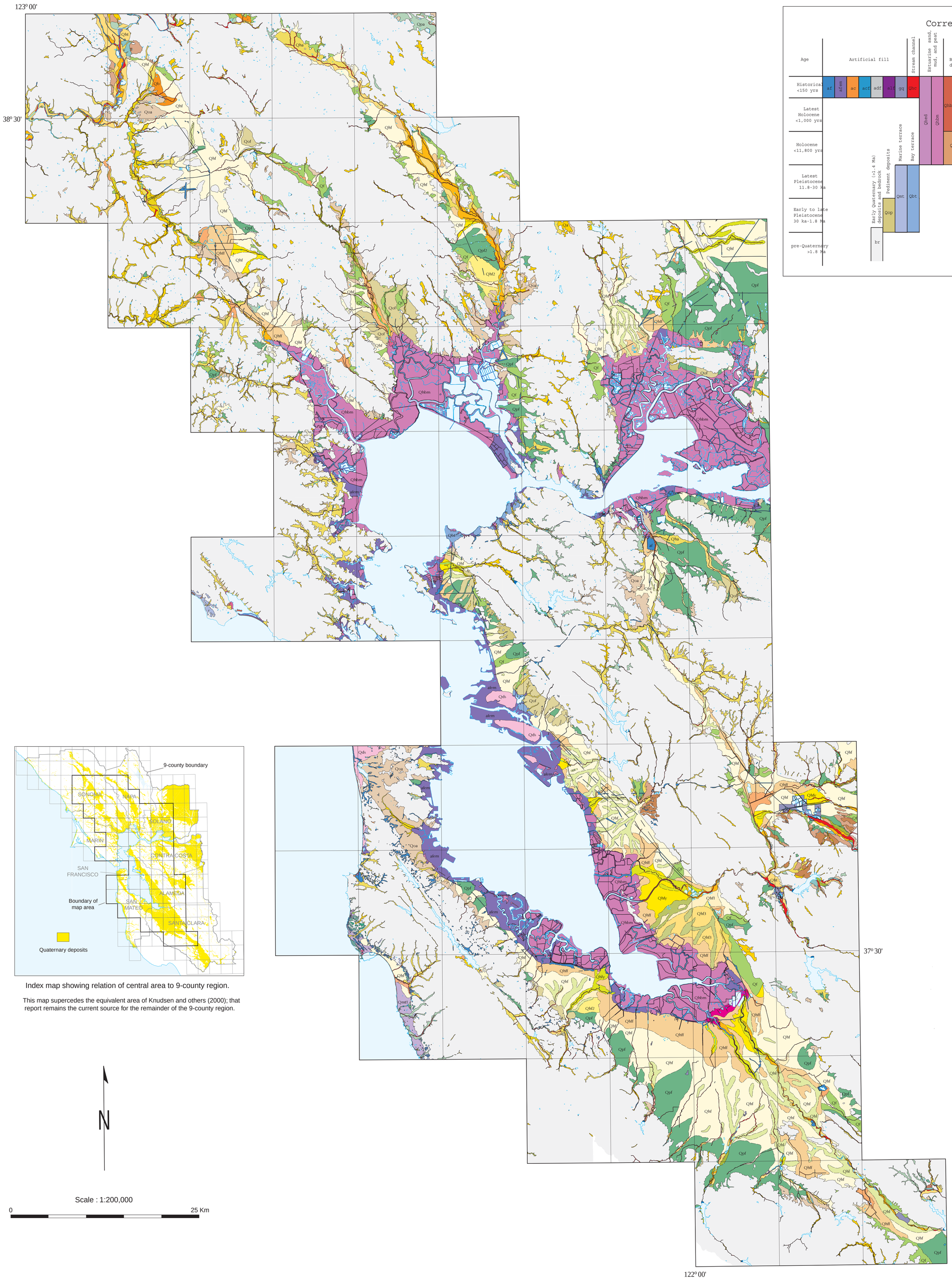

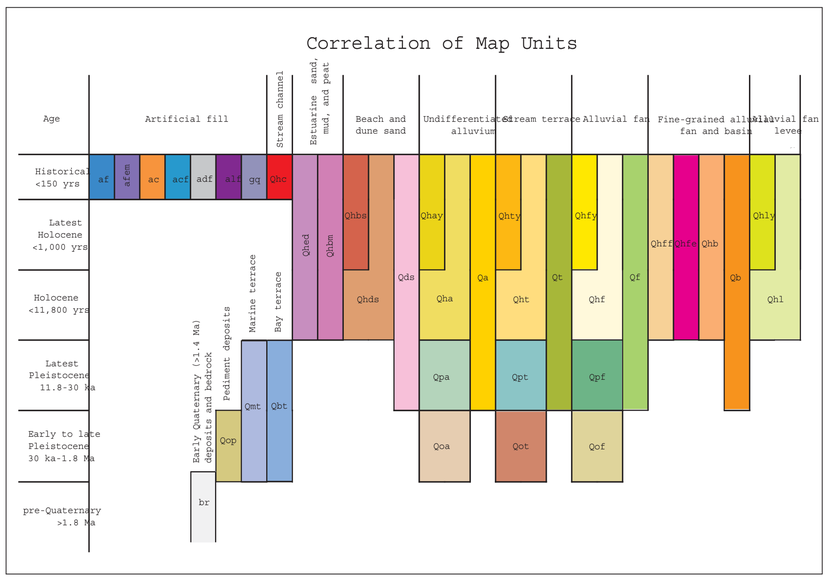

MAP UNITS

Historical

- af — Artificial fill
- afem — Artificial fill over estuarine mud
- alf — Artificial levee fill
- acf — Artificial channel fill
- adf — Artificial dam fill
- gq — Gravel quarries and percolation ponds
- ac — Artificial stream channel
- Qhc — Historical stream channel deposits

Latest Holocene

- Qhfy — Alluvial fan deposits
- Qhly — Alluvial fan levee deposits
- Qhty — Stream terrace deposits
  - Qhty1 — Younger stream terrace deposits
  - Qhty2 — Older stream terrace deposits
- Qhay — Alluvial deposits, undifferentiated
- Qhbs — Beach sand

Holocene

- Qhds — Dune sand
- Qhbm — San Francisco Bay mud
- Qhed — Estuarine delta deposits
- Qhb — Basin deposits
- Qhfe — Alluvial fan-estuarine complex deposits
- Qhf — Alluvial fan deposits
  - Qhf1 — Younger alluvial fan deposits
  - Qhf2 — Intermediate alluvial fan deposits
  - Qhf3 — Older alluvial fan deposits
- Qhff — Alluvial fan deposits, fine facies
- Qhl — Alluvial fan levee deposits
  - Qhl1 — Younger alluvial fan levee deposits
  - Qhl2 — Intermediate alluvial fan levee deposits
  - Qhl3 — Older alluvial fan levee deposits
- Qht — Stream terrace deposits
  - Qht1 — Younger stream terrace deposits
  - Qht2 — Older stream terrace deposits
- Qha — Alluvial deposits, undifferentiated

Holocene to Latest Pleistocene

- Qds — Dune sand
- Qb — Basin deposits
- Qf — Alluvial fan deposits
- Qt — Stream terrace deposits
  - Qt1 — Younger stream terrace deposits
  - Qt2 — Older stream terrace deposits
- Qa — Alluvial deposits, undifferentiated

Latest Pleistocene

- Qpf — Alluvial fan deposits
  - Qpf1 — Younger alluvial fan deposits
  - Qpf2 — Older alluvial fan deposits
- Qpt — Stream terrace deposits
- Qpa — Alluvial deposits, undifferentiated

Pleistocene

- Qmt — Marine terrace deposits
  - Qmt1 — Youngest marine terrace deposits
  - Qmt2 — Younger marine terrace deposits
  - Qmt3 — Older marine terrace deposits
  - Qmt4 — Oldest marine terrace deposits
- Qbt — Bay terrace deposits

Early to Late Pleistocene

- Qop — Pediment deposits
- Qof — Alluvial fan deposits
- Qot — Stream terrace deposits
  - Qot1 — Younger stream terrace deposits
  - Qot2 — Older stream terrace deposits
- Qoa — Alluvial deposits, undifferentiated
  - Qoa1 — Younger alluvial deposits, undifferentiated
  - Qoa2 — Older alluvial deposits, undifferentiated

Early Quaternary and Older

- Older deposits and bedrock

Lines

Contact, dashed where location uncertainty is greater than about +- 100 m.

Index map showing relation of central area to 9-county region.

This map supercedes the equivalent area of Knudsen and others (2000); that report remains the current source for the remainder of the 9-county region.

N

Scale : 1:200,000

0 — 25 Km

Map Projection: UTM zone 10
Datum: NAD27

MAPS OF QUATERNARY DEPOSITS AND LIQUEFACTION SUSCEPTIBILITY IN THE CENTRAL SAN FRANCISCO BAY REGION, CALIFORNIA

QUATERNARY DEPOSITS

geology by

Robert C. Witter, Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler, and Carolyn E. Randolph

digital database by

Carl M. Wentworth, Suzanna K. Brooks, and Kathleen D. Gans

2006