Ecologically Acceptable Flows.

Progress report for period 1 February-31 March 1992.

(a) Technical Progress.

Channel Survey, Flow Measurement and Sampling.

River Gwash: The study reach on the Gwash has been re-established being based on the study reach first surveyed in the DoE commissioned report "Instream Flow Requirements of Aquatic Ecology in Two British Rivers". This reach has been extended to include a better downstream hydraulic control and some of the original transects excluded with some new ones being put in. The positions of all the transects have been marked with permamarks and their elevations measured. The channel cross section, cover and substrate, velocities and water elevations have all been measured at one calibration flow.

River Lambourn: A study reach has been established on the R. Lambourn at the Hunt's Green site. The positions of the study transects have been established, marked with permamarks, and the elevations surveyed. The channel cross sections have been surveyed, as has cover and substrate, and velocities and water surface elevations have been measured at one calibration flow.

River Wye: A second calibration flow has been measured on the Pant Mawr site.

River Exe: A second calibration flow has been measured on the Warren Farm site.

Data Entry/Processing.

The channel survey data for the River Lambourn has all been entered, and cross section profiles have been plotted using FREELANCE. The calibration flow data for the Exe and Wye have also been entered.

Water surface areas for the sites on the Rivers Gwash, Lymington and Lambourn have been calculated to enable IFE to calculate species densities for the study reaches.

<u>Institute of Freshwater Ecology.</u>

General

Most of the remaining time available in the current year was used in the preparation of data for the "Interim Report" thus no work has been carried out on invertebrates and macrophytes in this reporting period.

A development not funded by the NRA has begun which will be of use in the development and assessment of PHABSIM. The dramatic effects of macrophyte growth on river depth observed in the

NERC science budgeted project on the East Stoke Millstream has prompted us to investigate the feasibility of modelling discharge/macrophyte growth and its effects on wetted perimeter in a variety of channel shapes. Dr John Hearne (University of Natal) started work on this project in mid-March.

Fish communities and Millstream experiment

The NRA contributed to the funding of the first two months of the Millstream project and this is now entirely funded by NERC Science Budget. The two months were used to develop the stop-netting technique for electro-fishing and devise a system for recording the position of captured fish. Details of this are presented in the Interim Report. Fishing experiments are being repeated in the Millstream in the coming year and the results will also be used to supplement data obtained for the Ecologically Acceptable Flows Project. Data on population structure are being collated.

The current status of the national fishing surveys is described in the "Interim Report". Since then some difficulty has been experienced finding suitable times and sites at which to carry out the fishings on the remaining rivers. With the exception of the Itchen these have been arranged and it is hoped that the Lambourn and the Ouse will be fished in April and May.

Literature review

References to fish and fish habitat relationships to discharge fluctuations continue to be collated for the bibliography.

(b) Interim Results.

- Final selection and access granted for all of the 11 study sites.
- Transects placed and headpin elevation surveys completed for the Rivers Exe, Wye, Hodder, Blithe, Mill Stream, Lambourn, Itchen, Lymington, Gwash, Gt. Ouse at Brampton, and Lees Brook.
- Initial channel surveys completed for the Rivers Blithe, Mill Stream, Wye, Lymington, Lambourn, Gwash, and Gt. Ouse (at both Brampton and Lees Brook sites). Initial channel surveys partially completed for the Rivers Exe, and Hodder.
- Further calibration flows measured for the Mill Stream (5), Blithe (5), Exe (1), and Wye (1).
- Electro-fishing surveys completed on the Rivers Exe, Wye, Hodder, Blithe, Mill Stream, Lymington, and Gwash.
- Invertebrate samples taken from the Rivers Exe, Wye, Hodder, Blithe, Lambourn, Lymington, and Mill Stream.

(c) Cost in Reporting Period to 31.03.92.

	Contract Value £	Spend £	Spend %
Staff	68,584	5,000	7.3
Travel & Subsistence	22,983	2,510	10.9
Consumables	11,647	765	6.6
Subcontracts	46,566	0	0
TOTAL	149,761	8,275	5.5

(d) Total Cost of Project to 31.03.92.

	Total Budget £	Spend £	Spend %
Staff	162,080	97,476	60.1
Travel & Subsistence	35,520	14,107	39.7
Consumables	23,260	18,358	78.9
Subcontracts	86,040	60,566	70.4
TOTAL	312,320	190,507	70

(e) Estimated Costs of Work in Next Reporting Period.

Staff	14,000
Travel & subsistence	1,600
Consumables	1,500
Subcontracts	5,000
TOTAL	17,600