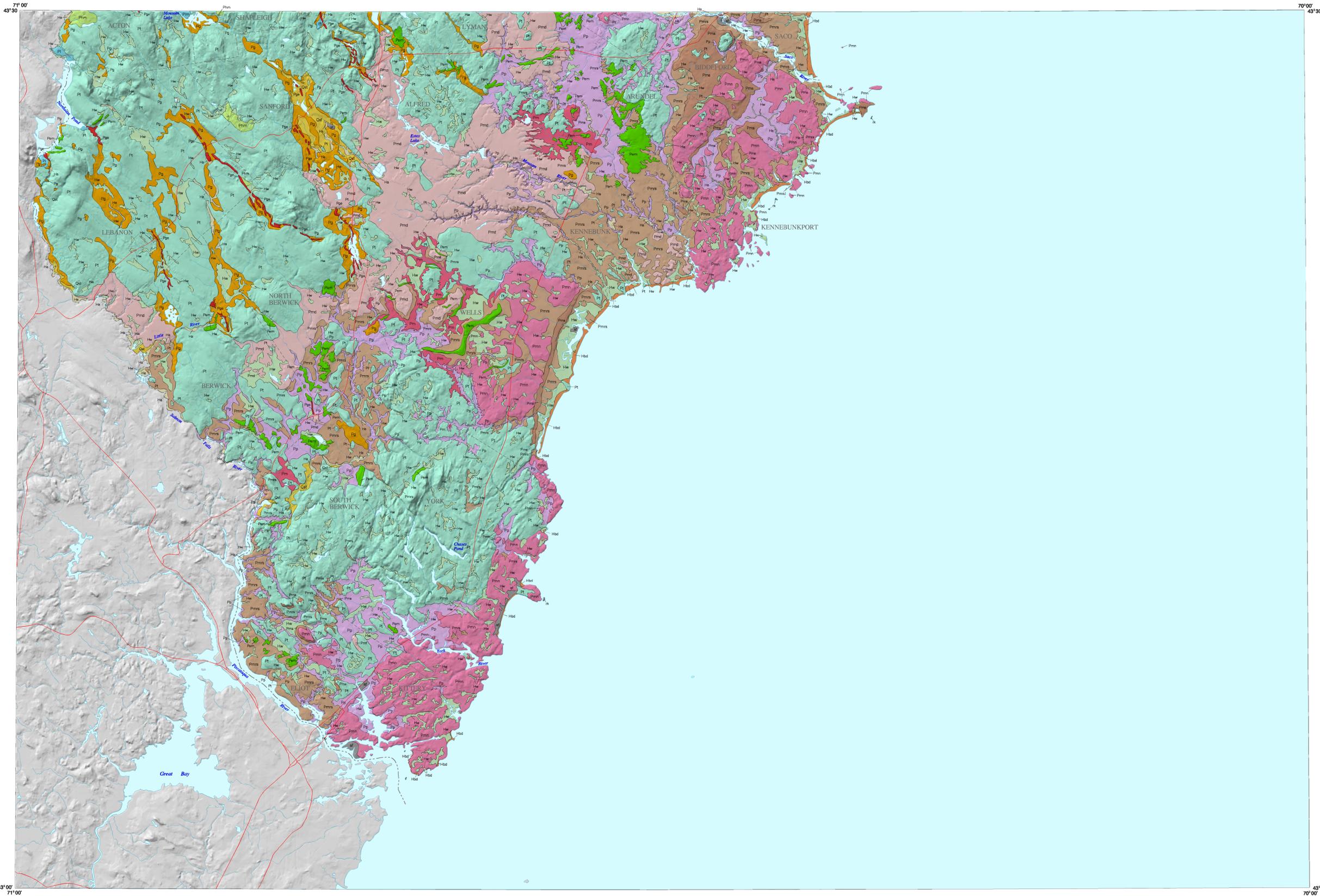


Surficial Geology of the Kittery 1:100,000 Quadrangle, Maine



Kittery Quadrangle, Maine

Surficial geology compiled by
Susan S. Tolman

Geologic editing by
Woodrow B. Thompson
Thomas K. Weddle

Cartographic design and editing by
Robert D. Tucker

Funding for the preparation of this map was provided in part by the U.S. Geological Survey
STATEMAP Program, Cooperative Agreement No. 06HQAG0026.

Maine Geological Survey
Address: 22 State House Station, Augusta, Maine 04333
Telephone: 207-287-2801 E-mail: mgs@maine.gov
Home page: <http://www.maine.gov/doc/nr/mc/nr/mc.htm>

Open-File No. 07-52
2007

EXPLANATION OF UNITS

Map units are labeled and grouped here by age:

H = Holocene (postglacial deposits, formed mostly during the last 10,000 years)
Q = Quaternary (age may vary from late Pleistocene to Holocene)
P = Pleistocene (formed during most recent glacial episode, between about 25,000 and 10,000 years ago)

- a^f** Artificial fill - Surficial sediments, rock fragments, and/or artificial materials, transported and dumped to build up highways, waterfronts, etc.
- Ha** Stream alluvium - Sand, silt, gravel, and organic material deposited on flood plains of modern streams.
- Hw** Wetlands - Peat, muck, and/or fine-grained inorganic sediments in poorly drained areas. Includes both freshwater wetlands and coastal salt marshes.
- Hbd** Coastal beaches and sand dunes - Modern ocean beaches are generally too narrow to distinguish at the scale of this map and thus are grouped with adjacent dune deposits.
- Qst** Stream terraces - Sand, gravel, and silt deposited on former flood plains as streams cut down to their modern levels.
- Pl** Glaciolacustrine deposits - Sediments deposited in temporary ice-dammed or sediment-dammed glacial lakes. Includes deltas and lacustrine fans consisting of sand and gravel, and lake-bottom sand, silt, and clay. Named glacial lakes are listed below.
- Pim** Glacial Lake Mousam (southern part overlaps divide between Little Ossipee and Mousam Riverbasins)
- Pmrs** Marine regressive deposits - Sand, gravel, and silt deposited in (or graded to) shallow marine waters during late-glacial regression of the sea. Includes large sand plains that commonly overlie marine mud of the Presumpscot Formation. Formed by a variety of fluvial and nearshore processes.
- Pms** Marine shoreline deposits - Beach and dune deposits ranging from sand to gravel. Formed during the regressive phase of late-glacial marine submergence.
- Pmn** Marine nearshore deposits - Sand, gravel, and silt deposited by wave and current action in shoreline and shallow nearshore environments. Formed mostly during the regressive phase of late-glacial marine submergence.
- Pp** Presumpscot Formation - Silt, clay, and sand deposited on the sea floor.
- Pmf** Submarine fans - Sand and gravel deposited on the sea floor at the glacier margin.
- Pmd** Glaciomarine deltas - Flat-topped sand and gravel deposits graded to the contemporary late-glacial sea level and formed at or near the glacier margin.
- Pm** Marine deposits, undifferentiated - Sand and gravel of uncertain origin, but thought to have been deposited in the sea.
- Pg** Glacial stream deposits - Sand and gravel deposited by glacial meltwater streams at or near the ice margin. Map unit includes ice-contact and outwash sediments, as well as minor glaciolacustrine deposits.
- Pga** Eskers - Ridges of sand and gravel deposited by meltwater streams in subglacial tunnels. May also include some fan deposits formed where tunnel streams ended in glacial lakes.
- Phm** Hummocky moraine - Glacial till with hummocky topography. Usually occurs in valley bottoms. Contains many boulders, and lenses of sand, gravel, and silt are locally abundant. Formed by melting and disintegration of debris-rich ice in the marginal zone of the last glacial ice sheet.
- Pem** End moraine complexes - Clusters of closely spaced end moraines deposited at the receding (but still active) margin of the last glacial ice sheet. Most individual moraines within these clusters trend generally east-west, parallel to the ice margin. Composed of till and/or sand and gravel, locally including submarine fan deposits.
- Pt** Till - Loose to very compact, poorly sorted, massive to weakly stratified mixtures of sand, silt, and gravel-size rock debris deposited directly from glacial ice. Locally contains lenses of waterlaid sediments.
- rk** Bedrock outcrops

EXPLANATION OF SYMBOLS

- Geologic contact
- Road
- County boundary
- State boundary
- Town boundary
- PORTLAND Township name

RELATED MAPS

Tolman, S. S. (compiler), 2007. Deglaciation features in the Kittery 1:100,000 quadrangle, Maine: Maine Geological Survey, Open-File Map 07-54.

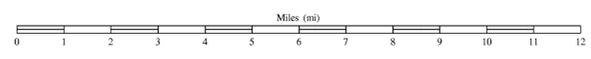
Tolman, S. S. (compiler), 2007. Glacial ice-flow indicators in the Kittery 1:100,000 quadrangle, Maine: Maine Geological Survey, Open-File Map 07-53.

INDEX TO SOURCES OF GEOLOGIC MAP DATA

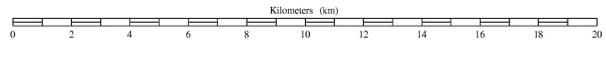
1:24,000 Surficial geologic quadrangle maps, authors, and Maine Geological Survey Open-File numbers. In some areas the original map data have been supplemented with more recent observations.

MILTON	SANFORD	ALFRED	KENNEBUNK	BIDDEFORD	BIDDEFORD POOL
A. Maglioli 99-91	C. Neil 97-55	C. Neil 99-76	G. Smith 99-86	C. Hildreth 99-78	C. Hildreth 99-79
ROCHESTER	SOMERS- NORTH	NORTH BERWICK	WELLS	KENNEBUNK- PORT	
G. Smith 99-98	G. Smith 99-99	G. Smith 99-92	G. Smith 99-104	G. Smith 99-87	
DOVER EAST	YORK HARBOR	YORK BEACH	YORK BEACH		
G. Smith C. Cameron 99-82	P. O'Toole J.M. Clinch C. Cameron 99-107	P. O'Toole J.M. Clinch C. Cameron 99-106			
PORTSMOUTH	KITTERY				
G. Smith C. Cameron 99-95	P. O'Toole J.M. Clinch C. Cameron 99-88				

Shaded relief base by Marc C. Loiselle using a digital elevation model with a 10-meter grid, sun angle of 315°, and sun elevation of 45°.



Map Scale
1:100,000



National geodetic vertical datum of 1929.