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Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	<i>Topographic</i>
Field No.	<i>4459</i>
Office No.	<i>4460</i> <i>44612A</i>
LOCALITY	
State	<i>Florida</i>
General locality	<i>Florida Coast</i>
Locality	
<u>1928</u>	
CHIEF OF PARTY	
<i>O.S. Reading</i>	
LIBRARY & ARCHIVES	
DATE	

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Form 504	
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DEPARTMENT OF COMMERCE	
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Type of Survey	<i>Topographic</i>
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
NOV 28 1929
Acc. No.

REG. NO.

4459

t PHOTO TOPOGRAPHIC TITLE SHEET
Aerial Phototopographic Survey

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter ____ No. 13.

REGISTER NO. **4459**

State Florida

General locality West Coast Ten Thousand Islands

Locality Broad Creek to Shark River to Broad Creek

Scale 1:20,000 Date of survey Mar. 29 & Apr. 12, 19 28

Vessel HYDROGRAPHER & U.S.A.C. Leaning Amphibian Plane

Chief of Party O. S. Reading R. E. Eyma

Surveyed by J. A. Dexter, Pilot, Sgt. Matos, Photographer,
O. S. Reading, Photo plot.

Inked by R. C. Bolstad.

Heights in feet above none to ground to tops of trees

Contour Approximate contour Form line interval none feet

Instructions dated _____, 19

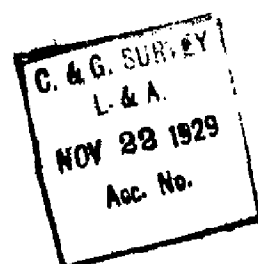
Remarks: Compilation of four lens air photos Nos. 48 to 59;

123 to 135 and 220 to 235. Reduced to 1:20,000 and photo

engraved by Printing Section.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

u PHOTO TOPOGRAPHIC TITLE SHEET
Aerial Phototopographic Survey



REG. NO. 4460

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter No. 14

REGISTER NO. **4460**

State Florida

General locality Cape Sable

Locality ~~Shark River to East Cape to Shark River~~

Scale 1:20,000 Date of survey Mar. 29 & Apr. 12, 19 28

Vessel Str. HYDROGRAPHER and U.S.A.C. Amphibian Plane

Chief of Party ~~O. S. Reading~~ R. P. Eyman

Surveyed by J. A. Dexter, Pilot, Sgt. Matos, Photographer
Photographs reduced by O.S. Reading

Inked by R. J. Sipe and R. C. Bolstad

Heights in feet above None to ground to tops of trees

Contour Approximate contour Form line interval none feet

Instructions dated _____, 19

Remarks: Compilation of 4-lens air photographs Nos. 1 to 47,

135 to 169. Reduced to 1:20,000 and photo engraved in

Printing Section.

U. S. GOVERNMENT PRINTING OFFICE: 1923

applied to chart 1250. Dec. 1, 1938 g. H. S. & team.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
NOV 28 1929
Acc. No.

to PHOTO TOPOGRAPHIC TITLE SHEET
Aerial Phototopographic Survey

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter No. 15

REGISTER NO. 4461

State Florida

General locality Cape Sable

Locality Whitewater Bay ^{to} ~~and~~ Flamingo.

Scale 1:20,000 Date of survey Mar. 29 & Apr. 12, 1928

Vessel HYDROGRAPHER and U.S.A.C. Loening Amphibian Plane.

Chief of Party ~~O. S. Reading~~ R. P. Eyman

Photographs reduced by O. S. Reading
Surveyed by J. A. Dexter Pilot, Sgt. Matos, Photographer,
~~O. S. Reading, photo plot.~~

Inked by W. J. Chovan.

Heights in feet above none to ground to tops of trees

Contour Approximate contour Form line interval none feet

Instructions dated _____, 19

Remarks: Compilation of 4-lens air photographs Nos. 170 to 181; 236 to 268. Reduced to 1:20,000 and photo engraved in printing section.

U. S. GOVERNMENT PRINTING OFFICE: 1924

REG. NO.

4461

Descriptive Reports to Accompany
Air Photo Topographic Sheets.

No.	Field No. 13 - Shark River.
No.	Field No. 14 - Shark River to Cape Sable.
No.	Field No. 15 - Whitewater Bay and Flamingo.

These three sheets are a compilation of four lens air photographs taken with T-2 camera 26-1 by the Army Air Corps during 1928. The photographs were taken from an amphibian plane at an altitude of about 10,000 feet giving an approximate scale of 19,000 to the photographs. Photographs Nos. 27 to 59 were taken from 11:20 A. M. to 11:30 A. M. and Nos. 123 to 181 from 12:30 to 12:50 on March 29, 1929, with the tide about one half foot above mean low water, according to the Tide Tables. Photographs Nos. 220 to 268 were taken from 2:45 to 3:05 P. M. on April 12, 1928. The tidal constants for the inside waters are unknown.

Compilation. - Projections on the approximate scale of the photographs as determined by a preliminary plot were laid down on celluloid. The control stations were plotted on these projections and photostats of the original topographic sheets enlarged to the scale of the projections were traced on the celluloid in blue. A radial line graphic traverse was then plotted from each strip of photographs holding to the control and to the general trend of the topography. The strips were replotted to agree with each other also.

The area along the outer coast of these sheets is well controlled. With the exception of the point to the eastward of Flamingo. The photographic strips were broken in this vicinity and the plane possibly had not steadied down sufficiently to assure accurate plotting without control. The work as plotted agrees in general with the old topography in the vicinity. The interior of the Shark River Sheet (No. 13) is uncontrolled except for a compass and wire traverse of 1.5 miles from station Tarpon to the inshore wing of the third strip of photographs. The strips do not overlap sufficiently to offer much strength to the lateral distances, the camera and transformer were out of adjustment and the plane made a wide turn between Shark and Broad Rivers (Sheet 12). For these reasons the plotting of this sheet is quite weak. Several trial adjustments were made and the final adjustment left some discrepancies which were thrown into the marsh areas rather than the channels. It is not believed that the inaccuracies remaining are sufficient to affect the hydrography or that they are large enough to be detected on the ground without a control survey. There was considerable tilt and scale variation to the photographs in the vicinity of Oyster Bay and the adjustment in this area is somewhat weak. The remaining areas of the sheets are believed to be of standard accuracy.

Sheet 15 was controlled by two figures of sextant triangulation and piano wire and sextant traverses from Station White which is located in a gap between the second and third photographic strips. The wire used for the measurement of the line used as a base for the sextant triangulation was marked with solder and later measured with a 300 foot steel tape along a level road. The difference between the sheave distance and the tape measurement was five feet in 1.5 miles. The azimuth of the wire traverses were obtained from solar azimuths at traverse stations "Thin" and "Out".

Junction of celluloid sheets and photo engraving negatives. - In producing these sheets it is necessary to use several separate celluloid strips and photo engraving negatives. These separate portions are later fitted together to form the sheet but residual errors, usually quite small, can not be avoided in the matching. The junctions of the celluloid strips and negatives are indicated on the several sheets in pencil and errors from this source may be avoided by using the projection on the same side of the junction lines when transferring data from the sheets.

General Description. - The shore in the vicinity of Shark River and Ponce de Leon Bay is covered with mangrove eighty to one hundred feet in height, probably the largest in the world. The area is cut up by a complicated network of tidal channels into numerous islets. These channels gradually open out to the Southeast into Oyster Bay and after another chain of islets into Whitewater Bay. The channels to the north and east gradually merge into Shark River which leads back into Tarpon Bay and the Everglades. The mangroves gradually decrease in height to twenty feet in Tarpon Bay and low brush in the rivers and marshes leading eastward from Whitewater Bay. The mangrove areas are overflowed by the higher high waters.

Northwest Cape, Middle Cape, and East Cape of Cape Sable are sandy accretions from coastal wave and current erosion. The sand away from the beach is covered by grass and there are coconut plantations on Middle and East Cape. The coconuts distinguish the Capes and should be charted.

The area to the eastward of Cape Sable is a marl prairie. The area has a canal and several ditches cut through it and would make desirable agricultural land were it not overflowed by the extraordinary high waters of hurricane tides. It is marshy during the rainy season except near the canals and ditches. The spoil bank of the canal has been leveled off for use as a road and some eight miles east of Sheet 15 it is rock surfaced. It is called the Ingraham Highway and leads to Miami via Royal Palm Park, Florida City and Homestead.

Emergency Airplane Landing Field. - Almost any portion of the grassy prairie between the canal and the shore may be used as a landing field during the dry season. The ground becomes quite soft in the rainy season. A circle over the particular spot selected for landing should be made, if practicable, to make certain that it is not too near one of the ditches.

Hydrographic Notes. - A few notes taken while establishing the control are given for use before the hydrographic examination gives more definite information. The charted soundings in Ponce de Leon Bay check with those taken running across it. Five to six feet can be taken up Shark River to Tarpon Bay. Five feet can be taken through Oyster Bay and Joe River to Whitewater Bay. The general depth in Oyster Bay seems to be about six feet. There are a series of reefs and bars running across the middle of Oyster Bay from east to west near the small islets. Five feet can be carried close to the east side of the west large islet of the series. Few soundings were taken in Whitewater Bay. These seemed to indicate depths from 3 to 6 feet. There is a trail leading from Coot Bay to the Ingraham Canal and Highway. Small boats are sometimes kept in Coot Bay and are used for running up the coast instead of rounding Cape Sable.

Changes in shoreline. - There are marked signs of erosion along the outer coast, particularly in the vicinity of Shark River. Measurements from the new triangulation verified this. The islets in the entrance to Shark River show an erosion due to waves and currents of meters and one or two of the smaller ones have disappeared. The shoreline of the bight about four miles east of East Cape on the south shore of Cape Sable appears to have receded about meters, according to the new triangulation. The differences between Sheet 15 and the shoreline of the previous topography are believed to be due to lack of control for the original survey.

Names. - The names appearing on the sheets are those on Chart and those found well established in local usage. No names were assigned by field officers.

Landmarks. - There are no landmarks. The character of the landfalls are well described in the Inside Route Coast Pilot.

Areas requiring further examination. - There is an unphotographed area between the second and third strips of photographs shown on Sheet 15. It is considered desirable to run in the shoreline of the inlands in Whitewater Bay, occurring in the gap. Joe River and the main southern channel leading into Whitewater Bay were sketched in while measuring the wire and sextant control traverse. A large bay at the southwest end of Whitewater Bay was also missed by the photographs (Lat. 25° 15, Long. 80° 54.)

APPROVED

K-T. Adams
FIELD RECORDS (O)

L.O. Robert
Chief, Division of Charts

O. R. Reading

J. B. Borden
Chief, Section Field Work

G. W. Wade
Chief, Div. of Hyd'y and Top'y

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4459

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 1

REGISTER NO. 4459 (Standard)

State Florida

General locality West Coast.

Locality ~~Shark River~~, Tussock Key, Shark River to Broad Creek

Scale 1:20,000 Addition in red ink March, 1930
Date of survey

Vessel Chartered Houseboat "MYJO"

Chief of Party Benjamin H. Rigg

Surveyed by Benjamin H. Rigg

Inked by G. E. Morris

Heights in feet above — to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated December 6, 1930

Remarks: Shoreline shown in red ink was transferred from hydrographic
boat sheet, which was used for the survey.

Descriptive Report
to Accompany
Topographic Sheet # 1
Project #48

T-4459(*island*)

Instructions dated December 6, 1929.

LIMITS:

A small area lying in Lat. $25^{\circ} 26'$ and Lon. $80^{\circ} 57.5'$ including a small anchorage and an island known as Tussock Key.

SURVEY METHODS:

The shoreline shown in red on this sheet was surveyed with a planetable. The boat sheet was used in the field and the surveyed area was later transferred to the present chart copy for transmittal to the archives.

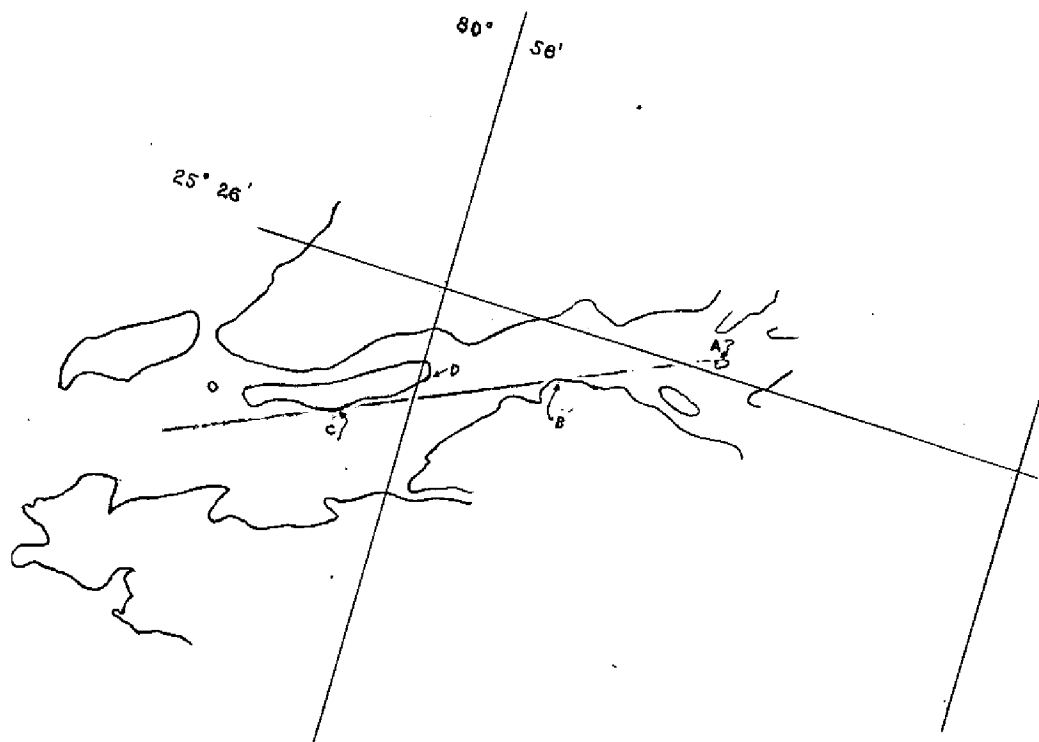
The planetable was set up at Tussock Key, (point marked "A" in sketch) oriented on "B" & "C" which were on range. The line CA was drawn. A rod measurement to B gave the distance AB. This location of A was checked with a rod reading on D, from this point the topography was run in.

NOTE:

Several guides and sportsmen who saw the chart copy of Shark River mentioned the fact that Tussock Key was missing. A large number of the yachts that frequent Shark River use this anchorage.

Respectfully submitted

Benjamin H. Rigg
Chief of Party.



DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. _____

REGISTER NO. ~~74460~~

74460 Supplemental

State Florida

General locality South coast.

Locality Cape Sable

Scale 1:20,000 Date of photographs ~~survey~~ January, 1935

Vessel Shore Party No. 11

Chief of party E. R. McCarthy

Surveyed by See notes accompanying sheet.

Inked by " " " "

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated November 17, 1935

Remarks: The purpose of this sheet is to make a junction with the detail shown on Sheet Register No T-4460 which was compiled in 1925. The scale of this compilation is 1:20,280.

Report T 4460 Supplemental

Corrections noted in blue on T 4460 supplemental are from field examination by B. H. Rigg during his hydrographic survey in 1931. These were originally shown on a chart paper print filed in the tube with the original. The chart paper print has been discarded after transferring the corrections to T 4460 supplemental.

Corrections noted in red on T 4460 supplemental have been made from photographs taken Jan 25, 1935 and field examination by the party of Lieut. McCarthy. This work included making a junction with the new airphotographic survey T 5439.

6,21/38

B. J. Jones

DATA SHEET
Sheet No. ~~2543~~

T4460 Supplemental

Portion of work	Done by	Date completed
Projection made by	Washington Office	
Projection checked by	E. R. M.	May 27, 1936
Control plotted by	E. R. M.	May 27, 1936
Control checked by	M. B. G.	May 27, 1936
Radial plot developed by	J. C. M.	March 12, 1937
Radial plot verified by	E. R. M.	April 15, 1937
Compiled in pencil by	E. R. M.	May 6, 1937
Inked by	J. C. M.	October 7, 1937

STATISTICS

Area of sheet 14.5 square statute miles.

Length of shoreline 3.1 statute miles.

Length of shoreline (lakes and ponds) 4.1 statute miles.

Length of rivers and canals 1.6 statute miles.

NOTES

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~~Map drawing of topographic map Register No. T-5439 and~~
Corrections to be made to topographic map Register No.
T-4460, compiled during 1928.

Reference is made to the field letter of September 17, 1937 and
The Director's letter of reply, dated September 28, 1937.

General explanation and procedure:

The junction of Sheet Register No. T-5439, to the east of
this compilation, showed poor agreement with the detail as delineated
on Sheet Register No. T-4460, compiled in 1928. The major difference
was noted in the delineation on the high water line and road near
Latitude 25° 08' and to a less extent in the locations of the Home-
stead Canal and Joe River. The purpose of the detail shown on this
sheet is to rectify these discrepancies.

The topographic detail shown on this sheet was obtained
from the 1935 photographs. That shown in red was obtained from
Sheet Register No. T-4460. In order to obtain an agreement in detail,
this portion of Sheet Register No. T-4460 on a scale of 1:20,000, was
traced on paper and projected to the scale of this sheet, 1:20,280,
on the projector and the 1935 photographs used to obtain the detail
at the point where the two sheets agree. Perfect agreement was obtained
in the detail at the points indicated without adjustment, except in the
case of the marsh area which is a variable nature.

Agreement was obtained in the delineation of Joe River at a
point just beyond the detail shown in dashed lines on the 1928 sheet.
It is believed that this detail was obtained by reconnaissance on
the original compilation and therefore, subject to change.

There is a slight change in azimuth in the Homestead Canal,
at a point about 100 meters east of the point where the detail was
taken from the 1928 sheet. This change in azimuth bring the two sheets
into agreement at this point.

The location of the road and high water line was apparently
in error on the 1928 compilation. It is possible to identify the
plotted locations of triangulation stations MIDDLE, WHITE, SAB and
CAPE SABLE LAT. STA. on the 1928 compilation but MUD and CANAL were
apparently not used on that compilation. With the addition of these
two stations a stronger radial plot resulted which resulted in
better locations. In regard to the representation of the road at this
locality, reference is made to page 3 of the descriptive report for
Sheet Register No. T-5439 and also the general rule that connecting
roads should be shown with double lines. The condition of this road
is very poor during the rainy season and should, perhaps, be shown
with a broken lines.

The marsh area to the south of Joe River has been corrected to join the marsh area as shown on T-4460. This compilation has been carried to the westward far enough to correct the faulty interpretation in the 1928 work in the case of the large pond or lake at approximate Latitude $25^{\circ} 11.7'$, Longitude $80^{\circ} 04.6'$. The area of this lake on the 1928 compilation is shown to be marsh.

The area of trees that appear on this compilation north of the Homestead Canal does not make a perfect junction with those shown on Sheet Register No. T-4460. It was impossible to delineate this feature further because of the clouds in the photographs at this point. Mud flats, shown south of the Homestead Canal, also extend further to the westward than is shown on this sheet but because of the same reason it was impossible to obtain this detail.

It will be noted that the south end of one of the arms of the lake mentioned in paragraph one above has been shown dashed. This was covered by clouds in the photographs and the delineation as shown was taken approximately from the 1928 sheet.

Interpretation of 1935 photographs:

An area that appears to be a change in vegetation in the marsh area south of Joe River appears on the 1935 photographs. This area is burnt over marsh grass. During the dry season the local people burn areas in this fashion and in approximately a week or ten days, return to hunt deer that come to feed off of the tender young shoots.

Notes for the correction of T-4460:

Errors in the projection on Sheet Register No. T-4460 are noted where $81^{\circ} 02' - 03' - 04'$ and $05'$ cross $25^{\circ} 11'$.

Most of the coconut palms on Middle Cape were destroyed by the hurricane of September 2, 1935. (See photographs attached)


The hurricane caused changes in the beach line on East Cape, Middle Cape and Northwest Cape. An inspection of the air photographs (also see photographs attached) discloses the fact that these beaches are continually changing. The lines of successive beaches are visible in these photographs. It is believed that these features should be noted as changeable.

Geographic names:

All geographic names appearing on the name sheet for this sheet are discussed in the descriptive report for Sheet Register No. T-5439.

Photographs:

There is appended hereto, photographs which were obtained by the Everglades National Park Association immediately after the hurricane of 1935.


John C. Mathisson,
Jr. H. & G. Engr.,
U. S. Coast and Geodetic Survey.



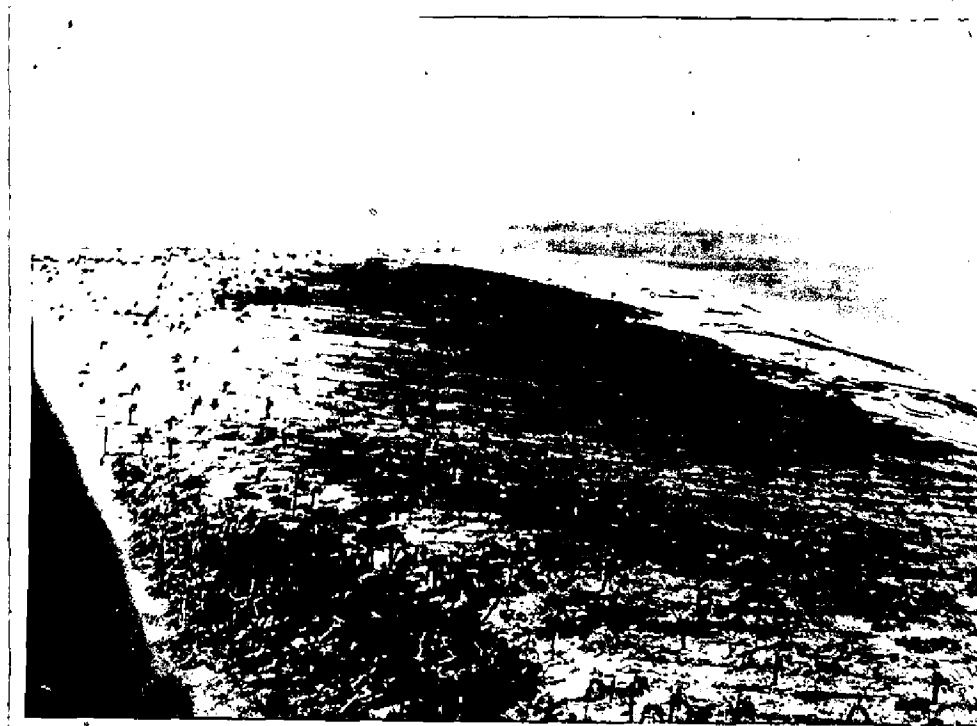
East Cape from the west



Northwest Cape from the south. Note successive
line of beaches.



Middle Cape from northeast.



Middle Cape from north. Note changes in beach line.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4461

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 2

REGISTER NO. 4461 (Standard)

State Florida

General locality West Coast Cape Sable

Locality Joe River White water Bay to Flamingo

Scale 1:20,000 Date of survey March, 1930

Vessel Chartered houseboat MYJO

Chief of Party Benjamin H. Rigg

Surveyed by Benjamin H. Rigg

Inked by Benjamin H. Rigg (transferred to chart print G.E.Morris)

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated December 6, 1930

Remarks: Original made using boat sheet Field No T4461 (

this sheet was the hydrographic boat sheet so the work was transferred to this chart print for transmittal to the archives. B.H.R.
(Shown in red on standard)

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 15

REGISTER NO. T44612

State Florida

General locality West Coast

Locality Whitewater Bay

Scale 1:20,000 Date of survey Dec, 20, 1937

Vessel

Chief of party

Surveyed by

Inked by

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated, 19

Remarks:

Descriptive Report
to Accompany
Topographic Sheet #2 4461 (Standard)
Project No 48

Instructions dated December 6, 1929.

LIMITS:

The area bounded by Lat $25^{\circ}13'$ and Lat $25^{\circ}18'$, Lon $81^{\circ}00'$ and $81^{\circ}03'$. This was missed when the aerial photographs of this coast were taken.

A small bay lying in Lat $25^{\circ}13'$, Lon $81^{\circ}01'$, was resketched using courses and distances obtained from the sounding records.

SURVEY METHODS:

A plane table and alidade was used in making this survey. Boat sheet T 4461 was used as a topographic sheet. The shoreline surveyed was inked in in red and later transferred to the chart copy for transmitting to the archives.

Signals EAT, DED, & THIN were recovered and rebuilt. These signals had been carefully located by Mr Reading's party the previous summer by a combination of wire traverse, theodolite and sextant angles. The table was set up at EAT and oriented on DED and THIN and from this point a traverse was run down Joe River to a satisfactory junction with the shoreline sketched by Mr Reading. (Par. 7 instructions.).

The table was next set up at CoT Lat $25^{\circ}15.78'$, Lon $81^{\circ}00.75'$. Orientation was made by using tangents to visible points and islands shown on the boat sheet, checking with rod readings to near points. From this point a traverse was run, finishing this



AT STATION EAT



STATION COT



JOE RIVER

side of the point.

The small bay south of Joe River was not considered important enough to warrant the time necessary for a detailed survey. The shore line was revised to agree with information obtained while running the sounding lines. (Directors letter 4/8/30 Ref No. 10-RS.

Several small islands located by sextant are also indicated on this sheet.

Respectfully submitted,


Benjamin H. Keizer
Chief of Party.

Descriptive Report T 4461 A

T 4461 A has been made up in this office and includes the following changes from the original T 4461

1. Details shown in red on T 4461 standard T 4461 standard is as filed in the tube. with T 4461 and T 4461 A. Refer to the preceding ~~descriptive~~ pages for the descriptive report for T 4461 standard
2. Deletion of details west of meridian $80^{\circ} 02'$ to make a butt junction with T 4460 #
3. Deletion of details below lat $25^{\circ} 14'$ to make a butt junction with the new map T 5439.

BG Jones 12/20/37