

**NATURAL AND MAN MADE FACTORS EFFECTING
PERSIAN GULF ECOSYSTEM**

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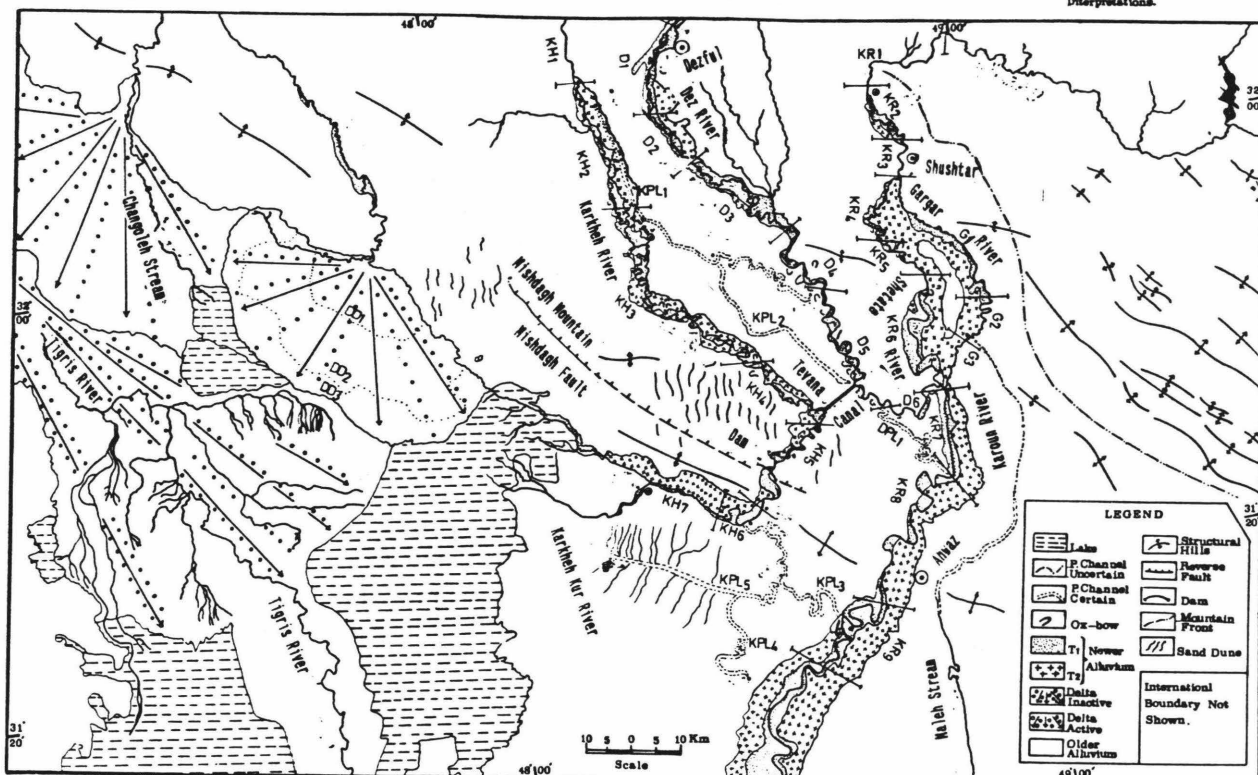
ABSTRACT: Persian Gulf (24° to 30°N and 48° to 56°25'E) is surrounded by many countries. The northern coastal line is Iranian territory where as, the southern and western coast line comprises countries like Kuwait, Iraq, Saudi Arabia, United Arab Emirate, Qatar and Bahrine. This gulf with about 232850 Km², 1290 Km and 240 Km (area, length and average width respectively) considered as a sea. Average depth is 31 meters and maximum depth is 90 meters which is in Hormoz strait. Geologically speaking, Persian Gulf, the extension of Oman sea is believed to be formed by geological downwarping of the continental shelf of Iran. It contains over 130 Islands which are developed due to process of reef formation, salt diapirism and other geological phenomenon. Some of these islands have fresh water and inhabitants.

The Persian Gulf, during geological past has experienced many changes. The present area is much smaller than that of past. This shrinkage and receding has led to the formation of famous Mesopotamian plain which constitute large parts of Iran and Iraq. Due to tectonic activity in the north and north west, river sediments and high evaporation in the course of time made its area to be under continuous process of reducing. Tectonic activity is also a significant process for changing river courses as deduced from satellite output data (Rangzan, 1996) which exhibits different stages of delta formation and channel migration (Fig.1) inducing ecosystem changes. Investigations reveals that due to water reduction of the oceans, Persian Gulf dried three times in the past, and sand dune hills in the Persian Gulf floor prove frequent dryness.

In the dawn of this century transportation of oil from Gulf started by oil tankers to different parts of the world. Due to heavy traffic pollution is induced to Gulf water hence it is called SPECIAL REGION. Moreover, during imposed war (Iran-Iraq war) and Persian Gulf war many ship sunken and hundreds of oil wells were fired for long time. A review of literature on marine pollution (Beril et al, 1996; Morrison et al, 1996; Readman et al, 1996; Sergey et al, 1996; Sevari, 1996) reveals that presence of oil and its products and use of toxic gases during these two wars severely effected life of marine organism, human being, plant and soil fertility. In addition waste sewage of industrial factories such as petrochemical, cement, atomic and city sewage are poured into the Gulf and influences ecosystem. Table 1 represents concentration of some elements in different stations along northern territory, it is also evident from these data that

Figure.1 RIVER MORPHOLOGICAL MAP OF PARTS OF KHUZESTAN-IRAQ AREA

Based On Satellite TM Data Interpretations.



concentration is more as compare to high polluted areas.

Table 1 Heavy Metal Concentrations

Stations	Concentration in ppb				
	Zn	Cd	Pb		
Helileh	1	200	275	150	1-Iran-Iraq war
	2	275	115	500	2- Persian Gulf war
	3	150	44	250	3-After Persian Gulf war
Ziyarat	1	180	66	123	
	2	290	125	500	
	3	136	23	176	

Besides these man induced pollution, a continuous natural processes which include reduction and concentration of Persian Gulf water can be considered as an important parameter for pollution and changing ecosystem. Because at present in each second 300 m³ water enters Gulf from several rivers and rate of evaporation from the Gulf is 15000 m³. With construction of more dams on supplying rivers in Iran, Iraq, Syria and Turkey Gulf water would be more concentrated and continuous dryness of Persian Gulf would happen and leaves beyond unfertile saline soil where in some places reaches up to 150 Km in length.

Kalantari (1996), while discussing groundwater management of the northern coast has suggested few points in order to change ecosystem of the northern territory. During his latest investigations he concluded that structural control play an important role for storage of water in carbonate rocks. Furthermore sand stone and sand dunes can be considered as a good potential aquifers.

Following points are also suggest to prevent further pollution and to recover the Gulf.

- 1-Discharge monitoring of oil
- 2-Cleaning oil by ,mechanical and chemical processes
- 3-bacteria to decompose oil materials
- 4-To respect international rules and rights
- 5-Improvement of drilling rig
- 6-Sewage treatments

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