

Orkney Lobster Hatchery

A new post-larval rearing system

Background

Orkney has a highly successful lobster industry, due in no small part to the Orkney Lobster Hatchery, which has been in operation since 1996. This facility rears juvenile lobsters for release to the wild, replenishing the natural stock and enhancing the profitability and sustainability of the local fishery.

The project

In August 2007, the Orkney Fisheries Association (OFA) sought funding from Seafish to develop an innovative new system aimed at solving the problem of a lack of space in the Orkney Lobster Hatchery and to allow more juvenile lobsters to be managed by the same number of staff.

A grant of £5000 from the Seafish Industry Project Fund enabled OFA to pilot a new innovation by Dennis Gowland and Richard Land (of Northbay Shellfish Ltd). The system – called Aquahive – comprises vessels with uniquely designed, stacking, circular trays in which lobster larvae are reared in individual cells.

The introduction of Aquahive enables the hatchery to accommodate up to 10 times more juvenile lobsters in the existing floor space. It also means that whereas young lobsters previously had to be released at Stage 4 of their growth (just after they mature from larvae to tiny lobsters) now they can be grown on to Stage 6, when they are much larger - greatly increasing their chances of survival after release to the fishery.

In the first season of use (2008) the Aquahive facilitated an increase in total production from around 48,000 to 98,000 juvenile lobsters, all at stage 6. Since then, the unit has helped the Orkney Lobster Hatchery to regularly and significantly exceed both the numbers and sizes of juvenile lobsters released to the fishery – all accomplished with the same labour.

“The grant from Seafish was key to helping us get a prototype system up and running in Orkney”

Dennis Gowland, Shellfish Hatchery Systems Ltd



Key outcomes

- A boost to long term sustainability in the Orkney Lobster Fishery
- Better survival rates for juvenile lobsters released to the wild
- An affordable means for fishermen in remote locations to set up their own lobster hatcheries

Key benefits and achievements

Commercial success

As well as allowing more juvenile lobsters to be deployed in the Orkney fishery, more are now also available to be sold on – which in turn helps to finance the running of the hatchery. The value of the additional juveniles sold in a season from a single Aquahive would equate to about £25,000 if these had been sold at the market price to other fisheries.

The Aquahive is now being manufactured on a wider scale and distributed by Shellfish Hatchery Systems to customers in Canada and Norway. Within the UK, a customised version has also been built for the National Lobster Hatchery at Padstow, and following its successful installation and operation, the Hatchery has ordered more units, providing potential for increased financial benefits for the UK industry.

Scientific advance

The new system can be used in conjunction with traditional incubators by removing larvae at late Stage 3 and placing them in the individual cells provided by the Aquahive. This avoids the problem of heavy predation from other larvae whilst they change to Stage 4. The Aquahive tray can also be used to deploy the juveniles directly to the seabed using a secondary adapted tray, protecting against predation whilst they escape to the wild over a 12-72 hour period.

Sustainability

The introduction of Aquahive is helping the Orkney fishery to harvest lobsters sustainably. In the time since the hatchery has been operational the lobster catch in Orkney has increased from a figure of around 88 tonnes in 1996 to 138 tonnes in 2010 with similar effort.

Fishing community

The technology has created new opportunities for small groups of fishermen in remote areas to set up relatively low-cost lobster hatcheries to support their local fisheries – thus aiding long-term job security and helping to maintain island and remote communities.

For more information

www.aquahive.co.uk

www.orkneylobsterhatchery.co.uk

Seafish

supporting the seafood industry for a sustainable, profitable future

www.seafish.org