

ABSTRACT

The Polychaete macrofauna near a large Industrial Complex at Point Lisas, Gulf of Paria, Trinidad, West Indies.

The coastal area of Point Lisas Industrial Estate was investigated for quantitative and qualitative changes in polychaete communities, from November 1984 to February 1986. At each station six replicate sediment samples were collected using a 0.04 m² van Veen grab. Polychaetes were identified from five samples and the sixth was analysed for trace metals, petroleum hydrocarbons, total organic carbon and grain size. Data were analysed using density, diversity indices, agglomerative hierarchical classification (dendrograms and K-dominance curves were plotted), and feeding guilds to assess the relationship of distribution and abundance of polychaetes to environmental parameters.

One hundred and ten species representing 33 families were collected. Density ranged from 0 to 6035 per m², and the Shannon Wiener index of diversity from 0 to 2.892. The polychaetes (except for Capitella capitata and Streblospio benedicti) were well distributed over the study area. Sediment type and proximity to outfalls determined spatial distribution. Capitella capitata and Streblospio benedicti were the numerically dominant species, while Paramphinoe sp.b was the most widespread. There were elevated levels of zinc (67.17 ppm. maximum), petroleum hydrocarbons (45.72 ppm. maximum),

ammonia (343 ug/l maximum) and marked sediment shifting at few inshore stations. Temperature was also highest at the inshore stations (41.0° C maximum).

The indicator organisms, Capitella capitata and Streblospio benedicti were restricted to inshore stations and showed marked fluctuations in their abundance suggesting that these stations were polluted. The study area did not appear to have deteriorated since a previous study in 1979/1980.