



## **Effects on the shore line modifications of illegal dumping of demolition material: the case of Palermo gulf**

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Most coastal habitat now exhibits stress from human activities and thus a linkage between adverse environmental impacts and coastal development is now apparent. This linkage is complex, often not well understood, yet it is expected to increase in strength as coastal population expands.

New and recent human agglomerations in the coastal zone have brought about unprecedented changes that would have been unexpected only few years ago and whose effects are now rising. The Gulf of Palermo (north Sicily) is an excellent example to observe this kind of recent coastal modifications since, especially in the last forty years, this area has suffered an extremely high human pressure. Expansion of new chaotic anthropized areas, sometimes without any city planning and without the connected black water discharge in the sea (only rarely purified), have radically changed the shoreline and the nearshore.

The quality of the column water and the shore line have been mostly affected by the discharge of black water and by the direct and indirect human pressure.

This paper is focused on this second aspect. Our goal was to reconstruct the recent history of the evolution of this area. This was done by using georeferenced maps and aerial photographs of the last forty years as well as sedimentological and morphological data collected on the field.

We have found substantial variations mostly in the back of the shore line. They have been caused by the uncontrolled building of new houses that have covered an enormous area only few metres far from the coast. Other kind of variations are found on the shore line and are connected with the demolitions of entire quarters of Palermo during the last big war or in the sixty, seventy and eighty years, to substitute houses with buildings. The material produced by those demolitions was illegally discharged in four big areas along the coast. The consequential effect was the creation of small hills of artificial blocs and sands that, during the last years, the waves have distributed along the coast thus changing the morphology of the shore line and creating many new beaches.