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THE ROLE OF ECOLOGY IN MARINE POLLUTION MONITORING  
ECOLOGY PANEL REPORT

J. S. Gray (Chairman), D. Boesch, C. Heip, A. M. Jones, J. Lassig,  
R. Vanderhorst and D. Wolfe

INTRODUCTION

The report on the feasibility of effects monitoring (McIntyre et al., 1978) emphasized the difficulties in monitoring of population and community effects. It was argued that the response of populations and communities to pollutants is non-specific and that it is hard to distinguish pollution-induced from natural changes. However, with the possible exception of some

effects in response to specific pollutants, such as sewage effluent or paper pulp mill waste (Pearson and Rosenberg, 1978) or oil spills (Scauder, 1978) it is relatively easy since changes in population and communities are usually dramatic. Such studies are usually done over small geographical areas and are relatively short term, seldom longer than 15 years duration. The other and more difficult goal of monitoring is the detection

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Ecological monitoring data, therefore, provide the only real test of effects on populations. However, early detection of changes on individuals, such as with genetic damage, is clearly preferable since effects on populations may not be shown for many generations.

OBJECTIVES OF BIOLOGICAL MONITORING

The effects of pollutants in populations and communities can be somewhat arbitrarily divided into acute and chronic effects. The detection of acute ef-

fective effects of pollutants must cover many decades. The division of monitoring into two distinct categories is not clear cut and no single set of criteria can be established for ecological monitoring. Either local sites and objectives must be clearly defined and the appropriate spatial and temporal scale selected.

The unravelling of effects of climatic changes on populations and communities can be greatly aided by small-scale international monitoring programmes. Under COMET project 41 of the European Economic Community four different communities, Ireland/Fa-

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