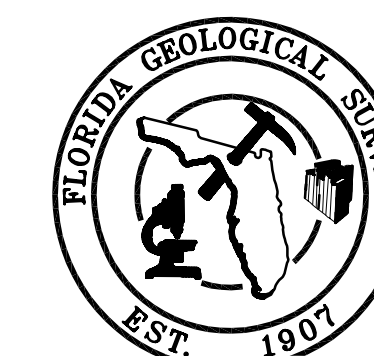


SURFICIAL SEDIMENT MAP
OF THE EASTERN
PORTION OF THE
U.S.G.S. 1:100,000 SCALE
HOMESTEAD QUADRANGLEBY
RICHARD GREEN P.G. # 1776
KEN CAMPBELL P.G.
AND TOM SCOTT P.G.
1995WALTER SCHMIDT
STATE GEOLOGIST AND CHIEF

The Miami and Key Largo Limestones, which form the bedrock of the eastern portion of the Homestead quadrangle, are generally covered by 15 centimeters to more than 2.5 meters of marl, muck, carbonate mud and soils. Data utilized in developing this map included information from the Dade County soil survey (Soil Conservation Service, 1995a, in preparation; Leighty and Henderson, 1958), Monroe County soil survey (Soil Conservation Service, 1995b, in preparation), auger samples, push probes, well cuttings and cores.

The area mapped as thin soil over Miami Limestone covers much of the northern one-quarter of the map. Here, up to approximately 30 centimeters of soil lie directly on the Miami Limestone. The surface of the Miami Limestone is quite irregular due to micro-karst development; limestone is exposed in limited areas. As a result of the irregularities, pieces of limestone are commonly seen in plowed fields.

The map area showing thin soil over Key Largo Limestone is similar to the area discussed above. A thin soil has developed directly on the Key Largo Limestone. In general, the soil is 15 to 30 centimeters deep, with limestone exposed in limited areas. This map area forms the higher portions of the keys.

Surrounding the areas where Miami Limestone is covered by a thin veneer of soil, a marl of variable thickness, ranging from less than 50 centimeters to more than one meter, lies on the limestone. The marl, which is of fresh water origin, grades laterally into mucks (organic-rich sediments with variable clay and carbonate contents), then marine carbonate muds and marls.

Marl underlain by peat occurs between the areas mapped as marl and those areas mapped as muck. This area was delineated from the 1958 soils map (Leighty and Henderson, 1958). Limestone underlies this map unit at depths exceeding 60 centimeters. Muck lies on the Miami Limestone along the coast and inland along many of the drainage areas; mangroves commonly grow in this area. The muck contains varying percentages of organic matter, carbonate mud and marl, and other non-organic components. The contact between the muck and the carbonate mud is speculative and is based on limited data.

Carbonate mud forms the islands within Florida Bay and occurs along both the bay side and ocean side of Key Largo. Probe data indicates that the carbonate muds may exceed 2.5 meters in thickness. The surface of the exposed carbonate muds are often vegetated by abundant mangroves. A muck component may also be present in these areas.

Selected Bibliography

Causaras, C.R., 1986, Geology of the surficial aquifer system Dade County, Florida: U.S. Geological Survey Water Resources Investigation Report 86-4126, 240 p.

Duncan, J., 1993a, Geologic Map of Dade County, Florida: Florida Geological Survey Open-File Map Series 67.

Duncan, J., 1993b, Geologic Map of Monroe County, Florida: Florida Geological Survey Open-File Map Series 66, Sheet 2.

Enos, P. and Perkins, R.D., 1977, Quaternary sedimentation in South Florida: Geological Society of America Memoir 147, 198 p.

Evans, C.C., 1987, The Relationship between the topography and internal structure of an ooid shal sand complex: the Upper Pleistocene Miami Limestone, in Mursas, F., (ed.), Miami Geological Society Memoir 3, p. 18-41.

Fish, J.E., and Stewart, M., 1991, Hydrogeology of the surficial aquifer system, Dade County, Florida: U.S. Geological Survey Water Resources Investigation Report 90-4108, 50 p.

Gleason, P.J., 1972, The origin, sedimentation and stratigraphy of a calcic mud located in the southern fresh-water Everglades: Ph.D. dissertation, Pennsylvania State University, University Park, PA, 355 p.

Hoffmeister, J.E., Stockman, K.W., and Multer, H.G., 1967, Miami Limestone of Florida and its recent Bahamian counterpart: Geological Society of America Bulletin 78, p. 175-190.

Johnson, R.J., 1993, The Upper Pleistocene Miami Limestone of Florida: Neutron-Gamma Publishing, Tallahassee, FL, 81 p.

Leighty, R.G., and Henderson, J.R., 1958, Soil survey (detailed reconnaissance) of Dade County, Florida: U.S. Dept. of Agriculture, Soil Conservation Service, 56 p., 12 maps.

Parker, G.G., Ferguson, G.E., and Love, S.K., 1955, Water resources of Southeastern Florida: U.S. Geological Survey Water-Supply Paper 1255, 965 p.

Scholl, D.W., 1977, Florida Bay: a modern site of limestone formation: in Multer, H.G., (ed.), Field guide to some carbonate rock environments, Kendall/Hunt Publishing Co., Dubuque, Iowa, p. 66-71.

Soil Conservation Service, 1995a, in preparation, Dade County Soil Survey: U.S. Department of Agriculture, Soil Conservation Service.

Soil Conservation Service, 1995b, in preparation, Monroe County Soil Survey: U.S. Department of Agriculture, Soil Conservation Service.

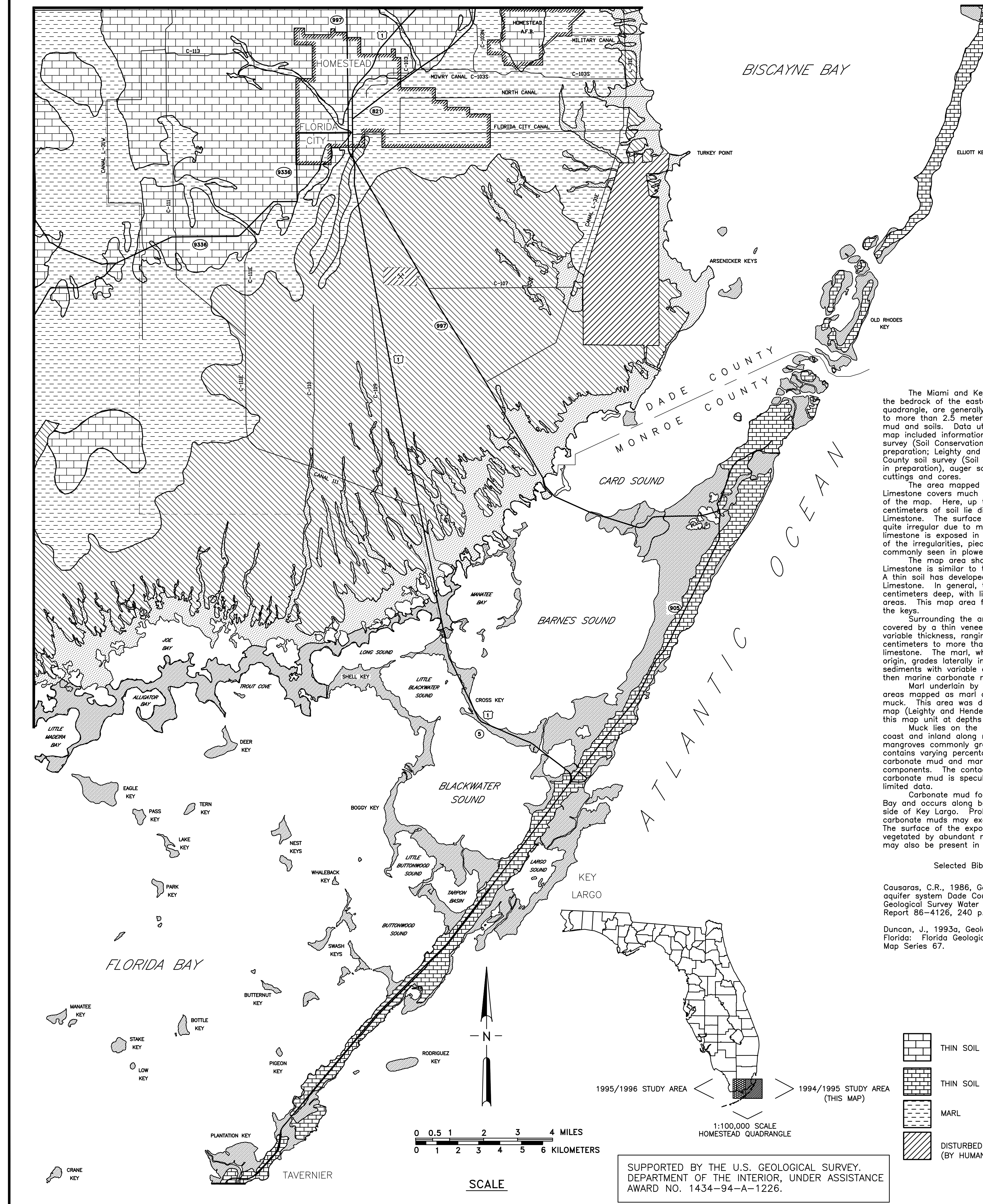
Turnel, R.J., and Swanson, R.G., 1977, The development of Rodriguez Bank, a Recent carbonate mound: in Multer, H.G., (ed.), Field guide to some carbonate rock environments, Kendall/Hunt Publishing Co., Dubuque, Iowa, p. 167.

Wanless, H.R., 1967, Sediments of Biscayne Bay - distribution and depositional history: M.S. thesis, University of Miami, Coral Gables, Florida, 260 p.

EXPLANATION

	THIN SOIL OVER MIAMI LIMESTONE		MARL UNDERLAIN BY PEAT
	THIN SOIL OVER KEY LARGO LIMESTONE		MUCK
	MARL		CARBONATE MUD
	DISTURBED (BY HUMAN ACTIVITY)		BOUNDARY OF EVERGLADES NATIONAL PARK QUARRY

CARTOGRAPHY BY RICHARD GREEN AND JENNIFER BRANCH

SUPPORTED BY THE U.S. GEOLOGICAL SURVEY,
DEPARTMENT OF THE INTERIOR, UNDER ASSISTANCE
AWARD NO. 1434-94-A-1226.