Offshore Hard Minerals Occurrences: a Data Base

ABSTRACT

During the last thirty years, many occurrences of hard minerals have been discovered on the sea floor. Most of those Discoveries were done by chance during academic surveys that were not designed for mineral prospecting. Some of those Occurrences have been prospected, mostly during the sixties, with inappropriate method and equipment. With the disposability of new technologies as swath mapping, high Resolution side scan sonars, high resolution seismic for Special sediments, it may be time to reconsider these Surveys. A data base of all offshore hard-mineral occurrences Recorded in the literature have been set up. This data base will be presented and discussed.

Men are suspicious by nature. Everything hidden is supposed to be either horrible or fabulous. The bottom of the sea is an excellent place for hidden treasure. Hephaistosalias Vulcan was forging the metals under the sea. The lost Atlántida was full of precious metals. Memo using the Nautilus earned its Opulence from underwater mines and wrecked vessels. However, the discovery of minerals under the sea is much more recent. Leaving apart the attempts made to explore and mine the Polymetallic nodules of the deep sea, it will be considered there only the marine minerals of the continental shelf or its possible extension, the Exclusive Economic Zone.

BRIEF HISTORY OF MARINE MINERALS ECONOMY

Most discoveries have been fortuitous during academic surveys. The purpose of which was to study the sediment my processes and not to prospect the minerals.

But the mining started from the land. At the beginning of the Century, prospectors that arrived too late to acquire claims in Alaska, discovered after a storm that the beaches at the south of the gold creek were shining in the sun. After a short rush that ravaged the beaches, gold was mined underwater with a Bucket dredge. To the shore off Bluff in 1903.

In Malaysia, tin miners started on dry land and small valleys, then they went down to the rivers using dredges on barges. Following the stream they came inside the estuaries and from there to the sea. The same story happened for sand and gravel extraction in Great Britain and in France.

At the beginning of the sixties, it was predicted by the "Club De Rome" that, before the end of this century, we would be in short of most commodities because the incredible rate of growth of our raw material consumption. Mining companies started to search for any source of mineral sand the sea was not forgotten.

In France a joint venture named Germinal was formed in 1972. Between dozen organisations: research institution as CNEXO (National Centre for the Exploitation of the Oceans, now Firmer), bureau of mines (BRGM), dredging and mining companies and banks. TIM objective was to collect all available information about marine minerals. An important Fomentation has been assembled year after year. Two International seminars have been organized on this subject in 1977 at Orléans and in 1984 at Brest.

At the same period several surveys have been made to identify mineable marine mineral deposits. But the available Prospecting technology was inaccurate.
Looking for more?

Some of the OnePetro partner societies have developed subject-specific wikis that may help.

PetroWiki was initially created from the seven volume Petroleum Engineering Handbook (PEH) published by the Society of Petroleum Engineers (SPE).
The SEG Wiki is a useful collection of information for working geophysicists, educators, and students in the field of geophysics. The initial content has been derived from: Robert E. Sheriff's Encyclopedic Dictionary of Applied Geophysics, fourth edition.

2016 Update of Occurrence Rates for Offshore Oil Spills Excluding the first three data as outliers, Figure 17 includes an exponential best-fit trend line providing a rough quantitative estimate that confirms the downward trend observed over the last 40 years. This trend line formula is not intended for projecting future spill incidence rates. For this purpose, the report calculates two base spill rates: one including hurricane spills and the other excluding hurricane spills. 4.4.1. Platform Base Spill Rates Table 8 compares the full record and 15-year spill rates to the full record estimates from the previous report (Anderson et al., 2012) for both the $\geq 1,000$ and $\geq 10,000$ spill size categories.