THE FLOW PATTERN OF THE BONNY AND NEW CALABAR RIVER SYSTEMS OF NIGER DELTA REGION, NIGERIA

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INTRODUCTION

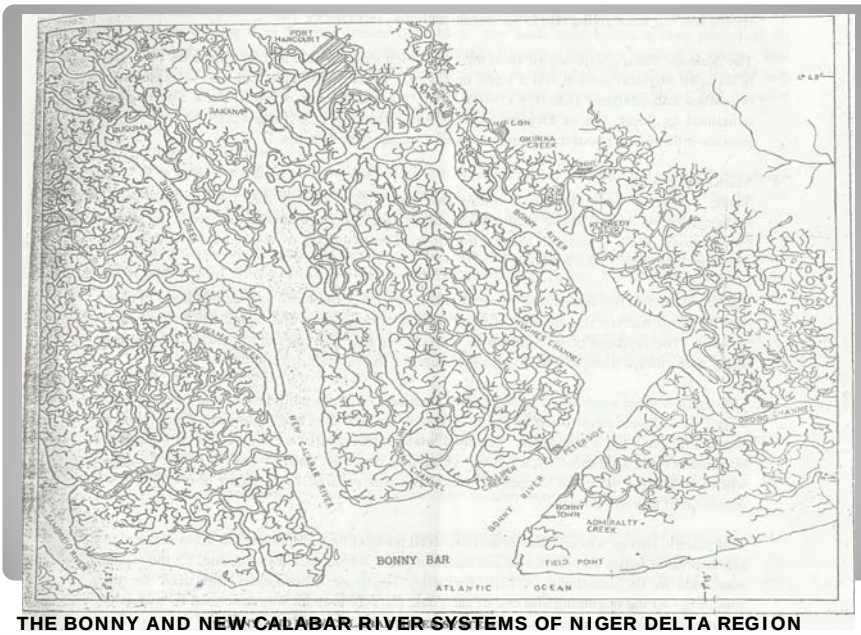
- 1.1 Rivers of Niger Delta
- 1.2 Activities of oil companies
- Industries
- 1.3 Human Activities

AIM AN OBJECTIVES

- 2.1 To Obtain Accurate results of waterlevels,velocities and discharges.
- 2.2 To use results obtained to determine flow pattern.

STUDY AREA

- 3.1 The Study area is a section of the Eastern part of the Niger Delta located in Rivers State of Nigeria. It stretches between latitude 4^0 23' and latitude 4^0 56' North of the equator and latitude 6^0 50' and 7^0 15' East of the Greenwich Meridian covering approximately 180 sq km



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METHODOLOGY

- 4.1 Water Levels
- 4.2 Velocities
- 4.3 X-sectional Areas
- 4.4 Discharges

METHODOLOGY CONTD

DATA ACQUISITION

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- *5.1Mean Tidal Level (MTL*
- *5.2 Bathymetry*
- *5.3 Flow/Discharge*
- *5.4 Surface velocities*

DATA ACQUISITION CONTD

RESULTS

6.1 The highest tidal registration for Bonny was 2.62m while the lowest was 0.31m.

6.2 The mean tidal level was 1.52m.

6.3The mean velocity in a vertical at the reference cross-section on a spring tide was 0.34m/s.

CONCLUSION

- 7.1 In terms of flow, it was observed that from five hours before High Water to High Water (7 out of 13 hours) water flows from Bonny River to New Calabar River. More water flows from Bonny to New Calabar River in any tidal cycle.
- 7.2 With regard to *Chezy Coefficient,* the result of the experiment showed that in 11 out of 66 cross-sections (17%), Chezy value of between 20 and 30 were obtained.
- 7.3 The overall conclusion is that the river system has high resistance coefficient.
- 7.4 Since there were noticeable changes in magnitudes of flow, water level and discharge, one can conclude that the Chezy coefficient, cross-sectional dimension as well as storage location affect the flow, water level and discharges.

REFERENCES