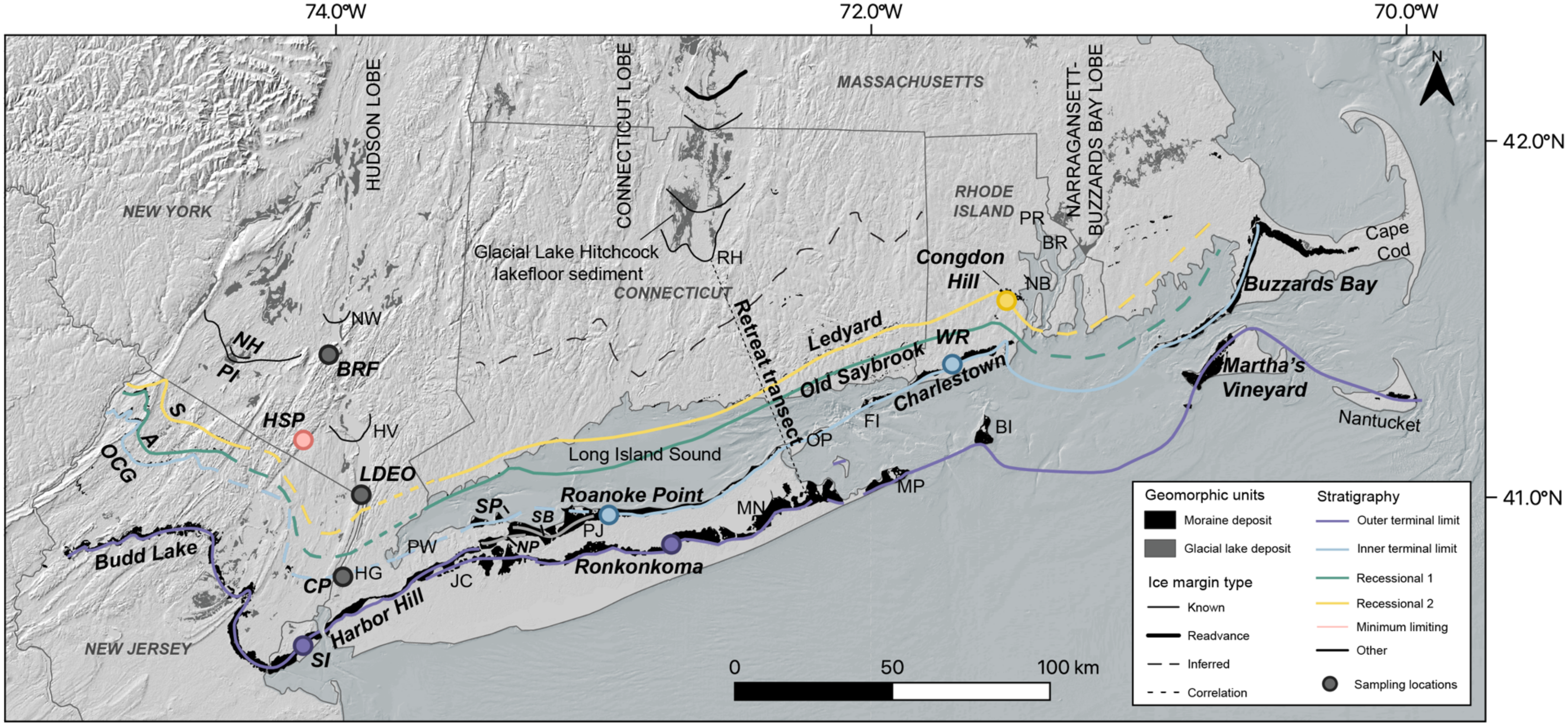
74.0°W
72.0°W
70.0°W
42.0°N
41.0°N
MASSACHUSETTS
HUDSON LOBE
CONNECTICUT LOBE
NARRAGANSETT-BUZZARDS BAY LOBE
NEW YORK
RHODE ISLAND
CONNECTICUT
NEW JERSEY
Glacial Lake Hitchcock lakefloor sediment
RH
PR
BR
NB
Congdon Hill
Cape Cod
Buzzards Bay
Martha's Vineyard
Nantucket
NW
NH
PI
BRF
HSP
HV
S
A
OCG
LDEO
Ledyard
Old Saybrook
WR
Charlestown
Retreat transect
FI
OP
BI
Long Island Sound
MP
MN
Roanoke Point
SP
SB
PJ
NP
PW
JC
HG
CP
Budd Lake
Ronkonkoma
Harbor Hill
SI
0
50
100 km
Geomorphic units
Moraine deposit
Glacial lake deposit
Ice margin type
Known
Readvance
Inferred
Correlation
Stratigraphy
Outer terminal limit
Inner terminal limit
Recessional 1
Recessional 2
Minimum limiting
Other
Sampling locations

Figure 1 - Regional map of New England and New York depicting ice marginal positions and glacial geomorphology. Hillshade topography from NASA Shuttle Radar Topography Mission (2013). Bathymetry from NOAA Office of Coast Survey BlueTopo product (tinted dark blue to indicate ocean). Glacial geology is from the surficial geologic maps of Massachusetts (Stone et al., 2018), Rhode Island (Boothroyd et al., 2003), Connecticut (Stone et al., 2005), New York (Cadwell et al., 1989), and New Jersey (Stone et al., 2002). Ice marginal positions and correlations are adapted from Sirkin (1982), Stone and Borns (1986), Boothroyd et al. (1998), Stone et al. (2005), Ridge et al. (2004), Ridge et al. (2012), and Stanford et al. (2021). Retreat rates presented in Section 5.1.3 are calculated using distance along the retreat transect. Moraine segment names discussed in the text are labeled in bold italics and other locations of relevance are labeled in regular text. Sample locations associated with a specific ice-margin position discussed in the text are colored by their stratigraphy as defined in the legend. A = Augusta moraine, BI = Block Island, BR = Barrington, RI, BRF = Black Rock Forest, CP = Central Park, FI = Fishers Island, HG = Hell Gate, HSP = Harriman State Park , HV = Haverstraw, NY, JC = Jericho, NY, LDEO = Lamont-Doherty Earth Observatory, MP = Montauk Point, MN = Manorville, NY, NB = Narraganset Bay, NW = Newburgh, NY, NH = New Hampton moraine, NP = Northport moraine, OCG = Ogdensburg-Culvers Gap moraine, OP = Orient Point, PI = Pellets Island moraine, PJ = Port Jefferson, NY, PW = Port Washington, NY, RH = Rocky Hill, CT, S = Sussex moraine, SB = Stony Brook moraine, SI = Staten Island, SP = Sands Point moraine, WR = Wolf Rocks Moraine.

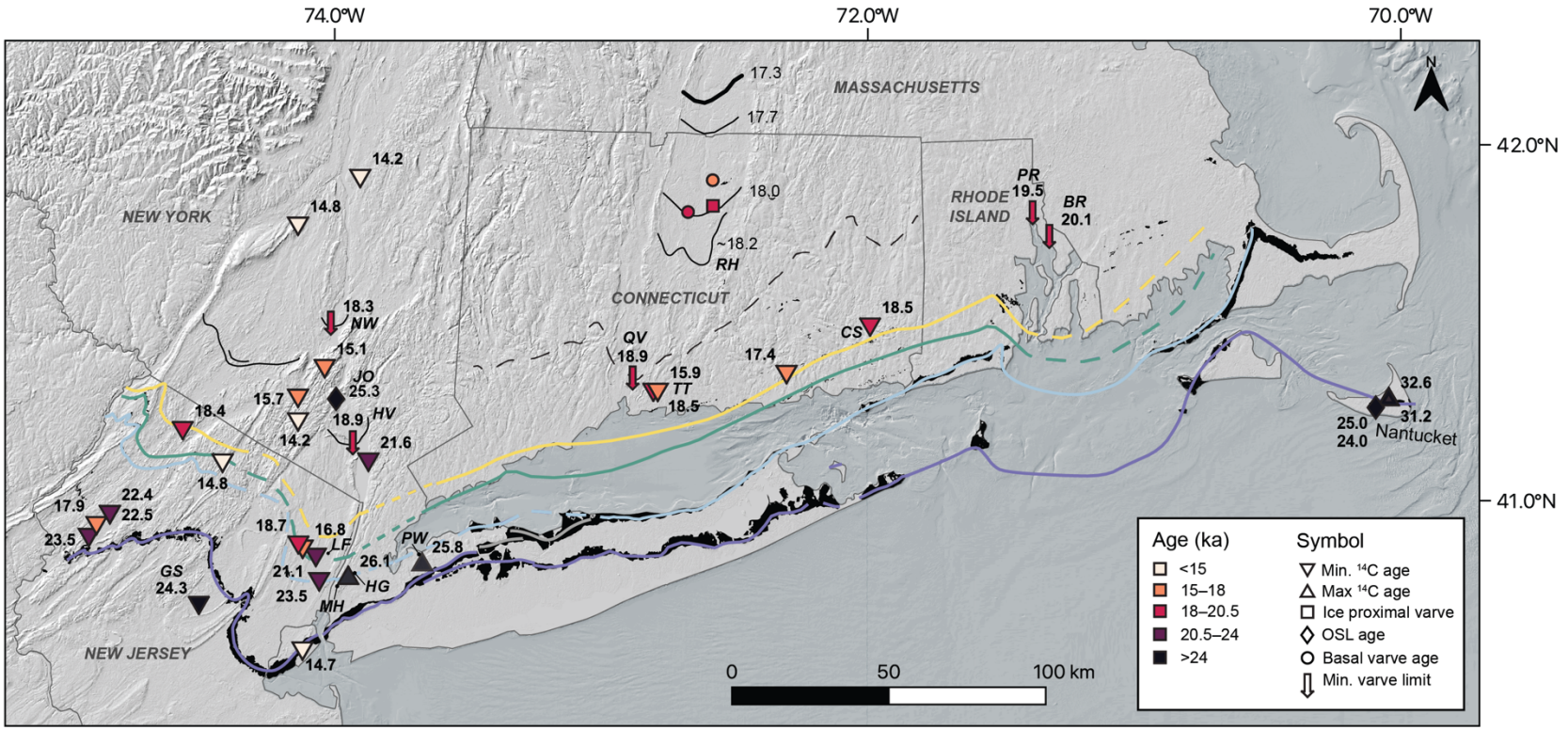

Figure 2 - Previously published chronological constraints based on radiocarbon and glacial varves. Background and ice margin limits same as Figure 1. Ages are discussed and cited in the text. Radiocarbon ages are calibrated to cal. kyr BP. BR = Barrington, RI; CS = Cedar Swamp; GS = Great Swamp; HG = Hell Gate; HV = Haverstraw, NY; JO = Pones Point; LF = Little Ferry varve sequence; MH = Manhattan, New York City; NW = Newburgh, NY; PW = Port Washington; PR = Providence River; QV = Quinnipiac Valley, CT; RH = Rocky Hill; TT = Totoket.

Jo

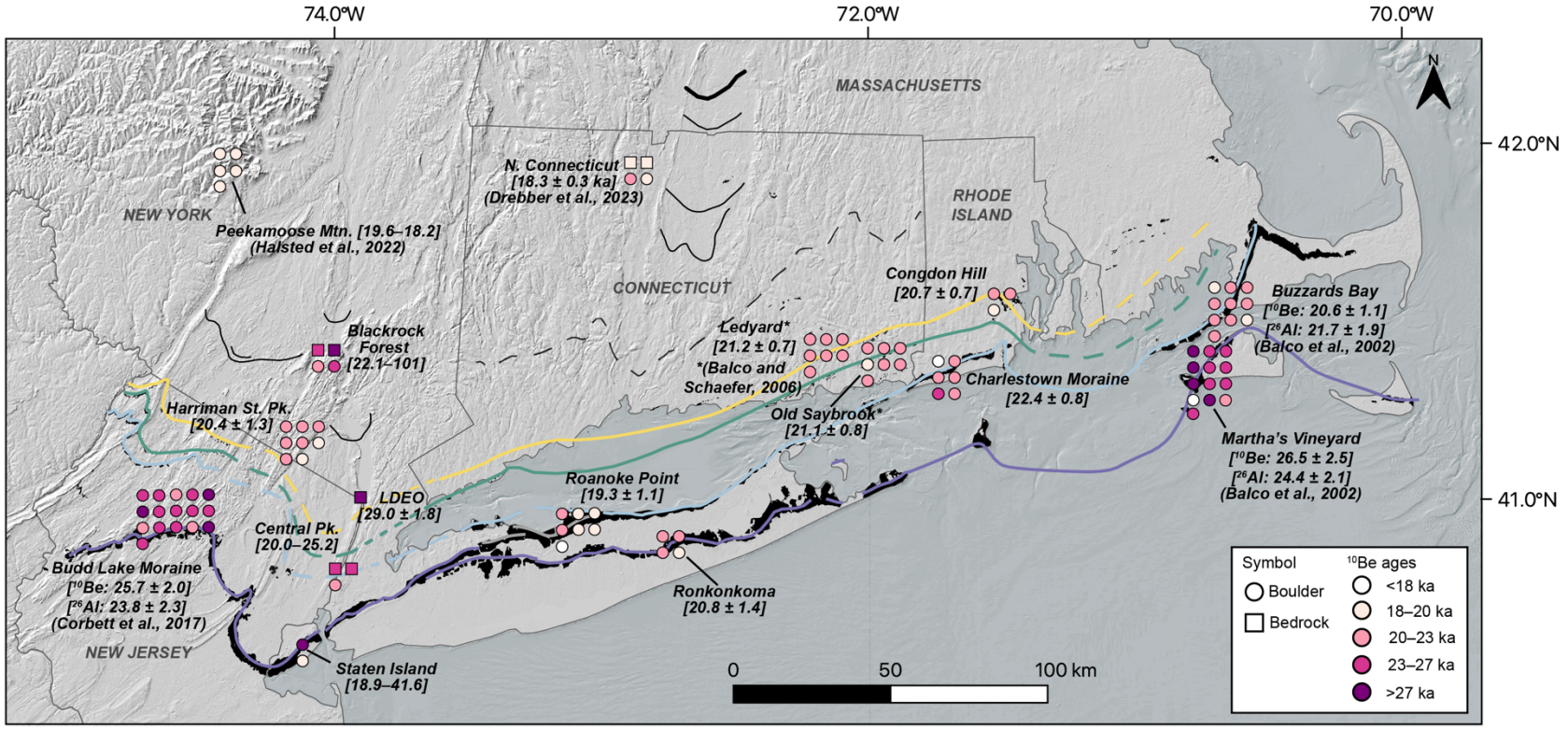

Figure 3 - New and previously published ^{10}Be exposure ages from boulder and bedrock surfaces. Background and ice margin limits same as in Figure 1. Previously published ages are listed with their reference. All are ^{10}Be ages, except where ^{10}Be and ^{26}Al ages are specified. On the Martha's Vineyard and Buzzards Bay moraines, samples with both ^{10}Be and ^{26}Al measurements are colored according to the average of the ^{10}Be and ^{26}Al ages (Balco et al., 2002). Although the Budd Lake moraine samples have both ^{10}Be and ^{26}Al measurements, the symbols are colored only by ^{10}Be age because Corbett et al. (2017) state that many of the ^{27}Al concentrations may be underestimated and therefore exclude the ^{26}Al ages from discussion. The average of the ^{26}Al ages on the Budd Lake moraine is listed for completeness. Where all samples come from the same deposit, the age is listed as mean ± standard deviation, and where samples at a site are not from the same deposit an age range is listed. A full list of sample ages is in Table 1 and moraine ages in Table 2.

Supplement to: The Laurentide Ice Sheet in southern New England and New York during and at the end of the Last Glacial Maximum - A cosmogenic-nuclide chronology

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Supplemental material uploaded as separate files
-Tables S1-S3
-Additional sample photos for the new sample locations associated with this publication can be found on ICE-D:Laurentide (https://version2.ice-d.org/laurentide/publication/1187/)

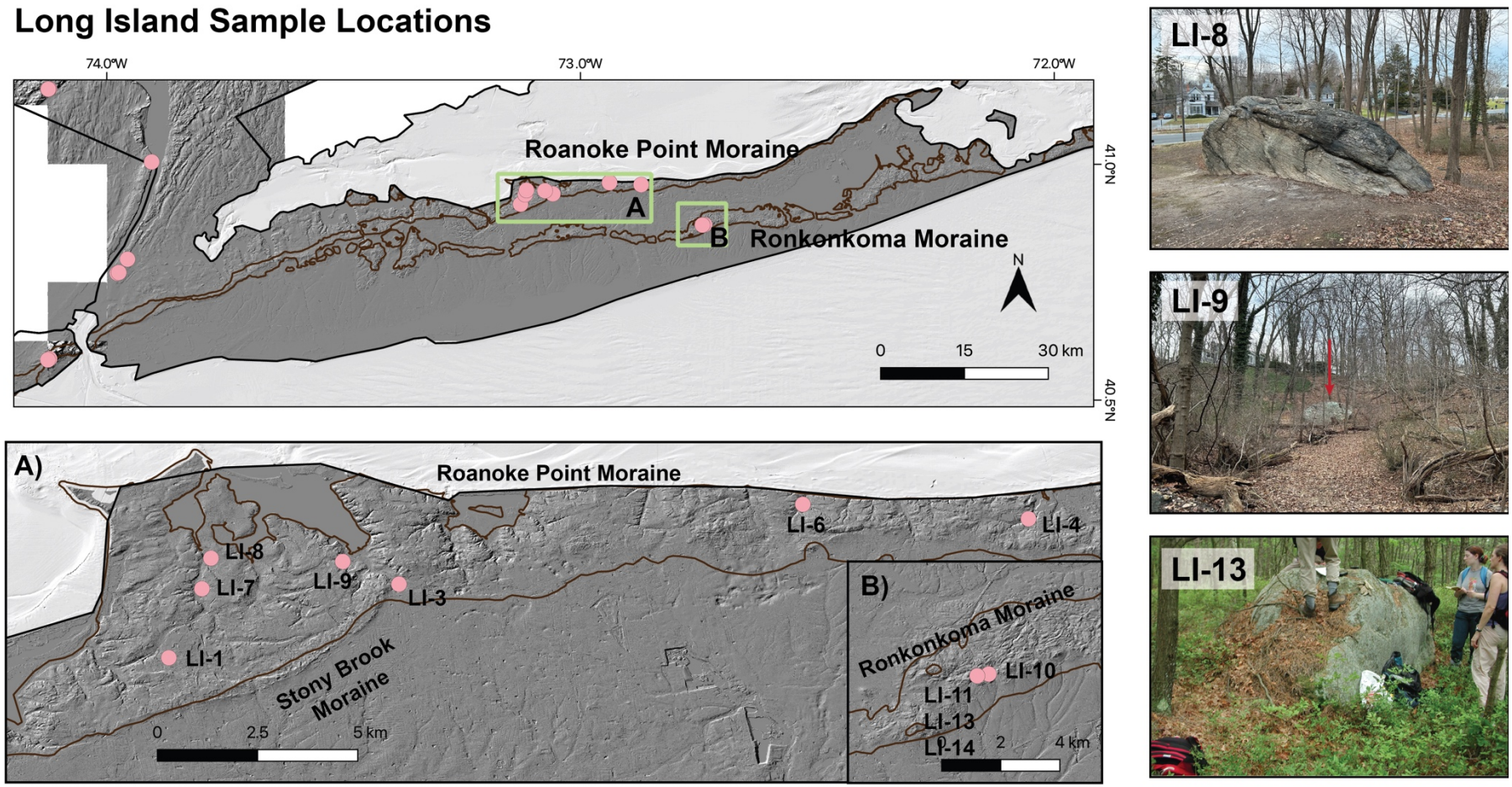

Figure S1 - High resolution hillshade of Long Island and representative sample photos from the Roanoke Point and Ronkonkoma moraines. Topography is the New York State 2 m Hillshade from the New York State GIS Program Office (2023). Bathymetry from NOAA Office of Coast Survey BlueTopo product is shown in light grey. Brown moraine outlines are from the surficial geologic map of New York (Cadwell et al., 1989). Photos show representative samples from the Roanoake Point moraine (LI-8, stable position on topographic high; LI-9, boulder located in topographic low, age considered a young outlier) and the Ronkonkoma moraine (LI-13). As described in the text, all samples on the Roanoke point moraine, except LI-1 and LI-8, are in topographic lows, and we therefore hypothesize that they have experienced some degree of postdepositional disturbance, resulting in an average exposure age that is younger than the true moraine deposition age.

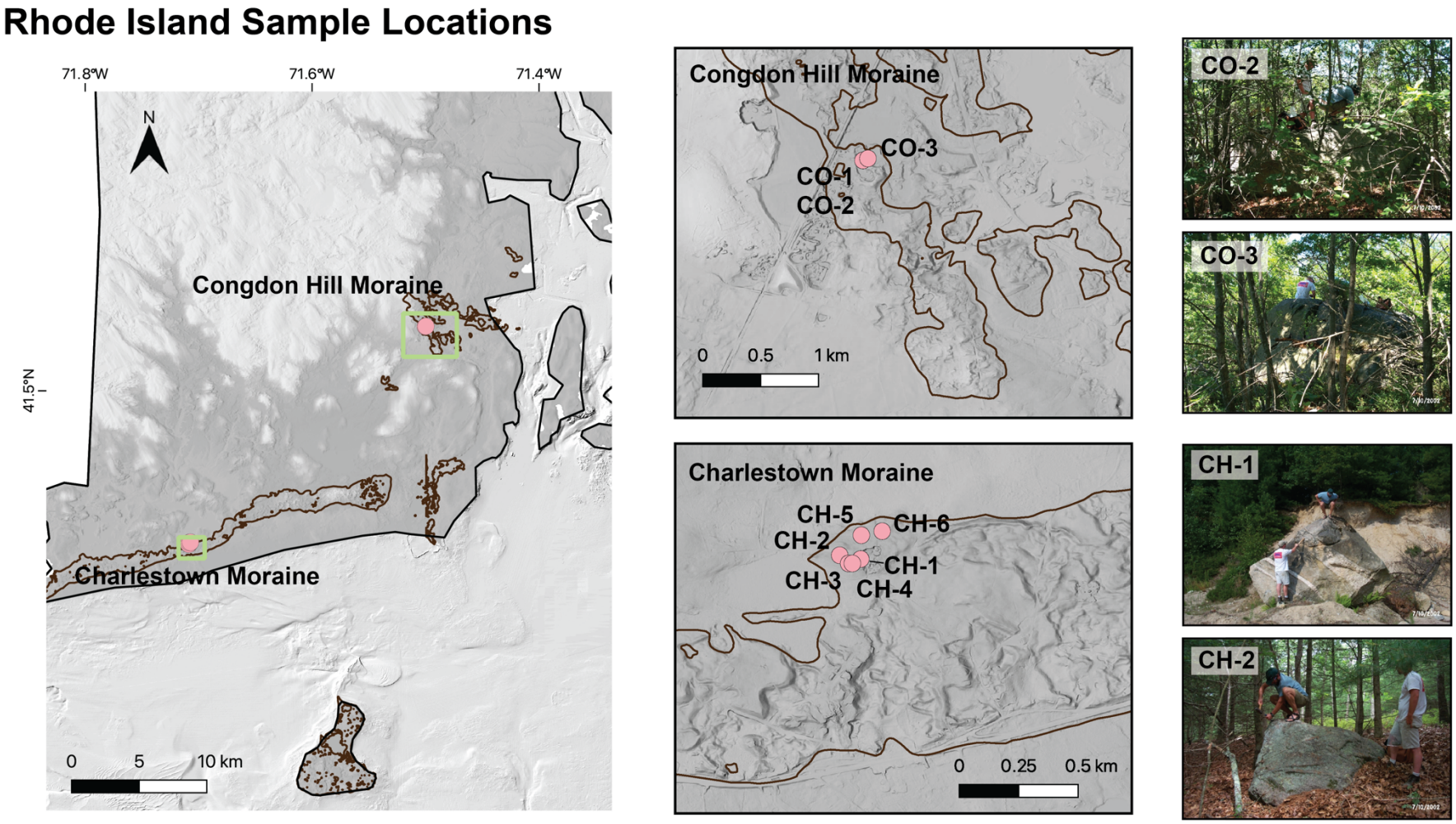

Figure S2 - Shaded relief map of Rhode Island and representative sample photos from the Charlestown and Congdon Hill moraines. Topography is the Rhode Island Lidar Shaded Relief from Rhode Island Geographic Information System (2022). Bathymetry from NOAA Office of Coast Survey BlueTopo product is shown in light grey. Brown moraine outlines are from the surficial geologic map of Rhode Island (Boothroyd et al., 2003). Photos show representative samples from the Congdon Hill moraine (CO-1, CO-3) and the Charlestown moraine (CH-1, located in gravel pit, age is the one young outlier on this moraine; CH-2).

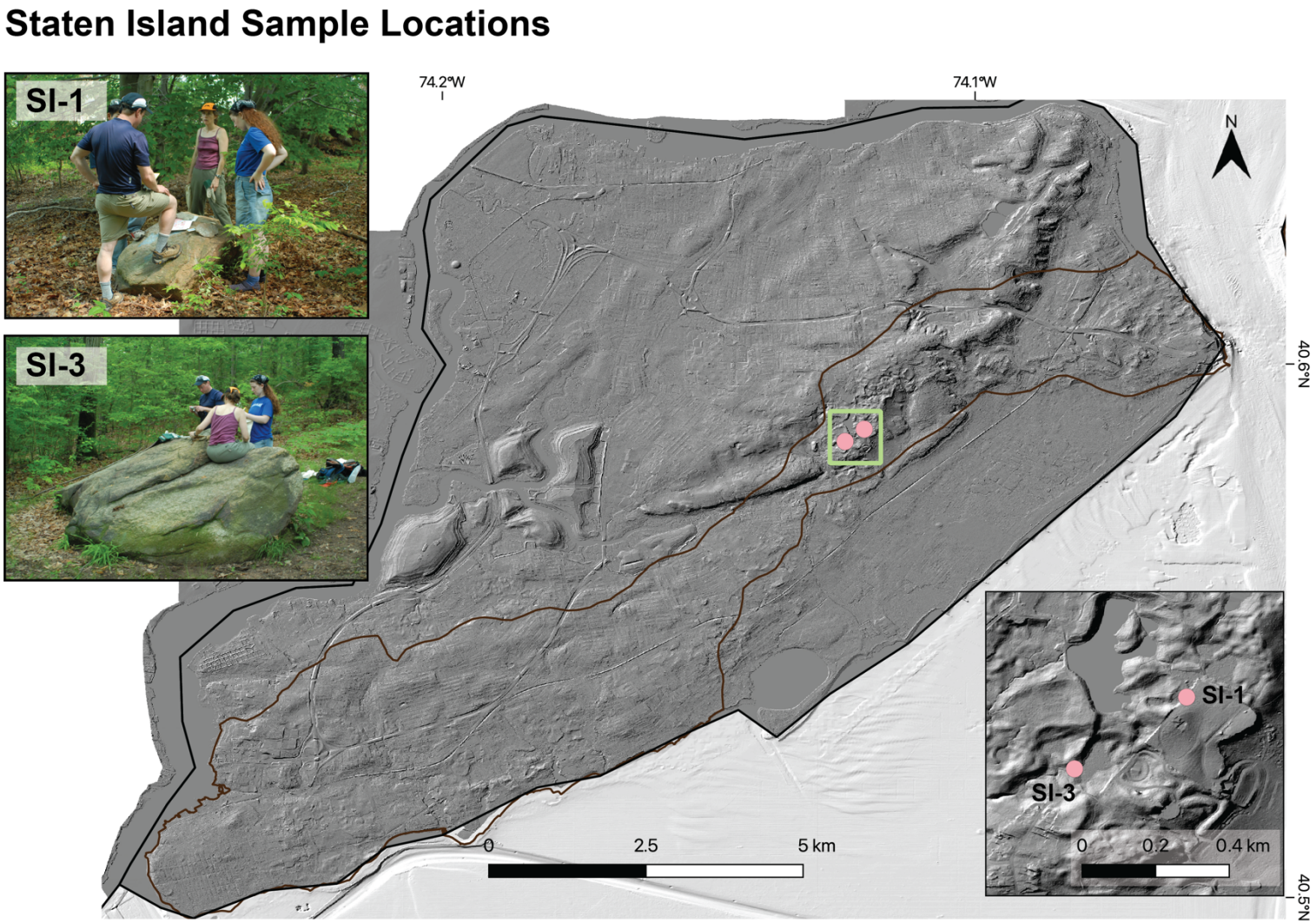

Figure S3 - Shaded relief map of Staten Island and sample photos from the Harbor Hill moraine on Staten Island. Topography is the New York State 2 m Hillshade from the New York State GIS Program Office (2023). Bathymetry from NOAA Office of Coast Survey BlueTopo product is shown in light grey. Brown moraine outlines are from the surficial geologic map of New York (Cadwell et al., 1989). Photos show the two samples from the Harbor Hill moraine on Staten Island. SI-1 (41.6 ± 2.4 ka) , is at topographic high, but is considered to have nuclide inheritance, while SI-3 (18.9 ± 2.1 ka) is located in a drainage and is likely affected by postdepositional disturbance.

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