

New Caledonia lobster aquaculture trials: The season is here!

Antoine Teitelbaum

*Over the last couple of years, New Caledonia's provincial fisheries offices have aimed at implementing a small experimental lobster aquaculture industry based on wild *Panulirus ornatus pueruli*, which are mainly caught as they settle into the lagoon. In 2009, fisheries officers from New Caledonia had the opportunity to attend a study tour in Vietnam where they witnessed all aspects of the industry, from collection to grow-out in sea cages.*

The process is quite simple but it is critical to first identify suitable settlement areas. Afterwards, larvae collectors are deployed. The principal target species in New Caledonia is *P. ornatus*, which spawns during the warm months of September to January. Given the extended larval life of this lobster species, it was anticipated that collectors should be in place by March or April. Once pueruli are seen on the collectors (mostly around the time of a new moon), they are harvested and placed in sea cages where they are fed and grown until they reach market size.

Initial trials took place in 2009 in Ouano Bay (near La Foa), a well-known lobster settlement area. The trials were successful enough to invest more effort into developing this new industry. Initial lobster recruits from these trials averaged a few hundred that were caught on of a couple longlines with collectors; there were not enough, however, to jump-start the industry in New Caledonia. Grow-out techniques on a larger scale will be demonstrated at a later date

As a result, North Province and South Province, together with New Caledonia's Agency for Economic Development (ADECAL), with some assistance from SPC's Aquaculture Section, decided to invest in a lobster industry development trials for 2011, and identified two areas to focus on: 1) increasing the number of juveniles by collecting from a variety of places around New Caledonia; and 2) determining the technical feasibility of lobster grow-out in sea cages on a commercial scale.

Two fishermen from the North Province (one from Canala and one from Kone), and two from the South

Province (one from Thio and one from Yaté) were selected for training, in addition to the fishermen who had been part of the pioneering aquaculture venture of Ouano Bay (Société Aquacole de Ouano). All of the selected fishermen came from areas where lobsters were known to recruit. In April 2011, the fishermen gathered in Ouano to build the larvae collectors, which would be deployed later that same month.

A floating cage raft was built and deployed in Ouano Bay. All juveniles collected during 2011 will be kept by fishermen for several days before being transferred to grow-out cages at Ouano.

Everyone involved is hopeful that out of the five collection sites, there will be enough lobster pueruli to increase the development of this new and exciting industry. The grow-out, if done correctly, will allow animals to reach plate size within 6–9 months. *Panulirus ornatus* is the fastest growing tropical lobster, so why not imagine locally grown lobsters being available for New Year's Eve 2011!

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Freshly collected lobster puerulus. Image: Henri-Luc Fogliani.

What is a lobster pueruli trap?

Lobster pueruli collectors can be made out of just about anything. The collectors must, however, be placed in the water at the right time and in the right area in order to attract lobsters as they settle onto a substrate. Lobsters will tend to stay away from the bottom where predation is higher. In some areas of New Caledonia where recruitment takes place, one can see hundreds of small pueruli on the underside of floats, boat hulls or mooring ropes.

For this project, the fisheries services used what was developed in Vietnam, mostly because it has proven to work well. The lobster pueruli collectors in New Caledonia are deployed on longlines (floating) that hang just below the surface.

While looking for places to settle, lobsters will come into contact with the collectors and hide. The longlines can later be pulled from the surface where the pueruli are removed from the collectors. The larvae are then ready for the grow-out phase.

In New Caledonia, collectors were made out of mesh shadecloth and wooden sticks with holes drilled into them.

Images: Henri-Luc Fogliani.



Aquaculture health training trip to Western Australia

Rarahu David

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In 2008, following a series of exchanges with Western Australia's Department of Fisheries Animal Health Laboratory (FHL), the Biotechnical and Pearl Quality Laboratory (LBQP) of the French Research Institute for Exploration of the Sea (IFREMER), and the Pearl Oyster Department (PRL), Dr Brian Jones and his colleague, Dr Fran Stephens, visited the PRL-IFREMER-SPE (French Polynesia's Fisheries Department) research station in Vairao, Tahiti. This visit allowed useful exchanges about diseases at pearl oyster farms but also about shrimp and fish diseases. FHL is, in fact, in charge of diagnosing aquatic animal diseases (except for mammals) in the state of Western Australia, and Dr Jones, the lab's head pathologist, is an internationally known aquatic disease researcher.

In order to further their training in specific diagnostic techniques for the marine setting, particularly in microbiology and histology, FHL and SPE jointly arranged to have FHL host an SPE agent (Rarahu David, head of the Health Programme for Non-Pearl-Oyster Aquaculture Facilities) and an IFREMER agent (Pevatunoa Levy, head of histology at LBQP) for two weeks in September 2010.

The trip provided an opportunity to review the information gathered for an histopathological atlas dedicated to the species *Platax orbicularis*, currently in draft. This

project, initiated in Tahiti, will benefit from the guidance of Dr Jones.

Pevatunoa Levy received training in the histological techniques used at FHL, particularly the use of decalcification solutions (to soften bones and scales before samples are processed).

At the same time, Rarahu David was hosted by the microbiology laboratory of Dr Nicky B. Buller (author of *Bacteria from fish and other aquatic animals: A practical*