

The following supplement accompanies the article

Ichthyoplankton community structure in the northwest Gulf of St. Lawrence (Canada): past and present

Alice O. V. Bui^{1,2,*}, Patrick Ouellet¹, Martin Castonguay¹, Jean-Claude Brêthes²

¹Department of Fisheries and Oceans, Institut Maurice Lamontagne, 850 Route de la Mer, PO Box 1000, Mont-Joli, Québec G5H 3Z4, Canada

²Institut des Sciences de la Mer de Rimouski, 300 Allée des Ursulines, Rimouski, Québec G5L 3A1, Canada

*Email: alicebui@mac.com

Marine Ecology Progress Series 412: 189–205 (2010)

SUPPLEMENT

Total ichthyoplankton distribution

Distribution maps were generated to give a visual sense of species distributions within the study area as well as of variations in species abundance between the 2 decades and sampling times. The whole study area, and particularly Jacques Cartier Strait (see Fig. 1) and the northwest part of the study area, were critical areas for egg and larval production in the 1980s. Indeed, higher ichthyoplankton abundances were recorded during this decade than in recent years. The results show that the area once sustained high fish egg production; if cod stocks ever recover in the Gulf, the northwest Gulf could be a key area.

Biogeography

Maps presenting the distribution of species abundance were produced to verify if any spatial pattern in the ichthyoplankton distribution within the study area could be identified. In the 1980s, ichthyoplankton were mainly concentrated in Jacques Cartier Strait (especially in June 1985, June 1986, and May 1987) and on the northeast shelf of Anticosti Island (May and June 1986) (Fig. S1). In the 2000s, ichthyoplankton were concentrated on the southwest shelf of the island, especially in May 2006 and May 2007. In 2005, ichthyoplankton were more evenly distributed across the area, with relatively low abundances. Ichthyoplankton in June 2006 were more concentrated on the southeast Anticosti shelf (although this area was not sampled during the previous decade) (Fig.S1). In the 1980s, H4B eggs (gadids and merlucciid hakes, rocklings, butterflyfish *Peprilus triancanthus*, windowpane *Scophthalmus aquosus* and Gulf Stream flounder *Citharichthys arctifrons*) eggs were concentrated in the western part of the study area, west and south of Anticosti Island (Fig. S2). In the 2000s, higher H4B egg abundances were found southwest of the island. American plaice eggs and redfish larvae occurred more widely in the eastern part of the study area in the 1980s and also southwest of the island for redfish larvae in June 1985 (Figs. S3 & S4). In the 2000s, American plaice eggs seemed to be more evenly distributed, especially in May 2006 and May 2007, whereas higher abundances of redfish were found in the south of the study area. Sandlance larvae were concentrated in the northwestern part of the study area, in Jacques Cartier Strait and at the head of the Anticosti Channel in the 1980s (Fig. S5). In the 2000s, sandlance larval distribution extended towards the southeast, although high larval abundances were also recorded in the northwestern part, especially in May 2007. Arctic shanny was collected across the whole study area in June in the 1980s and in May 2006 and May 2007, with higher abundance in the Jacques Cartier Strait (Fig. S6).

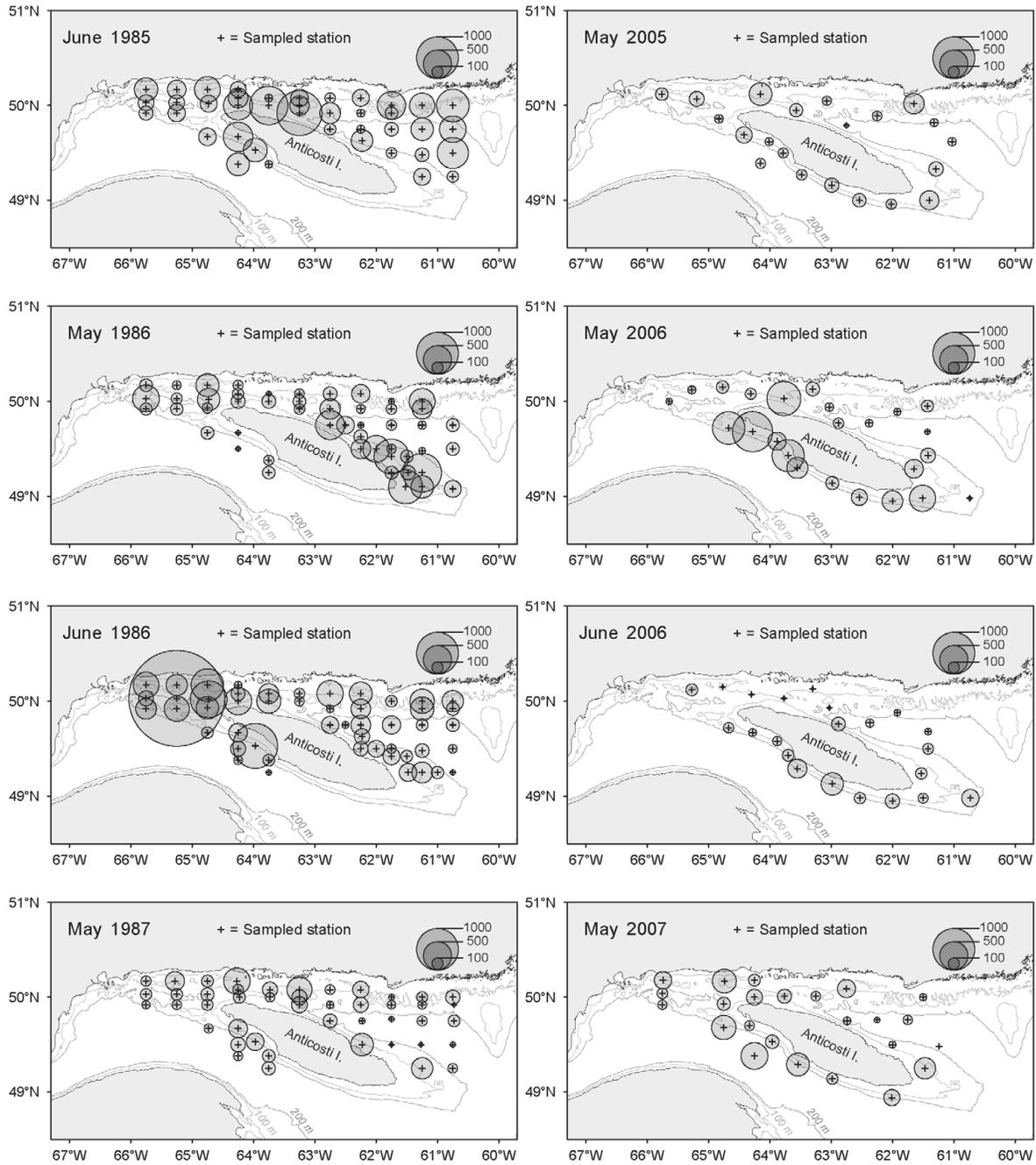


Fig. S1. Distribution of total ichthyoplankton (No. 10 m⁻²) collected during each cruise

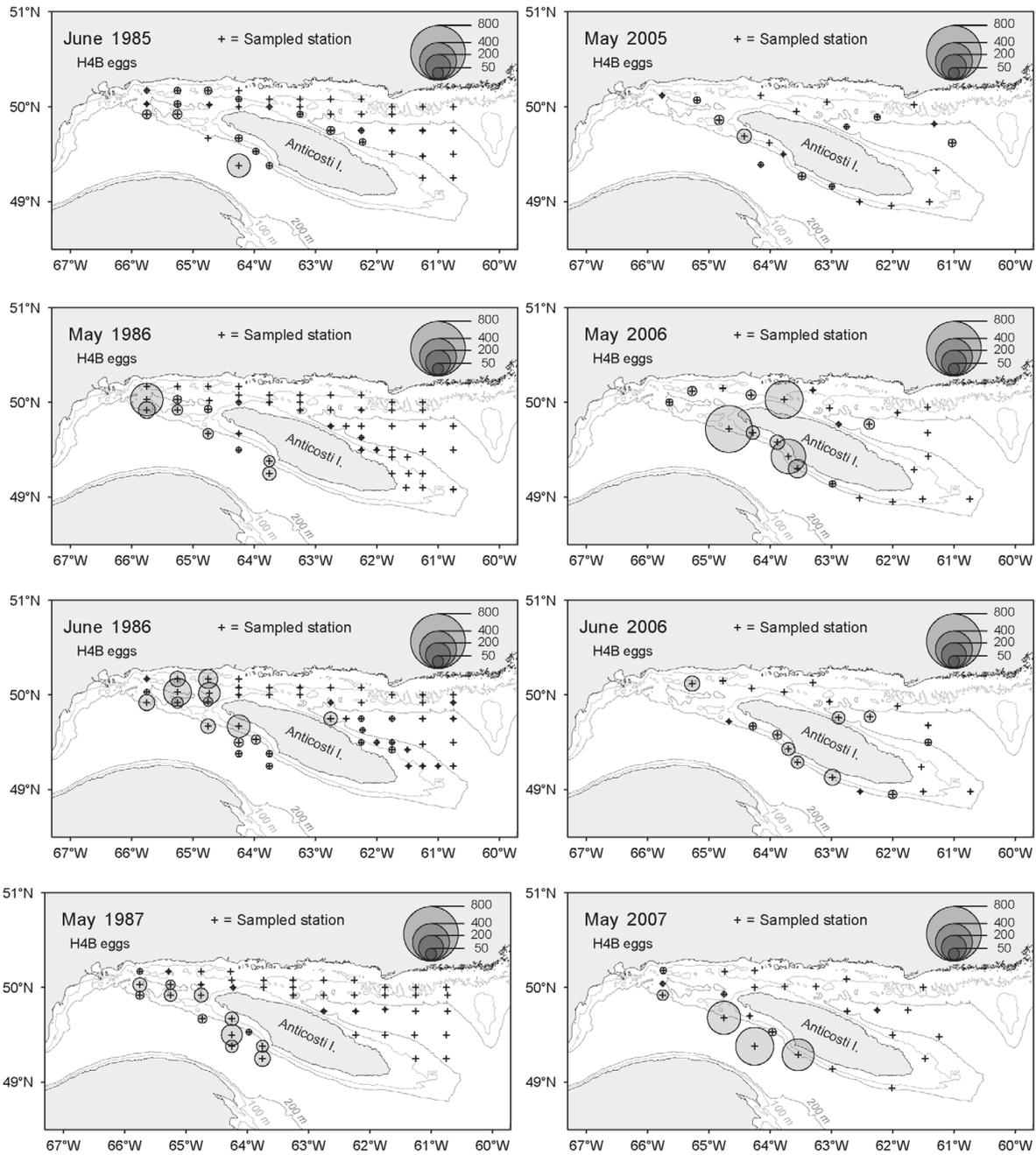


Fig. S2. Distribution of H4B eggs (No. 10 m⁻²) collected during each cruise

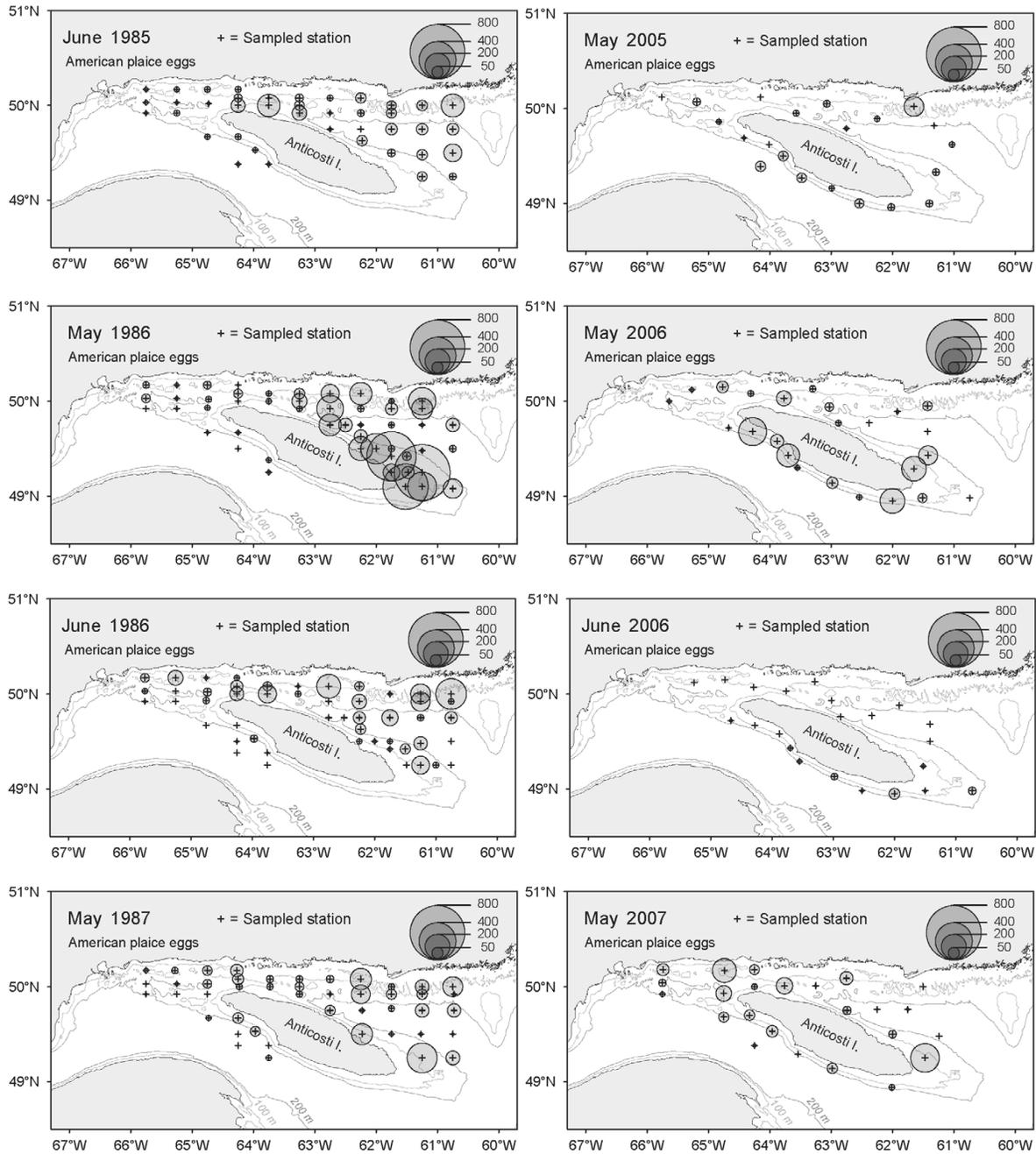


Fig. S3. Distribution of American plaice eggs (No. 10 m⁻²) collected during each cruise

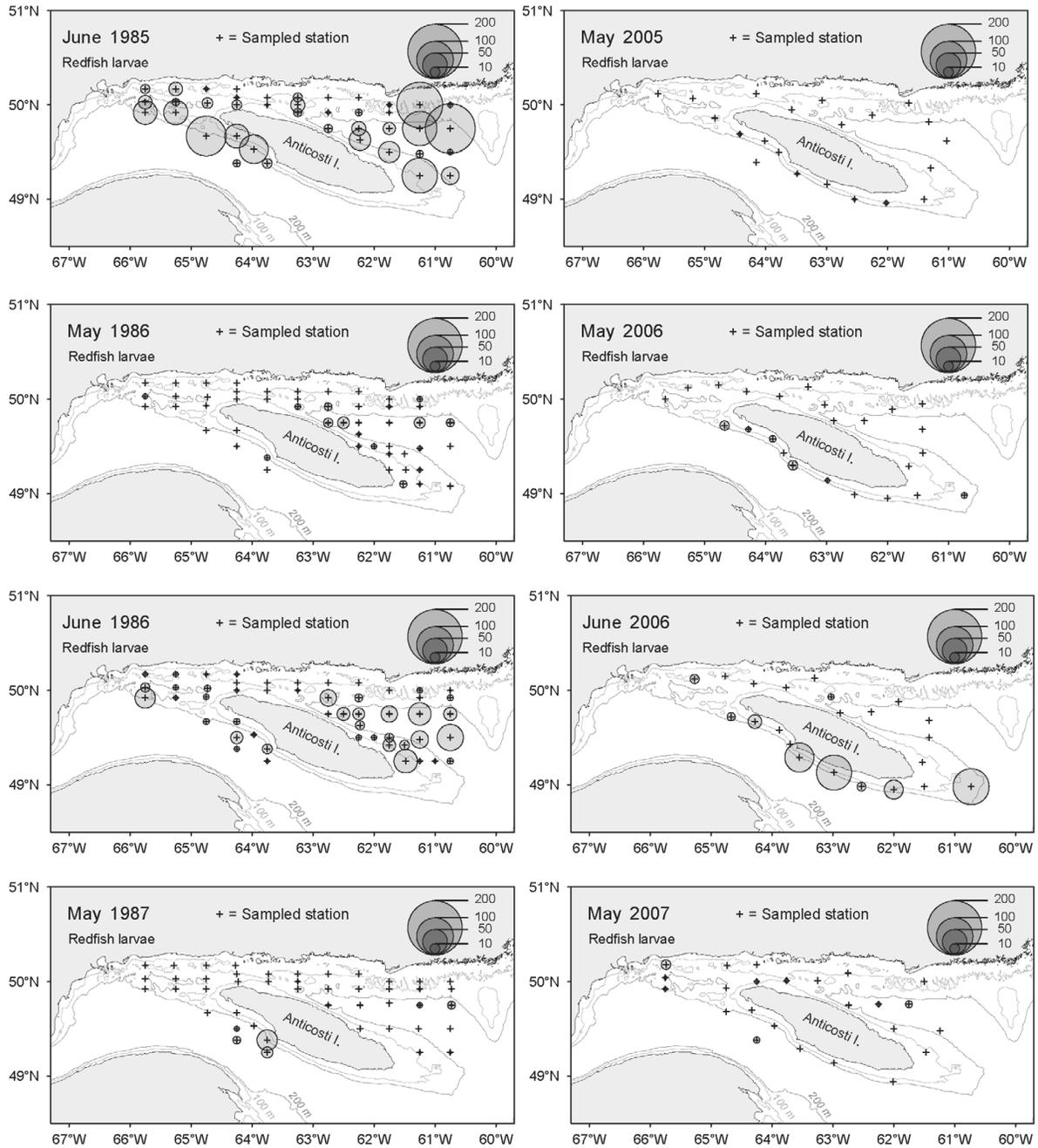


Fig. S4. Distribution of redfish larvae (No. 10 m⁻²) collected during each cruise

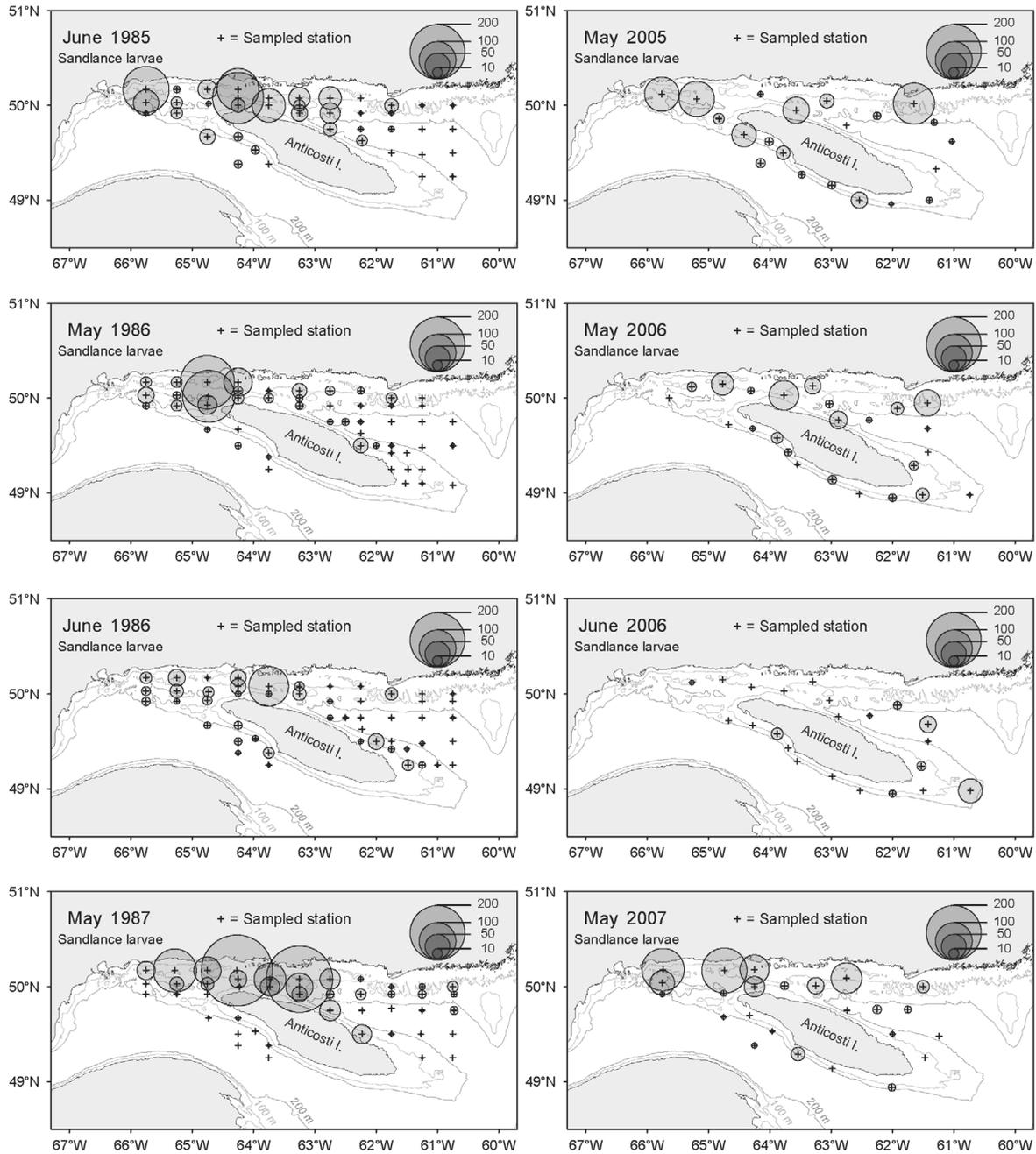


Fig. S5. Distribution of sand lance larvae (No.10 m⁻²) collected during each cruise

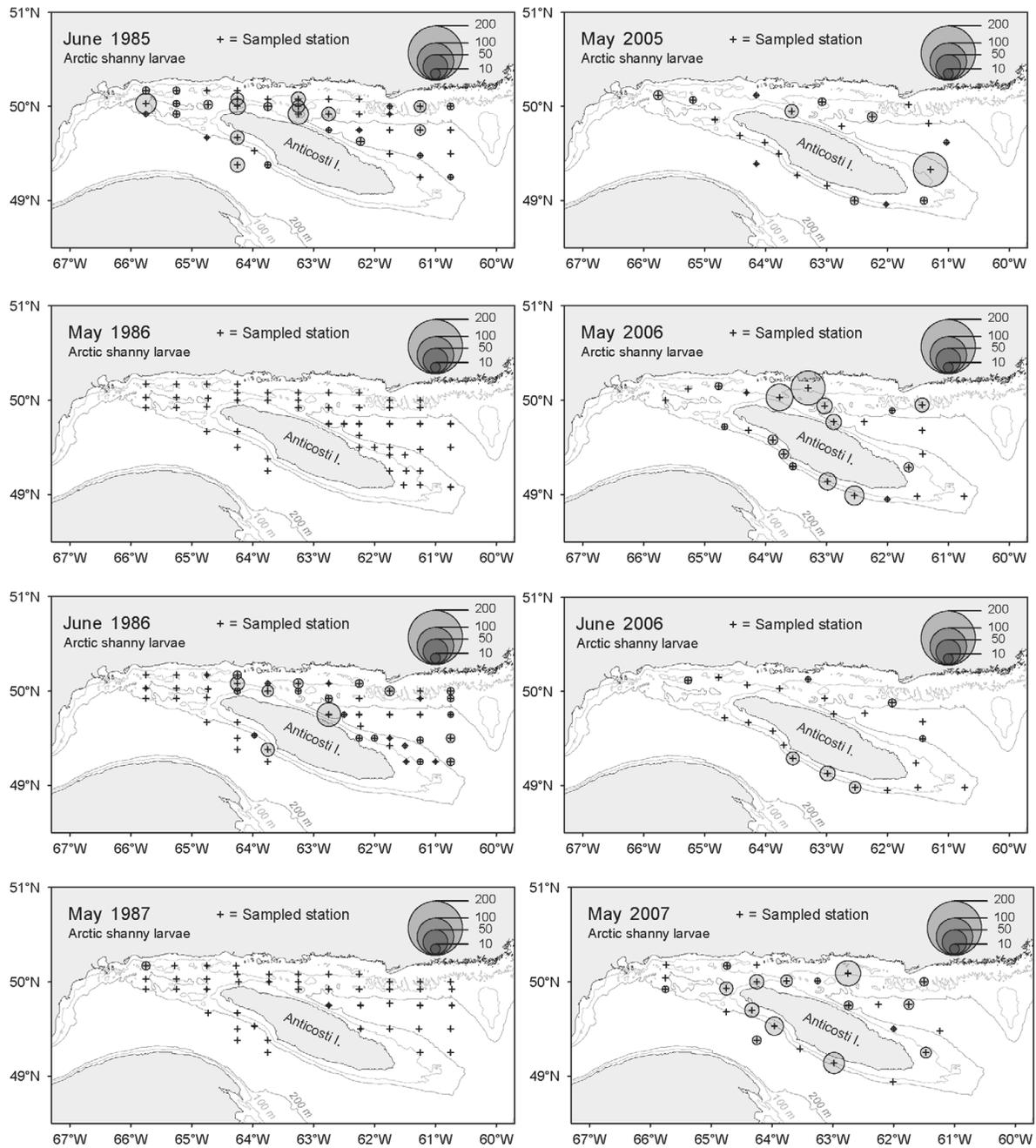


Fig. S6. Distribution of Arctic shanny larvae (No.10 m⁻²) collected during each cruise