
**SOUTH AUSTRALIAN
FISHERIES MANAGEMENT SERIES**

PAPER No.24

**DEVELOPMENT OF AT-SEA ROCK
LOBSTER HOLDING SYSTEMS IN
SOUTH AUSTRALIA**

By Primary Industries and Resources South Australia, Fisheries

25 Grenfell Street, Adelaide 5000
GPO BOX 1625 ADELAIDE SA 5001

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1.0 SUMMARY OF RECOMMENDATIONS

RECOMMENDATION 1

The ability for licensed fishers in the Northern Zone to hold live rock lobster in temporary structures (corfs) during the fishing season should continue.

RECOMMENDATION 2

Holding of rock lobster in temporary structures after the close of the season should be accommodated through registration as a fish farmer under section 51 of the Fisheries Act 1982 and obtaining a permit for the release of fish into the water under section 50. Although temporary, such structures should only be permitted on a defined site.

RECOMMENDATION 3

Holding of rock lobster in a permanent structure at-sea on a defined site, requires aquaculture development approval through the Aquaculture Committee of the Development Assessment Commission, and the issue of either section 50 & 51 fish farm permits or a section 53 aquaculture licence as well as the issue of a lease over the site.

RECOMMENDATION 4

Holding of rock lobster at-sea should not be permitted within the area of the Southern Zone Rock Lobster Fishery.

RECOMMENDATION 5

All rock lobster held in cages at-sea as per recommendations 2 & 3 must be identifiable as farmed stock. Identification must include a minimum of a CDR system (stock on/stock off real time reporting) in conjunction with some secondary marking system. Interim marking systems may include tagging.

RECOMMENDATION 6

That appropriate and cost effective marking and identification mechanisms of farmed stock be investigated.

RECOMMENDATION 7

That possession of berried female rock lobsters in holding systems be permitted.

RECOMMENDATION 8

That berried female rock lobster and rock lobster roe not be available for sale.

RECOMMENDATION 9

That any application for a permit to collect rock lobster puerulus be referred to both rock lobster fishery management committees.

RECOMMENDATION 10

That the development of suitable policies for the management of future puerulus access and growout be undertaken through the Working Group on Live Holding of Rock Lobster.

2.0 INTRODUCTION

Members of the South Australian rock lobster fishery, particularly from the Northern Zone fishery, have expressed interest in developing systems for value-adding to rock lobster by holding them at-sea. The nature of holding systems is yet to be determined but may consist of any of the following:

- Temporary holding systems only to be used during the fishing season;
- Temporary holding systems to be used both during and after the fishing season;
- Permanent systems only containing lobster during the fishing season; and
- Permanent systems containing lobster both during and after the fishing season.

At this stage fishers are aiming to take advantage of periods of higher prices during, and possibly after the close of, the fishing season. Consideration is also being given to potential benefits in holding rock lobsters over longer periods and increasing their weight through growth.

In the developmental phase of these activities it is essential that appropriate compliance and management policies be developed to ensure that this industry is complementary to the existing commercial fishery.

It is also appropriate to investigate policy directions for other issues relating to rock lobster aquaculture prior to specific projects being proposed.

2.1 Discussion Paper

In March 1996 PISA Fisheries released *Discussion Paper on Issues Relating to the Development of Rock Lobster Aquaculture and Rock Lobster Holding Systems at-sea in South Australia* for comment. This document was distributed to all fishery licence holders from the Southern Zone Rock Lobster Fishery (SZRLF) and the Northern Zone Rock Lobster Fishery (NZRLF). The document was also considered by the SZRLF, NZRLF and Aquaculture Management Committees. Additionally the paper was made available to any interested group or individual on request.

The discussion paper outlined considerations for the development of policies for rock lobster holding systems and aquaculture in South Australia.

Accompanying the document was a questionnaire which presented readers with a number of multiple choice questions. Readers were also invited to comment on any issue relating to the document or questionnaire.

2.2 Working Group

In May 1996 the NZRLF Management Committee requested that a working group be established to address management arrangements for rock lobster aquaculture and holding systems in South Australia.

A working group was formed of individuals with a broad range of experience and interest in the management of South Australia's rock lobster and aquaculture industries. The northern and southern zone rock lobster fisheries were represented.

The first meeting of the working group was held on 6 June 1996 to consider issues raised in the discussion paper and make recommendations for future policy direction. While the meeting focussed on recent interest in at-sea holding systems, discussion also included consideration of live holding by processors and possible grow-out of rock lobster either from eggs or from collected puerulus.

2.3 Policy Paper

This paper presents PISA Fisheries policy for the development of an at-sea live holding industry for rock lobster in South Australia. The paper takes into consideration issues raised through:

- The questionnaire presented to industry;
- Discussions of the Working Group into Live Holding of rock lobster; and
- Considerations of the Management Committees of aquaculture and both rock lobster fisheries.

3.0 QUESTIONNAIRE RESULTS

A questionnaire was sent to 350 licence holders from the NZRLF and the SZRLF to assess industry's approach to live holding of rock lobster.

A total of 66 responses were received over a period of approximately two months. 18% of the SZRLF licence holders and 20% of the NZRLF licence holders responded.

A summary of the questionnaire results is provided in Table 1. Further detail is available in Appendix 1.

Table 1: Results of the questionnaire (total number of responses) on support for rock lobster holding systems and aquaculture.

Question	Yes	No
Value adding in closed season	32	30
Aquaculture on land	21	40
Aquaculture at-sea	18	45
Sale of berried females	10	52
Development of "roe" market	8	53

Overall support for live holding at-sea was limited, and particular resistance was expressed to the concept of selling berried females or rock lobster roe.

4.0 MEETING OF THE WORKING GROUP FOR LIVE HOLDING OF ROCK LOBSTER

Appendix 2 presents a summary of the discussions of the first meeting of the Working Group held on 6 June 1996.

Draft recommendations from the working group were:

1. That applications considered to be significant developments under the *Development Act 1993* be subject to the aquaculture development process before access is considered by the Director of Fisheries.
2. That a discussion paper be prepared for the next meeting of the working group that provides options for a Catch and Disposal Record (CDR) system as well as options for securing cages to ensure compliance with other regulations pertaining to the wild rock lobster fishery.
3. That the holding of berried female rock lobsters for aquaculture purposes be allowed only after a satisfactory method of stock identification has been developed.
4. That terms of reference be developed to initiate a cost benefit analysis for the marketing of berried female rock lobster or rock lobster roe produced by rock lobster farms.
5. That in the short term, applicants wishing to hold or sell berried females or roe be required to submit a detailed research proposal to both IMCs before consideration is given by the Minister for Primary Industries of the Director of Fisheries.

5.0 CONSIDERATIONS OF THE MANAGEMENT COMMITTEES.

The draft recommendations of the Working Group for Live Holding of Rock Lobster in South Australia were tabled at the Southern Zone Rock Lobster Fishery Management Committee on 10 July 1996. The committee supported the concept of management of at-sea holding systems but expressed concern at the use of berried females or puerulus.

The recommendations were tabled at the Northern Zone Rock Lobster Fishery Management Committee on 13 August 1996. The meeting also expressed concern at the use of berried females or puerulus in aquaculture but supported the holding of berried females in systems.

A Draft Final Report was prepared taking these concerns into consideration. The Draft Final Report was presented to each of the Management Committees for consideration. The Southern Zone Rock Lobster Fishery Management Committee considered the report at their meeting of 26 November 1996. The committee did not support the use of at-sea holding systems within the Southern Zone and recommended that females be kept separately to males or sold prior to the end of the season to avoid the holding of berried females in the systems.

The Northern Zone Committee expressed concern at possible future access to rock lobster puerulus and reiterated support for current restrictions on taking of undersized rock lobsters.

The Aquaculture Management Committee generally supported the draft paper while having some concerns regarding the cost of complying with some recommendations. The committee requested an involvement in future policy development to ensure this industry does not impact on other aquaculture industry sectors.

6.0 LEGISLATIVE STATUS OF HOLDING ROCK LOBSTER AT-SEA

6.1 Background

It has not been clear how holding rock lobster at-sea should be facilitated within the current legislative framework of the *Fisheries Act 1982* and the *Development Act 1993*. With an increasing number of applications being received by PISA covering a broad range of operations there is a need to identify a policy for assessing these applications.

6.2 Issues

The following major issues have been considered:

- The differing types of operations (corfs, holding operations and aquaculture); and
- The requirements of the relevant legislation.

6.3 Types of Operations

Four types of operations were identified:

- Temporary holding systems only to be used during the fishing season;
- Temporary holding systems to be used both during and after the fishing season;
- Permanent systems only containing lobster during the fishing season; and
- Permanent systems containing lobster both during and after the fishing season.

For the purposes of this section temporary systems imply no right of tenure over the site whereas a permanent structure implies a right of tenure and would result in the issue of a lease over the site.

6.4 Relevant Acts

Fisheries Act 1982

Section 50 enables the Director of Fisheries to issue a permit for the release of certain types of fish into waters of the state.

Section 51 enables the Director of Fisheries to register certain applicants as fish farmers.

Section 53 enables the Director of Fisheries to issue leases or licences for aquaculture.

Section 54 requires registration of premises, places, boats or vehicles for the purposes of fish processing. Section 54 is subject to Section 50 and therefore a fish processor is unable to return fish to natural waters and therefore unable to release rock lobster into a cages containing and contiguous with, natural waters.

Section 55 enables the development of regulations to regulate fish processors.

Scheme of Management (Rock Lobster Fisheries) Regulations 1991

Regulation 18 prohibits the sale by licensed fishers of live rock lobster during the closed season.

Fisheries (General) Regulations 1984

Section 35A specifies marking requirements for the use of corfs.

Section 35AB limits the use of corfs for holding live rock lobster to holders of a rock lobster licence in either the northern or southern zone fisheries. Condition 149 of the Southern Zone Rock Lobster Fishery licence specifically prohibits the licence holder from returning live rock lobster taken under the licence to a cage or corf after the rock lobster have been weighed at a certification station.

The size of corfs is currently undefined as is the number of fish that can be held in an individual corf.

Development Act 1993

This act requires that development approval be sought from the relevant planning authority for all “development” as defined under the Act. Temporary structures or those considered to be minor or insignificant in nature do not require development approval. Structures at-sea for use in aquaculture operations fall within the jurisdiction of the Act. The relevant planning authority for development at-sea is the Development Assessment Commission (DAC) which has delegated its powers for consideration of such developments to the Aquaculture Committee.

6.5 Current Management Arrangements in the Northern and Southern Zone Rock Lobster Fisheries

There is concern that management of the rock lobster fisheries may be undermined by holding live rock lobster at-sea. Holding stock at-sea provides the opportunity for placing lobster directly into cages rather than having them weighed as part of quota (Southern Zone) or to fish during closures and place catches directly into cages (Northern Zone).

Overall catch disposal records (CDR's) may assist in this process however, consideration has been given to the possibility of farmers replacing rock lobsters that die in holding cages with extra rock lobsters taken illegally from the wild.

Due to the compliance related issues in the southern zone rock lobster fishery, and unless compliance protocols can be put in place that can address the risks to the fishery's management, holding facilities should not be permitted in the southern zone fishery.

RECOMMENDATION 1

The ability for licensed fishers in the Northern Zone to hold live rock lobster in temporary structures (corfs) during the fishing season should continue.

RECOMMENDATION 2

Holding of rock lobster in temporary structures after the close of the should be accommodated through registration as a fish farmer under section 51 of the Fisheries Act 1982 and obtaining a permit for the release of fish into the water under section 50. Although temporary, such structures should only be permitted on a defined site although the site may change from year to year.

RECOMMENDATION 3

Holding of rock lobster in a permanent structure at-sea on a defined site, requires aquaculture development approval through the Aquaculture Committee of the Development Assessment Commission, and the issue of either section 50 & 51 fish farm permits or a section 53 aquaculture licence as well as the issue of a lease over the site.

RECOMMENDATION 4

Holding of rock lobster at-sea should not be permitted within the area of the Southern Zone Rock Lobster Fishery.

7.0 IDENTIFICATION OF FARMED STOCK

7.1 Background

In order that consideration be given for the holding of rock lobster at-sea as per recommendations 2 or 3, it is critical that farmed stock be identifiable from fished stock.

Management of both the northern and southern zone rock lobster fisheries relies on limiting the total number of rock lobsters removed from the fisheries. In both instances, holding rock lobster at-sea offers an opportunity to avoid these limits. Clear identification of farmed stock from wild stock is essential.

It is noted that some interim identification mechanism must be in place by the end of the fishing season in 1997.

7.2 Issues

The following issues were considered in addressing the identification of farm stock.

- The need to protect the management arrangements and compliance protocols of the wild fishery;
- The cost implications to operators of holding systems and rock lobster farmers; and

- The impact of any marking method on the health or marketability of the rock lobster.

7.3 Cost Implications

The cost of compliance with any management policies will fall to the aquaculture industry. Costs of enforcing and adhering to policies should be considered during their development.

Individual tagging or marking of rock lobsters may be costly in terms of the time involved. Ensuring compliance with such a requirement would also be attributed to the industry as a component of the licence and permit fees.

Any identification system should consider the potential impact on both the health and condition of the rock lobster and the marketability of the product. Tagging may be seen as an advantage in providing marketing branding.

RECOMMENDATION 5

All rock lobster held in cages at-sea as per recommendations 2 & 3 must be identifiable as farmed stock. Identification must include a minimum of a CDR system (stock on/stock off real time reporting) in conjunction with some secondary marking system. Interim marking systems may include tagging.

RECOMMENDATION 6

That appropriate and cost effective marking and identification mechanisms of farmed stock be investigated.

8.0 HOLDING AND SALE OF BERRIED ROCK LOBSTERS OR ROCK LOBSTER ROE

8.1 Background

A number of people holding live rock lobster (both at-sea and on land) have found that females (without eggs when caught) may produce berry when they are held in cages or tanks in close proximity to male lobsters.

Some operators have expressed an interest in investigating market possibilities for both the berried females and the berry (roe).

8.2 Issues

The following issues have been considered:

- Current legislative requirements relating to the holding and sale of female rock lobsters with eggs;
- The need to protect the integrity of existing regulations relating to the wild fishery, particularly the protection of berried females;
- The economic impact of not being able to hold females which may berry during the holding period, even if sale was not permitted;
- The negative impression that may be created in the market through the sale berried females or eggs; and
- The potential economic benefits of developing markets for berried female rock lobster.

8.3 Legislation

Section 42 of the *Fisheries Act 1982* specifically prohibits any person from taking fish of a class declared by regulation to be protected. Regulation 6(d) of the *Fisheries (General) Regulations 1984* declares female rock lobsters with external eggs to be protected.

Section 44 (2) of the *Fisheries Act 1982* makes it an offence to be in possession of fish declared by regulation pursuant to Section 42. A defence for such an infringement is that the fish were not taken in contravention of the Act.

8.4 Management

Current fishery regulations are in place to protect the breeding stock of the fishery, specifically females containing eggs which may be caught during the breeding season. The ability for farmers to sell or to be in possession of berried females may provide an opportunity for illegal taking of such fish by the commercial and recreational sectors of the wild fishery.

8.5 Holding of females which may berry

The intention of rock lobster holding systems is to place wild caught animals into cages soon after capture and sell them when market conditions are favourable. Such a process would result in both male and female rock lobster being held together, or in close proximity, resulting in females depositing eggs during holding.

Providing that the farmed stock are identifiable, and that compliance protocols will provide confidence that no berried females are taken from the wild, possession of such fish on farms should be permitted.

Options for minimising the occurrence of berried females in holding systems include the segregation of sexes or a ban on holding females after the end of the season.

8.6 Marketing of berried females and market perception

The appearance of berried rock lobsters in the marketplace may create an impression that the management of the fishery does not consider berried females worth protecting. This may damage the reputation of the industry both here and overseas. The presence of berried female rock lobster in the market place may also undermine the management not only of this fishery but of fisheries for the same and similar species, particularly those in Victoria and Tasmania.

8.7 Economic Benefits

It is considered that there are no real economic benefits to the wild fishery or holding systems in permitting the sale of berried females. Some market opportunities have been identified although little market research has been undertaken. The quantifiable risks in allowing the sale of berried rock lobster dictate that this practice should remain illegal until such time as any positive gains can be demonstrated for changing this policy.

RECOMMENDATION 7

That possession of berried female rock lobsters in holding systems be permitted.

RECOMMENDATION 8

That berried female rock lobster and rock lobster roe not be available for sale.

9.0 PUERULUS GROWOUT

9.1 Background

Research projects are underway elsewhere in the world investigating the potential for rock lobster aquaculture from puerulus growout. If puerulus culture was to proceed, tasks would include identifying and developing cost effective methods of catching large numbers of puerulus and of growing them to a marketable size. The impact any such activity may have on the wild fishery would have to be quantified.

9.2 Issues

The following issues have been considered:

- Legislative Status
- The impact that puerulus growout may have on the fishery;
- The need to maintain South Australia's position in terms of new developments; and
- The economic benefits of establishing rock lobster aquaculture from puerulus growout.

9.3 Legislative Status

Section 34 of the *Fisheries Act 1982* requires that:

A person must not, for the purpose of trade or business, engage in a fishing activity of a class that constitutes a fishery unless -

- (a) *the person hold a licence in respect of the fishery; or*
- (b) *the person is acting as an agent of a person holding a licence in respect of the fishery.*

and Section 46 states that:

The Governor may make regulations for the conservation, enhancement and management of the living resources of the waters to which this Act applies, the regulation of fishing and the protection of certain fish, and, without limiting the generality of the foregoing, may by such regulations -

- (a) *declare that any prescribed class of fishing activities constitutes a fishery;*

Regulation 5 of the *Scheme of Management (Rock Lobster Fisheries) Regulations 1991* constitutes the Northern and Southern Zone Rock Lobster Fisheries.

Collection of rock lobster puerulus for trade or business therefore requires a permit or licence under the Act.

In addition puerulus, being rock lobster, would be subject to the legal minimum length as per Regulation 27 of *the Fisheries (General) Regulations, 1984* which states that:

- (1) *A rock lobster is undersize if it is -*
- (a) *in the case of a rock lobster taken from the waters of the Northern Zone Rock Lobster Fishery - less than 10.2 centimetres in length as shown in diagram 5A of schedule 7;*
 - (b) *in any other case - less than 9.85 centimetres in length as shown in diagram 5B of schedule 7.*

RECOMMENDATION 9

That any application for a permit to collect puerulus be referred to both rock lobster fishery management committees.

9.4 Impact on Fishery

The impact of collection of puerulus from the wild population for growout is unknown at this stage. Impacts are dependent on the survival of puerulus under natural conditions. Development of puerulus growout is based on an assumption that natural survival of puerulus is low and that growout offers an opportunity to value add to the fishery by ensuring a higher number of offspring reach commercial size.

Large scale collection of puerulus may have an impact on recruitment within the natural population.

As puerulus represent potential recruits to the natural population of rock lobster, limited access to puerulus is critical to the management of the rock lobster fishery. Access should therefore be determined in conjunction with management of the rock lobster fisheries.

Policy development for the management of access to and growout of puerulus is beyond the scope of this paper. Further policy development should be undertaken through the Working Group on Live Holding of Rock Lobster in South Australia.

9.5 New Developments

At present South Australia is leading the development of rock lobster holding through the use of sea cages. Both New Zealand and Western Australia are investigating the potential for puerulus growout and see an opportunity for their aquaculture industries. Their assessments indicate that benefits are at least 5 years away from realisation.

RECOMMENDATION 10

That the development of suitable policies for the management of future puerulus access and growout be undertaken through the Working Group on Live Holding of Rock Lobster.

APPENDIX 1

Questionnaire results

The questionnaire was sent to 350 licence holders from the NZRLF and the SZRLF. A total of 66 responses were received by PISA Fisheries over a period of approximately two months. 18% of the SZRLF licence holders and 20% of the NZRLF licence holders responded.

Of the 66 licence holders who responded, nine identified themselves as processor's, ten identified themselves as prospective rock lobster aquaculturists and one identified himself as an existing rock lobster aquaculturist. Results are summarised below for each section of the survey.

Do you support the development of value adding by holding rock lobsters during the closed season?

There were 32 *yes* responses and 30 *no* responses to this question.

Out of the 32 'yes' responses received, 16 were from the NZRLF and 16 were from the SZRLF.

Licence holders who did not support out of season holding were concerned that this activity may lower prices during the times of the fishing season when the price for lobsters was usually high. Most fishers relied on this period to increase the average return for the season. Prices were usually high at the start and the end of the season. Concern was also raised that licence holders who did not wish, or could not afford, to keep rock lobster out of season would be forced out of business as those who were holding lobsters manipulated the rock lobster market.

The difficulty in providing effective compliance with holding lobsters at-sea was also raised. It was mentioned that fishers may be tempted to add illegally caught rock lobster to the holding facilities. It was also suggested that if this activity was permitted it may tempt legitimate fishers, forced into constructing costly out of season holding systems, to break the law in order to survive.

Supporters of this concept suggested that by holding rock lobster out of season fishers could have a greater influence on price fluctuations for rock lobster. This would lead to increased average prices for rock lobster over the entire year. It was also suggested that specific Asian markets could be targeted during particular festivals which occur during the closed seasons for both zones.

Do you support the development of aquaculture of rock lobsters 'on land'?

There were 21 *yes* responses and 40 *no* responses to this question.

Those supporting on land aquaculture indicated that it was less likely to impact on the wild fishery than sea based aquaculture. It was also suggested that this would clearly be a form of processing or aquaculture and was not a component of the wild fishery.

Opposition to this form of development were concerned that existing rock lobster processors would suffer as a result of this development. Concerns were also raised that large quantities of rock lobster held out of season would reduce prices during the end of the season.

Do you support the development of aquaculture of rock lobsters 'at-sea'?

There were 18 *yes* responses and 45 *no* responses to this question.

Supporters of sea based holding and aquaculture developments indicated that this option would be cheaper than land based developments.

Opposition to this form of development highlighted a range of potential problems including compliance, transfer of disease to wild stock and the effect that high mortalities would have on the wild rock lobster fishery's reputation and marketability.

It was also suggested that rock lobster aquaculture should be successfully developed on land before attempting it at-sea.

If you answered yes to the previous questions, do you support:-

Tagging;

Tail punch;

Audit;

Other.

The majority of responses supported an audit system (15) over tagging (10) and tail punching (9). This was due to the perceptions that an audit would be the least expensive method, that tagging would be ineffective due to moulting and that tail punching would reduce the marketability of the damaged rock lobster. Other responses suggested the investigation of zip tags, freeze patches or bleaching of the rock lobster.

The major concern indicated in responses was that any identification system that damaged the rock lobster would reduce sale price and negate any financial benefits of holding the stock. It was also noted that an audit system based on extensive handling by compliance officers may damage the stock.

If processors or aquaculturists find themselves in possession of berried female lobsters after having purchased them when they were not in berry, do you support:-

The sale of these lobsters?

There were 10 *yes* responses and 52 *no* responses to this question.

The major concern of fishers opposed to this activity were the compliance related problems of differentiating between legally kept rock lobster in berry and illegally caught wild rock lobster in berry. It was also suggested that the benefits to the fisher of selling berried rock lobster were outweighed by the potential damage to the wild fishery through this activity.

Roe product development?

There were 8 *yes* responses and 53 *no* responses to this question.

Opposition strongly suggested that allowing this type of activity would make existing regulations prohibiting the taking of berried female rock lobster difficult to enforce. Concern was also expressed that, should demand outweigh legal supply, an illegal industry would grow that could potentially threaten the wild fishery.

Supporters of this activity suggested that, if rock lobster were taken legally from the wild, fishers should be able to develop that product and any by-product without detrimental effect to the wild fishery.

Appendix 2

Summary of discussions at the first meeting of the Working Group on Live Holding of Rock Lobster in South Australia, held on Thursday 6 June 1996.

Note: This group has met only once and so these notes are a draft only and have not been ratified by the members.

Attendance

Mr T Rusby (PISA Policy)
Mr M Smallridge (PISA Aquaculture)
Mr M Pendle (PISA Compliance)
Mr D Spencer (NZRLF)
Mr A Ferguson (NZRLF)
Mr L Carrison (SZRLF)
Mr T Moran (SZRLF)
Mr R Edwards (Executive Officer NZRLF Association)

Legal Status

Concern was raised that the concept and methodology for value adding was new to many fishers. Therefore, there should be a provision for fishers to develop live holding systems at-sea on a trial basis, within the fishing season only with an option of extending or altering the operation following trials.

It was agreed that a fisher should be permitted to do this without having to commit to the formal process of being assessed as a potential aquaculturist. Should such an operation extend beyond the rock lobster fishing season, it should then be considered as subject to the aquaculture assessment process. Such an operation should be dealt with as an aquaculture operation.

The working group considered the current regulation 18(1) of the *Scheme of Management (Rock Lobster Fisheries) Regulations 1991* where rock lobster fishers were not permitted to sell rock lobsters during the closed season. The group recommended that this regulation should remain at this stage as those operations wishing to sell rock lobster during the closed season would be registered or licensed as aquaculture operations with no such restrictions.

It was agreed that there was no need to provide a definition or size restriction for corfs in the regulation as this omission allows flexibility to test a range of corf sizes and structures during the fishing season.

In summary it was generally agreed that applications considered to be significant developments under the *Development Act 1993* be subject to the aquaculture development approval including consideration for a permit or licence from the Director of Fisheries.

Thus the holding (and sale) of rock lobster at-sea out of season would be treated as an aquaculture activity. Licensing of aquaculture enterprises would also deal with the issue of possession of berried female rock lobster that had come into berry after being legally caught and held. This issue is dealt with in a later section.

Stock Identification

A Catch and Disposal Record (CDR) system operates in conjunction with an individual abalone marking system in the South Australian abalone farming industry. As all juvenile abalone stock are produced in hatcheries the marking is accomplished through the introduction of an artificial marker in the diet of juvenile abalone. This results in the abalone producing a clearly marked ring in the shell.

The cost of this process is minimal. Unfortunately, at this stage a diet marker is not an option for rock lobster aquaculturists.

Although it was agreed that some form of paper audit (CDR) would be required, it was suggested that such a system may be of limited value without the support of a secondary identification system.

The majority of members supported the concept of combining an audit system with some other method of identification to clearly distinguish farmed from wild stock.

The idea of sealing holding cages was discussed. This system would involve all holding cages being sealed in some manner such that a compliance officer could clearly detect if the cages had been opened. There would be a requirement to notify compliance officers when it was proposed to open cages. The majority of members agreed that further investigation was required to identify an appropriate system which combined a paper trail with the requirement to seal holding cages.

It was suggested that this may impede the farming of rock lobsters and that other methods should also be investigated.

Berried Females

There was a deeply held view by some participants that the holding or sale of berried females should be prohibited.

It was recognised that, once a satisfactory mechanism for identifying farmed stock had been developed, the impact of holding berried females on the management of the fisheries would be diminished. Concern was expressed at the effectiveness of any identification process and it was suggested that holding berried females should be prohibited until identification has proven successful.

Farmers expressed concern at the increased costs and time involved in sorting stock to remove all females prior to the breeding season given that most females have berried in the research cages during the breeding season.

The sale of berried females of rock lobster roe was raised. The impacts of either appearing in the marketplace and the implications for management of the fishery were noted.

It was noted that, at this stage, no markets had been clearly identified and that the market potential was unknown. It was suggested that a market analysis be undertaken to investigate this potential and that a cost-benefit analysis of marketing berried females be commissioned.

Puerulus Growout

The meeting noted the research underway in New Zealand relating to collection and subsequent growout of puerulus following settlement on mussel lines. It was suggested that such developments would be raised in South Australia and that suitable policies should be developed to handle them.

Given the long term nature of such projects and in order to maintain a leading position in the development of rock lobster aquaculture it was suggested that research funding be sought and programs be supported by industry.

Draft Summary of Recommendations

1. That applications considered to be significant developments under the Development Act 1993 be subject to the aquaculture development process before access is considered by the Director of Fisheries.
2. That a discussion paper be prepared for the next meeting of the working group that provides options for a Catch and Disposal Record (CDR) system as well as options for securing cages to ensure compliance with other regulations pertaining to the wild rock lobster fishery.
3. That the holding of berried female rock lobsters for aquaculture purposes be allowed only after a satisfactory method of stock identification has been developed.
4. That terms of reference be developed to initiate a cost benefit analysis for the marketing of berried female rock lobster or rock lobster roe produced by rock lobster farms.
5. That in the short term, applicants wishing to hold or sell berried females or roe be required to submit a detailed research proposal to both IMCs before consideration is given by the Minister for Primary Industries of the Director of Fisheries.