

## **2005 CHARTER CRUISE PROGRAMME**

### **REPORT: INA K 1/2005**

**(PROVISIONAL:** not to be quoted without prior reference to the author)

#### **STAFF:**

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6 Environment Agency staff (part-time)

#### **DURATION:**

6 November – 11 November 2005

#### **LOCATION:**

Thames, Medway, Swale and Essex Estuaries

#### **AIMS:**

1. To carry out a trawl survey for pre-recruit bass in the middle Thames estuary, Medway, Swale, Essex Blackwater, Crouch and Roach Estuaries over established grid stations.
2. To determine the relative abundance of bass and other species in the Thames and adjoining estuaries.
3. To obtain a sample of flatfish for environmental monitoring programmes.
4. To obtain a sample of 100 0-group bass for an experiment on feeding ecology of juvenile bass using stable isotopes.

#### **NARRATIVE:**

Staff travelled to Leigh-on-Sea on 5 November and unloaded the gear that afternoon. The charter vessel left Leigh-on-Sea at 04.30 GMT on 6 November, and with a weather forecast of south westerly force 6 increasing to gale force 8, the survey commenced with 4 tows in the Swale using twin high-headline bass trawls fitted with shrimp mesh cod-end liners, fished independently from the boat's two derricks. The weather on following day improved, allowing the 9 tows in the outer Thames to be completed successfully. Due to a forecast of more bad weather, it was decided to continue the survey in the Essex rivers, so the charter vessel was moved to Wallasea that night. On the 8 November the 6 tows in the River Crouch and the Roach were worked. Samples of 0-group and 1-group bass caught that day were delivered to the Burnham laboratory. November 9 was spent working on the tows in the River Blackwater, and the Ina K returned that evening to Leigh-on-Sea. On the following day tows in the Medway were fished. On the fourth tow of the day the port net caught on an obstruction 5 minutes after shooting. The skipper and crew of the Ina K repaired the net and the station was repeated successfully. The tide was one metre below predicted, causing a delay in fishing the next tow in Hoo creek (Kingsnorth Power station) and with daylight fading the last tow of the day (at the mouth of the River

Medway) was abandoned. The final day was spent working on the tows in the Inner Thames to complete the survey. The fishing gear was unloaded that evening and staff returned to Lowestoft that night.

**RESULTS:**

36 valid tows were fished, consisting of 34 core stations (Figure 1). Due to consistent net damage station E has been dropped from the survey, and the alternative station E1 was fished instead. Prime station G was repeated to give enough flounder to satisfy the additional aims. Water temperature and salinity levels were recorded at every station.

A total of 3,938 bass were caught in the survey compared with 20,701 in 2004. The fall in catches of bass could be due to the increase in water temperature, which at 13.06° was the highest in the time series, or due to a poor year class.

Catch rates of bass were:

	2005	2004	2003	2002
Overall	6.1/minute	30.4/minute	29.0/minute	55.6/minute
Essex Rivers	3.1/minute	11.4/minute	30.8/minute	23.4/minute
Thames and Tributaries	8.0/minute	39.6/minute	27.9/minute	71.1/minute
Average Surface Water Temperature	13.06°C	11.43°C	8.95°C	9.71°C

	2001	2000
Overall	12.7/minute	1.99/minute
Essex Rivers	16.8/minute	1.5/minute
Thames and Tributaries	10.9/minute	2.2/minute
Average Surface Water Temperature	11.31°C	9.48°C

Three bass caught were above the minimum landing size (36cm). Bass were the most abundant species of the survey.

A total of 173 bass were sampled for age during the survey. The results indicate that 63% of the fish caught throughout the survey area were 0-group (the 2005 year class), 24% were 1 year olds (the 2004 year class) and 12% were 2 year olds (the 2003 year class), with modal lengths at 9 cm, 18 cm, and 23 cm respectively (Figure 2). Eighty percent of the 0-group bass were caught in the Medway

A wide variety of other species were caught, the most abundant being whiting *Merlangius merlangus* (1,572 fish) and bib *Trisopterus luscus* (1,174 fish). Of particular interest 123 0-group cod *Gadus morhua* and 8 red mullet *Mullus surmuletus* were caught during the survey. Two anchovies *Engraulis encrasicolus* were caught, one in the Medway and the other west of Thurrock in the Thames.

Length distributions of all fish species except for gobies and 0-group herring and sprats were compiled to provide the Environment Agency with data on abundance and distribution.

One sample of flounders was retained for CEFAS environmental monitoring programmes.

Two samples of bass were retained for an experiment on feeding ecology of juvenile bass using stable isotopes and for genetic studies.

CEFAS would like to thank the skipper and crew of the Ina K and the Environment Agency staff for their help in the successful completion of this year's survey.

Mary Brown  
15 November 2005

**INITIALLED:**

**DISTRIBUTION:**

Basic list +  
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Figure 1

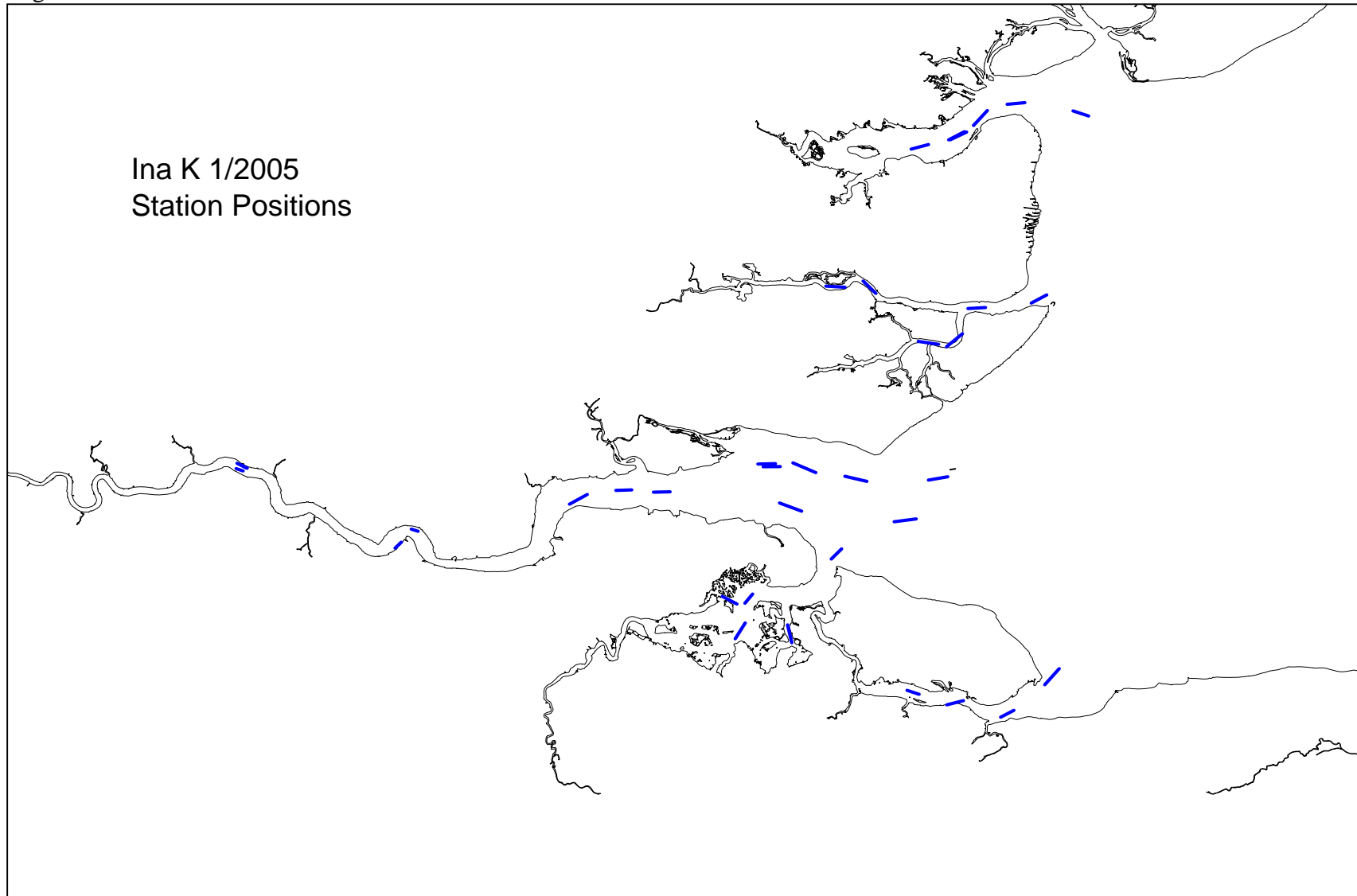


Figure 2

