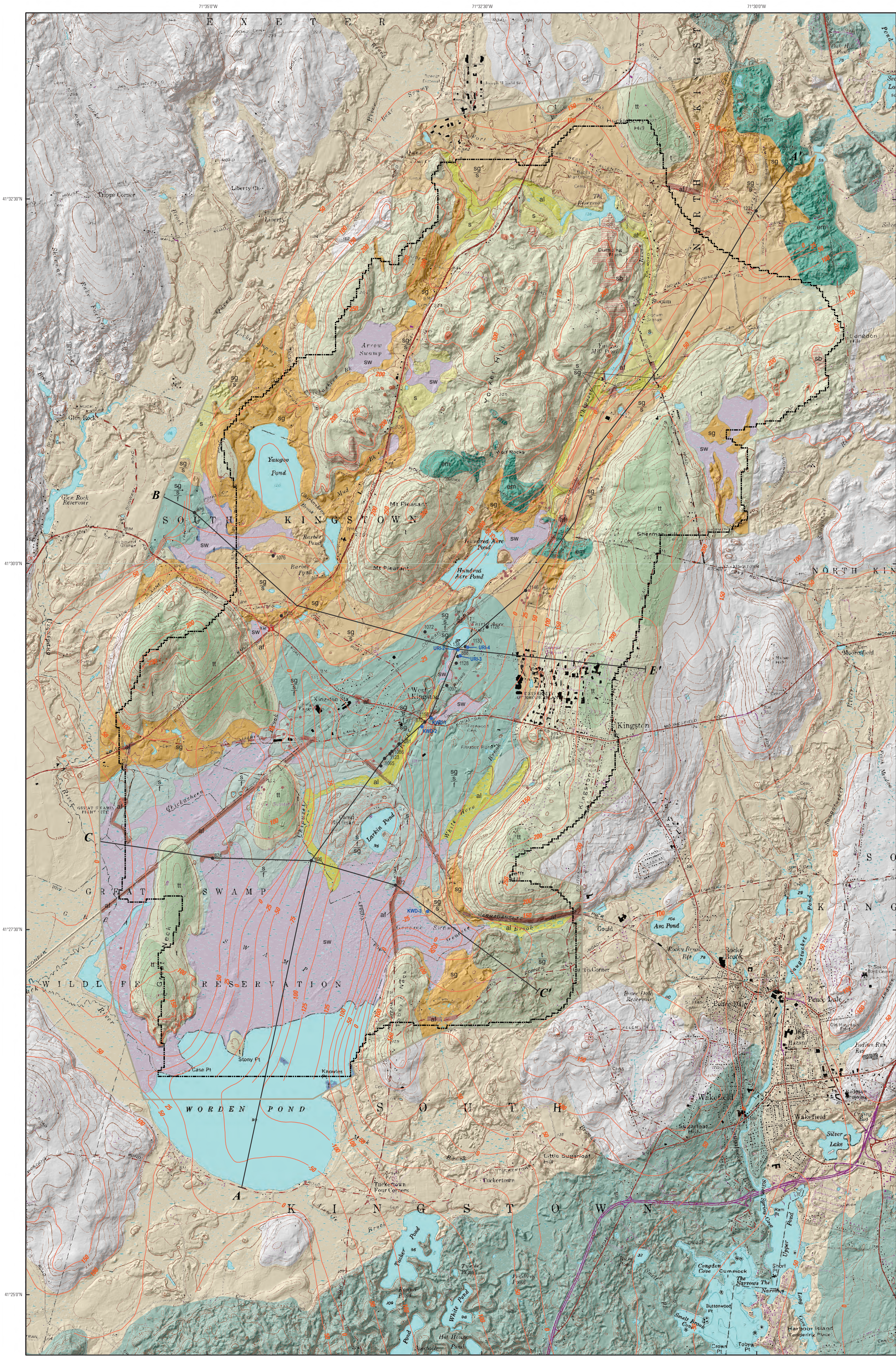




EXPLANATION

DESCRIPTION OF MAP UNITS

- Postglacial deposits**—Alluvium is present beneath the floodplain surfaces of the Chipuxet River, although some surfaces are also underlain by swamp deposits; swamp deposits also occur in positions isolated from the floodplain, such as in kettle holes. Swamp deposits and alluvium are generally thin less than 10 feet (ft) thick and are underlain by thicker glacial deposits
- Artificial fill**—Earth materials and manmade materials that have been artificially placed, primarily in highway and railroad embankments, and in dams
- Floodplain alluvium**—Sand, gravel, silt, and some organic material, stratified and well to poorly sorted. Textures vary over short distances, both laterally and vertically, and are generally similar to the texture of adjacent glacial deposits
- Swamp deposits**—Organic muck and peat that contain minor amounts of sand, silt, and clay, stratified and poorly sorted, in kettle depressions or poorly drained areas

Glacial meltwater deposits (stratified deposits)—Sorted and stratified sediments composed of gravel, sand, silt, and clay (as defined in chart below) deposited in layers by glacial meltwater. These sediments are classified into three textural units—sand and gravel deposits, sand deposits, and fine deposits. The texture of glacial stratified deposits is described throughout their whole vertical extent either as a single textural unit or as two or more units in various orders of superposition referred to as “stacked units.” Contacts between subsurface textural units are not mapped with as great an accuracy or detail as those at the surface. All units of glacial stratified deposits overlie glacial till and (or) bedrock which is not included in the stacked unit.

- Sand and gravel deposits**—Composed of mixtures of sand and gravel particles within individual layers and as alternating layers. Sand and gravel layers generally range from 25 to 50 percent gravel particles and from 50 to 75 percent sand particles. Layers are well to poorly sorted; bedding may be distorted and faulted due to postdepositional collapse. Origin: Proximal deltaic and fluvial deposits and delta topset beds
- Sand deposits**—Composed mainly of very coarse to fine sand; coarser layers may contain up to 25-percent gravel particles, generally granules and pebbles; finer layers may contain some very fine sand, silt, and clay. Layers are commonly well sorted. Origin: Deltaic foreset beds, distal lacustrine fan deposits, and distal fluvial deposits
- Fine deposits**—Composed of very fine sand, silt, and clay that occur as well-sorted, thin layers of alternating silt and clay (varves) or as thicker layers of very fine sand and silt. Very fine sand commonly occurs at the surface and grades downward into rhythmically bedded silt and clay varves. Origin: Lake-bottom deposits, distal lacustrine fan deposits
- Sand and gravel overlying sand**—Sand and gravel less than 20 feet thick, horizontally bedded and overlies thicker, inclined layers of sand. Origin: Deltaic deposits
- Sand overlying sand and gravel**—Sand is of variable thickness overlies sand and gravel of variable thickness. Origin: Distal forest beds overlying proximal deltaic deposits
- Sand and gravel overlying sand overlying fine overlying sand and gravel**—Sand and gravel less than 20 feet thick and horizontally bedded overlies thicker, inclined layers of sand; these overlie silt and clay of variable thickness and sand and gravel of variable thickness. Origin: Deltaic deposits overlying lake-bottom deposits overlying proximal lacustrine fan deposits
- Sand overlying fine overlying sand and gravel**—Thin sand overlies thicker silt and clay of variable thickness and sand and gravel of variable thickness. Origin: Deltaic deposits overlying lake-bottom deposits overlying proximal lacustrine fan deposits
- Sand and gravel overlying sand overlying fine**—Sand and gravel less than 20 feet thick, horizontally bedded overlies thicker, inclined layers of sand; these overlie silt and clay and locally very fine sand and silt of variable thickness. Origin: Deltaic deposits overlying lake-bottom deposits and distal lacustrine fan sediments
- Sand overlying fines**—Thin sand overlies thicker silt and clay and locally very fine sand and silt. Origin: Deltaic forest beds overlying lake-bottom deposits and distal lacustrine fan sediments

Glacial-ice-laid deposits—Includes deposits laid down beneath the ice sheet as lodgement till or melted out of the ice as ablation till; also material melted out or shoved into place at the terminus of the ice sheet as end moraine deposits

- Till**—Nonsorted, nonstratified mixture of sand, silt, and clay containing scattered pebble, cobble, and boulder clasts; large surface boulders are common; mapped where till is generally less than 10 to 15 feet thick. Predominantly upper till of the last glaciation; loose to moderately compact, generally sandy; commonly stony. Two facies present in some places—a looser, coarser grained ablation facies, melted out from supraglacial position; and an underlying more compact, finer grained lodgement facies deposited subglacially. A darker green color (tt) indicates areas where till is greater than 10 to 15 feet thick, chiefly in drumlin landforms in which till thickness commonly exceeds 100 feet. Although upper till is the surface deposit, the lower till constitutes the bulk of the material in these areas. Lower till is moderately to very compact and is commonly finer grained and less stony than upper till. An oxidized zone, the lower part of a soil profile formed during a period of interglacial weathering, is generally present in the upper part of the lower till. This zone commonly shows closely spaced joints that are stained with iron and manganese oxides
- End moraine deposits**—Composed predominantly of boulders and ablation facies sandy upper till, lenses of stratified sand and gravel occur locally within the till. Surface boulders on end moraine deposits are generally more numerous than on adjacent till surfaces; dense concentrations of boulders are present in some places and shown on map as triangle-patterned areas. Deposits occur as free-standing hummocky landform and range in thickness from 10 to 60 feet. Origin: Deposits laid down by ablation at the front of the retreating ice margin in the Wolf Rocks and Congdon Hill moraines
- Till overlying sand and gravel**—Ablation till and some lodgement till overlying deformed glacial meltwater sediments. In the glacial pit south of Genesee Brook, till ranges from about 3 ft to as much as 10 feet in thickness. Origin: Readvance of the ice sheet over previously deposited deltaic deposits

- Bedrock areas**
- Bedrock outcrops and areas of abundant outcrop or shallow bedrock**—Solid color shows extent of individual bedrock outcrops; ruled patterns indicate areas where small outcrops are too numerous to map individually
- Bedrock contour**—Contours drawn on the surface of the bedrock; number is altitude in feet, interval is variable

- Map units outside of study area**
- Undifferentiated stratified deposits**
- Charlestown, Point Judith, and Congdon Hill end-moraine deposits**

MAP SYMBOLS

- Geologic study boundary**
- Contact between map units**
- Model boundary**
- Quadrangle boundary**
- Line of geologic section**
- Location of wells used in mapping**
- Location of wells shown on cross sections and identification number**
- Location of production wells and identification number**

Particle diameter										
10	2.5	0.16	0.08	0.04	0.2	0.01	0.005	0.0025	0.0015	inches
256	64	4	2	1	0.5	0.25	0.125	0.063	0.004	mm
Boulders	Cobbles	Pebbles	Granules	Very coarse sand	Coarse sand	Medium sand	Fine sand	Very fine sand	Silt	Clay
Gravel particles				Sand particles			Fine particles			

Grain-size particle diameters—Grain-size classification used in this report; modified from Wentworth (1922)

Surficial materials units mapped by J.R. Stone; basic geologic units modified from Kaye, 1960, Powell, 1967, and Scheller, 1961

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By
Janet Radway Stone
2014

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