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Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*W. Pittman*  
Superintendent.

State: *No. Carolina*

DESCRIPTIVE REPORT.

*Top* Sheet No. *3436*  
*3437*

LOCALITY:

*Alligator River*

*1914*

CHIEF OF PARTY:

*C. L. Garner*

11-4045

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## DESCRIPTIVE REPORT

To accompany topographic sheets "A" and "B"

Alligator River, North Carolina.

### General Statement:

The survey included within the limits of these sheets is a revision of the entire topography adjacent to or near the Alligator River. It was caused by finding a general recession of the shore line for many miles up from the mouth of the river which was discovered while executing a triangulation over the same area.

### Extent:

These sheets extend from the mouth of the river to 2 miles above Newport News Point and includes all of the shore line of the main body of the river together with the shore line of the mouths of all the tributaries thereto. All roads, buildings, or other details of importance are included.

### Results of the Survey:

This topographic resurvey disclosed a general recession of the shore line from the mouth of the river to the end of the survey with the exception of a few places where the water is especially shallow thus causing the sea to be broken and allowing the marsh or grass, as the case may be, to grow outward. A comparison of the two shore lines, (The original shown on the sheets in pencil or carbon copy and the present position of the shore line shown in ink), will readily show the changes that have takes place at various points along the river. In several places along the main body of the river there has been a recession of more than 200 meters from the position as surveyed in 1849. In these places, as along both shores of the river, it is thickly wooded varying from gum, scattered pines, and cypress to bay and laurel and some Juniper. The fact that the shores are wooded does not

seem to retard their washing away to any extent. This is on account of the soil being very porous and marshy thus forming a very loose foundation for the trees. AS soon as the trees are undermined they topple over and the recession continues. As an example of the formation of the earth it would probably be well to say that stakes 4 to 6 inches in diameter and 8 feet long can be driven their full length in the earth without the slightest difficulty. This was done in many cases when trying to get a firm support for the instrument in observing on triangulation. After setting them down for this distance it was often easy to push them further with ones weight.

The change of the shore does not seem to have affected the depth of the river to any marked extent. Where the greatest change has occurred the depth of the water up to the trees is often 6 to 10 feet.

Dangers:

The stumps and logs resulting from this have partly sunk and a considerable number have drifted further out in the stream thus rendering it very unsafe to navigate boats closer than 400 or 500 meters of the shore.

Commerce:

Outside of private enterprise the commerce on this river consists of one small steamer and a motor driven boat of 15 or 20 tons which make weekly runs to and from Elizabeth City, N. C. One makes round trips from Fairfield at the head of the Alligator River and the other from Gum Neck landing which is about 6 miles up the river from Newport News Point. These ships make the runs on the same day and also go in the same direction thereby amounting to only one steamer. The stopping places between Elizabeth City and Gum Neck are East Lake, The Frying Pan, and Grapevine Fishery. A small schooner carries freight between Elizabeth City and Fort Landing. This was used to advantage in ordering gasoline.

Additional to the shipping mentioned above there are two tugs regularly used in towing barges of lumber out from the river. One is for the Dare Lumber & Company which operates a large mill in Elizabeth City and has a lumbering camp at Buffalo City. The other belongs to the Richmond Cedar Works which operates a lumber camp at The Frying Pan.

There are no telegraph lines in the vicinity and the only post offices are East Lake and Gum Neck and near Fort Landing. There is telephone connection at Fort Landing and Gum Neck.

The present position of the shore line is inked while the original as copied from the original topographic sheets is shown in pencil.

Method of Survey:

The survey of practically the entire shore line on both sides of the river consisted of stadia traverse and location by the three point problem. Except where there was sufficient check on the position to determine the accuracy the distance between stations was connected by traverse and a check secured in this way. In these traverses there was only one discrepancy larger than 15 meters and these were discarded, being considered too small for adjustment except for the adjacent signal. The exception was on a traverse from Triangulation station Grapevine to Triangulation Station Newport News where the discrepancy was 40 meters. Since a part of this line was traversed in a foggy day when the rod was very indistinct it is thought that the error occurred here and the adjustment of the shore line was made in that way. In this locality this amount of error, up in a bay of no importance, was not considered of sufficient importance to re-traverse the entire distance. From Station Hyde to Station Deep Point the shore line was located by the graphical location of stumps and trees at intervals of from 200 to 300 meters along the shore and the intervening distance sketched in.

Respectfully Submitted  
Helen L. Barney  
Asst. C. E. Surveyor

Statistics to Accompany

Topographic Sheet "A", Alligator River, N. C.

No. of statute miles of shore line surveyed	-----	39.5
" " square statute miles of area " "	-----	8.0
" " " " " creeks "	-----	1.0
" " " " " roads "	-----	1.0

Topographic Sheet "B"

No. of statute miles of shore line surveyed	43
" " square statute miles of area "	8
" " statute miles of creeks "	.75
" " " " " roads "	1.75