



Community-based aquaculture hatchery, One Arm Point, Dampier Peninsula, the Kimberley, Western Australia – a community success story

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Introduction

Since 1995, the Australian Centre for International Agricultural Research (ACIAR) has been supporting trochus research and development projects in Australia, Indonesia and Vanuatu. In the 2003–2005 phase of the ACIAR project, Samoa replaced Indonesia as one of the collaborating agencies. This short article highlights the successful hatchery work, completed in the previous phase of the ACIAR trochus project, achieved by the Australian node of the project involving the Bardi Aboriginal community in One Arm Point (OAP), the Kimberley Aquaculture Aboriginal Corporation (KAAC) and other supporting agencies in Western Australia (WA).

The Bardi Aborigines Association Inc (BAA) represents about 350 indigenous people living in the OAP community 230 km northeast of Broome, in Western Australia. In 1998, the ACIAR trochus project (FIS/94/10-Extension) was required to produce a large number of trochus juveniles for seeding research on numerous reefs off OAP and Cunningham Point. However, the long time-frame that was required for finalising agreements with funding bodies resulted in delaying the completion of KAAC's AUD 3.5 million multi-species hatchery, which was contracted to produce the trochus juveniles for the research work (see *Trochus Bulletin* #10, which contains an article on KAAC's hatchery). This resulted in the need for the project coordinator, Dr Chan Lee, to find an alternative hatchery to supply the juveniles needed.

Working collaboratively with the Bardi people and Ardyloon Inc (the business entity responsible for the hatchery operations of BAA), and with assistance of KAAC, a community-based trochus

hatchery was built at OAP to supply juveniles to the research project. Funding support was provided by the following agencies:

- Aboriginal and Torres Strait Islander Commission (ATSIC)
- Department of Fisheries (DoF), Western Australia (WA)
- Aquaculture Development Council (ADC), WA and
- ACIAR-funded trochus project.

The first step

Like many indigenous communities in isolated parts of countries, infrastructure and resources are often very poor. The project is made more difficult because the hatchery needs to be near the sea and existing utilities (such as power and freshwater supply), but away from the community living areas. Despite the multitude of daunting tasks and impediments, stakeholders were able to quickly resolve these issues and move forward by working collaboratively:

- BAA and KAAC - got the community behind the project, contributed some 32 solar panels for the hatchery, provided site management, native hardwood for building structure, and some manpower for construction
- ATSIC - provided a grant of AUD 20,000 to cover some materials and other community related costs
- ADC and DoF - provided another AUD 20,000 for a hybrid solar management system for power supply
- ACIAR - provided the project coordinator, a part-time technical staff to work in OAP, and additional materials for the hatchery
- All donors agreed that the hatchery would be handed over to OAP at the end of the ACIAR trochus project.

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OAP hatchery at the beginning of construction
Note the use of bush hardwood for construction.



View of hatchery on completion.
Note: the solar panel on the left provides power supply to the hatchery.



One Arm Point community members assisting in construction work.
Note: 3rd from left is Louie bin Mourie, OAP Chairperson at the time of the hatchery project and 1st from left on the vehicle is Barry Sharpe, hatchery manager.



View of solar panel power supply to the hatchery.

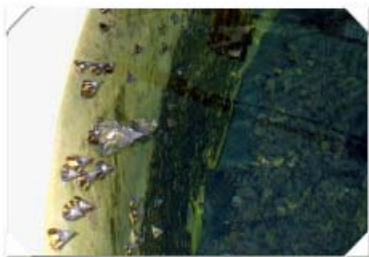
Funding provided by the Minister of Fisheries, WA.
Note: L to R: the Minister of Fisheries, WA at the time of the hatchery project, an OAP elder, Louie bin Mourie, Chair of OAP and Dr Chan Lee.



Some community staff working at the hatchery.
Note Barry Sharpe, hatchery manager in the centre and Charla Clements, Chair KAAC at the right.



Inside view of the OAP hatchery showing production tanks.



Trochus juveniles grazing along the side of tank.



Juveniles growing on rubble in the tank.



Polished shells for sale at KAAC's multi-species hatchery.



Tropical abalone: another commercial species for OAP.

Figure 1. The One Arm Point hatchery, Dampier Peninsula, the Kimberley, Western Australia

It was a magnificent effort by all parties that resulted in the hatchery project successfully completed within a six-month time frame. The outcome was a state-of-the-art community-based trochus hatchery that uses a hybrid solar power system, which incorporates a solar inverter with a bank of batteries for power storage and an automatic generator backup for power supply when needed. The hatchery was built with local hardwood collected by community workers and covered with shade cloth. It contains twelve 5-t circular and three 3-t production tanks. Pictures of the construction and completion of the hatchery are shown in Figure 1.

The spawning work and juvenile production

Training for Ardyaloon Inc hatchery staff began in mid-1999. The goal was to produce juvenile trochus for the ACIAR seeding research work on the reefs. During its first season of operation, the hatchery produced over 100,000 juveniles for the project.

The Ardyaloon Inc hatchery has since been continually used for spawning and growout of approximately 200,000 trochus juveniles for the aquarium trade supply and reseeding purposes.

Future development of the hatchery

Handover, expansion

In 2000, the hatchery was handed over to the BAA, OAP by the Director of Fisheries, WA. Since that time, the hatchery has been upgraded by Ardyaloon Inc with 24 new 10-t polycarbonate tanks for growout, one 3-t tank, two 32-t supply tanks, additional plumbing and fittings, pump upgrades, additional filtration, a new generator, scientific equipment, two new blowers and concrete flooring with labour provided by Barry Sharpe and OAP workers. These upgrades will increase juvenile trochus production in the hatchery and allow the production of other suitable species of interest to the stakeholders.

It is anticipated that future expansion of the hatchery will include the construction of staff quarters, amenities for spawning work, office facilities, an algae room and further growout facilities for trochus as well as tropical abalone, giant clam and barramundi.

Presently, hatchery workers undertake the usual daily hatchery operating activities, offer tours in peak season, and polish trochus shells for sale to tourists. Staff also undertake occasional brood-stock collection and reseeding activities.

Ardyaloon Inc hatchery aims to undertake further spawning between August 2004 and March 2005 to produce a minimum of 12,000 trochus for the aquarium trade and 26,400 trochus for reseeding onto the aquaculture licensed reef of BAA, using existing infrastructure. The hatchery has the capacity to generate income through sales of the following items:

- Polished shells – AUD 25,000
- Juveniles for the aquarium trade: AUD 21,000, selling 20–30 mm and 30–40 mm specimens at AUD 1.50 and AUD 3.50, respectively.

Staff and training

The hatchery, which is managed by Barry Sharpe, provides ongoing training for at least five community trainees completing Certificates 1, 2 and 3 in aquaculture with the Kimberley College of TAFE. Students from the community school are also provided with training and work experience through the hatchery as part of their curricular activities.

Ideally located and with proven production ability, the Ardyaloon hatchery at OAP has excellent capacity for commercial development and the establishment of an economically viable and sustainable enterprise for the OAP community over the next few years. However, additional infrastructure and support is vital to the hatchery's development as a commercial enterprise and is beyond the immediate means of the community. The venture requires long-term commitment from stakeholders and service providers with essential support required from funding bodies in the short to medium term for the development of the hatchery as a commercial community enterprise.

