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Sediment Sources in the Persian Gulf

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Sediment Constituent Analysis is an effective tool for identifying sediment sources. Based on several sediment samples taken from different sites all over the Iranian coastlines, we have been able to show that an important portion of sediment on the beaches in the Persian Gulf is bio-clastic; that is, biologically created from the coral environment as well as other marine habitats. Unlike mineral (clastic) sediments, carbonate sediments are born not made. Furthermore, carbonate sand constituents are generally less durable than their quartz and mineral counterparts, and break down relatively quickly. Therefore, destruction of reefs and degradation of marine habitat are certain to reduce the sand supply to the shoreline in the Persian Gulf that is necessary to maintain beaches.
Carbonate sands are also found on the coastline of the Oman Sea. One of the striking things about the sediments along the coastline of Iran is the high percentage of carbonate material. Molluscan debris is common, even ubiquitous. This reflects the populations living in the offshore waters. Some molluscs thrive in high-energy sandy environments, others like finer sediments. Some live at the surface, while some burrow down as much as a half-metre. A great deal of information can be gained from the study of the species of mollusk and their distribution in the sediments.
This paper introduces a few case studies done in different parts of the Persian Gulf by using this method as a general assessment toolbox.