JULIANA LAKE: A BENGHAZI WETLAND IN DISTRESS!

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POSTER SUMMARY

Of all the remaining natural habitats of Benghazi's urban area, perhaps the most threatened are its karst lakes and coastal salt marshes (locally known as Sebkhas). Juliana Lake stands out as one example of a fragile ecosystem that is steadily shrinking and exposed to dredging and, consequently, possible damage to its aquatic organisms, and the inevitable loss of its renowned biodiversity. Several 19th & 20th - century traveler's sketches and maps, soil maps, photographs and satellite images provide the bases for change in the size and magnitude of the lake and its adjacent areas over time. The study also includes an assessment of the sediment composition and texture of material accumulating at the bottom of the lake. These sediments are composed essentially of mixtures of sebkha sediments such as salty clay, silt, and clayey sand. The sediments at surface and around the Juleana Lake, however, are represented by quite soft whitish to yellowish and scattered patchy limestones of unknown affinity. Terra-rossa (reddish soil) and Quaternary caliche are present also but calcarenites (clastic limestone) cover considerable part of the studied area. The bio-micro components of these sediments are described and a number of small-sized benthic foraminifera have been identified. Macrofauna, which are primarily presented by recent benthic seashells belonging to phylum mollusca, have been investigated also and several species have been identified to the species level wherever possible. Other calcareous biotic components are predominantly shell fragments of molluscs, bryozoans, echinoderms and calcareous coralline red algae. It is concluded that the distribution, diversity and abundance of the total benthic organisms recovered in this survey reflect that the local habitat of the Juliana Lake were rich in nutrients and consequently providing an important food source for fishes, birds, and mammals. In fact, without these benthic organisms, these larger animals would not be able to survive. Finally, it is recommended that more specialized and detailed landscape ecological studies need to be undertaken by specialists to fully assess the peculiarities of Juliana Lake. Similar survey work should also be completed for other wetland natural habitats in the region to fully understand their original functions and values, and assess recent alteration trends and consequences.
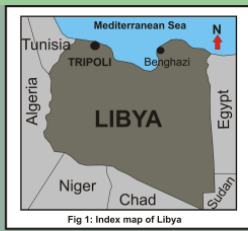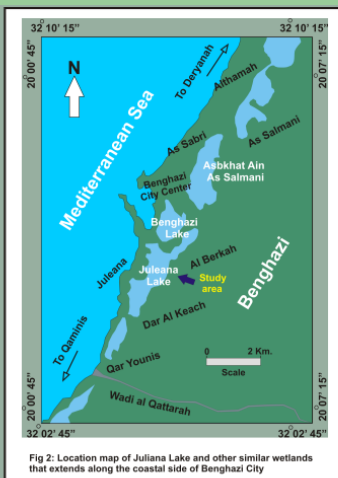
Fig 1: Index map of Libya

Fig 2: Location map of Juliana Lake and other similar wetlands that extends along the coastal side of Benghazi City
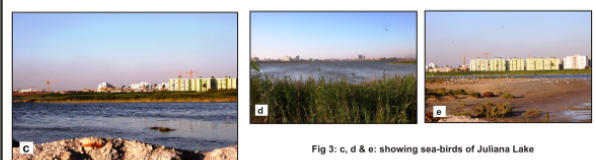

Juliana Lake

Fig 3: a & b: General views of Juliana Lake

Fig 3: c, d & e: showing sea-birds of Juliana Lake

Beechey, Cap F.W. & H.W. Beechey, Proceedings of the Expedition to Explore the Northern Coast of Africa, London, 1828

Fig 4 A & B : showing ancient Benghazi and its Juliana lake

A- Benghazi, 1821 (after Beechey Brothers).
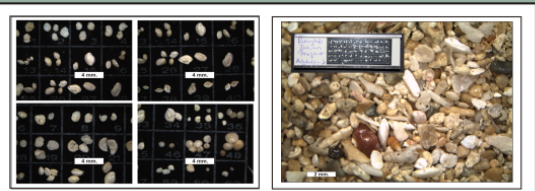
B- Benghazi, 1920, reproduced after Goodchild, 1921

Fig. 5: Recent and lose sediments (right view) with abundant small sized benthic foraminifera (left views)
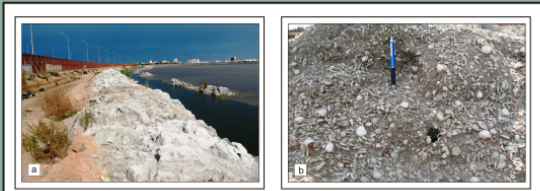

Fig. 6: Bottom sediments are forming artificial ridges along some sides of Juliana Lake (a).
These sediments are extremely rich by recent seashells of phylum mollusca & benthonic foraminifera (b).
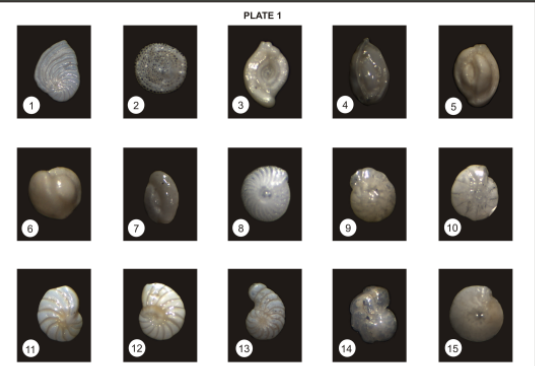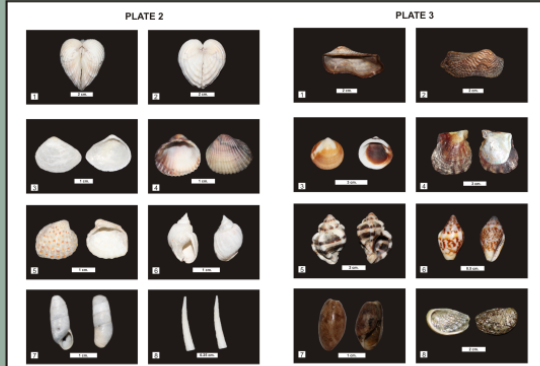

PLATE 4

PLATES 4 & 5: Representing examples of dumping of solid (above) and liquid (below) wastes at Juliana lake

PLATE 5

PLATE 1: Benthic foraminifera at study area, Magnification range between X75-X85

PLATE 2   PLATE 3

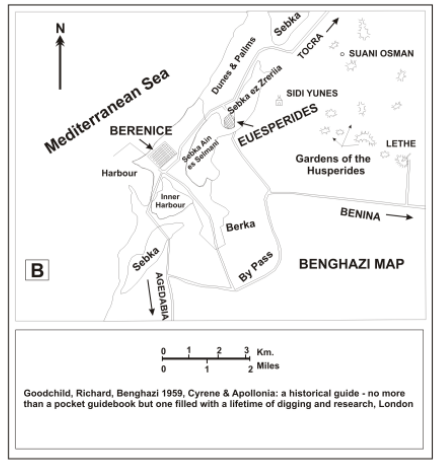PLATES 2 & 3: Mollusca (pelecypoda, gastropoda and scaphopoda) at study area

Goodchild, Richard, Benghazi 1959, Cyrene & Apollonia: a historical guide - no more than a pocket guidebook but one filled with a lifetime of digging and research, London