OIL POLLUTION OF THE CAPE INFANTA COASTLINE

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ABSTRACT

Observations on oil pollution over the past 24 years have been made along the Cape Infanta coastline. Although no shipping disasters have occurred in the area, the oil cover of the rocks has increased markedly in places, with signs of affecting the intertidal fauna. It is concluded that the cumulative pollution by oil under present conditions may in time produce results similar to those encountered after large oil spills.

INTRODUCTION

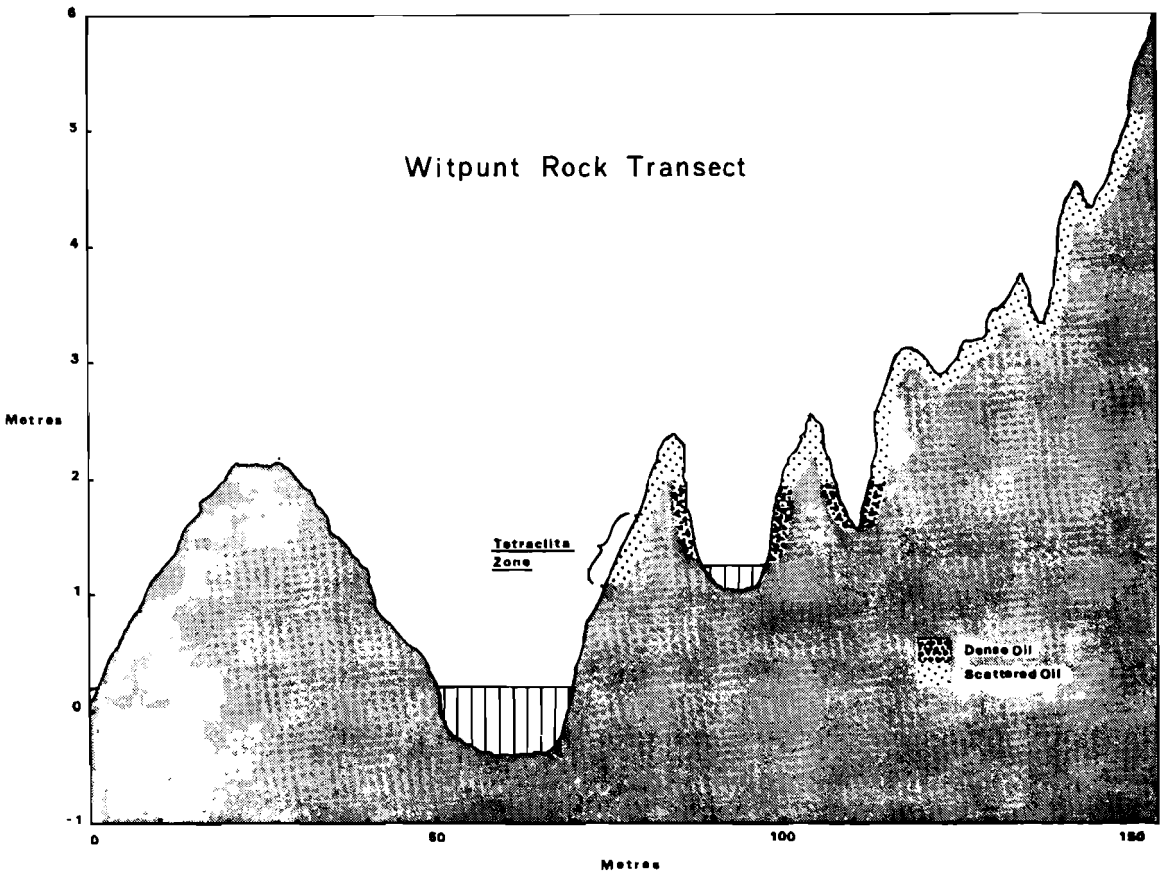
Cape Infanta is the south-easterly point of a rocky headland 48 miles east-north-east of Cape Agulhas. It is a rugged outcrop of Table Mountain Sandstone with cliffs 30–50 m high, indented by several bays up to 1 500 m across and possessing numerous ridges dipping into the sea.

The coastline 3 km either side of Cape Infanta has been privately owned since 1947. At that time there were no indications of oil pollution of the rocks. Since then the area has been visited every year and it has been noted that crude oil has gradually been deposited along the coast in ever increasing amounts. What started as an isolated speckling about 1952, has now developed into a heavy contamination of sheltered rock, without the presence of a wrecked or leaking tanker.

Throughout the year the wind comes predominantly from west to south-west. Similarly the swell direction is mainly from the south-west. At intervals along the coast off-lying rocks and reefs break the main force of the swells. Behind these, sheltered pools and inlets can be found.

TRANSECT

To assess the accumulation of oil on this rocky coast a transect in the intertidal zone on the south-western side of Witpunt 1,5 km south-west of Cape Infanta was surveyed. This transect runs north/south and traverses typical sheltered pools and rocks where more severe pollution occurred. The main force of the incoming swell is broken by a reef approximately 50 m wide. Under normal sea conditions the transect is only affected by splash and water rising in a number of interconnecting pools and channels. Under storm conditions, foaming seas will sweep over the transect and up the shore to a vertical height in excess of 5 m. From Figure 1 it can be seen that the rocks at the seaward end are clear of oil. Oil is scattered over the remainder of the sheltered rocks from a level of 1,20 m to 5,18 m above low water of



springs. The heaviest concentrations occur surrounding sheltered pools (Fig. 2) from the mid-tide to high water of springs. The lower limit corresponds with the level of the barnacle *Tetraclita serrata* which occurs from 1,13 m – 1,69 m above low water of springs. Although the levels are similar, little oil covers the *Tetraclita* which occurs where there is more water movement.

This vertical distribution of oil on a rocky shore corresponds very closely to that encountered at Cape Agulhas after the grounding of the *Wafra* where the most severe oil coverage was from mid-tide to high-tide marks. (Day *et al.* 1971).

So far the effects on the intertidal life appear to be slight in most areas. Both winkles *Oxystele tigrina* and *O. variegata* appear to be largely unaffected. *O. variegata* is present on rocks of low oil cover and in pools surrounded by dense oil cover, but is absent from exposed rocks where oil cover is dense. The sea urchin *Parechinus angulosus* and the alikreukel, *Turbo sarmaticus* also appear unaffected.

FIGURE 2
Heavy oiling surrounding a sheltered pool. The surface of the oil has been discoloured by dry foam and a crust has formed. Beneath the surface the oil remains viscous. The pool is clear of oil.

However there was a complete absence of *Octopus granulatus* from low water pools where they are normally common. There was a marked increase in the numbers of the crab *Plagusia chabrus* which is the normal prey of *Octopus*.

Thus apart from the possible effects on *Octopus* and *O. variegata*, so far the presence of oil does not appear to have had marked effects on the intertidal fauna. But the danger lies in the cumulative effect of this type of oil pollution. With the build-up of oil over a period of time, under what might be termed normal conditions, a situation can be reached where the oil density is as great as that caused by an oil tanker disaster of the *Wafra* type, with comparable damage to the inter- and infratidal flora and fauna.

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