

## CHARACTERIZATION OF THE SCALLOPS AND PREDATORS DYNAMICS AT SHORT TIME FOLLOWING A LARGE SCALE SEEDING

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Commercial seedings of giant scallops (*Placopecten magellanicus*) have been done in Magdalen Islands, (southern Gulf of St-Lawrence, Québec, Canada) since 2000. The information collected tend to show that the scallops are subjected to high predation pressure right after the seeding. It was thus considered important to characterize precisely the impact of predation on seeded scallops to reduce losses. In 2003, we began a three-year study to collect data on the spatial and temporal variations in predators. These data were collected using a video camera mounted on a large mobile sleigh towed by a boat. All video sequences were recorded and analyzed using image processing software. The predation potential on juvenile scallops was evaluated with tethering on spatial and temporal scales. The scallops were tethered to cables tied onto square metal frames (1.2 x 1.2 meters). These frames were slowly immersed from the boat and removed after 48 hours. The remains were used to evaluate predation rates from crab (crushed shells) or starfish (entire shells still attached by the hinge). Finally, some behavioral data were collected during tank trials. These data provided an estimation of the bias associated to the tethering technique, particularly that due to the inability of the tethered prey to escape.

We observed spatial variability in the density of each predator species on the main seeding site. The size structure of each species was stable over time and among sampling sites. Further, predator densities were unaffected by large scale seedings. Predation potential over a short period was relatively limited and was spatially and temporally stable on seeding and control sites. Finally, the behavior study confirmed that tethering had little impact on the crab predation rate. However, the starfish predation may be overestimated. An adjustment coefficient must be used to evaluate more precisely the starfish predation impact.

The presentation will focus on our experimental approach and on updated results collected during this study.



Figure 1. Scallops were tethered to a metal frame to evaluate the predation potential.