



**Fig. 1** Cruise track for acoustic survey of the Douglas Bank spawning grounds. Solid circles indicate position of herring schools or aggregations (areas of circles indicate relative size of targets:  $S_A$  values = 17, 340, 5620 respectively for 15-minute intervals). Positions of plankton stations sampled during cruise are indicated by crosses. Trawl 1 was carried out at the position of the large herring aggregation ( $54^{\circ} 2.8'N$ ,  $4^{\circ} 30'W$ ).

The large herring aggregation was approximately 430m wide. If circular and bisected through the centre, the biomass would be approximately 660t. A similar aggregation 300-400m wide was found in the same location and at the same time in October 1997, and was estimated by shoal mapping to comprise 1200 t of fish.