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Lucinda Hall and Dartmouth Map Library staff
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