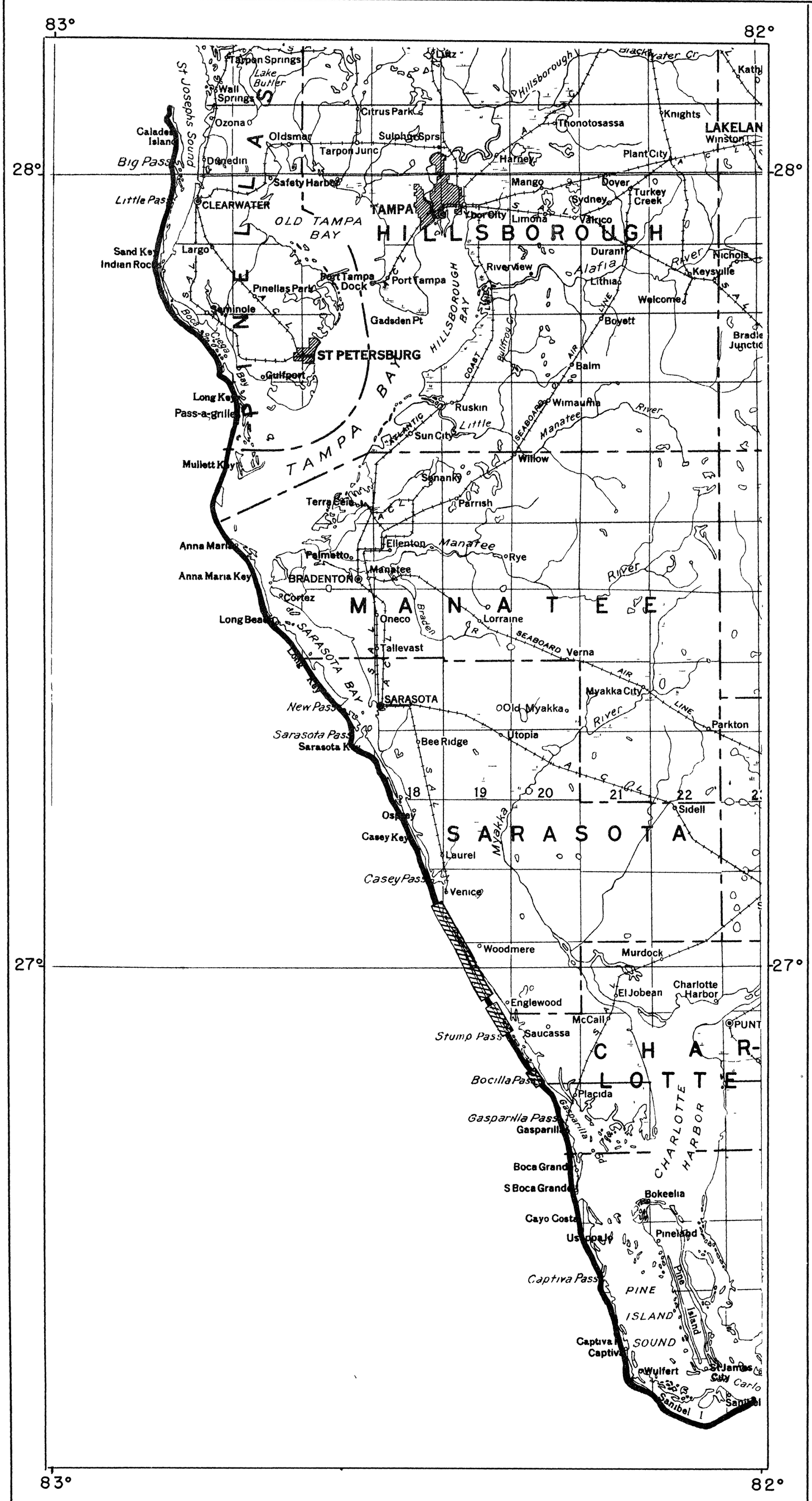
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
UNITED STATES ATOMIC ENERGY COMMISSION

TRACE ELEMENTS MEMORANDUM
REPORT 678



AIRBORNE RADIOACTIVITY SURVEY OF THE GULF OF MEXICO BEACH BETWEEN SANIBEL ISLAND AND CALADESI ISLAND, FLORIDA

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The accompanying map shows the results of an airborne radioactivity survey along the Gulf of Mexico beach between Sanibel Island and Caladesi Island in Florida. This survey was made May 4, 1953, as part of a cooperative program with the U. S. Atomic Energy Commission.

The survey was made with scintillation detection equipment mounted in a Douglas DC-3 aircraft and consisted of one flight line, at a 500-foot altitude, parallel to the beach. The vertical projection of the flight line coincided approximately with the landward limit of the modern beach.

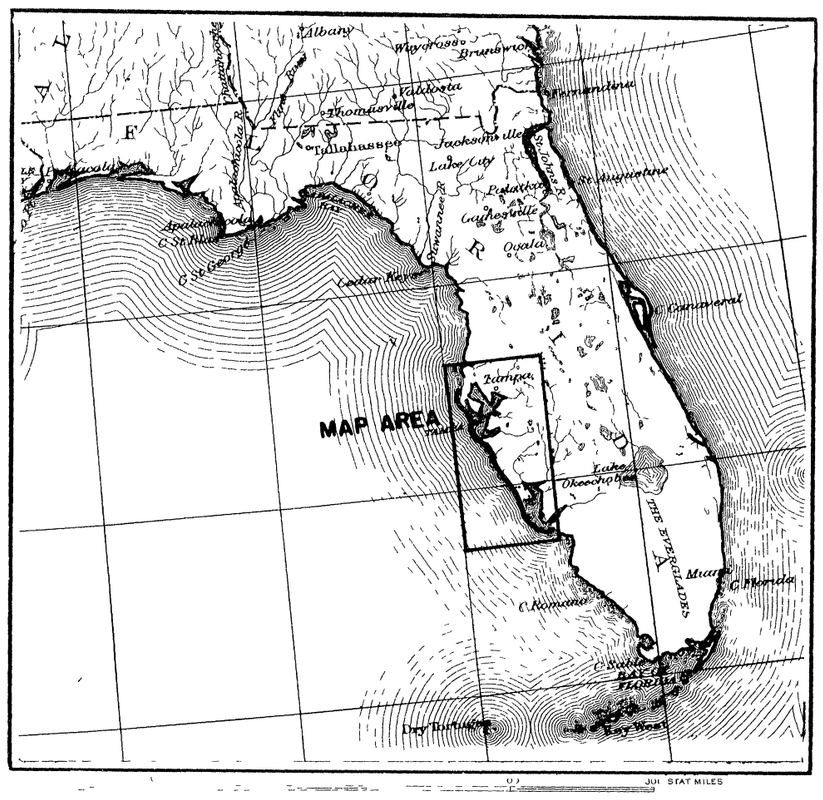
The width of the zone on the ground from which anomalous radiation is measured at the nominal 500 foot flight altitude varies with the areal extent and intensity of radioactivity of the source. For strong sources of radioactivity the width of the zone may be as much as 1400 feet.

The accompanying map and index map show the approximate locations of the areas of greater-than-average radioactivity and the location of the traverse flown. The abnormal radioactivity is apparently caused by radioactive minerals associated with "black sand" deposits which occur locally along the beach in the region.

The present technique of airborne radioactivity measurement does not permit distinguishing between activity due to thorium and that due to uranium. An anomaly, therefore, may represent radioactivity due entirely to one or to a combination of these elements.

It is not possible to determine the extent or radioactive content of the materials responsible for the abnormal radioactivity. The information given in the accompanying map showing the localities of greater-than-average radioactivity therefore, suggests areas in which uranium or thorium deposits are more likely to occur.

1/ U. S. Geological Survey
2/ Oak Ridge National Laboratory



INDEX MAP OF FLORIDA SHOWING LOCATION OF MAP AREA AND LINE TRAVERSED

This map has been released without editorial and technical review for conformity with the U. S. Geological Survey standards and nomenclature.

EXPLANATION

Anomaly area of greater-than-average radioactivity

Line traversed

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NOVEMBER 1953