

## **Maritime litter studies in the Firth of Forth**

**E. Caulton and M. Mocogni**

Department of Biological Sciences, Napier College, Edinburgh, Scotland, U.K.

During the past four years successive studies of litter have been undertaken on beaches along the southern shoreline of the Firth of Forth. The original and longest study was at Cramond, the subject of the poster display at this symposium. The Cramond study identified nineteen categories of litter, three of which were container and the rest non-container. Percentage composition of the major categories were: Containers (18.8%), Plastic Sheeting (18.8%), Clothing (14.31%) and Plastic Fragments (11.2%). Our findings revealed that the bulk of the litter of all categories was of local origin, deposited either directly onto the beach by visitors/local residents or indirectly by tidal distribution upstream from beach tips further east (e.g. at Granton). None of the Cramond litter was of foreign origin.

Subsequent studies along Edinburgh's coastline have been undertaken at Portobello, Seafield, Granton and Silverknowes. Only at the last named was any evidence of sea dumping found—some eight containers of foreign origin ranging from Scandinavia to the Mediterranean were recorded. A recent study carried out on litter on the two beaches at South Queensferry has revealed a sorry state with regard to this aspect of pollution. Results are currently being analysed and will be published in due course. Portobello beach would appear to be the cleanest of Edinburgh's coastline beaches. A weekly study of litter on the foreshore has been undertaken for some four months, the weekly analysis being carried out just before the daily round of the beach cleaning vehicle. Thus a twenty-four hour weekly sample has been recorded. These results are currently being analysed.

The conclusion reached to date would indicate the need for more publicity both on site and via the media to reinforce the desirable use of the already adequate litter disposal boxes/skips available to the public. Much money, equipment and labour is wasted on cleaning up litter-strewn beaches and such resources can and ought to be put to more essential tasks.

## **Tributyltin contamination in the Firth of Forth**

**S. K. Bailey**

Napier College, Edinburgh, Scotland, U.K.

and

**I. M. Davies**

DAFS Marine Laboratory, P.O. Box 101, Victoria Road, Aberdeen AB9 8DB, Scotland, U.K.

Tributyltin (TBT) compounds are used as biocides in antifouling paints on marine structures, including the hulls of commercial and leisure craft. The TBT leaches slowly from the paint and prevents the settlement and growth of fouling organisms. Although TBT is rapidly degraded in sea water, the concentrations