

LOIS RACS(C) Core Programme
Water Guardian SV 11
Cruise Report
25th-29th July 1994

Personnel:

Duncan Plummer (PML/Hull)
Tony Bale (PML)
Karla Youngs (PML/U of Plymouth)
Malcolm Woodward (PML)

Monday 25th: The LOIS van traveled from Plymouth. From 1700-1900 the equipment was loaded aboard *Water Guardian* and initial commissioning commenced.

Tuesday 26th: The scientific party mustered on board at 0900 and completed commissioning the equipment. *Water Guardian* locked out of Hull Marina at 1125. From 1130 and throughout the day measurements of conductivity, temperature, pH, dissolved oxygen, suspended particle load were recorded using the NRAs system. The survey commenced at 1145 (station 18). Samples were collected at a selected number of stations for gravimetrics, C/N, chlorophyll, phytoplankton identification and particle size analysis. The UOR was deployed at 1220 (Immingham) and towed until 1722 and recovered at station 35. During the tow, both eastwards and westwards, a series of 5 vertical profiles for optical properties were carried out with the PRR-600 (stations VP1-VP6). On the eastwards passage stations 18-27 were visited. Stations 30-37 and 19,18 and 17 were visited on the return journey up the Humber and the system was off-line at 1812 (station 17). *Water Guardian* tied up along side Admiralty Steps until locking into Hull Marina at 1900. From 1900-2030 the nutrient analyser was set up. Due to the weather, 7/8 and 8/8 cloud cover, remote sensing from the aircraft could not take place.

Wednesday 27th: The scientific party boarded the vessel at 0900 and completed commissioning the nutrient analyser. The *Water Guardian* departed Hull Marina for the down stream nutrient survey at 1200. The nutrient analyser and the NRAs system (conductivity, temperature, pH, dissolved oxygen, suspended particle load) were on line at 1215. Samples were collected at all the stations for gravimetrics, C/N and chlorophyll analysis. The survey was completed at 1750. Due to the weather, 8/8 cloud cover and rain, remote sensing from the aircraft could not take place

Thursday 28th: The *Water Guardian* departed from the marina at 0745 for the up stream nutrient survey from Hull to the Aire Confluence. The underway monitoring was as per Wednesdays survey. At 0810 the nutrient analyser was on line and the survey started at station 16 at 0817. The survey continued until 1021, station 3 (Aire Confluence). The return survey commenced at 1035 and ended at station 16 at 1316. A further set of standards and baselines were then measured. The plan was then to complete the remote sensing part of the programme as the forecast was for an

improvement in the weather. This was called off as the weather did not improve and hence the aircraft would not be flying. The *Water Guardian* returned to Hull Marina at 1325. The equipment was unloaded and the scientific party disembarked at 1530.

Friday 29th: The party returned to Plymouth. (Contingency day).

All times in this report are BST.

Notes: The seventh LOIS Core Programme was hampered by the weather.

The remote sensing part of the programme was restricted to one UOR tow and visiting 5 of the Vertical profile stations. Even this activity occurred without an accompanying aircraft overflight.

The programme was flexible and efforts were made to alter it to accommodate a possible overflight. In this we are grateful for the advice and expertise of Jim Flett and Claire Buckler of the *Water Guardian*. Unfortunately the weather was always too cloudy and was often raining.

The nutrient survey from the Aire Confluence to the Humber Mouth was completed on the Wednesday and Thursday.

During the passage up stream the LOIS RACS(C) EMP2000s on the Lightfloats at Hessel Sands, Lower Witton and No 34 were observed to be in place.

The *Water Guardian* works mainly off the northeast coast of England. It would thus be an ideal vessel for possible LOIS surveys in the vicinity of the Tweed.

Duncan Plummer

29th July 1994