

**Background Information Document
for the
Establishment of an Abalone Ranching
Pilot Project in Area NC 4
by
Diamond Coast Abalone (Pty) Ltd**



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Figure 1: Map showing the northern (NC 4a) and southern (NC 4b) boundaries of Area NC 4, the proposed area in which different sites will be seeded.

Table 1: Area NC4 co-ordinates (± 40 km)

1. Introduction

On the 20th of August 2010, the Minister of Agriculture, Forestry and Fisheries published (in Government Gazette No. 33470) for public comment the draft criteria for allocating rights to engage in abalone ranching or stock enhancement (Government Notice No. 728) as well as the general guidelines for marine ranching and stock enhancement in South Africa and the guidelines and potential areas for marine ranching and stock enhancement of abalone (*Haliotis midae*) in South Africa (Government Notice No. 729).

Abalone ranching is a method of producing abalone in which juveniles are bred in land-based hatcheries and then placed in the sea by the rancher. Once the abalone have been placed in the sea they live and grow like a wild abalone, until they are harvested, processed and sold by the abalone rancher. The abalone always belong to the rancher, even when they are in the sea, and it is illegal for anyone but the rancher to harvest them.

Government Notice No. 729 states that although abalone ranching experiments have been undertaken in the Northern Cape Province since 1995, ranching of abalone should continue on an experimental (pilot project) level in the province to determine viability by monitoring ecological interactions and risk assessment assumptions as well as social and economic responses. It identifies four potential areas that will be considered for abalone ranching pilot projects in the Northern Cape Province; one of which is zone NC4, in which Hondeklip Bay is situated.

On the 21st of April 2011, the Minister published (in Government Gazette No. 34241) the criteria for allocating rights for abalone ranching or stock enhancement pilot projects (Government Notice No. 352), together with an invitation to apply for abalone ranching and stock enhancement pilot projects (Government Notice No. 353). This document provides background information for the Public Participation Process that Diamond Coast Abalone (Pty) Ltd is undertaking as part of its application for a right to conduct an abalone ranching pilot project in Area NC 4 (as defined by Government Notice No. 729).

Diamond Coast Abalone (Pty) Ltd is a partnership between members of the Hondeklip Bay community, the existing abalone aquaculture industry i.e. TerraSan Ltd and Stellenbosch University. The company was established as an outcome of the Department of Science and Technology Hondeklip Bay Abalone Project and currently owns and operates a 48-tank abalone holding facility at Hondeklip Bay that could be increased depending on viable economies of scale for the full commercial phase. If the pilot project indicates viability, Diamond Coast Abalone (Pty) Ltd plans to establish a full commercial abalone ranching operation (as defined by Government Notice No. 729) in Area NC 4.

2. Environmental Legislation

The guidelines for marine ranching and stock enhancement (Government Notice No. 729) are published in terms of the provisions of the Marine Living Resources Act, 1998 (Act No. 18 of 1998). Other relevant legislation and policies identified by Government Notice No. 729 include the Policy for a Sustainable Marine Aquaculture Sector in South Africa (2007), the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), and the FAO Code of Conduct for Responsible Fisheries, FAO, 1995.

The general guidelines for marine ranching and stock enhancement in South Africa state that applicants proposing to carry out marine ranching must undertake an environmental assessment under the

Environmental Management Amendment Act 2008 (Act No. 4 of 2008). The guidelines and potential areas for marine ranching and stock enhancement of abalone (*Haliotis midae*) in South Africa suggest that applicants undertake a Risk Assessment as per the National Environmental Management Biodiversity Act (2004) in the case of translocated animals.

Diamond Coast Abalone (Pty) Ltd has appointed Ecosense Consulting Environmentalists cc to undertake an independent environmental assessment of its proposed undertaking and to participate in the preparation of the company's abalone ranching pilot project right application (including the Public Participation Process).

3. Project Description

Diamond Coast Abalone (Pty) Ltd plans to undertake an abalone ranching pilot project in Area NC 4 in the Northern Cape Province. The company will seed selected sites at sea with different size cohorts of *Haliotis midae*, at different densities, in order to determine the technical, environmental, financial and social viability and sustainability of abalone ranching in the Northern Cape Province. Sites will be monitored to determine optimal stocking densities, abalone health, and to determine long term survival and growth rates. Diamond Coast Abalone (Pty) Ltd plans to harvest seeded abalone to conduct post-harvest technology development and to undertake marketing tests.

3.1. Location

The guidelines and potential areas for marine ranching and stock enhancement of abalone (*Haliotis midae*) in South Africa identify four broad areas that might be suitable for abalone ranching in the Northern Cape Province. Diamond Coast Abalone (Pty) Ltd plans to seed different habitat sites in Area NC 4 (see Fig 1). The company plans to operate from the existing DST Hondeklip Bay Abalone Project site in Hondeklip Bay as the site already has infrastructure and services as well as a suitable bay for the launching of a workboat.

Table 1: Area NC4 co-ordinates (± 40 km)			
		Latitude	Longitude
NC 4a	Skulfontein	30° 6' 8,15" S	17° 11' 8,03" E
NC 4b	2 small rocks 200m from shore	30° 25' 56,26" S	17° 20' 5,43" E

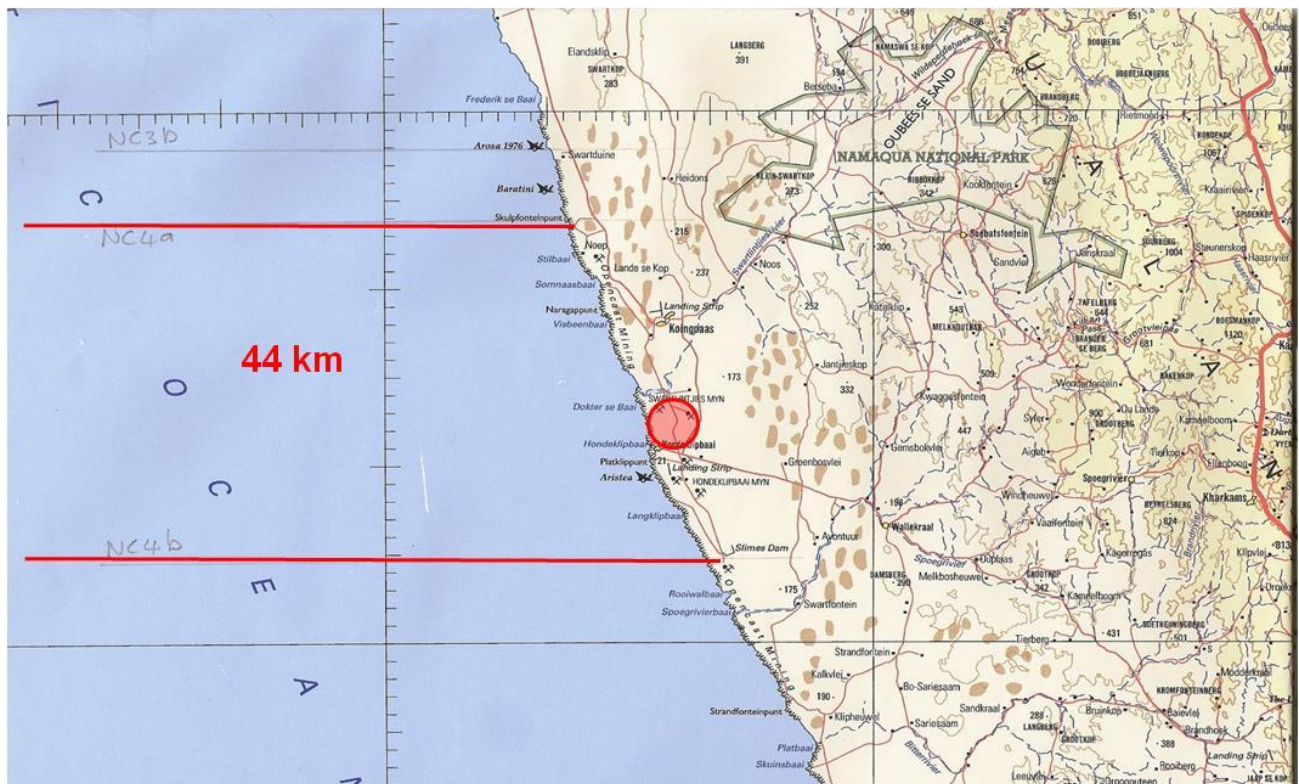


Fig 1: Map showing the northern (NC 4a) and southern (NC 4b) boundaries of Area NC 4, the proposed area in which different sites will be seeded.

3.2. Technical Capacity

Pilot projects for marine ranching of abalone require a comprehensive level of expertise and technical ability, with a thorough understanding of marine aquaculture absolutely imperative. Diamond Coast Abalone (Pty) Ltd has a well-rounded technical capability and capacity, with its shareholders including existing abalone aquaculture industry producers and Stellenbosch University. Its core competencies span the entire abalone aquaculture value chain. The company's shareholders have been involved in the development of abalone farming in Hondeklip Bay since 2005 and currently operate a 48-tank abalone grow-out facility in Hondeklip Bay.

3.3. Investment

Diamond Coast Abalone (Pty) Ltd's ultimate objective is to establish a full commercial abalone ranching venture in Area NC 4. Initial financial modeling shows potential financial viability at a production of 150 tons per year. Establishing an operation of this size will require an investment of approximately R 51 million. Diamond Coast Abalone (Pty) Ltd's shareholders include established investment partners and the company has the capacity and commitment to finance such a venture. The company's shareholders have already made significant investments in other sectors of the abalone industry, including land-based farming, research, post-harvest technologies and marketing.

3.4. Human Resources Development

It is a primary objective of Diamond Coast Abalone (Pty) Ltd to contribute to the socio-economic development and empowerment of the historically disadvantaged Hondeklip Bay coastal community

through job creation, skills development and business participation. A number of persons from the Hondeklip Bay community have already received formal and in-service aquaculture training and are employed by Diamond Coast Abalone. During both the Pilot Project Phase and Full Commercial Phase of abalone ranching, the company will employ a combination of skilled and semi-skilled workers. If the Pilot Project is successful and Diamond Coast Abalone enters into a Full Commercial Phase then it will also set up an abalone processing facility. Therefore, a full commercial business will create jobs in abalone ranching and abalone processing.

4. Project Rationale

Although fisheries contribute less than 1% to South Africa's National Gross Domestic Product, it is a very important sector in the livelihoods of fishing and coastal communities and therefore as part of government's poverty reduction strategy. Notwithstanding the introduction of several reformative interventions in the South African fishing industry, the current status of many coastal communities in the country can at best be described as fragile and few of our historically disadvantaged fisherfolk have found sustainable routes out of poverty and a declining quality of life.

The basic premise of South Africa's poverty reduction and transformation in fisheries framework argues that a well-managed fishery is one that generates economic rent without endangering the resource. Conversely though, this principle implies that poverty is likely to increase in the event of a decline in fisheries activities (production failure). Unfortunately, there is now little doubt that the world's fisheries face a grim future. The FAO estimates that most of the world's commercial fish stocks are fully or overexploited and therefore cannot be expected to produce major increases in catches.

Stock enhancement and marine ranching have been used in other countries to sustain continued production from the marine environment. In light of the collapse of the wild abalone resource in South Africa, and the concomitant negative socio-economic effects for coastal communities, marine ranching should generally be considered as a fishery management tool to enhance fishery production.

The Hondeklip Bay coastal community is experiencing severe economic distress, with unemployment levels approaching 70% due to the closure of the Lobster Processing Factory and the downscaling of diamond mining activities in the area. Economic growth opportunities in the town are severely limited and the community is unlikely to escape poverty without the creation of aquaculture based economic development.

The SA abalone aquaculture industry has already shown that commercial aquaculture can create sustainable employment as well as opportunities for the integration of historically disadvantaged persons in the supply chain and its associated poverty reduction, transformation and empowerment benefits. As such the development of abalone ranching in Hondeklip Bay and the rest of the Northern Cape Province is crucial.

5. Potential Environmental Impacts

Responsible aquaculture, marine ranching and stock enhancement can provide environmental benefits, while unbridled and irresponsible operations can cause a range of adverse environmental impacts. In recent years the expansion and diversification of aquaculture in Europe, Australia and elsewhere has been guided under carefully designed environmental controls. In addition, the aquaculture industry is increasingly moving

towards self-regulation with for example the implementation of Codes of Good Practice and environmental impact monitoring and mitigation measures. Potential environmental issues include the following:

5.1. Trophic / Ecological Interactions

The impact of abalone introductions on the ecosystem and species biodiversity needs to be assessed. Diamond Coast Abalone will continuously monitor the impact of the ranched abalone on the marine environment, as required by the Department of Agriculture Forestry and Fisheries.

Although there is the potential for competition between introduced abalone and local species such as sea urchins and limpets, it seems unlikely that under typical densities of abalone, competition will be significant as drift kelp in the area is over abundant. Due to the abalone's preference for drift weed, its effect on macro-algal species composition is also considered to be low. Furthermore, local predators will prey upon juvenile abalone and regulate population densities. Although the available studies conducted in the experimental ranching area off the Namaqualand coast did not specifically look at ecological issues, they also did not report any obvious changes to the kelp forest systems.

As stipulated in the DAFF abalone ranching guidelines, an Environmental Management Programme (EMP) will be compiled, by an independent expert entity, to ensure that research and monitoring commitments and environmental management practices are adhered to.

In the event that the introduction of abalone has a negative effect on the marine environment, which makes ranching unfeasible, harvesting will be an extremely effective method of removing them. While for many other species, the removal of a population in the marine environment seems to be near impossible, abalone worldwide and in South Africa have been documented to be extremely vulnerable to overexploitation.

5.2. Carrying Capacity

Stocking densities should not exceed the environmental carrying capacity of the ranching area, with an estimate of projected carrying capacity required to determine seeding numbers. The carrying capacity of an area is largely determined by habitat suitability. The experimental ranching project off Port Nolloth has demonstrated that the Namaqualand kelp forests are in principal suitable for abalone. A preliminary survey conducted by Diamond Coast Abalone suggests kelp forests in the range of 300 ha in Area NC 4, which should be sufficient for an economically viable operation.

The Guidelines and Potential Areas for Marine Ranching and Stock Enhancement of Abalone *Haliotis midae* in South Africa (Government Notice No. 729) suggest, as a guide for carrying capacity, the figure of 3 emergent abalone per m² which was recorded in a protected area in Betty's Bay in 1995. However, since carrying capacity varies from area to area Diamond Coast Abalone intends to conduct experiments during the Pilot Project Phase in which abalone are seeded at various densities in order to determine the effects of seeding density on survival-rate, the density of emergent abalone and the environment.

This ongoing research will inform subsequent phases of the pilot project on the optimal carrying capacity, and whether an area may support higher emergent abalone densities. Seeding density will be increased in a stepwise fashion, so as to minimize any impacts potentially resulting from overstepping the limits of the carrying capacity.

5.3. Diseases

All stock releases carry the danger of accidental release or introduction of disease causing agents or non-target species with potential detrimental effects on the ecosystem. A disease outbreak in the proposed ranching operation in Area NC 4 is unlikely to have the same level of impact as one in a natural population. Should a disease be established in the ranched population in the Area NC 4, the impact is likely to be limited to the ranching operation and neighboring abalone populations, none of which are presently natural. The potential for disease impacts have been considered and mitigated against by stocking healthy seed, separation of the ranched abalone from other abalone populations, implementation of a biosecurity program and disease monitoring.

5.4. Social Impacts

Positive social impacts that would emanate from the project include benefits in terms of investment, job creation, poverty relief and broad based black economic empowerment. All Historically Disadvantaged Individuals who are currently employees of Diamond Coast Abalone are members of an Employee Incentive Trust that holds shares in the company. Future employees will also become members of this trust. Potential social conflicts will be identified with recommendations on how to mitigate and manage them.

6. Environmental Impact Monitoring and Mitigation

The ultimate goal of the abalone ranching pilot project is to provide a scientific basis for evaluation of the technical, environmental, economic and social feasibility of abalone ranching in Area NC 4. This evaluation will include the overall and continuous monitoring of the environmental impacts associated with the project, with the project proponents obliged to submit a proposed monitoring program to be undertaken by an appropriately qualified person / organization.

7. Public Participation Process

Public participation for the project is being undertaken in accordance with the DAFF guidelines, which have been based on the relevant NEMA legislation. This implies an open and participatory process whereby stakeholders and other interested and affected parties are invited to review and comment on the project. The primary intention of the approach outlined above is to facilitate the identification of issues and concerns as early as possible in the scoping, public participation and EIA processes, thereby facilitating their incorporation into project planning. Public participation is an integral part of the assessment process and involves the following:

- Compilation of a database of interested and affected parties (information will be obtained from the local municipality and other sources)
- Distribution of the Background Information Document
- Advertising of the project in a local newspaper
- Display of a project notice on the project site
- A public meeting will be held to explain the project and collect additional comments
- Project documentation will be made available to registered interested and affected parties

- Following the collection of initial comments and the registration of interested and affected parties, a concept basic assessment document will be made available locally for review and commentary
- Registered interested and affected parties will have 30 days to comment on the concept document

The final environmental assessment report, including additional comments and recommendations, will be submitted to the Department of Agriculture, Forestry and Fisheries for approval. Registered parties will be informed of the outcome.

8. The Way Forward

You are hereby invited to participate in the process. You may register at the meeting as an Interested and Affected Party or you can register by post, fax or email. Interested parties are furthermore invited to submit any written comment on the project. The background information document will be available at the Municipal offices, Hondeklip Bay or on <http://www.ecosense.co.za/downloads.html> from 3 November 2011. If you need more information, want to register as an Interested and Affected Party or comment on the project; please contact Kozette Myburgh at 082 783 9860 (tel), 086 547 4221 (fax) or kozette@ecosense.co.za (email) by 2 December 2011.



agriculture,
forestry & fisheries

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Date: 29 September 2011

DIAMOND COAST ABALONE (PTY) LTD
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Dear Prof Daniel Brink

RE: OUTCOME OF APPLICATION FOR A RIGHT TO ENGAGE IN ABALONE RANCHING OR STOCK ENHANCEMENT PILOT PROJECT FOR CONCESSION AREA NC4 (APPLICATION NO: MARANCH 1001)

The Department of Agriculture, Forestry and Fisheries (DAFF) would like to inform you that your application for a **Right to Engage in Abalone Ranching or Stock Enhancement Pilot Project** has qualified for Phase 1 which was evaluated based on Exclusionary Criteria. The Department hereby advises you to proceed to Phase 2 which involves the Public Participation process and the submission of a full proposal as outlined in the "*Criteria for allocating Right for Abalone Ranching or Stock enhancement pilot projects*". The Public Participation process is detailed in the attached "**Guidelines for Public Participation**". The due date for the submission of all Phase 2 documents is the **15th January 2012**. Upon receipt of all documentation for Phase 2, the Department will evaluate all proposals using the Balancing Criteria outlined in the "*Criteria for allocating Rights for Abalone Ranching or Stock enhancement pilot projects*".

For further information you are welcome to contact the Department of Agriculture, Forestry and Fisheries via e-mail for the attention of Ms Zimasa Jika at ZimasaJ@daff.gov.za, Tel: (021) 402 3356.

Kind regards

ACTING CHIEF - DIRECTOR: AQUACULTURE AND ECONOMIC DEVELOPMENT

DATE: 30 SEP 2011

