

Summary

The Nile Islands in Damietta Branch "A Study in Applied Geomorphology"

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The Recent Study of the Nile Islands in Damietta Branch has shown the following facts,

- 1- Continue Change of the Morphology of the Stream after Setting up the High Dam. The Overage Width of the Branch Stream Decreased Slightly at a rate of 230 Meters in 1978 and 222 Meters in 2003. At Percentage of 3.48 %. The Length of the Stream in 1978 was about 247.5 km. it Increased in 2003 to 247.905 km. at a rate of Increase about 405 Meters the Average Depth of Water ranged from 1.39m and 10.80m at a rate of 3.65m this Shows that the Stream is very Shallow and Suitable for the Accumulation of Deposits and the formation of Islands in Most of it's Parts this Necessitates Deepening and Clearance of it's Stream and this is being done now. So the Stream is Suitable for Navigation from the Barrages to Damietta and this helps Carrying Goods from Cairo to Damietta and vice versa. The Water Surface lost 3% of its area from 1978 and 2003 at a rate of Decrease from 57km² to 55 km². The Water Declined about 2 km² the Branch is in the Denuding Stage. The rate Reached about 1.37 in 2003 and the Braided was 13% in 1978. This increased to 14% in 2003. Analyzing the Deposits of Stream Bed showed the average Pebbles of the Bed Materials of the Stream Decreased going north. These Materials are roughly in the Beginning of the Branch and Tends to be small and smooth towards the Mouth.
- 2- The Number of Islands and areas changed through the years of Study from 1800 to 2003 once, they Increase and another time they Decrease the Total Result is that they Decrease from 46 in the year 1800 to 29 year 2003. The River has lost about 17 Islands. The area Decreased from 0.464 km² to 0.150 km² at the rate of two Thirds. Through sequence of History the Development of Islands from the French Campaign year 1800 up till year 2003 .three Islands are Still found, they are El Ramla , Meet el kholy Abdallah and Kafr Elnaeam. With the length of 2.4000 km, 2.320 km and 2.200 km. there are some Islands with Average width ranging from 200 to 400 m. after Building the High Dam while before that the width was 1000 or more. And the Shape Changed to be long and narrow. the Percentage of the Change in Shape Decreased from 23.8 % to 17.17 % Between 1800

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to year 2003 what helped that was the joining of big Islands like Kafr Elagam , Tahla (Olama) , Elhorryfa , Samannod , al anz , about 20 Island Remained the Same in Damietta Branch in 1978 and Increased in area and Dimensions . About 25 Islands Joined to the Banks and Became part of the flow plain and 10 new Islands appeared in the Stream. These Islands are Submerged When Water Rises in summer and appear only in winter when the level of Water becomes Low. So, they are classified in the year 2003 to permanent (about 5 Islands) and Seasonal (about 23) and Temporary Islands (about 5 Islands). The results of analysis shoe that the content of mud Increases in the northern Islands Compared with those in the Middle of the Branch and the Southern Parts. This makes sure that the Pebbles average Volume Decreases towards North. They are Stream in the Beginning and Small and Smooth towards the Mouth.

- 3- The Geomorphological factors rode in informing and developing the Nile Islands became clear as there was great decrease in the amount of Drain after Building the High Dam in Spite of that, the Rivers Hydrological System is the same. This is represented in the Presence of Increase in Summer Flood and Decrease in winter. As a result of the Drain Decrease some Islands have been Geomorfologically Changed. Some Islands joined to one of the River banks or to the deposited formation of the delta, to or more joined together in one and some new Islands performed resulting from the decline of Water. These changes add a great effect on the Morphology of the Stream and the attempt of the River to reach anew Balance Stage throw the process of Contentious Side and Vertical Curving. it has been shown that the Load of the Bed is the Bases of Building Islands . And the Huge Load Complete the Process throws Flood Months before Building the Dam and Keeping the Load before it. As after Building the High Dam the Water Curved the Materials of the Sides and the Bed and Deposited on the Edges and Curved Bends of the Islands so they Grow and Developed as the River Bed is Cared to make the Process of the Balance after the amount of Drain and Load has Changed after Building the Dam and Keeping the Load before it. The amount of Salts as Increased because of the Drain Water of factors and Agricultural Drain. This helped in the Speed of Deposited, formation and Development of Islands. It is clear that the river after cleansing operations currently under way between the years 2000 and 2004 will be less mileage trend in a certain point in the second from 1.3 meters to 1.2 meters; a 0.1 m / s a percentage of 7.7% resulting in lack of water run-speed, as well as increase Ability to carry sediment and sculpture in the islands and even restore its balance again and this will lead to increased sedimentation in

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the bottom of the islands and later on, and contributes to expand and deepen in the Hungarian origin and evolution of islands, since the more the river wider and shallower led to increased opportunities for the emergence of islands in the river and evolution And vice versa. As well as affect the slope of the bottom of the Hungarian processes sculpture and sedimentation on the sector longitudinal and transverse; When the sector is sliding longitudinal and transverse of the river grow with the rate of sculpture, at least when the rate of decline less sculpting and sedimentation rate increases. The Climatic conditions of Temperature, Winds and Evaporation affect the Water Drain age passing the Stream of Dammietta Branch and the consequences of Changes in Drain age the Temperature and Evaporation affect the Increase and Decrease in the rate of lost Water from one place to another throw the year. The speed of the wind affects the activation of evaporation process. This loads to the increase in lost Water from Water areas in the Stream of the Branch. The direction of the northern wind affects the movement of Water twist the River tends to curve in the direction of East and deposited in the direction of West. The Plants and Animals affect the finding and developing the Islands the growth of plants load and forming plant gatherings in some places in the middle of the Stream and formed what is like Islands (Sand Barriers) which developed after that and becoming an Island .Animals help the process of curving and rock slide by scratching and digging. This helps to form and create River Islands to form new Islands. Man helps as a geomorphological factor and place an important rule with the natural factors to make the speed of deposited in the sub Water Stream and side movements to acquire new areas of cultivated land or build new dust barriers to connect Islands with opposite banks. This leads to the increase in deposits of sub Stream and the mass of Water of Water moves to the main Stream raising the level of the bed. This also causes losing of a great quantity of Water by the plants of sub Streams. The deposited increases and connect Islands with the deposits of the delta in an attempt to reach the new parlance.

- 4- The Study of the Geomorphological Dangers Facing Islands shows the presence of the deposited process in Elramla and Greater Sahrat and Gamgara in the period of the three comparing "1948 – 1978, 1978 – 1991, 1991 – 2003" the caring in the first stage and deposited in the second stage and the third in Islands of Kafr Elnaim, the caring in the second stage and deposited in the first stage and the third in Islands of Dengway, Meet Elkholy Abdallah and Eldahria, also the caring in the third stage and deposited in the first stage and the second in Islands of Shrmah and

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Sharbas. the process of deposited in Curving caused finally are increase in the area of Islands by 891972.85 m^2 , the equivalent of 212 acres, 7 carats. It is expected with Discharge increase, number of islands in the Damietta branch reach to eleven Islands, including eight will be Submerged Partially and they are Elramla, Gamgara, Greater Sahrgt, Kafr Elnaim, Dengway, Meet Elkholy Abdallah, Eldahria and Sharbas The total area will be flooded 0.770886 m^2 ; which is equivalent to 183 acres and 12 carats; rate of 28% of the total area. Three Islands will form again and they are Sarwa, Kafr Elkarnin and Elsafeen The total area of these islands 0.594016 m^2 which is equivalent to 141 acres, 9 carats. The presence of Agricultural use especially in growing Bananas and Vegetables after the use of Housing.

- 5- The Study of the Applying example shows that the Island of Elramla is old it appeared in the maps of the French campaign 1800. Its area in 2003 is 0.6 km^2 which is equivalent to 142 acres and 19 carats and it is continually growing in the south. the factors affecting the development in Elramla differed. There are hydrological natural, biological and human factors. In the north the Island is exposed to curving this leads to the presence of cliffs with a high of 2.60 m in summer with the high level of Water. The eastern Stream widens because of curving and the western Stream becomes narrow because of depositing and the grows of natural plants such as Nile grows witch helps to catch deposits this will cause the connection of the Islands in the west through time . the surface of the Island consist of several Morphological levels as a result of the continuous process of depositing and the general low level of the Nile Water because of it's control after Building the High Dam. The divided island of Ramla in geomorphology to the unit has an area of the upper and 0.2 km^2 or the equivalent of 47 acres and 14 carats, the unit has an area of Central and 0.16 m^2 or the equivalent of 38 acres, 2 carats, the unit has an area of low-and 0.23 m^2 or the equivalent of 54 acres and 18 carats, and the scope Sedimentation and seasonal total area is 0.11 m^2 or the equivalent of 26 acres, 4 carats, ranging shallow and covers an area of 0.11 m^2 or the equivalent of 26 acres, 4 carats. Emerged from the results of the analysis of bottom sediment in 86.5 km from el Roda measurement of the Island of Elramla that soft sand category is the prevailing rate which reach 45.5 % of the sample weight. Representing the southern part of the Island, new land for human use, both in Recreational projects or agricultural or fish farms, The total area is approximately 50 acres.