

NRLMG

NATIONAL

ROCK

LOBSTER

MANAGEMENT

GROUP

2004 ANNUAL REPORT

New Zealand Rock Lobster Fisheries Management Areas

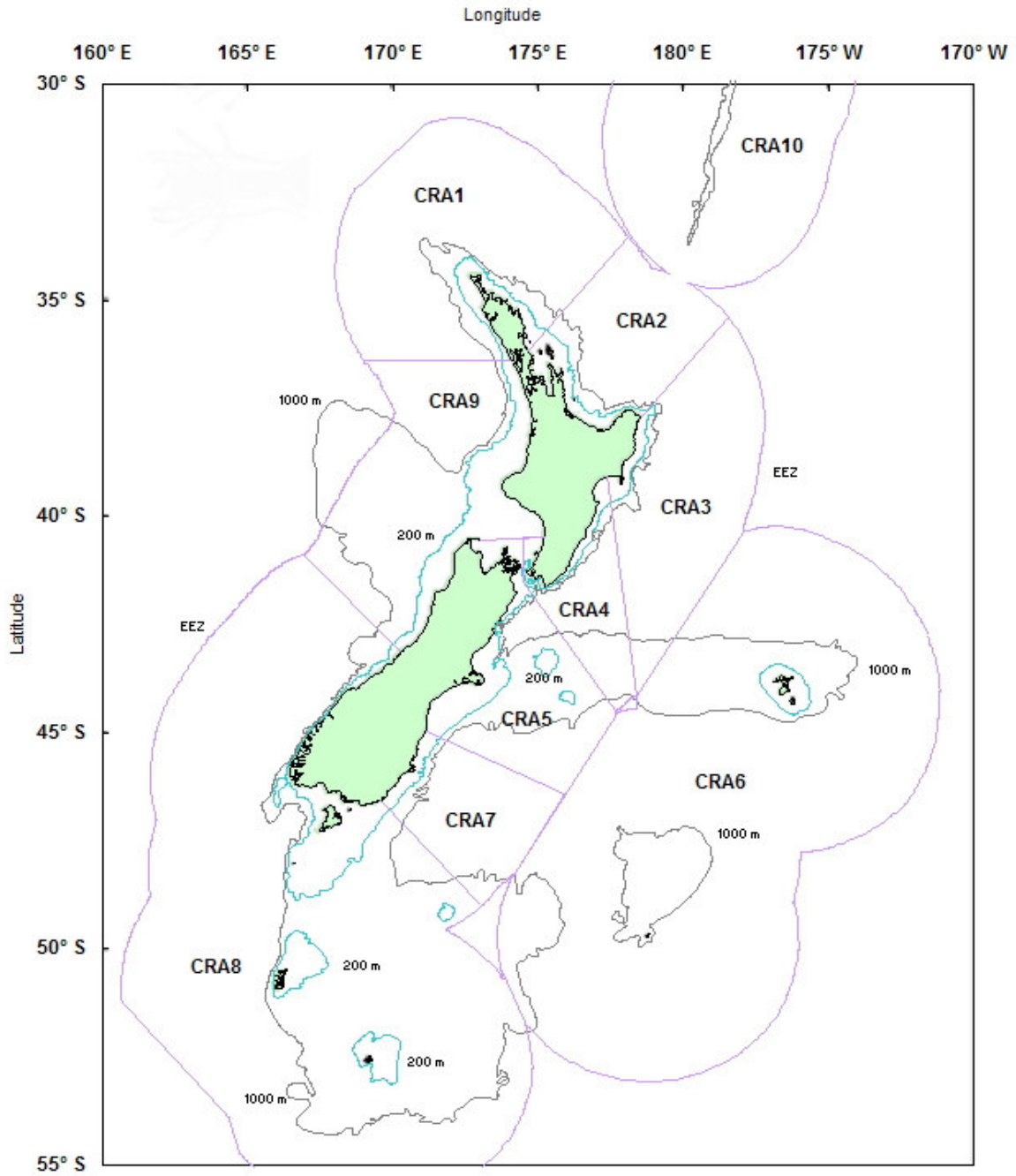


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Part One

INTRODUCTION

1.1 PURPOSE

1. The purpose of the National Rock Lobster Management Group (NRLMG) report is to provide primary advice on sustainability measures and management controls for rock lobster fisheries to the Minister of Fisheries. The report also outlines other matters considered by the NRLMG during the 2004 calendar year.
2. The report fulfils the role of the Ministry of Fisheries Initial Position Paper (IPP) and forms the basis of the Minister's statutory consultation with stakeholders on rock lobster issues.
3. The report reviews a range of topics considered and activities undertaken by the NRLMG during 2004 and contains advice and recommendations to the Minister to guide his TAC and Sustainability decisions in relation to the 2005/06 fishing year commencing April 2005.
4. The principal advice and recommendations contained in this report include –
 - i.) a description of New Zealand rock lobster fisheries;
 - ii.) the framework for managing rock lobster fisheries;
 - iii.) an explanation of management procedures and harvest control rules;
 - iv.) an outline of stock assessment issues;
 - v.) the implementation of catch reductions in the CRA 3 (Gisborne/East Coast) fishery to address sustainability issues; and
 - vi.) proposed regulatory amendments.
5. The recommendations and the background to the advice are discussed in greater detail in the body of this report.

1.2 ROCK LOBSTERS

6. The spiny rock lobster (*Jasus edwardsii*; Koura) has always been important to Maori and for much of this century has supported increasingly important commercial and amateur fisheries. Rock lobsters support one of the country's oldest commercial fisheries, and are one of the seafood industry's top export earners.
7. The commercial fishery has developed through a number of phases as catches have increased with the development of export markets. Management of the resource has changed in response to the changing status of the stocks and the expectations of stakeholder groups.
8. Since 1990 the rock lobster fishery has been managed within the Quota Management System (QMS) and governed by a mix of output controls and fishery regulations, including the provision of a minimum legal size, a prohibition against taking berried females and soft-shelled animals, method restrictions, the requirement that all pots be fitted with escape gaps, and closed seasons.
9. The current management of the rock lobster fishery is focused on moving stocks to agreed biological reference points and maintaining them at this level or above, primarily through the adjustment of Total Allowable Catches (TACs).
10. The NRLMG is the primary source of advice to the Minister of Fisheries on rock lobster fisheries issues. The NRLMG comprises representatives of the commercial, amateur, customary Maori, environment and conservation interests, science advisors from NIWA, SeaFIC and elsewhere, and the Policy, Science, and Compliance sections of the Ministry of Fisheries (MFish).
11. Since 1996 the NRLMG has developed management procedures underpinned by "Decision Rules" by which to manage some rock lobster fisheries. These rules, as currently established, provide for TAC adjustments to be made if the analysis of indicators of stock abundance shows increases or decreases across a predetermined range.
12. The NRLMG was one of the principal outcomes of the Rock Lobster Steering Committee convened by the then Minister of Fisheries in 1990 and which published a Ten Year Management Plan for lobster fisheries. The NRLMG has produced an Annual Report and recommendations to various Ministers of Fisheries since 1992.

The Species

13. New Zealand's rock lobster species belong to the crustacean family *Palinuridae*. The predominant species, *Jasus edwardsii*, (spiny rock lobster) occurs from the Three Kings Islands in the north to the Auckland Islands in the south and east to the Chatham

Islands. The main fishery areas are the east coasts of the North and South Islands, the south and south-west coast of the South Island, including Stewart Island, and the Chatham Islands. This species is found in New Zealand and southern Australia.

14. *Sagmariasus verreauxi* (Pawharu - Green or Packhorse rock lobster) is most abundant along the north and east coasts of the North Island from Cape Maria van Diemen to East Cape. The main fishery is in the northern part of this area. Some individuals are found as far south as Foveaux Strait, but there is no directed fishery for the species south of the Bay of Plenty.

Life cycle

15. Mating occurs in mature females which have recently moulted, although their shells need not be "soft" for mating to occur, which happens from a few hours to about five weeks after the female moult. Mating can take as little as 90 seconds, and egg laying occurs immediately after mating. Fertilisation is external by way of a spermatophoric mass deposited on the sternum of the female.
16. Most mature *J. edwardsii* females moult and mate some time between February and May. Females carrying eggs occur in greatest numbers from April to October, though a few are found during any month of the year. Females bear eggs only once each year and most mature females carry eggs during the egg-bearing season. Successful reproduction requires mature male and female lobsters of similar size.
17. The number of eggs carried by *J. edwardsii* depends on size, ranging from about 125,000 for a female of 95 mm carapace length (CL) to about 540,000 for one of 170 mm CL.
18. The size at which 50% of females are mature varies considerably for *J. edwardsii* throughout New Zealand, from 72 mm CL near Gisborne to 121 mm CL in eastern Foveaux Strait. This size appears inversely related to water temperature. No data are available from the Chatham Islands.
19. Size at 50% female maturity in most areas is less than the minimum legal size of 60 mm tail width (TW) (approximately 93-98 mm CL). Most females from these areas breed at least once before reaching the minimum legal size. However, from Banks Peninsula through western Foveaux Strait (CRA 7 and part of CRA 8), size at 50% maturity is greater than the minimum legal size. The effects of this are not known, but these areas have sustained high catches over time.
20. Most mature female *S. verreauxi* moult between July and November, bear eggs during late September to January, and hatch the eggs from December to January. The number of eggs carried by *S. verreauxi* ranges from about 375,000 for a female of 152 mm CL to 2,000,000 for one of 230 mm CL.
21. Rock lobsters of both species develop through a series of stages from egg to adult. Fertilised eggs are attached to pleopods (swimmerets) on the underside of the female's tail. The eggs develop for 3 to 6 months and hatch as small naupliisoma larvae. Within

a few days these metamorphose into phyllosoma larvae, which develop through 11 stages during the 10 to 20 months they spend in the ocean. The last phyllosoma stage metamorphoses into the puerulus larva, a strong swimmer that returns to the coast and moults into the first juvenile stage if it finds suitable substrate.

Larval Distribution and Recruitment

22. An extensive distribution of phyllosoma and puerulus larvae of *J. edwardsii* has been observed in areas along the east coast of the North and South Islands, and the Tasman Sea, to an area outside the EEZ boundary. Information on larval settlement patterns is available from several parts of the country.
23. Most late-stage phyllosoma larvae occur beyond the edge of the continental shelf to 1100 km from the coast. Larvae undergo diurnal vertical migration, moving into the top 150 m of the water column at night and dispersing in deeper water during the day. It is possible that late stage phyllosoma larvae delay metamorphosis to the puerulus stage, perhaps until they encounter an environmental cue such as lower salinity shelf water.
24. Puerulus larvae are most common in the plankton within the shelf edge. They are near the sea bottom during the day and rise in the water column at night. They have been observed to settle at depths to 10 m.
25. The puerulus settlement season varies with locality. Along the east coast of Northland and the Bay of Plenty the main settlement season is probably summer; from East Cape through Cook Strait settlement occurs in both summer and winter. Autumn appears to be the main settlement period in the north-east of the South Island, winter and spring are the main seasons south of Banks Peninsula, and year-round settlement is possible along the west coast of the South Island.
26. The highest larval settlements have been seen along the east coast of the North Island south of Matakaoa Point, the northeast and south coasts of the South Island, and the north Taranaki coast.
27. Because of the long larval life, the origins of larvae are difficult to determine. Larvae hatched in one area may be retained in that area by local eddy systems, carried to other areas by currents, or lost to New Zealand entirely. Eddy systems have been identified off the east coast North Island that may help to retain larvae within this area. However, for most areas larvae may originate a considerable distance from the settlement site.
28. The only known large breeding population of *S. verreauxi* is near Cape Reinga. The larval life is probably similar to that of *J. edwardsii*. The developing phyllosoma larvae are probably carried by the East Auckland Current towards the Bay of Plenty. The puerulus larvae probably settle out of the plankton at various sites along this coast. A few larvae may be transported south of East Cape, but most either settle out before reaching this area or are lost to the north-east, towards the Kermadec Trench.

Age and Growth

29. Rock lobsters, as do all crustaceans, increase in size by moulting. Growth rate is a function of both moulting frequency and moult increment. Because rock lobsters lack structures which would allow them to be aged, growth has been estimated from size-frequency distributions and tagging experiments.
30. Estimates of the growth rates for small *J. edwardsii* are available from the Gisborne area and Stewart Island. Males and females in Gisborne both reach about 38 mm CL one year after settlement and about 58 mm CL after two years. At Stewart Island, after one, two and three years they have reached 33, 52, and 68 mm.
31. Growth rates of larger animals have been estimated for a number of areas. The estimates of growth per moult, moult frequency, and annual growth vary between areas and between the sexes for the same area. The estimates come from ongoing tag, release and recapture studies across most rock lobster management areas so the data are continuously under review.
32. In most areas moulting is seasonal, with immature and mature animals of both sexes having their own distinct periods, which may vary between areas. Smaller males (between about 70 and 80 mm CL) from most areas generally moult twice a year. Large males moult once each year; very large males may moult even less often.
33. Immature females usually moult twice a year until maturity, then annually. Where size at 50% maturity is large, some females may begin moulting once a year before maturity.
34. Information on the growth rate of *S. verreauxi* is limited mainly to animals between 120 and 159 mm CL. Males and females between 120 and 139 mm CL moult at least once a year, between July and November, and perhaps twice, with an increment of about 7 mm CL per moult. Animals between 140 and 159 mm CL moult once a year between July and November, with an average increment of about 6.8 and 6.0 mm CL for males and females respectively.

Movements

35. For management, the most important movements would be large-scale migrations or inshore-offshore movements. Extensive tagging of *J. edwardsii* has been conducted in many areas. In most areas fewer than 5% of the returns have moved more than 5 km. Such areas include Tauroa Point, Banks Peninsula, Gisborne, Wellington, and Fiordland.
36. Movement patterns in southern New Zealand appear to involve two groups of animals: "run" rock lobsters that migrate over long distances, and "resident" rock lobsters that do not. In most studies, only up to 4% tagged lobsters moved significantly from the release site. However, when "run" lobsters were tagged, between 27.6% and 38.6% recaptures showed long-distance movements.

37. The long-distance movements of *J. edwardsii* tagged in southern New Zealand tend to be directional: southward along the Otago coast and the east coast of Stewart Island, westward through Foveaux Strait and northward along the west coast of Stewart Island and the Fiordland coast, in opposition to the prevailing current systems. These movements also appear to be seasonal, usually occurring off Otago and through Foveaux Strait from September through November and along the Fiordland coast during November through January. Most migrating females are immature, moving from Otago and Foveaux Strait, which have a large size at 50% maturity to Fiordland, with a smaller size at 50% maturity. These movements may be a “contranatant migration” in which animals migrate against the current which carries the larvae.
38. The long-distance movements of *S. verreauxi* in northern New Zealand also appear directional. All but two recaptures tagged at North Cape moved to the west or southwest, most to near Cape Reinga. Of the female recaptures, only 10% were mature when tagged, but 80% were mature when recaptured. Only 10% of the females tagged at North Cape had setae on the pleopods, but 80% had setae when recaptured. This may be another contranatant migration, with juveniles near North Cape moving towards Cape Reinga, where the only large breeding population of this species is known, at about the time of maturation.
39. There may also be a return movement towards the north against the prevailing current system along the east coast of the North Island by juvenile *S. verreauxi*. Most of the sublegal lobsters and immature females tagged between Bream Bay and Mahia moved north or west before recapture. Large numbers of sublegal animals are found on the east coast south of North Cape, but some legal-sized mature females are also found in this area. Thus juveniles from this area may also move towards Cape Reinga just before attaining sexual maturity.

Stock units and fisheries

40. The rock lobster fisheries extend from the Three Kings Islands in the north to the Snares Islands in the south, and to the Chatham Islands in the east. The main fishery is for *J. edwardsii* (CRA), which accounts for nearly all landings. There are currently ten quota management areas for CRA although one (CRA 10) is only an administrative designation and no fishing of any consequence is carried out there.
41. *S. verreauxi*; (PHC) is caught mainly in the north of the North Island and there is only one quota management area for all New Zealand waters.
42. Gel electrophoresis techniques have revealed no genetic differences between three samples of *J. edwardsii* collected from Gisborne, Wellington, and Stewart Island, suggesting that these samples were collected from the same stock.
43. Preliminary morphometric studies conducted on run and resident lobsters near Stewart Island show that the two groups can be distinguished on the basis of the telson length to carapace length ratio, but such differences may be environmentally induced.

44. The lack of genetic differences among areas, the long larval phase and long-distance movements of adults in some areas all suggest a single *J. edwardsii* stock around the mainland.
45. Recent stock assessments have addressed individual CRA areas (CRA 3 in 2004, CRA 4 and CRA 5 in 2003, CRA 1 and CRA 2 in 2002). For earlier assessments, the seven principle mainland areas were grouped on the basis of similarities in relation to size at maturity, the timing of biological cycles, and the perceived interchange between areas. CRA 7 and CRA 8 are designated the "NSS" sub-stock. CRA 1 and CRA 2 are called the "NSN", and CRA 3, CRA 4, and CRA 5 are called the "NSC".
46. Genetic and morphometric samples have not been collected at the Chatham Islands, and because of their geographical isolation, the rock lobsters from this area are also treated as a separate stock for management purposes.
47. Genetic and morphometric samples have not been taken for *S. verreauxi*. Because of the limited distribution of mature females near Cape Reinga, and the highly directional movements of tagged animals to this area, the species is considered a single stock.

1.3 NRLMG BACKGROUND

48. In 1992, the then Minister of Fisheries, Hon D L Kidd, endorsed the establishment of a national group, the NRLMG, to revise and develop the Rock Lobster Management Plan devised by the Rock Lobster Steering Committee (RLSC) (1991) and asked sector groups to nominate representatives. The RLSC was established by the same Minister to develop a long-term management plan for the lobster fisheries which at that time were considered to be seriously depleted by overfishing. The NRLMG has since made eleven annual reports, which contained recommendations for the sustainable management of this, the most important NZ inshore fishery.

Role of the NRLMG

49. The NRLMG operates in accordance with standards and specifications drawn from an extensive review in 2001 of the role and objectives of the NRLMG in consultation with the Minister of Fisheries. The NRLMG and the Minister agreed: -
- a) To maintain the NRLMG as the primary source of advice to the Minister of Fisheries.
 - b) To encourage and coordinate the development and implementation of Fishery Plans for rock lobster fisheries.
 - c) To act as a default regional planner for rock lobster research and management in circumstances where no Fishery Plan proposal was contemplated, or where a lack of organisation and coordination precludes any regional oversight by sector groups.
 - d) To retain a national coordinating body with well established and identifiable links to and from regional sector groups.
 - e) To coordinate and provide sector group input to research and information planning processes.
 - f) To coordinate and provide input to, and maintain an oversight of, the relevant Working Group processes and timetables.
 - g) To provide well informed, credible, and consistent research and management information and advice to sector groups, Government agencies, and Ministers.

Roles and responsibilities of members and advisers

50. Noting a preference for membership/participant numbers being kept at current levels with some flexibility accorded to need and circumstance, the NRLMG and the Minister also agreed the roles and responsibilities of the participating members and advisers as follows –

Sector Representatives – TOKM, NZ RLIC, NZRFC, ECO¹

- To provide consistent expertise, experience, knowledge, networking – to and from sector constituency. “It is important that each member represents the views of their constituent groups and relays discussions from the Group back to their constituents”... (Hon. Pete Hodgson, March 2001)

MFish – Fisheries Management, Compliance, Science

- To facilitate and coordinate information and advice to and from the NRLMG
- To ensure consistent information and advice to MFish personnel and to tangata whenua.
- To enable science (including stock assessment and biological), economic, social policy, and other advice deemed necessary by the NRLMG.

Advisory members – Stock Assessment, Biology and Behaviour, Economic, Social

- To maintain oversight of NRLMG deliberations and offer advice and guidance, including cautions, to assist the development and implementation of research and information plans, Fishery Plans, or regional harvest initiatives.

Chairman

- To facilitate NRLMG meetings and to oversee the development and delivery of the NRLMG Annual Report.

51. The NRLMG seeks technical advice from experts, and develops refinements and improvements to the management regimes currently in place for rock lobster fisheries. The NRLMG strives to provide quality advice to the Minister to assist in the statutory decisions on Total Allowable Catches (TACs), Total Allowable Commercial Catches (TACCs), and other management controls.
52. The NRLMG continues the important role of being a co-operative user group forum with specific focus on rock lobster fisheries issues. The NRLMG is perceived as a model for multi-sector management of fisheries in New Zealand. The NRLMG encourages co-operation between user groups at local and regional levels, and undertakes a co-ordinating role to ensure that the informed views of the represented sectors are incorporated into management and planning considerations.
53. The NRLMG has not only played a role in developing a significant level of consensus among user groups, which aids the decision making process, but also has encouraged the development of management initiatives throughout the country which have contributed to the improvement in rock lobster stocks over recent years. Stock assessments since 1992 have tracked increasing abundance in most fisheries, and

¹ Te Ohu Kaimoana, NZ Rock Lobster Industry Council, New Zealand Recreational Fishing Council, Environment and Conservation Organisations of New Zealand.

where stock rebuild has been less than optimum, management responses have been implemented which should ensure the sustainable utilisation of those fisheries within acceptable stock rebuild timeframes.

54. The NRLMG advises and informs regional stakeholder groups. This ensures that local issues are addressed within the context of the Fisheries Act and in a manner that is consistent with the overall harvest strategy for rock lobster fisheries.
55. The NRLMG continues to persevere with its efforts to formulate robust and enduring harvest strategies that will not require annual review, rather only fine-tuning when new information indicates that some adjustment is necessary. To that end, the NRLMG continues to develop and refine management procedures incorporating 'harvest control rules' which are designed to guide management actions.

2004 Work Programme

56. Over the past year the NRLMG convened on eight occasions, and a sub-committee on one occasion, to deliberate on a range of research, planning and management issues with the aim of confirming advice and recommendations for regulatory amendments to meet statutory timetables and to ensure the presentation of this annual report and recommendations to the Minister of Fisheries by 15th December 2004.
57. In addition, some members of the NRLMG have attended and participated in the Rock Lobster Fisheries Assessment Working Group (RLFAWG) meetings held during 2004 and the Stock Assessment Plenary convened by MFish in November 2004.
58. Also in 2004 the NRLMG again provided the core sector group participation in the annual Rock Lobster Research Planning Group process which culminates in the Research Co-ordinating Committee recommendations to the Minister of Fisheries in relation to required research services.
59. The NRLMG contributed to the development of management procedures and agreed biological reference points for incorporation into fisheries management decisions.
60. The NRLMG participated in the stock assessment procedures that delivered new assessments for CRA 3 to the November 2004 Plenary.

Attendance During 2004

<i>Representation</i>	<i>Meetings Attended</i>	<i>Apologies</i>
Chairman	8	-
Ministry of Fisheries	8	-
NZ Recreational Fishing Council	8	-
Te Ohu Kaimoana	8	-
Environment and Conservation	0	2
NZ Rock Lobster Industry Council	8	-
Science Advisors	7	1

Organisational Arrangements

61. Costs of participation in the NRLMG are borne by the representative organisations, and the NZ Rock Lobster Industry Council (NZ RLIC) supplies venues and facilities. Secretarial and administrative duties are shared by the NZ RLIC and MFish.

Recommendation

62. The NRLMG recommends that the Minister:
 - a) **note** that whilst supporting and encouraging the development and implementation of Fishery Plans for rock lobster, the NRLMG will continue to operate the current management framework outlined in this document and will work within the roles and responsibilities confirmed in the most recent review.
 - b) **confirm** the NRLMG as the primary source of TAC, TACC and management advice for New Zealand rock lobster fisheries; and
 - c) **confirm** the NRLMG as an appropriate body to consult on any matters relevant to the management of rock lobster fisheries.

NRLMG membership in 2004

Dr Kevin Stokes	<i>Chairman</i>
Scott Williamson	<i>MFish</i>
Dr Kevin Sullivan	<i>MFish</i>
Lee Robinson	<i>MFish</i>
Leigh Mitchell	<i>MFish</i>
Alan Riwaka	<i>Te Ohu Kaimoana</i>
Stan Pardoe	<i>Te Ohu Kaimoana</i>
Max Hetherington	<i>NZ Recreational Fishing Council</i>
Keith Ingram	<i>NZ Recreational Fishing Council</i>
Barry Weeber	<i>Environmental and Conservation Organisations</i>
Ron Brady	<i>NZ Rock Lobster Industry Council</i>
Daryl Sykes	<i>NZ Rock Lobster Industry Council</i>

Science Advisers to the Group

David Banks	<i>SeaFIC Science Group</i>
Vivian Haist	<i>Consultant</i>
Dr Paul Breen	<i>NIWA</i>
Susan Kim	<i>NIWA</i>
Paul Starr	<i>StarrFish</i>

Secretarial and Administrative Services

Helen Regan	<i>NZ Rock Lobster Industry Council</i>
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Part Two

STRATEGIC VISION

and

FRAMEWORK FOR ROCK LOBSTER FISHERIES

2.1 STRATEGIC VISION

63. The NRLMG has developed a *Strategic Vision for the NZ Rock Lobster Fisheries*. The vision is consistent with the Fisheries Act 1996, enhances an agreed management framework, and provides a basis for consideration of short, medium, and long term research and management issues such as:
- a) rock lobster stocks will be managed effectively (including cost effectively) to maintain the status of the stocks at or above the agreed biological reference points, consistent with the Minister's legislative responsibility;
 - b) fisheries will be managed using a property rights/ Quota Management System (QMS) regime with the principal management actions exerted via output controls (TACs) while a range of input controls will still apply where this proves appropriate to individual situations;
 - c) the strategy will provide for management flexibility, whilst ensuring sustainability, to enable all sector groups to maximise their benefits within a shared fishery;
 - d) management of the fisheries will take place within a clear policy environment, e.g., there will be clear, explicit, and agreed rules to describe property rights in the fisheries and the allocation between user group sectors. In addition, there will be explicit and agreed decision rules to prescribe management actions that result from monitoring and assessment of fisheries;
 - e) reliable and cost effective means to monitor and assess fish stocks will be in place. The catches taken and effort deployed by all extractive user groups will be effectively quantified, documented, and managed in accordance with the exercise of rights;
 - f) adverse environmental effects of fishing activities will be averted or minimised;
 - g) aquaculture of rock lobsters will be a permissible activity, governed by policies which ensure sustainable use of the wild stock within a rights based framework;
 - h) a shift of management responsibility to user groups will be promoted within the Fishery Plan framework provided for in the 1996 Fisheries Act; and
 - i) collaborative/consultative national co-ordination of research and management recommendations and development of policy will continue within the NRLMG or similar organisation; and
 - j) co-operative management initiatives, which may include the development of regional user groups and Fishery Plans, will be encouraged; and

- k) sustainable management and use of rock lobster fisheries will occur in an environment where the New Zealand public are well informed and educated on matters dealing with fisheries in general and rock lobster fisheries in particular.

2.2 FRAMEWORK FOR MANAGING ROCK LOBSTER FISHERIES

64. The framework for managing rock lobster and the attendant recommendations of the Group are consistent with expectations of a robust and enduring harvest strategy leading to a continuing sustainability of rock lobster stocks, and in the view of the Group are also consistent with the statutory obligations enshrined in the Fisheries Act 1996.

Goal

65. The rock lobster fisheries should be managed and be maintained at or above the assessed and agreed biological reference points, using a comprehensive approach that recognises a range of commercial, customary non-commercial, amateur and environmental concerns and values.

Strategies to Achieve Goal

66. The strategies will allow the population size to:
- i.) increase in each fishing year that it is below the target in agreed management procedures; or
 - ii.) be maintained at or above that level.
67. The extent of change in population size that can be sought will be determined after consideration of:
- i.) economic and social factors including:
 - ii.) the economic cost and benefits, social factors and rate of adjustment to the fishing industry,
 - iii.) the availability of rock lobster to Maori and amateur fishing groups, and
 - iv.) the economic return from the fishery; and
 - v.) biological and environmental factors including:
 - vi.) the uncertainty in the assessment of stock size and other biological parameters, and
 - vii.) the risk to the population; and
 - viii.) the timeframe over which the management options will have effect.

68. The strategies will identify the effects of fishing on the aquatic environment and provide for the implementation of measures to:
- i.) avoid, remedy, or mitigate any adverse effects of fishing on the aquatic environment;
 - ii.) maintain associated or dependent species above a level that ensures their long-term viability;
 - iii.) maintain the biological diversity of the aquatic environment; and
 - iv.) protect habitat of particular significance for fisheries management.

Implementing the Strategies

69. The tactics or actions developed to implement the strategies will:
- i.) be produced through a process that involves all sector groups, minimises conflicting views, and involves all participants in the group disclosing their positions on the issues considered in order to promote co-operation and encourage full and frank discussion;
 - ii.) be based on advice from scientists on the steps necessary to achieve the goal within various time frames;
 - iii.) consider available management options including but not limited to catch reductions, area closures, gear restrictions, enhancement, legal size changes, measures to maximise egg production, recruitment, and to minimise juvenile mortality;
 - iv.) promote and enable effective, including cost effective, compliance with fishery rules;
 - v.) consider the costs and implications of management options including:
 - a) the resources that are needed and currently available for research, compliance and administration;
 - b) the integrity of the research database;
 - c) whether the management alternatives can be effectively implemented;
 - d) how the impact of the management options are to be measured or estimated;
 - e) the impact of the management options on industry, customary non-commercial, and amateur fishers and the degree of their acceptance of the measures; and
 - f) the impact on other fisheries and the aquatic environment.

- vi.) be based on the best available information;
 - vii.) recognise any uncertainty in the available information and be precautionary when information is uncertain, unreliable, or inadequate; and
 - viii.) not use the absence of, or any uncertainty in, any information as a reason for postponing or failing to take any measure to achieve the purpose of the Fisheries Act 1996.
70. The NRLMG will provide a timely annual report containing recommendations for management, research and compliance of rock lobster fisheries to the Minister.

Harvest Strategy

71. The NRLMG pursues a dynamic harvest strategy for rock lobster fisheries. It is willing to consider and accept TAC changes in two situations:
- a) where stock modelling demonstrates that, after a TAC change, abundance is likely to move towards agreed biological reference points within an agreed period; and
 - b) where a TAC change is triggered by a fully tested and accepted management procedure (including a harvest control rule), such as the one described elsewhere in this report, designed either to rebuild a stock unit or to maintain the stock unit near an agreed biological reference point.

Assessment and Indicators

72. In accordance with the goal for managing rock lobster fisheries, stock assessment research will continue to be an important component of the management framework. The RLFAWG continues to refine and improve stock assessment techniques and to identify areas of uncertainty and information needs.
73. For a number of years, MFish has commissioned a major rock lobster stock assessment project incorporating extensive stock monitoring, data grooming and stock modelling, and a rock lobster recruitment project, based on monitoring puerulus settlement at selected sites around the New Zealand coast.
74. Since 1997 NZ RLIC has been contracted to provide stock monitoring and assessments in collaboration with NIWA, Trophica Research, StarrFish, Haist Consultancy and, for the first two periods, the SeaFIC Science Group. Within the overall research programme, the NZ RLIC has contracted NIWA, Lat37 Ltd,² and Trophica Research to undertake catch sampling and data entry, and to construct and maintain databases for the tagging projects. NIWA holds the contract for the rock lobster recruitment project.
75. Intensive catch sampling (including Logbooks) and tagging are undertaken to MFish agreed standards and specifications.

² Lat37 is a private company contracted to the NZ RLIC to provide stock monitoring services.

76. Vessel logbook data are now routinely incorporated into the stock assessment process. Logbook programmes supervised by technicians are well established in CRA 2, CRA 5, and CRA 8.
77. NIWA, Trophic Research, StarrFish and Haist Consultancy scientists continue to refine and improve stock assessment methods with routine oversight from the RLFAWG chaired by MFish Science Group. The SeaFIC Science Group provides a useful peer review of the process.
78. An independent peer review of rock lobster stock assessment methodology commissioned by MFish in 2001 concluded that key aspects of the current assessment model represent state-of-the-art methodology and are appropriate for assessments of the rock lobster stocks.

Management Procedures and Decision Rules

79. The NRLMG has established two simple decision rules for the NSN and NSC substocks. Each year, the rule for each substock compares the current estimate of standardised CPUE with the index from 1992-93. The two estimates are considered significantly different if their 1-standard-error bars do not overlap. Under these rules, TAC changes are considered only when the two CPUE estimates differ significantly.
80. For the NSS substock (CRA 7 and CRA 8) the NRLMG recommended, and in 2002 the Minister accepted, a more complex and extensively tested decision rule, called a management procedure. This specifies the data to be used and how it is to be analysed; specifies a new CPUE target for the fishery; specifies how the rule is "triggered", and specifies how the TACC is modified when the rule is triggered. This procedure, designed to rebuild the CRA 8 fishstock to the target level, is scheduled to be reviewed in 2007. It is accepted that CRA 7 may develop and test an alternative management procedure for their area, leaving this procedure to operate for CRA 8 only.
81. Management procedures designed to maintain the stock near agreed target levels were tested under the stock assessment research contract (CRA2003-01) in 2004. These were designed around a decision rule matrix that enables stakeholders to consider biological, economic and other outcomes, and their associated risks, when choosing fishery goals. More work is scheduled on this project for 2005.

Tactics

82. There are a number of mechanisms by which total removals from the fishery can be adjusted if circumstances dictate. These are:
 - a) adjusting the TAC;
 - b) changes in minimum legal size (MLS) limits;
 - c) adjustments to escapement provisions;
 - d) closed seasons;
 - e) fishing method restrictions;

- f) effort controls;
- g) closed areas;
- h) adjustments to commercial quotas and amateur bag limits;
- i) limitations on the numbers of participants in the fishery;
- j) improved handling to reduce sub-legal mortality;
- k) protection of soft-shelled lobsters and berried females.
- l) effective enforcement which provides a greater deterrent to illegal fishing;
- m) effective compliance services, such as education, which encourages voluntary compliance; and,
- n) maximised voluntary compliance with fisheries laws by fishers.

Recommendation

83. The NRLMG recommends that the Minister:

- a) **confirm** the framework for managing rock lobster fisheries contained in this Report.

Part Three

MATTERS CONSIDERED BY NRLMG in 2004

3 INTRODUCTION

84. The NRLMG has given consideration to a number of rock lobster fisheries management issues during 2004. The most important of these are:
 - a) the 2004 stock assessment outcome for CRA 3, and the development of an agreed management procedure for the CRA 3 stock;
 - b) changes to regulations that apply to landing, receiving and processing rock lobsters taken from the Southland Concession Area;
 - c) addressing concerns raised by the Minister in relation to the CRA 3 fishery;
 - d) convening a Catch Identification Sub-Group to investigate and report the efficiency and effectiveness of mechanisms and systems that might enable increased compliance with and less expensive enforcement of rock lobster regulations.
85. The Group continued to review roles, functions, accountability, and responsibilities in anticipation of the completion of the Fishery Plan framework, and in the expectation of a satisfactory resolution to the outstanding definition of amateur fishing rights.
86. In 2004 a primary function of the NRLMG was to conduct Rock Lobster Research Planning, and in that role considered the full range research activities for the period 2004 to 2006 considered relevant to the agreed plan and strategic vision for rock lobster fisheries.

3.1 CRA 3 (GISBORNE/EAST COAST)

87. During 2004 the Minister wrote to the NRLMG and noted that *“the CRA 3 stock does appear to be exhibiting signs of stress”* and anticipated receiving advice from the NRLMG in relation to whether changes to sustainability measures, minimum legal size or other management tools are needed for the CRA 3 fishery.
88. NRLMG members are aware that the Minister received correspondence from individuals and groups in Gisborne in which a series of complaints were made in relation to the perceived state of the CRA 3 fishery. The NRLMG is also aware of a series of Gisborne newspaper articles citing concerns about the CRA 3 fishery. The NRLMG notes that much of the media comment was from individuals not aligned with, or disagreeing with, the direction taken by the stakeholder groups, particularly the CRA 3 Industry Association direction.
89. The NRLMG has considered those concerns under several broad headings and addresses them in the following paragraphs.

Perceived status of the stocks, perceived “lack of management”, and “inadequate research”:

90. Concern was raised that rock lobster stocks have reached an all-time low and that the resource is being *“dangerously overfished.”* The current CRA 3 stock assessment (Section 3.10 of this report) demonstrates that not to be the case, with Autumn/Winter 2004 recruited biomass estimated to be well above the minimum biomass observed in the fishery (which occurred in 1992).
91. Catch per unit effort data (CPUE) derived from commercial fishing is used as a relative index of rock lobster stock abundance. CPUE for CRA 3 declined steadily from 1979 through 1993, then increased rapidly to 1997/98 and has declined every season since. The 2003/04 CPUE was marginally above the 1993/94 season. The declining quality of the fishing experience as indicated by CPUE is an expected consequence of overall stock decline.
92. The NRLMG notes that the 1997/98 CPUE was the highest in the modern history of the CRA 3 fishery (1979-2004) and well above the long term average. Expectations of catch rates based on the quality of fishing enjoyed in the period from 1995/96 through to 1997/98 are unrealistic.
93. The 2004 CRA 3 stock assessment acknowledges the effect of the declaration of the Te Tapuwae o Rongokako Marine Reserve in November 1999. The displacement of commercial and amateur fishing from that 2,400-hectare area has contributed to increased competition for catch on fishing grounds adjacent to the port of Gisborne. Customary interests have conveyed concerns about the relocation of commercial fishing effort into areas important for customary fishing and have cautioned the commercial sector that customary regulations may be invoked if excess effort is deployed on specific fishing grounds.

94. The CRA 3 Industry was alert to the status of the stock and declining fishing success in 2003. Rather than exacerbate a deteriorating situation, industry used, on its own initiative, ACE transactions (ACE shelving) to reduce the commercial catch target voluntarily as from 01 April 2004. This initiative has already assisted in reducing the stock decline.
95. Features of the shelving programme are that industry agreed the “target” catch for the current 2004/05 season at 207 tonnes (current TACC is 327 tonnes). Each CRA 3 quota share owner (QSO) was asked to shelve 37.5% of his or her quota shares to effect that reduction. Shelving was done by way of forward ACE transfer to an independent third party – in this instance the NZ RLIC Ltd – secured by a consensual caveat on the numbers of quota shares needed to cover the ACE transaction. Only three CRA 3 QSOs declined to participate in the shelving programme, necessitating the catch target to be increased from 207 tonnes to 210.3 tonnes for 2004/05.
96. In addition an extensive stock monitoring programme operates in CRA 3 on a seasonal basis. In addition to catch and effort information derived from mandatory reporting by fishermen and Licensed Fish Receivers (LFRs), intensive catch sampling is undertaken by NIWA and NZ RLIC Technicians, and tag release and recapture coverage has been extensive in recent seasons.
97. Full stock assessments for CRA 3 were undertaken in 1999, 2001, and in 2004. Also, a CRA 3 “operational management procedure” for managing catches in the CRA 3 fishery is currently under development.
98. Sustainability measures and the NRLMG recommendations for reducing catches in the CRA 3 fishery are discussed in more detail in Section 3.10 of this report.

A perceived “lack of legal crayfish in summer”:

99. There have been claims from individuals and groups that the quality of non-commercial fishing opportunity has declined in recent years. Those claims are probably correct. The decline is linked to a general decline in stock abundance across CRA 3.
100. However, the assertion that amateur fishermen “cannot catch legal lobsters” is not supported by an evaluation of the circumstances that prevail in the fishery. These are:
 - a) Amateur fishing is predominately a spring/summer activity. Catches are not solely dependent only on the abundance of male lobsters. The female lobster population is available to fishing from when egg bearing is completed (late September) through to mating (late February/March);
 - b) Male lobsters moult more than once in any one season in CRA 3. Although males greater than 52.0 mm and less than 54 mm make up a large proportion of the commercial landings in winter, not all lobsters in that size range are caught by commercial fishermen, nor is the commercial catch in winter 100% dependent on male lobsters in that size range - evidence of that is found in the catch sampling data;

- c) Commercial fishermen maintain a voluntary “non-commercial” period from December 15th to January 15th in line with an agreement with a previous Minister. This period coincides with the most populated holiday time and enables amateur rock lobster fishing along the coast without competition from commercial vessels.

The Winter Minimum Legal Size for commercial fishing

- 101. Some amateur fishers assert that support from the amateur sector for the removal of the general seasonal closure Regulations (September, October, November) in 2002 was conditional upon the removal of the 52 mm TW MLS for commercial fishing in the months of June, July and August. Both the general seasonal closure and the winter MLS formed part of a suite of provisions implemented in April 1993.
- 102. The rationale for the 52mm male MLS was that the difference of one moult increment reduction in the measurement enables industry to take 52 mm and 53 mm TW male lobsters in winter (at higher \$/kg) than otherwise would have been taken in late spring/summer at 54 mm TW (and lower \$/kg). In effect, a greater proportion of the TACC can be harvested at the times of the season when the most economic value can be obtained for the catches.
- 103. No formal proposal to have the MLS regime amended and a standard 54 mm TW MLS for commercial and amateur removals implemented has ever been submitted to the NRLMG through amateur sector representatives. The NRLMG did not recommend, and the Minister did not agree to, the removal of the closed season regulations on any conditions other than the expectation that the CRA 3 Industry would observe a voluntary closure from mid-December to mid-January in each season.
- 104. Individuals have suggested that the winter MLS for commercial fishing should be restored to 54 mm TW, the same as currently applies to amateur landings. The NRLMG has concluded that any adjustments to MLS could only be considered in the context of a full stock assessment.
- 105. Industry representatives on the NRLMG caution that the consequences of increasing the winter MLS for commercial fishing might include –
 - a) winter commercial landings could initially decrease by up to 65%. Industry would forego significant income overall, and very significant income on an individual basis for some fishermen and exporters;
 - b) fishing activity in winter would become more dangerous as fishermen targeted shallow close inshore grounds where larger breeding males congregate after mating and prior to moulting in July/August;
 - c) handling damage could increase, given that lobsters less than 54 mm would still be trapped in pots and turned over each fishing day;
 - d) competition between commercial and amateur fishermen would increase because the 52 mm - <54 mm size range catch forgone in autumn/winter

would be chased and caught by commercial operators in spring/summer – the time when amateur fishing activity is highest.

“Black rot” - Tail Fan Necrosis

106. Within the CRA 3 fishery boundaries there are three statistical areas (909, 910, and 911) for commercial catch and effort reporting purposes. An outbreak of tail fan necrosis (TFN) was first observed in the 910 statistical area over three years ago. TFN is a bacterial infection observed to some degree in most lobster populations, but is particularly severe in 910.
107. An independent bio-assay of sample infected lobsters was commissioned by the CRA 3 Industry Association early in 2003. Following the advice given by the contracted scientist, a “containment strategy” intended to reduce the opportunities for spreading the infection across CRA 3 fishing grounds has been operating since August 2003. A second bio-assay was commissioned in 2004 to confirm that a similar bacterial infection was responsible for lesions observed on the shells of legal and sub-legal lobsters caught in the 910 statistical area.
108. The severity of the infection in 910 is explained only by some combination of biological and environmental circumstances that have enabled infections to flourish in lobsters damaged during harvesting. The infection is unsightly but there is no food safety risk associated with it. The infection could impede or delay moult frequency depending on the severity, but there is no evidence that the infection has caused any significant increase in natural mortality of sub-legal or legal lobsters.

Recommendations

109. The NRLMG recommends that the Minister:
 - a) **note** that the NRLMG has considered the CRA 3 issues raised during 2004 and recommends action where appropriate;
 - b) **note** that this Annual Report contains recommendations to reduce CRA 3 catches to address sustainability concerns;
 - c) **note** that the NRLMG currently proposes no additional management measures for the CRA 3 fishery.

3.2 CAPTURE METHODS

110. In 2004 the NRLMG reviewed capture methods for use by non-commercial operators with a view to compiling advice and recommendations during 2004. The NRLMG is aware that a number of new innovative methods to assist amateur fishers to catch rock lobster have and continue to come onto the market. These new methods were not widely available or used by amateur rock lobster fishers when the amateur fishing regulations were put in place.
111. When evaluating capture methods and devices for use in rock lobster fisheries, the Plan of Management for the fisheries has provided guidance to the NRLMG.
112. The Plan of Management is one that essentially relies on catch “savings” to bring about a rebuild and/or to maintain stock abundance at some optimum level. That level will be a biological reference point that satisfies a Ministerial statutory obligation, or a level above, which has been agreed by stakeholders as the goal of a Harvest Initiative or Fishery Plan.
113. The incremental successes or otherwise of those catch saving strategies are reflected in annual TAC and Sustainability decisions, and the quality of the commercial and non-commercial fishing experiences.
114. The NRLMG has developed a method evaluation matrix or checklist which can be used to assess capture methods and determine whether or not they should be legally allowable. Proposed new capture methods could be weighted according to the risk they pose to the intended outcomes of the Plan of Management. At the upper end of the scale would be methods that have potential to catch indiscriminately and/or to damage rock lobsters.
115. In addition to evaluating any “new and improved” non-commercial capture methods or devices, the NRLMG has reviewed the methods traditionally used by the sector but which are not specified in Regulations. Ring potting is one. “Bobbing” is another. (“Bobbing” entails fishers dangling a baited stocking to which lobsters cling and are subsequently lifted from the water). The NRLMG notes that neither is size selective, but each method provides an opportunity for undersized, unmeasurable or berried lobsters to be returned to the sea, and each method does have a history of use that is implied in current amateur catch estimates and TAC allowances.
116. As part of the method review the NRLMG has also sought advice from MFish as to whether amateur methods (specifically, bobbing, hand-held snares, snares, wands or lassoes, scoop nets, rakes, hooks and ring potting) are legal. A summary of the MFish legal opinion is provided below.

Relevant Legal Matters

117. Section 89(1) of the Fisheries Act 1996 (“FA96”) prohibits anyone taking any fish, aquatic life or seaweed by any method unless they have a current fishing permit.

118. However, s 89(1) FA96 does not apply to the taking of fish, aquatic life or seaweed that is not for the purposes of sale and in accordance with any amateur fishing regulations made under the FA96³. The Fisheries (Amateur Fishing) Regulations 1986 are detailed and prescriptive. They place nationwide restrictions on the conduct of amateur fishers and provide a code for authorising, controlling, enforcing, and penalising amateur fishers. The restrictions imposed by the Regulations include restrictions on equipment and practises as well as specific restrictions for some named species (including rock lobster).
119. The Regulations provide restrictions on what is otherwise a permissive environment. Recreational fishers can use new methods to catch fish provided those methods do not breach any of the restrictions contained within the Regulations.

Current Method Restrictions

120. Some of the current method restrictions⁴ for recreational rock lobster fishers are:
- a) **Spears** or any device or implement capable of puncturing the lobsters exoskeleton are prohibited (R 25(3));
 - b) If using rock lobster **pots**:
 - i) The pot and the attached buoy must be clearly and permanently marked with surname and initials (R 25(4));
 - ii) The pot must have apertures of a specific number, size, shape, and construction to enable undersized lobster to escape (R 25B);
 - c) If using a **net**:
 - i) It cannot be baited, with the exception of a ring pot (R 25(2));
 - ii) Minimum mesh size is 100mm (R 6);
 - iii) It must be set, pulled, hauled, and retrieved by hand (R 8).
121. The Regulations define the following relevant terms:
- i. “Net” means any net or part of a net used or capable of being used to take fish; but does not include a whitebait net;
 - ii. “Ring pots” or “hoop net” or “Pull net” means a circular frame across which netting is attached;
 - iii. “Rock lobster pot” means any pot, whether baited or not, that is capable of catching or holding rock lobsters; and includes any other device capable of catching, holding, or storing rock lobsters;

³ Section 89(2)(a) FA96.

⁴ Apart from method restrictions there are also restrictions as to size, condition of and number of rock lobster permitted, see R 25 and R 25A.

- iv. "Set net" includes a gill net, . . . or any other sort of net which acts by enmeshing, entrapping, or entangling any fish;
 - v. "Spear" means any device or implement capable of puncturing the flesh or exoskeleton of any fish; but does not include any gaff or similar device used solely for the landing of any finfish.
122. Accordingly, whether a new recreational rock lobster capture method is lawful or is prohibited depends upon whether the new method comes within the various restrictions and the relevant definitions contained within the Regulations.
123. It is difficult to imagine a new method of catching rock lobster that does not fall within the definition of "rock lobster pot", as the definition "*includes any other device capable of catching, holding, or storing rock lobsters*".
124. The consequence of this broad definition of a "rock lobster pot" is that any new device that is capable of catching, holding or storing lobster must comply with the requirements for rock lobster pots.
125. If that is not the case it is then a question of determining whether the new method falls within any of the other definitions under the Regulations, such as "set net", "spear", "line", or "ring pot", and so additional restrictions are imposed.

Conclusion

126. Having considered the MFish legal opinion the NRLMG accepted it as suitable working definitions for Fisheries Officers and concluded that no changes to the relevant regulations were required. The NRLMG agreed to maintain a watching brief on the use of alternative capture methods, and the desires of the amateur fishing sector for a regulatory review.

Recommendation

127. The NRLMG recommends that the Minister:
- a) **note** the conclusion of the NRLMG review of amateur methods used in rock lobster fisheries.

3.3 CATCH IDENTIFICATION

128. In 2003 the NRLMG reviewed recommendations that in 2001 and 2002 were deferred by MFish for further consideration. MFish did not assess the recommended telson clipping initiative as having high enough priority to proceed in 2002 or 2003 (when balanced against available resources and all other regulatory amendment proposals).
129. The NRLMG therefore agreed to defer any further advocacy for the telson clipping recommendations pending more detailed investigation and evaluation of a comprehensive range of catch identification methods.
130. To this end, an NRLMG Catch Identification Sub-Group comprised of NRLMG members was established late in 2003. During 2004 the Sub-Group exchanged ideas and preliminary views, but as a consequence of internal reforms and re-organisation within MFish it has been difficult to coordinate the availability of staff and stakeholder representatives to complete the Sub-Group agenda.
131. The Sub-Group produced internal discussion documents and has met on only one occasion during 2004. The scope of the initial meeting was restricted to the role of catch identification in constraining illegal unreported removals from rock lobster fisheries. However the Sub-Group has acknowledged the wider application of catch identification technologies to identify, audit and monitor product source, product quantity and quality.

Recommendations

132. The NRLMG recommends that the Minister:
 - a) **note** the establishment of the Catch Identification Sub-Group, the members of which are drawn from NRLMG stakeholder representatives including MFish;
 - b) **note** the intention of the NRLMG to review and evaluate catch identification options.

3.4 DOMESTIC SALES OF ROCK LOBSTERS

133. In 2004 the NRLMG was asked to clarify the status of New Zealand and imported rock lobsters offered for sale to domestic wholesale and retail consumers. On behalf of consumers, concerns were expressed in regard to product quality and compliance and enforcement risks.
134. The NRLMG agreed that the appearance of relatively large volumes of Otago Concession rock lobsters in supermarkets and other fish retail premises was the catalyst for most enquiries and also agreed that an information sheet would be a useful reference for wholesalers, retailers and consumers.

Imported Rock Lobsters

135. Rock lobsters along with any other crustaceans imported into New Zealand, are considered “high risk” products for a food standards viewpoint. Both cooked and raw products fall under this “high risk” classification
136. The Food Safety Authority requires importers to comply with standards, with products having to display the necessary import certification (AQIS in the case of Australian lobsters), and/or be subjected to sampling and testing by Regional Health Authorities.

Labelling

137. Both New Zealand and Australia operate under a single Food Standards Code. Products imported for sale in New Zealand must on entry to New Zealand be clearly labelled in English with the product type.
138. Once distributed (e.g. from a bulk importer) to retailers for sale, where the lobsters are sold without packaging, it is not mandatory to display this information but the Public can request it.
139. Country of origin labelling at the retail level is a political (and cost) issue, and in New Zealand is currently not a requirement on other similar product releases from overseas.

Concession Rock Lobsters

140. Only Otago (CRA 7) concession lobsters can be sold on the NZ domestic market and then only if they are presented in a consumer pack. The Otago concession rules are set out in the Fisheries (South-East Area Commercial Fishing) Regulations 1986.
141. Selling Otago concession rock lobsters other than in a consumer pack is an offence attracting a fine not exceeding \$20,000. This applies to sales by a Licensed Fish Receiver (LFR) to a wholesaler or retailer, and a retailer to a consumer. The rock lobsters can be dead or alive, cooked or uncooked, when sold to the retail customer,

provided the lobsters are placed and sealed in the consumer pack at the LFR premises in Otago.

142. To comply with the law, a consumer pack must:
- i.) remain sealed (unbroken) until sold to a retail customer. The consumer pack cannot be opened to check for size (127 mm tail length) except by a Fishery Officer;
 - ii.) not exceed 1 kg in net weight. A consumer pack can therefore have any number of rock lobster or rock lobster tails up to a net weight of 1 kg;
 - iii.) be labeled with the processing company name, the Otago address, and net weight as a minimum. Additional branding labels can be attached as required by customers.

Recommendation

143. The NRLMG recommends that the Minister:
- a) **note** the issues in relation to the domestic sale of imported and concession rock lobsters and the rules that apply to Otago concession rock lobsters.

3.5 OTAGO (CRA 7) CLOSED SEASON

144. In July 2004 the Otago Rock Lobster Industry Association wrote to the NRLMG requesting that the NRLMG recommend amendments to Regulations that would remove the current seasonal closure that applies to commercial fishing. The CRA 7 fishery is closed to commercial fishing from November 20th to June 21st inclusive in every year.
145. The closure was implemented as a component of a CRA 7 Regional Harvest Initiative endorsed by the Minister of Fisheries in 1993 in response to his stated concerns over poor egg production from the Otago stock.
146. In the intervening years more knowledge has been gained about the biology and behaviour of Otago rock lobsters and the current management approach is unrelated to levels of egg production from the fishery. TAC and Sustainability decisions for CRA 7 are now guided by the operation of the NSS Management Procedure incorporating a harvest control rule that invokes TAC/TACC adjustments at predetermined intervals. This has been the case since 1997.
147. The seasonal closure has endured, but recent changes in export market timing and preferences mean that the closure now imposes significant constraints on the Otago rock lobster industry in regard to maximizing the value of production. Prices paid to CRA 7 fishermen for their catch in June, July and August are the lowest in New Zealand as a consequence of the mis-alignment of the catching season and the export opportunity. More value can be added to the fishery if the seasonal closure is revoked.
148. The seasonal closure has also acted to prevent the Otago industry from catching the allocated TACC in several seasons because there are insufficient fishing days available to them, a situation further exacerbated by adverse weather and sea conditions often encountered during the commercial season.
149. TACs and TACCs modified by minimum legal sizes (MLS) and method restrictions are intended as the primary constraints on removals, and given the economic cost to the CRA 7 industry, and the reliable operation of the NSS Management Procedure it is appropriate that this constraint on economic efficiency is removed at the first opportunity.
150. The NRLMG received the initial request from the Otago Rock Lobster Industry Association too late to have a regulatory amendment included in the MFish priority setting timetable for 2004. In which case there is no possibility of having the closure revoked in time for 01 April 2005. However, the NRLMG gives notice of the intention to evaluate a formal proposal for regulatory amendment and, if accepted, to progress it in the next round of the MFish priority setting process.
151. In the meantime the NRLMG will determine whether the rationale for the current seasonal closure is still relevant and has already requested that the Otago Rock Lobster Industry Association conduct a proper consultation with other stakeholder groups and

present a detailed proposal for Regulatory amendment to the NRLMG at the conclusion of that process.

Recommendation

152. The NRLMG recommends that the Minister:
 - a) **note** the industry proposal to remove the seasonal closure to commercial fishing in CRA 7 and the intention of the Otago Rock Lobster Industry Association to complete a consultation round with non-commercial stakeholders before presenting the proposal to the IPP process in 2005.

3.6 RESEARCH ACTIVITIES

2004 Rock Lobster Research Programme

153. The NZ RLIC completed the final sequence of the three-year CRA2000-01 Fisheries Services stock assessment contract in collaboration with NIWA, Trophica Research, StarrFish, and other parties, and has since commenced the first sequence of the three year CRA 2003-01 research contract.
154. NIWA continued the annual monitoring of rock lobster larval settlement.
155. MFish commissioned work to estimate the recreational harvest of rock lobsters in selected fisheries.
156. In March 2004 the NRLMG received a report authored by Dr Paul Breen – “Data needs associated with managing the environmental effects of fishing for rock lobsters (*Jasus edwardsii*)” – which will be useful in guiding future research planning.

Stock Monitoring

157. Industry logbook data from CRA 2, CRA 5, and CRA 8 continue to be incorporated into the stock assessment process. These programmes are supported by individual lobster fishermen who measure and record all rock lobsters in four designated pots each fishing day. The data, which are designed to be representative of the respective fisheries, are providing reliable and consistent information for stock assessments.
158. Sequences of stock monitoring are undertaken as Fisheries Research Services in CRA 1, CRA 2, CRA 3, CRA 4, and CRA 7.
159. Industry-funded technicians and administrative support staff continue to be employed in the Northland, Bay of Plenty, Canterbury-Marlborough, Chatham Islands, Otago, and Southern rock lobster fisheries.
160. Regional administrative and support staff are contracted and supervised by the NZ RLIC on behalf of industry. The NZ RLIC contracts Trophica Research to maintain the CRA Logbook database and to analyse and report logbook data to participants and to the annual assessment process.
161. The NZ RLIC and Trophica Research have implemented a web-based tag and release “track and trace” system that enables more timely reporting of tag recapture data by commercial and non-commercial extractive users. The system can be accessed at <http://tagtracker.trophica.co.nz/>.

Research Planning

162. In 2004, MFish again designated the NRLMG as the forum for the Rock Lobster Research Planning process. This process contributes to the MFish Business Plan. The NRLMG was selected as a model for fisheries research planning groups because of its

multi-sector representation and participation, and the degree of recognition given by the Minister when seeking TAC and sustainability advice.

163. The NRLMG sought and actively encouraged additional participants to the Rock Lobster Research Planning process that commenced in August and concluded with the Research Co-ordinating Committee submissions in October 2004. These included interest groups not directly represented on the NRLMG, and potential service providers.
164. The initial focus was to identify the information needs for rock lobster fisheries. The planning process also took account of the research projects in progress during 2004/05.
165. The NRLMG has previously confirmed a range of immediate and medium term research needs, the results of which will inform the Minister when making TAC and sustainability decisions, and may assist stakeholders wanting to develop and implement Fishery Plans.
166. The projects that are considered essential to the stock assessment and modelling, to the management procedures including harvest control rule evaluation and analysis and to management decisions are:
 - i.) stock assessment;
 - ii.) stock monitoring;
 - iii.) better non-commercial catch estimates including estimates of illegal removals.

Recommendation

167. The NRLMG recommends that the Minister:
 - a. **note** the scope of current rock lobster fisheries research;
 - b. **note** the level of industry involvement in stock monitoring, including catch sampling, Logbooks, and tag release and recapture, undertaken to MFish agreed standards and specifications; and
 - c. **note** the role of the NRLMG in the Rock Lobster Research Planning Process, the results of which form the basis of research services described in the MFish Business Plan.

3.7 MANAGEMENT PROCEDURES AND HARVEST CONTROL RULES

168. Harvest control rules for rock lobster fisheries were first implemented following agreement by the Minister 1993.
169. Generically the main benefit of harvest control rules and management procedures is that they enable the Minister's legislative obligations to be met in relation to sustainable utilisation while providing greater certainty to stakeholders over future management interventions.
170. Specifically, the benefits of harvest control rules are that:
- i.) they allow users to plan rationally;
 - ii.) they force stakeholders and managers to define management goals clearly;
 - iii.) they force stakeholders and managers to agree on data used in making decisions;
 - iv.) they force stakeholders and managers to establish clear rules in advance to guide management interventions;
 - v.) they incorporate uncertainty into the decision making process formally and objectively; and
 - vi.) they may act to increase the user's understanding and acceptance of decisions.
171. There are currently two types of decision rule in operation. The rule for the NSN and NSC substocks provides guidance, based on commercial CPUE, on when stock assessments should be undertaken. The decision rule does not provide guidance on management interventions, except that TAC changes should not be considered unless CPUE is significantly different from that in the reference year. The decision rule for NSN and NSC substocks was constructed to allow for increases in TACs where rebuild would not be significantly delayed by taking such an action.
172. The application of these decision rules will result in management action consistent with the Minister's legal obligations.

Recommendation

173. The NRLMG recommends that the Minister:
- a) **note** that management procedures continue to be evaluated to discover rules that deliver the desired outcomes while being robust to wide varieties of uncertainty.

Management objectives and associated performance indicators to be considered in development of harvest control rule candidates.

	Objective	Performance indicators
Yield	Maximise catch	Mean and median annual catch (t) Probability of falling below current TACC
Abundance	Maintain high abundance – there are economic, biological, and social benefits of high catch rates	Mean of CPUE (kg per potlift)
Stability	Minimise frequency of quota adjustments – a maximum of 3 to 5 years is preferred	Frequency of TAC adjustments Average annual variation in TACC (% AAV)
Safety	Minimise risk of low biomass levels	Probability of CPUE staying above the 1997 level
Diversity	Maintain a wide size range of lobsters – fishers are able to respond to changes in market demand	The proportion of lobsters in the catch that weigh 1kg or greater (%)
Rebuild	Maximise rate of rebuild	Mean annual percentage increase in CPUE Time to rebuild (yrs)

3.8 NSS BIO-ECONOMIC MODELLING

174. In 1997 the NSN (CRA 1 and CRA 2) and NSC (CRA 3, CRA 4 and CRA 5) stocks had decision rules created for them that triggered a stock assessment if CPUE dropped below prescribed levels. The NSS (CRA 7 and CRA 8) was brought into a more prescriptive rule that automatically adjusted TACs/TACCs in order to rebuild to a set level in a set amount of time.
175. By 1999 a number of concerns were being expressed by both the CRA 7 and CRA 8 industry stakeholder groups. CRA 8 expressed concern that the decision rule was not responding to apparent increased abundance. A subsequent analysis by stock assessment scientist Paul Starr projected a high probability of further TACC cuts because consecutive years of poor recruitment had put the actual rebuild well below the decision rule trajectory.
176. Target CPUE in the NSS decision rule appeared to be unrealistically high and CRA 8 questioned whether CRA 7 data was dragging down the performance of the rule. CRA 7 added their concern of potential management issues created by the CRA 7 TAC having to respond to Fiordland weighted data.
177. The NRLMG Report to the Minister in 2000 signalled the need for a new modelling approach. In the Minister's reply to the NRLMG, he -
 - i.) recognised the likelihood of further catch reductions as a consequence of the operation of the then current NSS rule;
 - ii.) asked the NRLMG to re-examine the NSS decision rule to ensure it was based on the best available information and provided for a reasonable balance between stock rebuild and socio-economic impact;
 - iii.) acknowledged CRA 7's concerns and invited proposals for alternative management approaches but expressed caution about any shift from the combined (NSS) management regime given the inter-relationship of the stocks.
178. The NRLMG supervised the development of a **Rebuild Management Procedure for NSS** based on CRA 8 CPUE with a revised target. The NRLMG recommended and the Minister agreed to adopt this procedure conditional upon a review in 2007, or sooner if the CPUE target of 1.9 kg per pot lift is reached.
179. Under this procedure, once the target CPUE is met the NSS sub-stock is deemed to be "rebuilt," and a revised Management Procedure incorporating a "maintenance rule" will be introduced. This is different to a "rebuild rule" as it aims to maintain the CPUE at an agreed level once "rebuild" is confirmed.
180. In anticipation of a more enduring NSS management strategy the NRLMG and the Minister agreed this NSS Management Procedure to be an appropriate interim position that would allow time to consider the results and the implications of the

Alternative Management Strategies report and the subsequent bio-economic modelling.

181. Concurrent with the development of the NSS Management Procedure the project entitled "*Evaluation of Alternative Management Strategies for NSS*" was commissioned by the Otago Rock Lobster Committee and the CRA 8 Management Committee. This project was undertaken as an industry-funded collaboration between the respective Committees and the SeaFIC Fisheries Economics Group and Trophica Research.

The NSS Bio-Economic Model

182. In 2004 the collaborative group developed a bio-economic model of the NSS fisheries. The model is a very sophisticated computer program that simulates the future performance of the NSS fishery under a range of catch scenarios. This modelling approach using both biological and economic data inputs is rare if not unique in fisheries management globally.
183. The most important aspect of the model that needs to be clearly understood is that the model is not a crystal ball; it does not predict the future in absolute terms. What the model does do is allow a comparison of the biological effects (abundance levels etc) and economic consequences of different management strategies, in order to make proactive rather than reactive decisions
184. An operating model (computer simulation) was developed that described the spatial structure and movement dynamics of the NSS fisheries, recruitment dependence, area specific fishing mortality etc. in order to compare the relative performances of a number of management options identified by NRLMG.
185. It was also recognised that this model could, with the right inputs, analyse the economic consequences of the options in order to assist with a socio-economic impact report.
186. The model is constructed in two parts:
 - a) **Part 1.** The biological sub-model is a spatial, sex and length-structured simulation model of the fishery. Three separate lobster populations and fisheries are simulated, representing Otago, Stewart Island -Foveaux Strait, and Fiordland.
 - b) **Part 2.** The economic sub-model uses catch and CPUE from the biological sub-model to calculate revenues and costs. It calculates total revenues and total costs separately for each of four fleets for each year of the simulation.
187. The model can show comparative outcomes using:
 - *Net Present Value* – where the opportunity cost of money over time is factored in.
 - *Seasonal Shift* – assessing the economic effect of catch timing.

- *Uniform Catch Value*- measures price for grade for season effect.
 - *Vulnerability to Price* – looks at how sensitive the comparisons are to revenue levels.
188. To inform decisions on future research needs the model was run using the Rebuild Management Procedure to bring the NSS stock up to three different levels of abundance - CPUEs of 1.7, 1.9, and 2.1kgs per pot lift - then run with a Maintenance Management Procedure to hold it at or about the target level.
189. This process was repeated using two different management options for the NSS stock: *Separate* and *Amalgamated*.

Separate Management:

- CRA 8 with the current Management Procedure
- CRA 7 with a constant exploitation harvest strategy and annual adjustments.

Amalgamated Management:

- Joining the CRA 7 and CRA 8 fisheries together to form what would effectively become CRA NSS - with a standardised minimum legal capture size set at the existing CRA 8 MLS (54/57mm TW).
190. Preliminary results from this innovative modelling work were presented to the Otago and Southland rock lobster industries in June 2004, and the project itself was reported to the NRLMG in July. Industry representatives confirm that the Otago rock lobster industry has a unanimous preference for the amalgamation option to be invoked once the NSS stock moves into maintenance mode. The CRA 8 industry however has been less enthusiastic about the amalgamation option and currently has a preference for separate management. Discussions are continuing within and between the Otago and Southland industries to reach consensus.

Recommendation

191. The NRLMG recommends that the Minister:
- a) **note** the development of the bio-economic model and the future management options being considered by commercial stakeholders in CRA 7 and CRA 8;
 - b) **note** that the bio-economic model extends the utility of the current NSS Management Procedure in that it anticipates a maintenance strategy for CRA 7 and CRA 8 once the NSS stock is rebuilt;
 - c) **note** that the work commissioned by industry will not affect the operation of the NSS Management Procedure for 2006/07, and that the calculation will be run during 2005 using CPUE data from the three most recent fishing years; and

- d) **note** that the NRLMG will provide more detailed advice on options for the NSS in the 2005 Annual Report.

3.9 STOCK ASSESSMENT OVERVIEW

Status of the Stocks

Introduction

192. In recent years the RLFAWG has reported assessments for individual stocks (CRA 3 in 2001, CRA 1 and CRA 2 in 2002, CRA 4 and CRA 5 in 2003)
193. CRA 9 is considered a separate entity within the NSI stock but is not assessed. CRA 10 is neither assessed nor included in the NSI stock because there is no fishing in the area.
194. The Chatham Islands (CHI–CRA 6) stock appears to be genetically the same as the New Zealand stocks. Changes in the CHI stock abundance are unlikely to affect the NSI stocks. CRA 6 is considered separately for stock assessment purposes.
195. There is only one species of packhorse rock lobsters in New Zealand, considered to be a single stock (PHC 1) and it appears to be genetically distinct from that in Australia. No assessment has been undertaken for this stock.
196. The stock assessment for CRA 3 was updated and reported to the Mid-Year Fishery Assessment Plenary in November 2004. No assessments were done for any other rock lobster fisheries in 2004. Both the NSN and NSC rules were evaluated and not triggered. The NSS Management Procedure is currently in the “latent year” and will not be operated until 2005.

Species	Quota Management Area	Stock	Fishstock Substock
Spiny Rock Lobster	Northland	NSI	CRA 1 } NSN
	Bay of Plenty		CRA 2 }
	Gisborne		CRA 3 }
	Wellington/Hawkes Bay		CRA 4 } NSC
	Canterbury/Marlborough		CRA 5 }
	Otago		CRA 7 } NSS
	Southern		CRA 8 }
	Westland/Taranaki		CRA 9
Kermadec	-		CRA 10
Chatham Islands	CHI	CRA 6	
Packhorse R/L	All NZ Fisheries waters	PHC 1	PHC 1

Reference points

197. In the absence of stakeholder group agreed management strategies, and in the absence of estimates of the biomass that could produce the maximum sustainable yield, the NRLMG believes that biological reference periods provide appropriate alternatives for management consideration for the reasons outlined in the discussion that follows.

198. To assess the status of a stock, the RLFAWG selects two estimates of “vulnerable biomass” as reference points, to use as indicators of stock status. These reference points are:
- i.) Vulnerable biomass for a selected period in the history of the fishery (the reference period), and
 - ii.) Vulnerable biomass as at 01 April in the year the assessment is done.
199. Vulnerable biomass is the quantity of stock available to the fishery: the weight of lobsters above the MLS, excluding berried females, as modified by selectivity at size and seasonal vulnerability to capture and removal.
200. When selecting reference periods the RLFAWG and the NRLMG are considering a number of important factors:
- i.) a period for which good data are available from which to estimate vulnerable biomass;
 - ii.) a period during which the fishery was well developed, but by no means fully developed – the fishery has continued to produce catches after the end of the reference periods;
 - iii.) a period in which the biomass was relatively stable.
201. Recent assessments (CRA 4 and CRA 5 in 2003) provided an indicator that is the average biomass from a reference period. For simplicity this is referred to as *Bref*. This is the biomass level calculated from the average start-of-season vulnerable biomass for the reference period. In assessments and model projections, *Bref* is a reference biomass, and can be regarded as the “fishable” biomass.
202. *Brefs* are neither the highest nor lowest biomass levels that have been experienced and observed in the CRA areas for which reference periods are chosen. In every case, stock abundance has fallen lower than the *Brefs* and biomass has increased from those lower levels.
203. For the CRA 3 assessment in 2004 a new reference biomass was defined: the mid-season vulnerable biomass associated with a CPUE of 0.75 kg/potlift. This catch rate occurs at a higher biomass than the CRA 3 reference biomass agreed in the 2001 stock assessment (equivalent to a CPUE of 0.57 kg/potlift).
204. The lowest biomass observed anywhere in the history of the fishery is suggested as the “limit” reference point – *Bmin*. In compiling advice to the Minister, the NRLMG has determined that the probability of being below that reference level should be small (<10%). In simple terms the limit *Bmin* is an undesirable stock status.
205. The NRLMG has therefore adopted *Brefs* as “target” reference points because, in the absence of estimates of *Bmsy*, they provide credible and practical benchmarks of sustainability and utilisation against which management actions that are consistent with legislative obligations can be recommended to the Minister.

Recommendation

206. The NRLMG recommends that the Minister:
- a) **note** that assessments were updated in 2004 for CRA 3;
 - b) **note** the detail of the CRA 3 stock assessment in the Mid-Year Fishery Assessment Plenary Report (November 2004) [Annex 1 to this Report];
 - c) **note** the discussion in this report related to the use and choice of reference periods, and in particular the distinction between “target” and “limit” reference points;
 - d) **agree** the choice of reference periods used for stock assessments, noting that the goals of sustainability and utilisation are encompassed in the reference points used in catch projections;
 - e) **agree** that no sustainability issues for any stock (other than CRA 3) require action for the 2004/2005 fishing year;

3.10 SUSTAINABILITY DECISION - CRA 3

Introduction

207. The full text of the "Report from the Mid-Year Fishery Assessment Plenary, November 2004", describing the CRA 3 stock assessment, is attached to this Report as Annex One.
208. The suite of input and output controls that constitutes the current CRA 3 management regime is discussed below.
209. The 2004 stock assessment identified a sustainability concern for CRA 3. This report describes that issue and makes proposals to address it.

Proposals

210. Following discussions among the CRA 3 industry, customary and amateur representatives, and MFish, it is proposed that to meet the Minister's legislative obligations for the fishery the CRA 3 aggregate catch be reduced for 2005/06.
211. CRA 3 commercial stakeholders have developed a set of management objectives for the CRA 3 fishery that are generally agreed by customary and amateur representatives, and in early 2005 these will be incorporated into an operational management procedure strategy for evaluation by the RLFAWG. The NRLMG will then recommend an appropriate CRA 3 Management Procedure to guide sustainability decisions for 2006 and beyond.

Background

212. The existing CRA 3 management regime has evolved from that implemented in April 1993, which itself was an outcome from a combined user group who considered management actions to address the then depleted state of the fishery.
213. The package of measures implemented in 1993 comprised a 50% TACC reduction, an adjustment to the MLS for commercial fishing in winter, seasonal closures, and measures intended to reduce handling and predation mortalities and constrain illegal unreported removals.
214. Stock abundance in CRA 3 began to increase almost immediately and TACC increases were made in 1996/97, 1997/98, and again in 1998/99. In addition, some of the regulatory provisions were amended, notably the closed seasons that prohibited commercial fishing from 01 September to 31st January and amateur fishing from 01 September to 30th November. The regulation prohibiting commercial fishers landing legal female rock lobsters during the months of June, July and August in any year was also removed.
215. No other changes were made other than a voluntary closure to commercial fishing from 15th December to 15th January when amateur fishing is at its peak.

216. In November 1999 the Te Tapuwae o Rongokako marine reserve was declared across a 2,400 hectare area that historically had provided approximately 10% of the CRA 3 commercial landings. The fishing fleet reliant in whole or in part on those fishing grounds was forced to relocate elsewhere in the fishery. The consequences of that relocation, coupled with a steady decline in stock abundance since the 1997/98 fishing year have occasioned a detailed review of current CRA 3 stock status and management arrangements.

Allocations to sector groups

217. A TAC of 453 tonnes was set for this fishery on 01 April 1999. Separate allowances of 20 tonnes each were made for amateur fishing and customary fishing. Allowances for other sources of mortality, including illegal removals, were made at 86 tonnes. The Total Allowable Commercial Catch (TACC) was set at 327 tonnes. No changes have been made to allowances since, but the CRA 3 Industry implemented a voluntary reduction in the commercial catch target (from 327 tonnes to 210 tonnes) as from 01 April 2004 out of their concern for the status of the stock.

218. Commercial catches from the CRA 3 fishery are detailed by Table 1 below.

Table 1: TACCs, season duration (months) and Catches 1988/99 to 1999/2000

Season	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	03/04
TACC	331	164	164	164	205	225	327	327	327	327	327	327	327(210)
Months	12	6	6	6	6	6	6	6	6	6	10	10	10
CATCH	191	181	161	155	204	223	326	326	328	290	291	216	-

Data obtained from Rock Lobster Fishery Assessment Working Group (2004) and MFish

219. Estimates of amateur catches have been made based on telephone and diary surveys completed in the Central region during 1992–93, the 1996 National Diary Survey and the 2000 National Recreational Fishing Survey. These various surveys all have problems, and MFish has not accepted results from the last survey. A 20 tonne allowance is provided within the TAC. The RLFAGW considered the various estimates and agreed to assume that amateur catches are close to the allowance of 20 t, and have been at this level throughout the fishery.

220. The 2004 CRA 3 stock assessment used an estimate of 20 tonnes for customary harvest based on advice from MFish and discussion in the RLFAGW. A 20 tonne allowance is provided within the TAC.

221. The illegal catch estimate for the 2003–04 fishing year supplied by MFish compliance is 89.5 tonnes, of which about 3 tonnes was estimated to have been included in the other

catch estimates. The 2004 stock assessment used these estimates and the MFish estimates for previous years.

222. The 2004 stock assessment model also takes into account a handling mortality (exerted on sub-legal and berried female lobsters returned to the sea) as a proportion of overall fishing mortality to the stock.

Stock assessment results for 2004

223. Modelling was undertaken in 2004 using a revised length based model. The stock assessment used data from the commercial catch history, early estimates of catch per vessel-day, later data on catch per potlift, size data from voluntary logbooks, market sampling and observer catch sampling, a pre-recruit index from the observer catch sampling, and tag-recapture data.
224. The model was very similar to that used in previous assessments, and the major change was that the model addressed the Te Tapuwae o Rongokako Marine Reserve, established in 1999. The RLFAWG considered three possible effects of the reserve:
- i.) a stock-recruit effect, through which increased egg production in the reserve might lead to increased recruitment in CRA 3;
 - ii.) a yield-per-recruit effect, through which reduced fishing mortality in CRA 3, as a result of a partial refuge, could increase yield-per-recruit through interchange of animals between the fished stock and the marine reserve; and
 - iii.) removal from the fishery of a portion of the stock and the ground it occupies.
225. The Working Group saw no basis for modelling hypothesis *i*) given the wide dispersal of larvae and the small area of the reserve relative to the areas of settlement. The Working Group noted that *ii*) implicitly assumes growth over-fishing and that significant interchange of lobsters occurs between the remaining fished stock and the new reserve. There is no evidence for the first assumption, and movement data collected by DoC (D. Freeman, DoC, pers. comm.) do not support the second.
226. The Working Group agreed to implement the third effect (*iii*), which is the simplest of the three hypotheses and possibly the most conservative, by removing an agreed percentage (10%) of the stock from the fishery in 1999 and assuming that recruitment to the model drops by that same percentage in subsequent years. Effectively, this hypothesis assumes that the stock has become smaller as a result of establishing the marine reserve.
227. For the 2004 assessment the Working Group re-examined the performance indicators used in previous assessments. To assess the status of the stock, the RLFAWG chose two estimates of “vulnerable biomass” (vulnerable biomass refers to rock lobster that are available to be legally harvested) as reference points:
- i.) **Bref:** for this assessment a new reference biomass was defined: the mid-season vulnerable biomass associated with a CPUE of 0.75 kg/potlift. This catch rate occurs at a higher biomass than the reference biomass for CRA 3

agreed in the 2001 assessment (equivalent to a CPUE of 0.57 kg/potlift). The RLFAWG and Stock Assessment Plenary accepted this new reference level as an appropriate short-term target for the fishery, and noted the lower associated risks inherent in this choice of target catch rate. An MFish harvest strategies workshop in November 2004 also expressed its approbation; and,

- ii.) **Bmin:** mid-season autumn-winter vulnerable biomass in 1992, which was the period of lowest estimated vulnerable biomass in the fishery.
228. The stock assessment modelling suggested that the current vulnerable biomass (mid-season autumn vulnerable biomass from 2004) was 203% of Bmin (5th to 95th percentiles were 157% to 263%) and that it was 60% of Bref (5th to 95th percentiles were 47% to 77%).
229. Forward projections were also used to estimate Bproj, the mid-season biomass in autumn-winter 2007, using the same catch estimates as for 2003, the same seasonal split of catches as for 2003, and the recruitment patterns seen in 1991-2000. This was 119% of current biomass. However, the range between the 5th and 95th percentiles was very large (40% of current biomass to 281%), indicating substantial uncertainty in the projections.

Uncertainty from the data

230. The CRA 3 assessment, although an improvement on earlier assessments in many ways (reflected in the various diagnostics discussed by the RLFAWG), was uncertain in several respects.
231. The RLFAWG used retrospective analysis to test the robustness of the 2004 model and results. This involved using the 2004 stock assessment model with data up to 2001 to see if the results of the assessment changed. The analysis suggested that the recent biomass estimates from the 2004 stock assessment are substantially lower than those from the same model fitted using only data through 2001. Estimates of earlier biomass are nearly identical. This showed high model sensitivity to the recent data.
232. The RLFAWG agreed on its prior belief in a low natural mortality rate (with a mean of 0.12) in CRA 3. However, the model results suggested a much higher rate (median near 0.30).
233. Sensitivity trials involving the handling of mortality rate, selectivity and growth rate also showed some model sensitivity to these choices, although the RLFAWG agreed that the best choices had been made. Despite the uncertainty discussed above, the conclusion that the stock size is probably well above Bmin appears to be robust.

Uncertainty in the projections

234. The second and much greater source of uncertainty is seen in biomass projections to 2007. Previous assessments made 5-year projections, but the envelope of possible results was considered too large to be useful for management, and the RLFAWG agreed to base the assessment on 3-year projections. Because recruitment patterns are

so variable, projections have the wide range of possible outcomes seen in Table 2: in three years the vulnerable biomass could be less than half the current biomass or almost triple.

Effect of the Marine Reserve

235. The effect of the new marine reserve in CRA 3 was addressed by assuming that 10% of the stock (both new recruitment and adults) was fully protected in the reserve and not available to the fishery. This assumption is uncertain, although the two most obvious alternatives seem unlikely.

Purpose and Principles of the Act

236. It is a requirement of the 1996 Act to maintain the potential of fisheries resources to meet the reasonably foreseeable needs of future generations. In determining management action, consideration needs to be given to the impact of the possible decline of the CRA 3 stock for future generations. Simulations indicate that reductions in aggregate removals will enable the stock to move towards the target reference biomass within a reasonable timeframe. The base case projections show the 2007 recruited biomass at 72% of the target biomass.
237. The proposed CRA 3 Management Procedure should ensure even greater certainty of a stock rebuild that will meet the needs of future generations.

Information Principles (S 10)

238. The catch levels recommended by the NRLMG (including 190 tonnes for commercial catch) are projected to move the stock to 80.3% of the target biomass within three seasons. The projections show an increase in stock abundance in a median 67% of the model runs. Based on the current best available information the NRLMG believes that the recommended catch levels are consistent with the information principles and will provide appropriate surety that the stock will rebuild towards the reference biomass.

Environmental considerations

239. The provisions of the Fisheries Act 1996 contain specific obligations relating to the aquatic environment and the effects of fishing. The statutory obligations are in the form of generic principles that need to be taken into account, namely:
- i.) adverse effects of fishing on aquatic environment are to be avoided, remedied, or mitigated;
 - ii.) biological diversity of the aquatic environment should be maintained;
 - iii.) habitats of particular significance for fisheries management should be protected; and
 - iv.) associated or dependent species should be maintained above a level that ensures their long term viability.

240. Potting is the only method used by commercial fishers to harvest rock lobster in CRA 3. There is little information available on the impact of this method on the aquatic environment. However, it is considered unlikely that this method has a demonstrable adverse effect on the environment in CRA 3. Research undertaken in South and Western Australia suggests that there is little or no impact on seaweed and other benthic communities, including fragile coral reef ecology, from rock lobster potting.
241. There is little information available on the impact of rock lobster fisheries on associated and dependent species, biodiversity or habitats of significance. Catch Effort Landing Return (CELR) information indicates that there is no aggregate bycatch of any associated and dependent species in CRA 3 greater than 1 tonne.
242. No habitats of particular significance for fisheries management have been identified within CRA 3.

Sustainability Measures (S 11)

243. Section 11(1) of the 1996 Act requires the Minister when setting or varying a sustainability measure, to take into account any effects of fishing on any stock and the aquatic environment, the natural variability of the stock concerned, and any existing controls under the Act that currently apply to the stock or area concerned.
244. The NRLMG does not consider that the bycatch taken by potting in CRA 3 has any adverse effect on the sustainability of the species (conger eels, octopus, sea perch). Bycatch of octopus from rock lobster fisheries represents a significant proportion of reported total catch of this species. There is likely to be under reporting of bycatch of this species because of its low commercial value. It is not known whether current catches are sustainable.
245. The adverse effects of fishing on the aquatic environment are discussed in the previous section.
246. The Minister is required to consider the natural variability of the stock before making decisions on management actions.
247. The base case projections reported in the 2004 assessment rely on an assumption the future recruitment (at 32 mm TW) would be similar on average to that in the period 1991-2000 with variability as seen in those ten years. However recruitment in those years is not necessarily a good basis for the prediction of future recruitment.
248. Puerulus settlement data for the NSC (CRA 3, CRA 4, and CRA 5) to the end of 2002 show that there was a strong settlement pulse in the early 1990s, followed by lower settlement up to 1999. From 2000 there has been a recovery in settlement levels, with 2001-03 near the long-term average.
249. The Minister is required to take into account the existing management controls that apply in this fishery before determining management action. In CRA 3 the MLS for rock lobsters is based on a tail width of 52 mm for male lobsters in the months of June,

July and August for commercial users only. The MLS for commercial and amateur users is otherwise set at 54 mm TW for male lobsters and 60 mm TW for females.

250. A closed season during the month of May applies to commercial fishing in CRA 3. In addition to the regulated commercial closure in May of each season the CRA 3 industry also observes a voluntary commercial closure from December 15th to January 15th. This closure was implemented in consultation with amateur fishing representatives in 2002 and is intended to reduce spatial and gear conflicts and competition for catches between commercial and non-commercial users in the peak summer holiday season.
251. In addition, several areas of the CRA 3 coastline, including but not limited to the 2,400 hectare marine reserve, are closed to commercial fishing.
252. No seasonal or area closures apply to customary or amateur fishers in CRA 3 other than the marine reserve. For recreational fishers the MLS is 54 mm TW for male lobsters and 60 mm TW for females. The amateur daily bag limit for the CRA 3 fishery is six rock lobsters per person per day.
253. A number of generic management controls apply in CRA 3 as well as other rock lobster fisheries in New Zealand. Taking egg bearing female lobsters is prohibited. Fishers are prohibited from landing rock lobsters that are soft-shelled, damaged (unable to be measured), or dead. Each rock lobster pot is required to meet specifications set out in regulations. These specifications include the use of escape gaps and the size of mesh. It is illegal to harvest rock lobsters using a baited net or spear. Potting is the only authorised method for commercial fishing in CRA 3.
254. Based on the best available information, the NRLMG believes that adjustments to catches will better achieve a reduction in removals from the CRA 3 fishery rather than any alteration to existing input controls.

Management options

255. The base case projections derived from the 2004 stock assessment confirm that total removals should be constrained to 339 tonnes in each fishing year to 2007. The NRLMG commissioned additional projections based on the CRA 3 assessment in 2004. The projections confirmed that greater certainty was assured to stock rebuild if catches were reduced. Using the base case as a benchmark, the NRLMG considered catch scenarios that involved:
 - i.) reducing commercial catches only;
 - ii.) reducing commercial catches and illegal removals.
256. The NRLMG concluded that greater certainty is given to reversing the apparent decline in stock abundance by constraining total removals to a lesser amount. The NRLMG has determined that an aggregate limit of 319 tonnes should enable the stock decline to be reversed and place the fishery on track to move substantially towards the target reference point in three years.

257. The NRLMG concluded that there was no practical method of effecting or determining the extent of reduced illegal unreported removals from the CRA 3 stock. The allowances for illegal removals used in the assessment and the projections are only estimates and the NRLMG agreed that greater certainty was found in reducing the commercial catch target in order to reduce aggregate removals to recommended levels.
258. However, the NRLMG advice is based on results from the assessment and the projections that are made under the assumption that aggregate catches are effectively reduced and constrained to the levels shown. The assumption is very important, because projections are sensitive to catch. In recommending a reduction in the target commercial catch the NRLMG highlights the importance of ensuring that the allowances made for customary, amateur, and illegal unreported removals are not exceeded if intended improvement stock abundance is to be achieved.

Table 2: Catch projections – commercial catches with no change to non-commercial removals:

NOTE: 210 (89) is the base case for the model projections.

Catch level	210 (89)			190 (89)			170 (89)		
	0.05	Median	0.95	0.05	median	0.95	0.05	median	0.95
UNSL_proj	4.3%	8.1%	17.5%	4.1%	7.6%	16.7%	4.0%	7.2%	15.4%
USL_proj	18.8%	41.5%	98.9%	16.8%	35.2%	97.0%	14.9%	30.1%	80.0%
Bproj	70	237	620	76	265	652	94	293	683
Bproj/Bcurr	39.9%	118.9%	281.2%	44.2%	132.8%	295.6%	53.8%	147.3%	309.9%
Bproj/Bmin	72.4%	243.5%	636.8%	78.7%	271.6%	667.8%	96.6%	299.8%	698.5%
Bproj/Bref	21.4%	72.0%	187.6%	23.1%	80.3%	196.9%	28.4%	88.6%	206.1%
%Bincrease		59%			67%			74%	
%>Bmin		86%			91%			95%	

Catch Setting Considerations

259. The Fisheries Act 1996 contains an obligation for the Minister to consider the status of a stock relative to the biomass that can produce the maximum sustainable yield and to make adjustments to removals to ensure that a stock is maintained at or above that level. The RLFAWG and NRLMG use Bref as a surrogate for Bmsy, as a target reference point. This was discussed at an MFish workshop in November 2004 and is not considered controversial.
260. The RLFAWG and NRLMG also use a limit reference point, Bmin, a level that future stock should never fall before. The Bmin reference point provides a useful comparison of the current status of the stock against the lowest recorded level of biomass (in 1992).
261. The recovery observed since 1992 indicates that the stock can recover from a reduction to biomass down to 1992 levels. However, the amount of yield that could be taken from a stock at the Bmin level to allow a rebuild is low. Reduction of the stock biomass to this level would have severe economic impacts on commercial fishers and result in much lower catching opportunity for stakeholders. Management action

should be designed to ensure that current biomass is maintained well above this level. The stock assessment estimates that the current mid-season vulnerable biomass is 203% (median) of biomass in 1992 (5th to 95th percentiles are 157% to 263%).

262. Projections of the base case model with 210 tonnes of commercial catch suggest that biomass after three years would remain above B_{min} in 86% of runs; or that biomass would fall below B_{min} in 14% of runs. However, the NRLMG considers that a 14% risk of falling below B_{min} is too high, and that this risk should be reduced to 10%.
263. The current biomass is less than the target, B_{ref}, with a median of 60% (5th to 95th percentiles are 47% to 77%). Projected biomass, using current catch estimates, has a median of 72% of B_{ref} (5th to 95th percentiles are 21% to 188%). Thus the median expectation is that biomass will move toward B_{ref}, but this is very uncertain. The effect of alternative catch levels on this probability is shown in Table 2..
264. To provide for better management of the fishery, the NRLMG proposed in 2001 that the stakeholders agree on a set of management objectives for the fishery to be incorporated into an operational management procedure. This has been addressed, and a management procedure will be designed and evaluated by the RLFAWG in early 2005.

CRA 3 Management Procedure

265. In 2005 the NRLMG will consider and recommend an “operational management procedure” for managing commercial catch in the CRA 3 fishery. This will be a decision rule that has been extensively evaluated through computer simulations, using the CRA 3 stock assessment as the operating model.
266. The management procedure will be designed by the stock assessment team under Objective 6 of the CRA2003-01 contract. The evaluation will explore a variety of alternative candidate rules, based on how well they deliver fishery objectives involving safety, (in many ways this is a form of risk analysis), stability, yield and the speed of rebuild to the target biomass. The ability of alternative rules to deliver the targets will be compared, and the final choice of management procedure will be recommended to the Minister by the NRLMG.
267. As in the NSS Management Procedure, changes to the catch will not necessarily be mandated each year, and change may be buffered in other ways as well.

Interdependence of Stocks

268. The NRLMG notes that there is no information available relating to the specific relationships between rock lobsters and other species.

Biological Characteristics and Environmental Conditions

269. The productivity of a fish stock is an important biological characteristic to consider in determining how quickly a fishery may be able to be moved towards a reference biomass. Longevity and growth rates are important considerations in determining the productivity of each species. Male and female lobsters in CRA 3 both reach about 38

mm carapace length (CL) one year after settlement and about 58 mm CL after two years.

270. The size at 50% female maturity in rock lobsters is less than the MLS of 60 mm TW and in CRA 3 most females breed at least once before reaching MLS.
271. Section 1 of this Annual Report discusses the environmental factors that might effect larval distribution and recruitment in rock lobster fisheries.

Social, Cultural and Economic Factors

272. The proposed reduction to the CRA 3 aggregate catch and the recommended reduction to commercial catches should be considered in the context of the catches reported for the two most recent seasons. In real terms the NRLMG recommendation of 190 tonnes would reduce the current commercial target of 210 tonnes by 20 tonnes. The CRA 3 Industry have met several times in recent months to review future management options for the fishery and remain committed to maintaining catch levels that will move the stock towards the agreed 0.75 kg/potlift target within a reasonable timeframe. Industry representatives have advised the NRLMG that the CRA 3 industry understands and accepts the need for further constraints.
273. However, industry representatives also reinforce the importance of ensuring, when reducing commercial catch, that the allowances made for customary, amateur, and illegal unreported removals are not exceeded if the intended improvement in stock abundance is to be achieved.
274. The NRLMG proposes two options for achieving the necessary CRA 3 catch reduction. Stakeholders have a preference for what is referred to as the annual catch entitlement (ACE) “shelving” option, whereby the CRA 3 Industry reduces the commercial catch target to the required level by way of entering into forward ACE transactions with an independent non-fishing third party, through FishServe⁵. This was the method used to reduce the 2004/05 catch target.
275. The second option is to effect a TAC reduction by reducing the TACC. There are a number of fishery specific factors that influence the impact of TACC reductions on the quota share and ACE prices. These include but are not limited to:
 - i.) the likelihood of future TACC changes;
 - ii.) whether the TACC is constraining catch;
 - iii.) the numbers of ACE dependent operators in the fishery; and
 - iv.) the behaviour of quota share owners to TACC reductions, i.e. whether they wish to continue to own quota shares in the face of possible future reductions to the TACC.
276. The economic impact of a TACC reduction as it relates to quota share and ACE values in the CRA 3 fishery will be partially mitigated because catches in the two most recent

⁵ Commercial Fisheries Services Ltd.

seasons have been below the TACC. However a TACC reduction will have the greatest effect on individual QSOs and fishermen who fully utilise their quota shares and ACE. A TACC reduction of the magnitude required would also have a significant impact on the balance sheets of quota share owners from the reduction in asset. Based on the current value of CRA 3 quota shares the asset value of the proposed reduction is \$32.9 million.

277. Based on the current port prices, and taking account of the current commercial catch target of 210 tonnes, the cost to fishermen as a consequence of the proposed TACC reduction will be \$560,000. ACE dependence will further increase and greater competition for available ACE will increase the operating costs of the remaining fishermen and reduce profitability. Industry representatives estimate that the CRA 3 fleet would decline to less than 30 vessels (currently 39) as a consequence of a TACC reduction due mainly to the increased dependence on ACE to maintain a viable economic fishing unit.
278. Most of the CRA 3 commercial catch is exported, with an estimated total value of \$6.1 million. The CRA 3 fleet has a wide geographical distribution and is economic importance to several small communities such as Tokamaru Bay and Mahia, as well as to the port of Gisborne. The fishery supports processing and export facilities in Gisborne (2), Wellington (1), Tauranga, (2) and Auckland (2). Processors are unlikely to be greatly affected by a reduction in throughput as a result of a TACC reduction given the current and recent landings.

Shelving versus TACC reduction

279. The NRLMG is in agreement about the need to reduce removals from this fishery and recommends constraining commercial extractions to 190 tonnes with no changes to other existing allowances. The NRLMG identified two options for achieving this objective:
- i.) Option 1 is to set a TAC at 319 tonnes and make allowances of 20 tonnes for customary fishing, 20 tonnes for amateurs, 89 tonnes for other sources of fishing related mortality (illegal removals), and set the TACC at 190 tonnes, in accordance with S 13 of the Fisheries Act 1996.
 - ii.) Option 2 is to retain the existing TAC, TACC and allowances but to constrain commercial catch to 190 tonnes (or a level you agree to) through an ACE shelving arrangement developed and administered by the NZ RLIC for the CRA 3 Industry. This option was successfully implemented for the 2004/05 season.
280. The details of the proposed ACE shelving arrangement are:
- i.) before final advice is due to be presented to the Minister the CRA 3 quota share owners (QSOs) would have entered into forward ACE transfers and appropriate caveats so as to reduce the available ACE for the 2005/06 season to 190 tonnes. The amount of ACE required to confirm the catch reduction

will be contractually transferred to an independent non-fishing third party – it is proposed to again use the NZ Rock Lobster Industry Council;

- ii.) all transactions will be lodged with FishServe;
 - iii.) once those transactions are confirmed the Minister can have absolute confidence that the 190 tonnes catch cannot be exceeded – only sufficient ACE to balance that catch will be available to the industry;
 - iv.) if the required commercial catch target has not been confirmed by the time that final advice is due, the NRLMG will then make a single recommendation for a TAC reduction by way of the recommended TACC reduction;
 - v.) during 2005 the NRLMG will recommend a CRA 3 management procedure to the Minister for use in future TAC and sustainability decisions. If the operation of the management procedure confirms the need for similar catch reductions in 2006/07 (which is likely) the CRA 3 QSOs will again enter into forward ACE transfers on the same basis.
281. The recommended TAC, TACC, and allowances are consistent with your legal objectives and would be implemented through notice in the Gazette. This is the MFish preferred option.
282. MFish does not yet have a definitive ACE shelving policy and there is no precedent for using ACE shelving as the primary sustainability measure in any fishery. Industry representatives submit that ACE shelving is consistent with the underlying intentions of the rights-based fisheries management regime in that it creates greater incentives for commercial rights holders, and the users of those rights, to ensure the rebuild of depleted stocks. The NRLMG would like more time to explore the ACE shelving option further. The NRLMG will provide additional information as part of the final advice on this fishery.
283. The NRLMG agrees that should the Minister decide to proceed with the proposed TAC reduction to 319 tonnes following further advice from the NRLMG in February 2005, the CRA 3 TACC should be reduced to 190 tonnes from April 2005.
284. The NRLMG proposes that the current allowances for customary and amateur remain unchanged from April 2005.
285. The NRLMG proposes that the allowance for other sources of fishing related mortality (illegal removals) be increased from 86 tonnes to 89 tonnes from April 2005.

Recommendation

286. The NRLMG recommends that the Minister:
- a) **note** that for CRA 3 the model results suggest that the levels of catch used in the assessment appear to be sustainable, but that any increase in future catch levels would result in an increased probability of a decrease in biomass;

- b) **note** that the base case model projections to April 2007 using 2003/04 catch levels, 59% of the model runs resulted in a biomass greater than the current biomass, Bcurr. 86% of model runs resulted in a biomass greater than Bmin. The median of all model runs shows an April 2007 biomass at 72% of the target biomass, Bref;
- c) **note** that in principle the NRLMG would prefer an even chance (50% probability) of being at the reference biomass level in the longer term;
- d) **note** that the NRLMG would ensure a very high probability (90%) of the CRA 3 stock being above the limit reference point Bmin;
- e) **note** that a catch reduction of 20 tonnes than that used in the base case projection will provide greater certainty (91%) of the CRA 3 stock being above Bmin and should take the stock to 80.3% of Bref in three years;
- f) **agree** an aggregate catch reduction to 319 tonnes, comprised of allowances of 20 tonnes for customary harvest, 20 tonnes for amateur catches, 89 tonnes for other sources of fishing related mortalities (illegal removals) and a commercial catch limit of 190 tonnes;
- g) **note** that the NRLMG proposes two options to effect that catch reduction –
 - i.) to reduce the TAC from 453 tonnes to 319 tonnes and agree that within the new TAC the allowances made for customary and amateur should remain unchanged, the allowance for other sources of fishing related mortalities be increased to 89 tonnes, and the TACC set at 190 tonnes; **or**
 - ii.) to make no change to the TAC or to the current allowances but allow the ACE shelving option described above to effect the necessary catch reduction;
- h) **note** that in proposing option ii) above the NRLMG will confirm that the required ACE transactions have been completed when compiling final advice in February 2005;
- i) **note** the discussion in relation to the choices between TAC setting and alternative limits on catches and allow the NRLMG to provide additional advice on these matters in February 2005;
- j) **note** that during 2005 the NRLMG will provide a recommendation for a CRA 3 Management Procedure that will guide future TAC and sustainability decisions for the fishery.

Part Four

ONGOING ROCK LOBSTER ISSUES

4.1 UNCERTAINTY IN ESTIMATES OF TOTAL REMOVALS

Overview

287. Accurate information about total removals is necessary to enable appropriate management decisions to ensure sustainability. Information on the level of commercial removals is collected by the Quota Management System (QMS) reporting system. However, the infrastructure for collecting information on amateur, customary, and illegal removals is poorly developed.
288. The lack of accurate information on non-commercial and illegal catch contributes to the uncertainty of the stock assessment, detracts from the effectiveness of agreed harvest strategies, and undermines the incentives created by the QMS.
289. In the case of rock lobster fisheries, to allow any or all of the individual catch components to increase without control will jeopardise the rebuild strategy and erode existing harvest rights and opportunities. No control is possible if catch components are unknown. No effective control is possible if catch components are uncertain.
290. Because the catch projections contained in stock assessments are made under the assumption of constant catches fixed at levels used in the assessment, an increase in future catch levels would result in an increased probability of a decrease in biomass and likely lower future biomass.
291. There is clear evidence of significant uncertainty associated with non-commercial removals from rock lobster fisheries and this situation has potential to confound the reliability of stock assessments, and to confound the expectations of, or to compromise the implementation of, regional harvest initiatives and/or Fishery Plans.
292. In the case of those stocks generally regarded as “shared fisheries”, or those where stock abundance is less than optimum and high levels of non-commercial fishing activity are evident, the need for reliable and credible non-commercial catch data is urgent.

Customary Harvest

293. There is minimal information on customary non-commercial harvest even though customary fishing regulations have been promulgated. In the South Island the *Fisheries (South Island Customary Fishing) Regulations 1998* became law on 20 April 1998. Customary fishing regulations for the North Island and Chatham Islands, the *Fisheries (Kaimoana Customary Fishing) Regulations 1998* came into force on 1 February 1999. The regulations become effective in different areas as nominated representatives of the tangata whenua are appointed.
294. The North Island and South Island customary regulations provide for quarterly reporting of permits issued for customary fishing purposes. Information derived from those permits is intended to improve the estimates of the level of customary harvest

and although all available information has been presented to the RLFAWG there is no information available from areas still managed under Regulation 27.

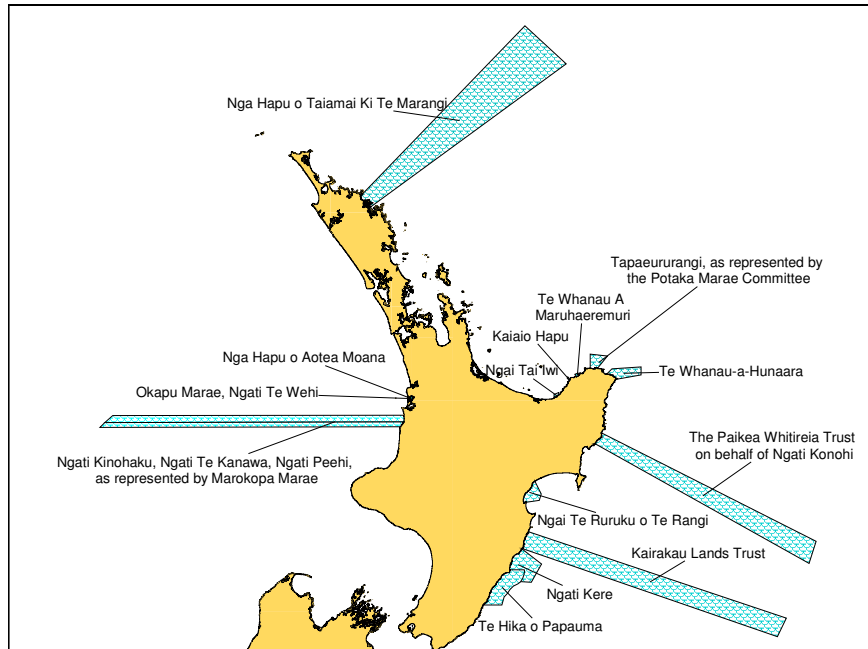


Figure 1 - Gazetted Kaitiaki Areas - North Island – August 2004

Amateur Harvest

295. MFish telephone, diary and ramp surveys have provided some amateur landing data from which estimates have been derived. Estimates of amateur harvest exist only for recent years and the results of the amateur catch surveys commissioned by MFish in 2000 remain highly uncertain and are not used in stock assessments. For the most recent rock lobster stock assessments the RLFAWG has assumed amateur catches and the trends in those catches over time.

Illegal Take

296. The level of illegal removals from NZ rock lobster fisheries, previously estimated to be 378 tonnes nationally, and updated to 60 tonnes and 52 tonnes for CRA 4 and CRA 5 respectively in 2003 and 89.5 tonnes for CRA 3 in 2004, remains of concern to the NRLMG.

297. MFish Compliance undertook a detailed analysis of information in 2004 and provided updated point estimates of 'unreported' illegal removals whilst advising the NRLMG and RLFAWG that *"the estimates cannot be verified and have an associated low level of confidence"*. Estimates of illegal take are highly uncertain. The RLFAWG has very little confidence in them.

Recommendation

298. The NRLMG recommends that the Minister:

- a) **acknowledge** that accurate and reliable data for all sectors are essential to the stock assessment process;
- b) **acknowledge** that accurate and reliable data for all sectors are essential to the fishery management decision making process, particularly in circumstances where catch reductions are considered necessary to maintain or improve stock abundance;
- c) **ensure** that sufficient resources are deployed by MFish to monitor non-commercial removals from rock lobsters fisheries in order to maintain the integrity of the TACs set for stocks and to maintain the integrity of the allowances made to extractive users within the TACs and the fishing opportunity associated with those allowances;
- d) **note** that the NRLMG recommends that greater emphasis should be placed on the full implementation of the North and South Customary Regulations.

4.2 COMPLIANCE AND ENFORCEMENT ISSUES

Illegal Removals

299. The NRLMG has consistently stated that reduced illegal fishing activity will facilitate attainment of the goal of the framework for managing rock lobster fisheries and improve harvest opportunities for legitimate extractive users.
300. Industry, customary, environmental, and amateur fishing representatives on the NRLMG have consistently expressed the view that Government should make a greater contribution to the existing Compliance budget and therefore enable more resources to be deployed into minimising illegal removals from the rock lobster fisheries.
301. Industry, customary, and amateur fishing representatives on the NRLMG agree that better compliance could be attained if rock lobster compliance strategies were developed and implemented.

Recommendation

302. The NRLMG recommends that the Minister:
 - a) **note** the significance of the illegal catch component and its negative effect both on the stock and on legitimate extractive users;
 - b) **note** that all user groups recommend that the Minister take steps to ensure that compliance strategies and services (including enforcement and education services) are sufficient to minimise illegal catch;
 - c) **ensure** that sufficient resources are deployed by MFish Compliance to constrain illegal unreported removals in the first instance to the levels of the allowances made in setting TACs, and ideally to much lower levels so as to improve the quality of the fishing experience to be enjoyed by legitimate users.

4.3 ALLOCATION PRINCIPLES

303. The NRLMG is agreed that the current fisheries management regime aims to achieve sustainable utilisation by controlling total removals to levels which allows stocks to move towards optimum levels. Total removals are expressed as the TAC.
304. The Fisheries Act requires that when recommending any variation in the TACC after having regards to the TAC, the Minister must allow for non-commercial interests in the fishery. However, the Act does not provide guidance as to amount that should be allowed.
305. Courts have determined that legislation does not require the Minister to give priority to amateur fishing over commercial interests or that the allowance must fully satisfy amateur requirements, and that it is not outside or against the purposes of the Act for the Minister to allow a preference to non-commercial fishing when setting TACCs.
306. Courts have also determined that a Minister should not reduce the TACC for conservation reasons unless he is able to take, and he does take, reasonable steps to avoid the reduction being rendered futile through increased amateur fishing.
307. Consistent with those Court decisions, MFish holds the view that, when a TAC is set, the Minister will have an obligation to consider controls to constrain amateur fishing limits within that allowance, but that it is not intended to constrain customary harvest.
308. The Court held that there was no implied duty for the Minister to fix or vary the amateur allowance at any particular proportion of the TACC or the TAC. The appropriate allocation is a matter for the Minister's assessment bearing in mind all relevant considerations on each occasion the Minister revisits the issue.
309. Unconstrained increases in legitimate take by any sector, or illegal take by fish thieves, will potentially have a number of consequences. These are:
 - a) a risk that the TAC will be exceeded;
 - b) a risk that the stock will decline or that a rate of increase will be reduced;
 - c) an erosion of other sector group fishing opportunity;
 - d) an erosion of the value and utility of the quota fishing right;
 - e) a possible failure of an agreed management plan; and
 - f) an obstacle to reaching a useful harvest initiative or Fishery Plan agreement within and between sectors.
310. In the case of rock lobster fisheries, to allow any or all of the individual catch components to increase without control will jeopardise the rebuild strategy and erode existing harvest rights and opportunities.

311. The NZRFC representatives wish to ensure that the amateur fishing right is not further eroded and therefore any increase in TACC needs to incorporate a concurrent increase in the amateur allowance required by the Act. In addition to such an increase they consider that the bag limits need upward adjustment to allow those fishers who take their limit to benefit from the increased abundance. They note that in the past the bag limit was reduced from ten to six rock lobsters for sustainability reasons and for that reason the reverse must occur.
312. Amateur fishing representatives consider that the legislation gives customary Maori rights and amateur fishing interests precedence over commercial rights. It is their submission that after setting a TAC the Minister must first satisfy all Maori and amateur expectations of catch allowance, then make allowance for *'other sources of fishing related mortalities'* including illegal catch, and having attended to those matters, allocate any remaining portion of the TAC to commercial users as the TACC for the fishstock.
313. Industry, Customary, and MFish representatives do not agree with that interpretation because it fails to give adequate recognition to the security of fisheries property rights already held by commercial users, including Maori, and the associated husbandry incentives. They do not believe that the amateur fishing view is consistent with the determination of the Courts.
314. Industry contends that by its very nature the TAC/TACC setting process allocates defined 'shares' of available harvest to extractive user groups based on the catches used in assessments. Further, the principle of proportional allocation of explicit catch allowances has been partially pre-determined by the existence of quota rights and a TAC. However, MFish notes that the Courts held that there was no requirement for proportionality in allocative decisions.
315. Industry is concerned that in the absence of sufficient information and the implementation of appropriate measures to constrain amateur catch to an allowance, and adequate constraints on illegal removals, a Minister may consider recourse to reducing TACCs in an attempt to hold total removals within the limit (TAC) required to ensure sustainability. If total non-commercial catch is not constrained, any TACC reduction may only facilitate an increase in non-commercial catch and illegal activity, through a relative increase in stock availability.
316. For this reason, industry representatives advocate a proportional allocation arrangement which allows each extractive user group to share in the available stock abundance and would therefore provide each legitimate sector with an incentive to protect and enhance their respective harvest opportunities.
317. These issues apply to other than rock lobster fisheries. Nonetheless, the debate has raised issues of fairness and equity. In those rock lobster fisheries such as CRA 1 and CRA 2, where industry suggest an increasing proportion of the total catch is being taken by non-commercial fishermen, allocation policies are of strong interest to commercial fishermen. In the absence of allocation principles, industry is concerned that any future actions required to maintain stock sizes could come at the expense of commercial operators and erode the property rights which are the foundation of the QMS.

318. Industry representatives acknowledge that rock lobster fisheries are 'shared' fisheries that have significant social and cultural values in addition to economic values. However, industry cannot support other than a proportional aggregate amateur fishing allowance within the constraints of a TAC. Industry also submits that the initial allowances made in the TAC setting process establish a 'benchmark' for shares of the available yield which can then become the basis for negotiation between user groups at a regional level as to future levels of access and use of rock lobster fisheries.
319. Industry submits that a formal allocation of 'shares' to amateur fishing provides an incentive required to bind that stakeholder group into an ongoing co-operative management, compliance, and research planning process at a regional level.
320. The NZRFC has noted the admission by the Minister and MFish that the amateur fishing right is poorly defined and poorly managed. They further note the admission that over a period the amateur fishing right has been eroded. The NZRFC accepted a challenge by the Minister and MFish to work jointly towards properly defining that right and setting an appropriate management structure.
321. Representatives of the NZRFC and officials from MFish formed the Recreational Rights Working Group (RRWG) to define the nature and extent of the amateur fishing right. The RRWG report was released for widespread consultation. The RRWG then reported to Cabinet with an analysis of the public submissions and recommendations. The Minister then established a Ministerial Consultative Group (MCG) that discussed the outcomes of public consultations and possible solutions.
322. Following consideration through the MCG process the Minister reported to Cabinet, who agreed objectives to provide a basis for continuing discussion and development of options for further public consultation.
323. The Minister established a "Rights Reference Group" to continue discussions and develop options for possible change. That Group reported to the Minister in October 2003 and is continuing in discussions.
324. The decisions announced to date by the Minister and Cabinet have not materially changed the uncertainty related to the nature and extent of amateur fishing rights.

Recommendation

325. The NRLMG recommends that the Minister:
 - a) **note** the positions of the stakeholder group representatives together with their concerns and urgently take steps to define the rights and allocative requirements needed for management of rock lobster and other fisheries resources.

Part Five

REGULATORY PROPOSALS

5.1 INTRODUCTION

326. During 2004 the NRLMG considered one proposal for regulatory amendment in April 2005. This was for a regulatory amendment to the Fisheries (Southland and Sub-Antarctic Areas Commercial Fishing) Regulations 1986 to Provide for the Domestic Sales of Southland Concession Area Rock Lobsters.
327. This Regulation proposal was submitted to the MFish Regulatory process (IPP) during 2004, but when balanced against available resources and all other regulatory amendment proposals the regulatory amendment was given a low priority and did not proceed. The NRLMG saw merit in this proposal and stakeholders are disappointed that it was unable to be progressed in 2004.

5.2 SOUTHLAND CONCESSION REGULATIONS

Proposal

328. The NRLMG has considered a proposal by the CRA8 Management Committee Inc. to amend the Fisheries (Southland and Sub-Antarctic Areas Commercial Fishing) Regulations 1986 to remove the provision preventing the domestic sale of Southland Concession rock lobsters.

Background

329. In 1988 the Fisheries (Southland And Sub-Antarctic Areas Commercial Fishing) Regulations 1986 were amended to provide for a concession to allow for the taking of female rock lobsters that were smaller than the national minimum legal size from the first of January 1989 to the 31st of April 1989, within the boundaries of the southern rock lobster fishery (quota management area CRA8). This area was defined in the amendment as the Southland Concession Area.
330. This original concession was extended during 1989, and following subsequent amendments, rock lobster fishers may now take female rock lobsters within the Southland Concession Area that have a minimum tail width of 57 mm for an indefinite period. The national minimum legal size for female rock lobsters is 60 mm TW. Therefore the concession applies to all female rock lobsters between 57 mm and 60 mm TW. These rock lobsters are commonly referred to as "Southland Concession rock lobsters", although this expression is not actually used in the Regulations.
331. At the time of the 1989 extension to the concession provisions relating to the processing and sale of Southland Concession rock lobsters were introduced. Included in these provisions was the requirement that all Southland Concession rock lobsters, or the tails, are exported. Specifically the wording of the regulation is:
- i.) *5E(1)(c) Any person who sells or possesses or processes any rock lobster or rock lobster tail pursuant to the authority of regulation 5B(2) or regulation 5C(2) of these regulations shall ensure, as far as that person is able that, except as otherwise authorised by these regulations,*
 - ii.) *The rock lobster, or tails, are either exported directly from a licensed fish receiver, or are delivered to an export transshipment point approved by the chief executive pursuant to subclause (2) of this regulation and in accordance with the terms and conditions of any such approval; and.....*
332. Clearly, the intention is that domestic sales of Southland Concession rock lobsters, or their tails, are prohibited.
333. There is an inequity in this situation in that Otago Concession Area rock lobsters (quota management area CRA 7) can be sold on domestic markets subject to certain constraints and conditions.

Problem definition

334. The current prohibition on the domestic sales of Southland Concession rock lobsters inhibits maximum economic value being gained from these lobsters and in some cases renders the product valueless. Business opportunity is constrained.
335. When the regulations were first promulgated for the Southland Concession Area there was a perception that to allow domestic sales of rock lobsters that were less than the national minimum legal size would provide the opportunity for rock lobsters to be introduced from other areas as purported Southland Concession rock lobsters. On analysis a size differential neither increases nor decreases any compliance risk as this opportunity to “top up” exists regardless of size restrictions.
336. In 1990 the Fisheries (Reporting) Regulations 1990 and the Fisheries (Record Keeping and Reporting) Regulations 1990 were introduced. These regulations increased the requirements relating to the production and retention of records and greatly enhanced the ability for the audit and monitoring of product flow. This level of compliance was not in place at the time of the introduction of the amendments providing for Southland Concession rock lobsters. Since 1990 these requirements have continued to be updated and strengthened.
337. The effectiveness of the Record Keeping and Reporting Regulations, and the additional requirements imposed on Southland Concession rock lobsters, further diminish the reasons supporting the continuation on the prohibition on domestic sales.
338. The Total Allowable Commercial Catch for CRA 8 is 603.7 tonnes. Of this 15 - 20% (90.5 – 120 tonnes) is Southland Concession rock lobster. At certain times of year the price realised in export markets is considerably less than that which could be gained on domestic markets. At times this differential is substantial with the export price being up to \$20 kg less than the domestic price. It is not possible to accurately quantify the increase in economic benefit, as the opportunity will vary from year to year. However it is reasonable to expect the minimum increase in benefit from the fishery to be in the vicinity of \$250,000.
339. At times rock lobsters are landed that are found to be unsuitable for export either live or when tailed. When this occurs with Southland Concession rock lobsters they become valueless. Lobsters in this condition that are larger than the national minimum legal size are readily sold on the domestic market.
340. The introduction of an amendment to allow licensed fish receivers the flexibility of selling Southland Concession rock lobsters domestically will provide the opportunity for maximum economic benefit to be gained from these lobsters.

Options for achieving the desired result

Non-regulatory measures

341. The current prohibition is due to the wording contained in regulation. Therefore it is not possible to achieve a result through non-regulatory intervention.

Regulatory measures

342. The change needs to strike the balance between providing for the business opportunity without compromising the integrity of the Southland Concession Area regime through increased compliance risk. An amendment that is consistent with the wording contained in the Fisheries (South-East Commercial Fishing) Regulations 1986 that provides for the conditions relating to the Otago Concession Area is suggested:
- a) to amend the current wording of the regulations to allow for domestic sales;
 - b) to provide for the requirement that all Southland Concession rock lobsters that are sold on the domestic market are contained within consumer packs;
 - c) to prescribe the requirements pertaining to consumer packs, including marking and the maximum weight of a consumer pack.
343. The CRA8 Management Committee Inc. considers the change is consistent with existing regulations. These regulations have proven to provide for the flexibility required by the CRA8 rock lobster fishing industry while maintaining an acceptable level of control and compliance.

Cost and Benefits of the proposal

344. An amendment as proposed should improve the ability of the CRA8 rock lobster industry to maximise the returns to be gained from the fishery.
345. As a result of the proposal Southland Concession rock lobsters may be encountered by MFish Compliance staff throughout the country, it is likely that there will be one –off costs involved in the education of MFish staff to the specifics of the amendment.
346. Apart from the one-off cost it is not anticipated that there will be any increase to the cost of enforcement.

Communication

347. Communication of the change would be required to both industry and MFish staff.

Discussion

348. The current prohibition prevents flexibility in sales strategies and constrains industry ability to maximise economic benefit from the utilisation of the TACC. The removal of the prohibition would enable both and also provide for consistency between the provisions relating to Otago (CRA 7) Concession lobster and Southland (CRA8) Concession lobster.
349. This proposal was first made to the NRLMG in 2003, was considered again by the NRLMG during 2004 and was submitted to the MFish priority setting process for evaluation. All members of the Group recognised the proposal had some merit. Members supported its progression, except the MFish representatives who felt the proposal in its current form represented an *ad hoc* approach to fisheries management as it only reviewed one aspect of the concession regulation regime.

350. MFish considers that *ad hoc* approaches which do not consider the broader context or alternatives to be inconsistent with the MFish Statement of Intent. However, because of the strong support for the proposal from within the NRLMG, MFish agreed to take the proposal in its current form to the April 05 priority setting process for consideration.
351. This MFish internal process allows MFish to compare all competing regulatory and other interventions and balance against the resources available. This proposal was classified as "*B - does not meet criteria for inclusion*" as it did not address a sustainability concern, was too *ad hoc*, and was inconsistent the MFish Statement of Intent. It was noted that to take advantage of utilisation opportunities such as identified through this proposal, the CRA 8 management committee should consider a robust fishery plan as an alternative.
352. MFish reported that when balanced against available resources and all other regulatory amendment proposals the regulatory amendment was given a low priority and would therefore not proceed.
353. The industry representatives on the NRLMG are disappointed by that response but unable to make any further progress until the next MFish priority setting round in 2005.
354. The NRLMG has noted that some of the issues relating to the domestic sales of concession rock lobsters are bound up in the work of the Catch Identification Sub-Group but also acknowledges the successful operation of domestic sales of Otago concession rock lobsters and the economic importance of that market to the Otago rock lobster industry.

Recommendation

355. The NRLMG recommends that the Minister:
 - a) **note** that the NRLMG saw merit in this proposal and that stakeholders are disappointed that it was unable to be progressed in 2004 and expect it to be reconsidered in 2005.

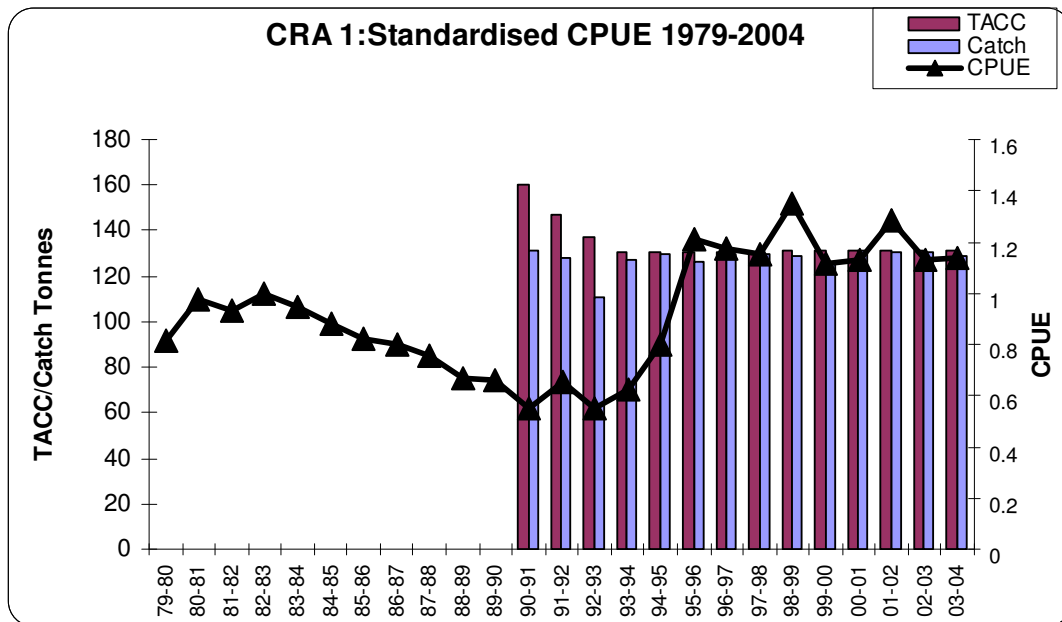
Part Six

STOCK SUMMARY

6.1 INTRODUCTION – STOCK SUMMARY

356. This section outlines the principal rock lobster fishing activities in each of the quota management areas and a brief summary of stock status taken from the most recent assessments.
357. The NRLMG has continued to encourage the formulation of fishery specific regional initiatives consistent with the guidelines established by the NRLMG in 1992. The Group is continuously revising and updating those guidelines to ensure consistency with new fisheries legislation and compatibility with the move to greater devolution of management responsibility to stakeholder groups.

6.2 CRA 1

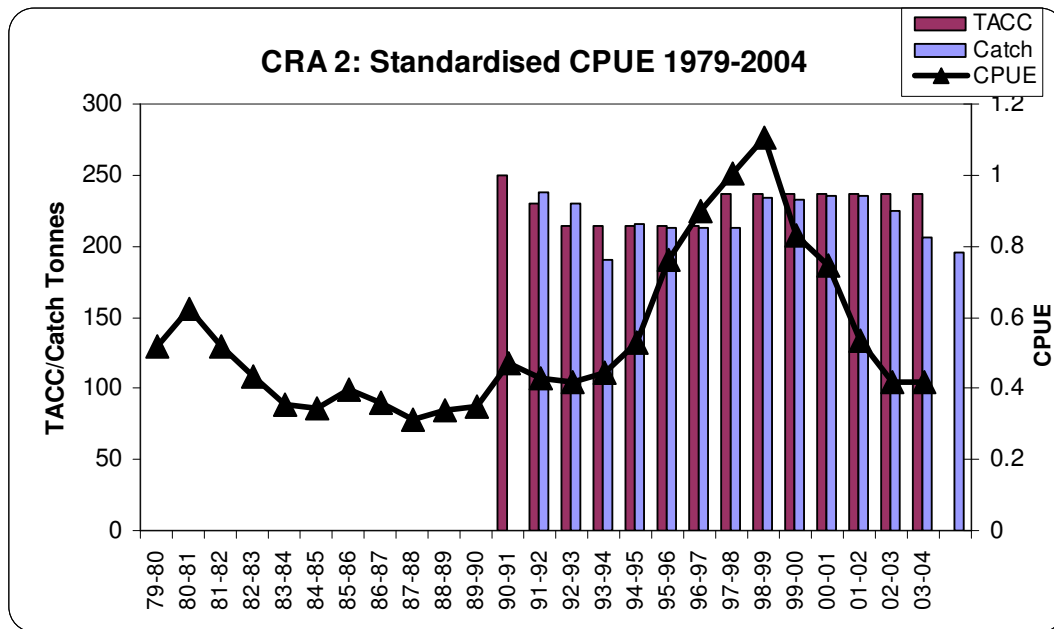


358. The CRA 1 fishery extends from the Kaipara Harbour on the west coast of the north island around North Cape and then south to Waipu. No TAC has been set for this fishery. The 130.46 tonnes TACC has remained unchanged since April 1993. The commercial fishery extends offshore to the Three Kings, but the bulk of the commercial harvest is taken from waters adjacent to the mainland.
359. CRA 1 is assessed using commercial catch and effort and quota monitoring report data. In addition, the CRA 1 commercial stakeholders group commissioned intensive catch sampling sequences for the fishery in the 1997/98 and 1998/99 seasons. CRA 1 stock monitoring was part of the CRA 1999–01 and CRA 2000-01 Research Services contracts and 60 catch samples and 7000 rock lobster tag and releases were completed from 2001 to 2003 inclusive. The CRA 2003-01 research contract provides for catch sampling sequences to be done annually until 2007.
360. The 130.46 tonnes CRA 1 TACC is distributed amongst 27 quota share owners. The TACC is harvested by approximately 16 permit holders. The landed value of commercial catch in CRA 1 is \$4.1 million (based on average port price paid to fishermen), making rock lobster an important contributor to the local and regional economy.
361. Amateur catch of rock lobster is estimated at 51 tonnes (MFish 1996). Diving using UBA is the predominant method used by amateur fishermen and women, although hand gathering, ring potting, and potting from vessels contributes to the amateur catch.
362. A large Maori population in the Northland region ensures that rock lobster retains significant customary value. No reliable estimates are available for customary catch. The progressive implementation of reporting procedures within the North Island

Customary Regulations might assist in future evaluations of customary harvest for the CRA 1 fishery.

363. CRA 1 is part of the NSN substock that was assessed in 2002. The model results showed that the April 2001 stock abundance was higher than in the 1979-88 reference period. Projections at the end of a five year period (April 2006) had a median expected biomass near the 2001 level if catches were constrained to the levels used in the assessment.
364. The assessment noted that these projections should not be considered reliable much beyond two to three years but CPUE has increased slightly and stabilised from 2001 to 2004, suggesting stable stock abundance.

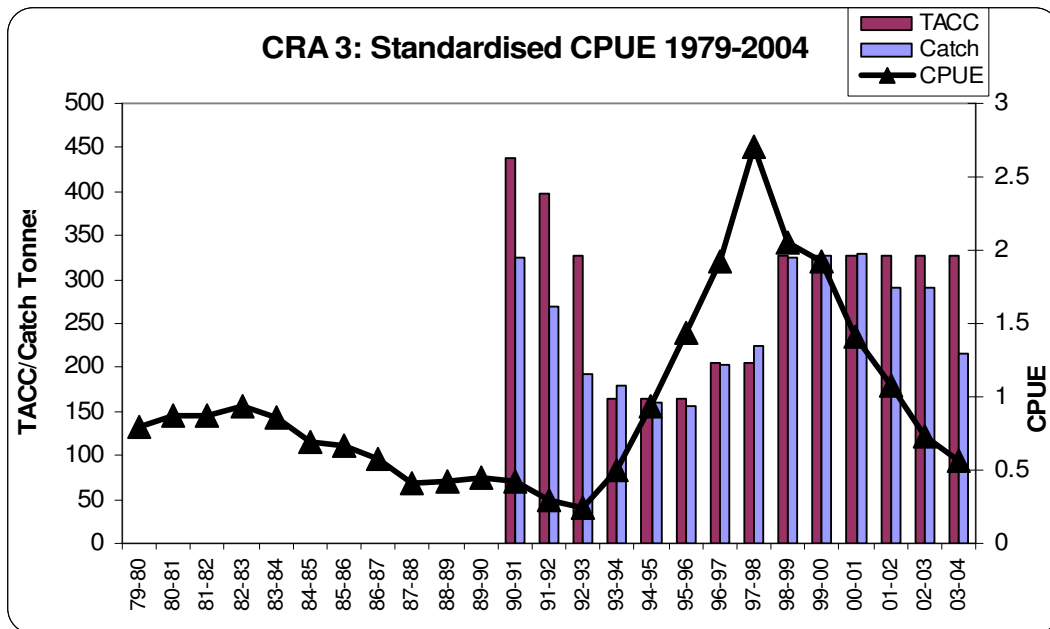
6.3 CRA 2



365. The CRA 2 fishery extends from Waipu through the Hauraki Gulf and Bay of Plenty to East Cape. The current 452.6 tonnes TAC for the fishery was set in 1997. The TAC is comprised of 140 tonnes for amateur catch, 16.5 tonnes for customary harvest and 60 tonnes for illegal removals. The current TACC is 236.1 tonnes.
366. The 236.1 tonnes TACC is distributed amongst 52 quota share owners. There are an estimated 34 vessels in the CRA 2 rock lobster fleet and the commercial season generally extends from June to January. The estimated landed value of the CRA 2 catch is \$9.3 million (based on average port price paid to fishermen) and the industry sustains a number of processing and export companies in Tauranga, Whitianga, and Auckland.
367. Amateur catch in this fishery is estimated at 140 tonnes (MFish 1996). Potting and diving are the preferred methods, and there is a large recreational charter vessel industry catering to the sector.
368. Customary catch is conservatively estimated at 16.5 tonnes. Anecdotal evidence in recent seasons suggests that the actual harvest may have been much greater. A large Maori population in the Bay of Plenty region ensures that rock lobster retains significant customary value.
369. The CRA 2 Rock Lobster Company Ltd is the representative commercial stakeholder group for this region. The Company has made significant investments in rock lobster research since its formation in 1995, including a comprehensive vessel logbook programme, tag and release projects, and sequences of intensive catch sampling to MFish standards and specifications. These data continue to be collected for use in the CRA 2 assessment.

370. Stock monitoring activities for the 2004/05 season included the continuation of logbook coverage, intensive catch sampling sequences within season, and tag recapture reporting.
371. The CRA 2 Rock Lobster Company Ltd has also endeavoured to develop and promote agreed compliance strategies for the CRA 2 fishery, and strengthen working relationships between sector groups.
372. CRA 2 was assessed as part of the NSN substock in 2002. The model results suggested stock abundance in April 2001 was higher than in the 1979-88 reference period. Projections at the end of a five year period (to April 2006) had a median expected biomass near the 2001 level if catches were constrained to the levels used in the assessment.
373. The assessment noted that these projections less reliable than for CRA 1, as the uncertainty of future recruitment had more impact on the short term projected biomass. CPUE for this fishery declined from 2001 to 2002, suggesting a decline in stock abundance, but then increased slightly in 2003. CPUE in this fishery has been variable over time since 1979/80.

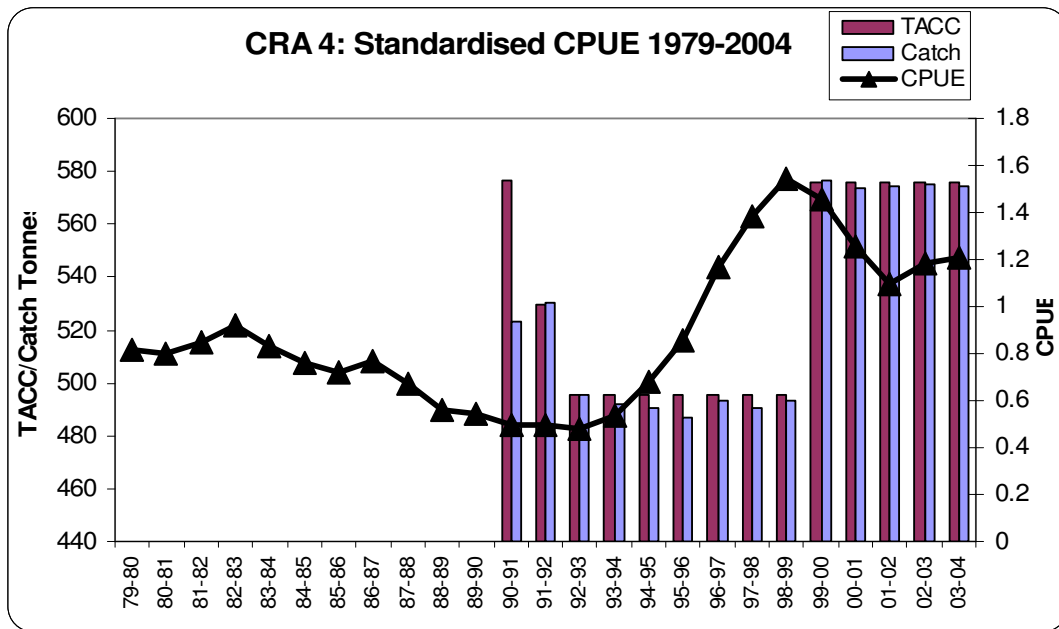
6.4 CRA 3



374. The CRA 3 fishery extends from East Cape south to the Wairoa River. The current 453 tonnes TAC was set in 1998. The TAC is comprised of a 20 tonnes allowance for amateur catch, a 20 tonnes allowance for customary harvest, an 86 tonnes allowance for illegal removals and a TACC of 327 tonnes. However the CRA 3 industry took a voluntary initiative to reduce the commercial catch target to 210 tonnes for the 2004/05 fishing year.
375. The TACC is distributed amongst 35 quota share owners. An estimated 39 commercial vessels reported CRA 3 landings in the 2003/04 fishing year. There is significant Iwi involvement in quota share ownership and fishing. The commercial harvest has a landed value of \$6.1 million (based on average port price paid to fishermen). There are two processing plants in Gisborne, and product is also shipped to Wellington, Tauranga and Auckland for processing and export.
376. Amateur catch is currently unknown but was estimated at 14 tonnes (RLFAWG 2001), although an allowance of 20 tonnes was made in the 1998 TAC decision. Potting and hand gathering are the preferred methods.
377. Rock lobsters have great cultural significance to local Maori and there is a very high level of customary harvest activity. Customary removals are uncertain although an allowance of 20 tonnes was made in the 1998 TAC decision.
378. Catches and catch rates have declined in recent seasons, and in 2003 the CRA 3 Industry Association took advice from fisheries research and management service providers and implemented an ACE shelving process to reduce the commercial catch target for the 2004/05 season and ensure a rebuild of stock abundance.

379. Shelving has been done by way of forward ACE transfers to an independent non-fishing third party – in this instance the NZ RLIC – secured by a consensual caveat on the numbers of quota shares needed to cover the ACE transaction.
380. A new stock assessment was done for CRA 3 during 2004. The projections from the assessment have used the 210 tonnes commercial catch target, along with other levels (see Table 2) and estimates of non-commercial, including illegal, removals. On the basis of those projections the NRLMG has made recommendations to the Minister to reduce CRA 3 catches to ensure sustainability.

6.5 CRA 4

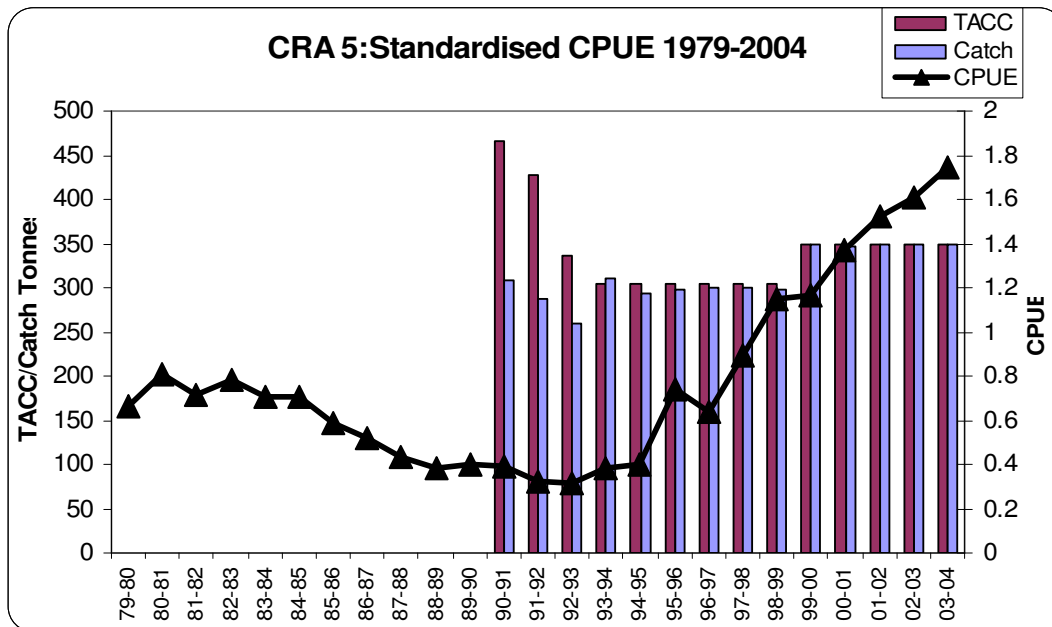


381. The CRA 4 fishery extends from the Wairoa River on the east coast, southwards along the Hawkes Bay, Wairarapa and Wellington coasts, through Cook Strait and north to the Manawatu River.
382. A CRA 4 TAC was first set in April 1999 and remains at 771 tonnes. In that decision the TACC was increased from 495.3 tonnes to 576 tonnes. Prior to 1999 the TACC remained unchanged since April 1993. Within the TAC a total of 85 tonnes is allowed for amateur catch and 35 tonnes for customary catch.
383. The 576 tonnes TACC is distributed amongst 89 quota share owners. The fleet comprised an estimated 65 vessels at the peak of the 2003/04 commercial season. The majority of vessels in the fleet operate from coastal bases in isolated rural areas. The CRA 4 commercial catch has a landed value in excess of \$18.4 million (based on average port price paid to fishermen) and supports several processing and export operations in Napier and Wellington, Auckland and Canterbury.
384. The amateur catch is estimated at 73 tonnes (MFish 1996). Potting and hand gathering are the preferred methods for amateur fishers in this area. As in most CRA areas, the majority of amateur catch is taken in the summer months when commercial lobster vessels are not operating. The region sustains a recreational fishing and dive charter industry during those months.
385. Customary harvest estimates for CRA 4 are not available, but the reporting requirements associated with the implementation of the North Island Customary Regulations should enable more informed decision making in future.
386. A comprehensive stock monitoring programme has been established in the CRA 4 fishery. There is a long time series of intensive catch sampling data from Napier,

Castlepoint, Cape Palliser, and the Wellington South coast. This series was extended in the current season with a total of 32 sample days completed for the period May to November 2004. Tag recapture data are being routinely reported by commercial fishermen.

387. The 2003 CRA 4 stock assessment is reported in detail in the RLFAWG 2003 Plenary Report.

6.6 CRA 5

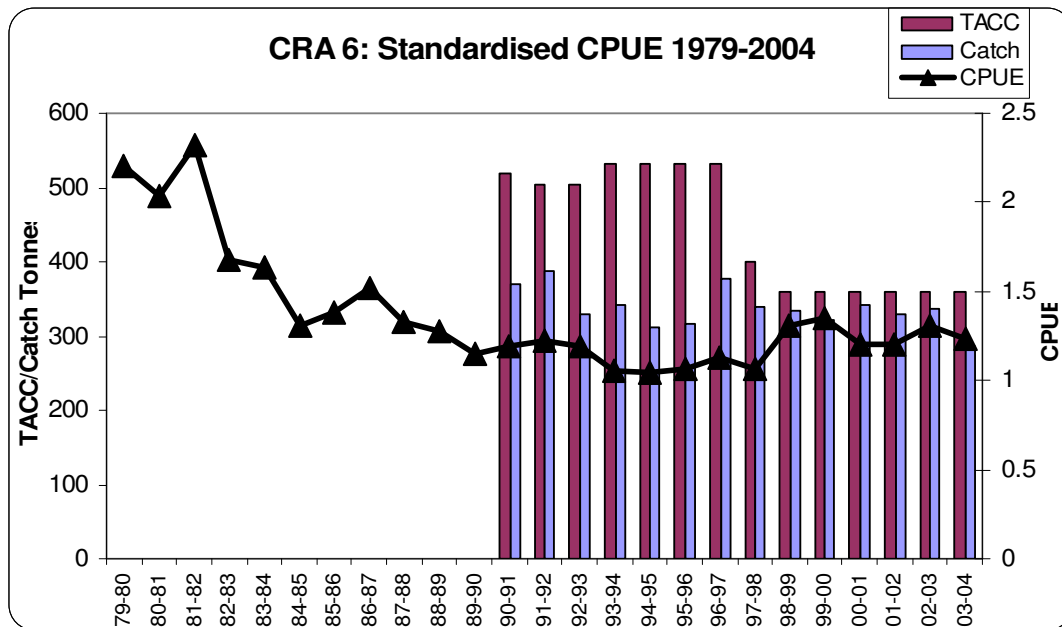


388. The CRA 5 fishery extends from the western side of the Marlborough Sounds across to Cape Jackson and then southwards to Banks Peninsula. There are three distinct regions of commercial fishing—Picton/Port Underwood, Ward, Kaikoura, Motunau, and Banks Peninsula, although some commercial vessels work the area from Nelson through to D’Urville Island. The bulk of the commercial catch is taken from the area bounded by Tory Channel in the north and Motunau in the south.
389. The current TAC of 467 tonnes was set in April 1999. In that decision 40 tonnes was allowed for amateur catch and 40 tonnes for customary catch. The TACC was increased from 303.7 tonnes to 350 tonnes.
390. There are 55 quota share owners in CRA 5. The fleet comprised an estimated 35 vessels reporting catch in the 2003/04 season. Many commercial vessels work off beaches between Port Underwood and Motunau. The landed value of the commercial catch was estimated at \$11.1 million (based on average port price paid to fishermen) in 2003/04, and the fishery supports processing and export facilities in Nelson, Ward, Kaikoura, and Christchurch
391. The CRA 5 industry members, through membership of their commercial stakeholder group CRAMAC 5, have encouraged and facilitated an ongoing dialogue with amateur fishing and dive clubs and with Iwi groups in the region. The responses to the process have been extremely encouraging in terms of future co-operative research and management initiatives.
392. Amateur catch is estimated at 35 tonnes (MFish 1996). The preferred methods for amateur fishing are potting and diving with UBA. The recreational fishing and dive charter industry is growing in the region. Dive clubs in the region have actively

reported tag recapture information and maintain an ongoing interest in the regional research programme.

393. There are no estimates for customary harvest in CRA 5.
394. CRA 5 has an intensive stock-monitoring regime in place. Intensive catch sampling and tag and release projects have been done as Fisheries Required Services, and CRAMAC 5 operates an extensive Vessel Logbook programme that provides data to the stock assessment process.
395. The 2003 stock assessment for CRA 5 is reported in detail in the RLFAWG 2003 Plenary Report.

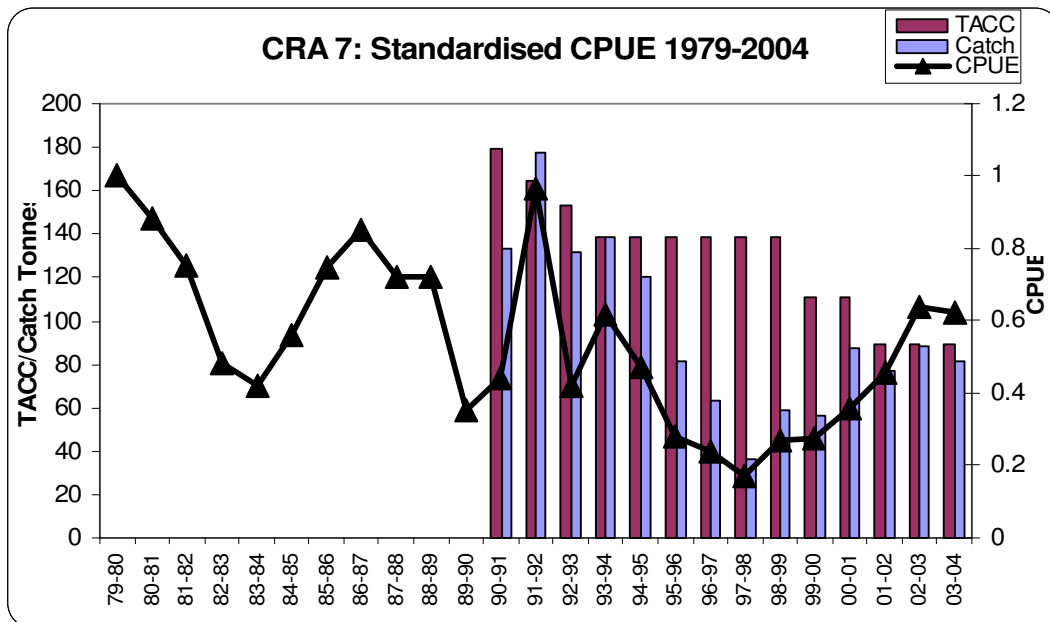
6.7 CRA 6



396. The region designated as CRA 6 is geographically very large, being all waters within a 200 nautical mile radius of the Chatham Islands and Bounty Islands, but the area being fished is restricted to a relatively narrow coastal margin adjacent to the Chatham Islands coastline.
397. The fishery is unique in that despite declines in landing and CPUE from historical levels, the lobsters caught generally comprise much larger size classes than are found in mainland fisheries. The reasons for the decline in catch and CPUE are unknown, and length frequencies of the landed catch have changed little since the development of this fishery. Previous RLFAGW reports have noted that the CRA 6 data are consistent with a stock model in which the biomass being fished is much smaller than the biomass of the contributing stock.
398. The abundance of the standing stock in CRA 6 is likely to be more dependent on immigration of larger lobsters into the area than it is on recruitment and growth. This reduces the likely effectiveness of management interventions.
399. For the 1998/99 fishing year a TAC of 370 tonnes was set. A total of 6 tonnes was set aside for amateur catch and 4 tonnes was provided for customary catch. The TACC was reduced from 400 tonnes to 360 tonnes in response to MFish concerns over declining landings and declining CPUE. The TAC and TACC remain unchanged.
400. An analysis of CPUE and catch against TACC was undertaken in 1998. The analysis indicated that when CPUE was standardised (takes into account changes in fishing patterns and numbers of vessels operating etc), as opposed to the use of raw data, catch rates in the fishery had not significantly declined over recent years.

401. CRA 6 is unique in that unlike all other CRA management areas, two harvest methods are allowed for commercial fishing. The bulk of the TACC is landed from vessels using pots, but there are limited numbers of dive permits issued for the fishery and divers take large quantities of lobsters in the summer months.
402. There are 49 CRA 6 quota share owners. The majority of quota is owned by mainland New Zealand interests. There are approximately 34 vessels reporting CRA 6 landings and the number of divers is unknown although only 11 of the original dive consents issued to qualifying persons between 1990 and 1993 were current during 2002-03. Additional divers operate under the authority of permits in the name of the consent holders. Tension between divers and pot fishermen has diminished over recent years.
403. The landed value of the commercial catch in 2003–2004 was approximately \$10.7 million (based on average port price paid to fishermen). The fishery supplies processing and export facilities on the Chatham Islands and in Auckland, Wellington, and Christchurch.
404. The CRA 6 Industry Association established a Fishermen’s Office at Waitangi in May 2000 and NZ RLIC contracted an administrative officer trained by FishServe to co-ordinate the distribution and collation of Catch Effort Landing Returns and Monthly Harvest Reports for delivery to FishServe.
405. There is no major research programme currently underway for the fishery because all previous research initiatives – intensive catch sampling, tagging, and juvenile abundance surveys – have delivered similar results. There are also high costs associated with research co-ordinated from the mainland. However, the CRA 6 Industry Association is monitoring a trial of Vessel Logbooks, such as used in CRA 2, CRA 5, and CRA 8, to collect size frequency and abundance information at sea.

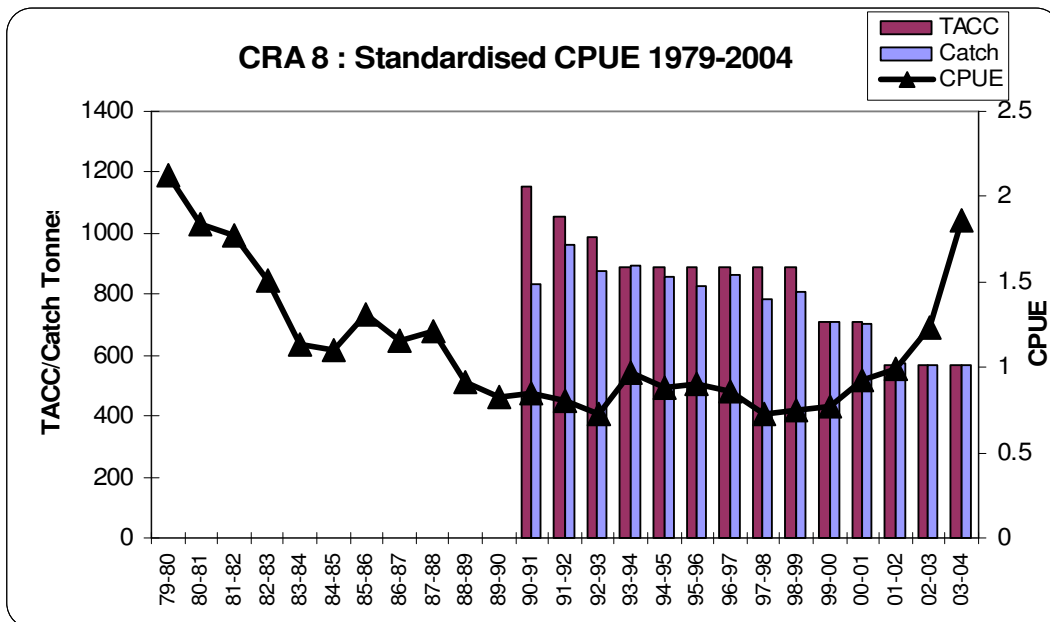
6.8 CRA 7



406. The CRA 7 fishery extends from the Waitaki River south along the Otago coastline to Long Point. In 2002, CRA 7 agreed to accept the new NSS management procedure proposed by the NRLMG and accepted by the Minister of Fisheries. Although the procedure is based only on CRA 8 CPUE and is designed to rebuild the CRA CPUE to target level, CRA 7 has agreed to accept TAC changes generated by this procedure.
407. At some time in the future, CRA 7 may develop and evaluate a management procedure specific to CRA 7. If this procedure is accepted by the NRLMG and the Minister, then CRA 7 may switch to that management procedure, leaving the current NSS management procedure to operate in CRA 8 only.
408. For the 2004/05 fishing year the TAC was set at 114.9 tonnes. A total of 5 tonnes was set aside for amateur catch and 10 tonnes was provided for customary catch. The TACC was set at 94.9 tonnes. The TAC/TACC adjustment was undertaken in response to the triggering of the NSS decision rule.
409. The CRA 7 commercial season runs from 21 June to 19 November inclusive and the MLS is a tail length of 127 mm for both male and female lobsters. The fishery is open to amateur fishing all year with a MLS regime of 54 mm tail width for males and 60 mm tail width for females. The CRA 7 fishery is unique in that a 'buffer zone', closed to commercial rock lobster fishing has been incorporated into the regional harvest initiative agreed by amateur and commercial users in 1993.
410. There are 35 CRA 7 quota share owners. In the 2003/04 season 16 commercial vessels reported CRA 7 landings. The landed value of the catch is estimated at \$1.6 million (based on average port price paid to fishermen). The CRA 7 catch is processed and exported or sold to the domestic market by several Dunedin fishing companies.

411. CRA 7 commercial interests are represented by the Otago Rock Lobster Industry Association. The association has a paid regional co-ordinator and also funds stock monitoring sequences to supplement work done as Fisheries Required Research Services. Intensive catch sampling is done in three 5 day sequences during the commercial season.
412. There is no estimate of amateur catch. The preferred methods for amateur fishing are potting and diving with UBA.
413. There are no estimates for customary harvest in CRA 7.

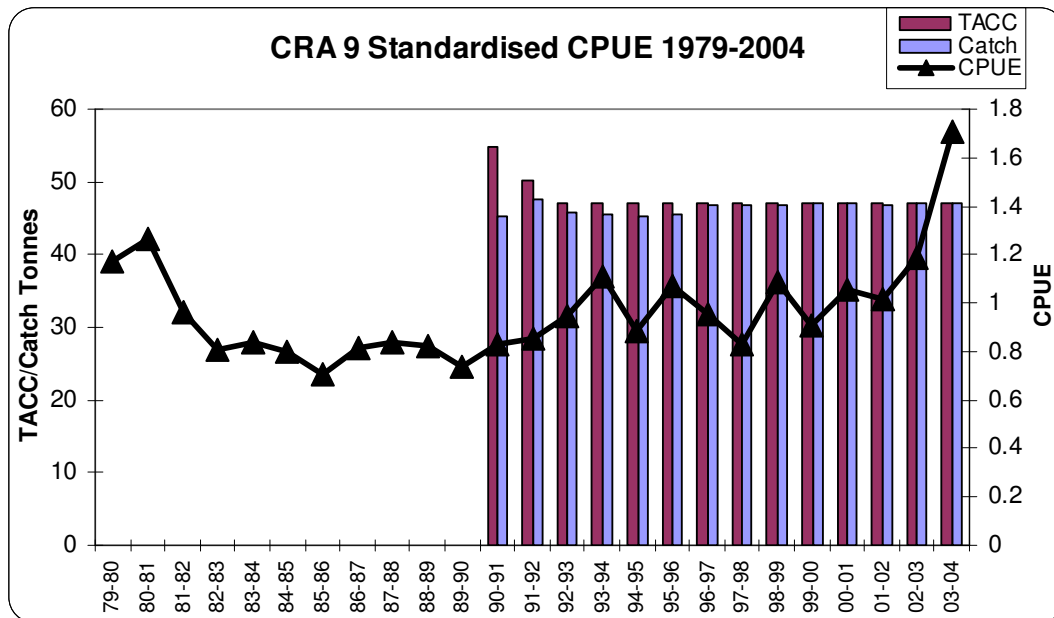
6.9 CRA 8



414. The CRA 8 fishery is the largest mainland fishery geographically. The region extends from Long Point south to Stewart Island and the Snares, the islands and coastline of Foveaux Strait, and then northwards along the Fiordland coastline to Bruce Bay. The CRA 8 fishery is included with CRA 7 in the NSS assessment and management procedure analysis.
415. The MLS for commercial catch incorporates a 54 mm tail width for male lobsters and 57 mm tail width for females. The equivalent measures for amateur catch is 54 mm tail width for male lobsters and 60 mm tail width for females.
416. The CRA 8 Management Committee Inc is the commercial stakeholder organisation for the fishery. The Association employs a Chief Executive. The Association has funded an extensive Voluntary Logbook programme until 1998 when the Logbook programme was incorporated as a Fisheries Required Service. The Association also contracts to the NZ RLIC to provide intensive catch sampling and lobster tag and release as part of the Fisheries Research Services contract to the Ministry of Fisheries.
417. The CRA 8 Industry has developed and implemented codes of practice in relation to use and disposal of fishing gear and refuse, and as a founding member of the Guardians of Fiordland Fisheries, has contributed to an extensive code of practice for the waters adjacent to the World Heritage area.
418. There are 124 CRA 8 quota share owners. In the 2003/04 season there were 61 commercial vessels reporting CRA 8 landings. The CRA 8 fleet operates in the most remote coastal areas of South Westland and Fiordland. The estimated value of the landed catch is \$18.1 million (based on average port price paid to fishermen). The industry supplies processing and export operations in Te Anau, Riverton, Stewart Island, Invercargill, Bluff, Christchurch, and Wellington.

419. Amateur catch is estimated at 16 tonnes (MFish 1996). The preferred methods for amateur fishing are potting and diving with UBA.
420. There are no estimates for customary harvest in CRA 8.
421. A TAC of 690.4 tonnes was set for the 2004/05 fishing year. A total of 29 tonnes was set aside for amateur catch and 30 tonnes was provided for customary catch. The TACC was set at 603.4 tonnes. The TAC adjustment was undertaken in response to the triggering of the NSS decision rule.

6.10 CRA 9



422. The CRA 9 fishery is geographically large but has the smallest TACC of any region (with the exception of CRA 10). The fishery extends from north of Bruce Bay to the Kaipara Harbour but commercial lobster fishing is constrained to the north-west coast of the South Island and the area between Patea and Kawhia, in particular the Taranaki coastline. No TAC has been set for this fishery and the 47 tonnes TACC has remained unchanged since 1992.
423. There are 20 CRA 9 quota share owners. In the 2003/04 season 9 commercial vessels reported CRA 9 landings. The estimated value of the landed catch is \$1.5 million (based on average port price paid to fishermen). The industry supplies processing and export operations in Marlborough, Nelson, New Plymouth, Wellington and Auckland.
424. The CRA 9 Industry Association Inc. is the representative organisation of the commercial interests in the fishery. The Association has initiated a Voluntary Logbook programme but the project has limited potential because of the relatively short commercial season and the small number of vessels in the fleet. The Association has contracted a regional liaison officer to co-ordinate tag recapture reporting and supervise the use of Vessel Logbooks by commercial operators.
425. There are no estimates of amateur or customary catch for the CRA 9 fishery.
426. No stock assessment has been made for the CRA 9 fishery. CPUE has been consistent over many years and the TACC constrains commercial landings, suggesting a stable or increasing stock.

6.11 PACKHORSE ROCK LOBSTER – PHC

427. The packhorse rock lobster management area extends to all of New Zealand. Packhorse lobsters grow to a significantly larger size than red rock lobsters (CRA) and have different shell colourations and appearance.
428. The TACC for this fishery was set at 30 tonnes in 1990, but was increased to 40 tonnes in 1992 as a result of appeals. Historically the fishery has been primarily an incidental catch for many commercial rock lobster fishermen in the Northland/Auckland and Bay of Plenty regions. However several fishermen did successfully target the species prior to 1990 and dependent on environmental conditions have attempted to do so in several seasons since.
429. Due to the different biology and behaviour of this species the MLS is set at 216 mm tail length. Prohibitions on the taking of berried female lobsters apply. In addition, a large area of water to the north-east of North Cape was closed to rock lobster fishing on a year round basis in 1977 in an apparent effort to protect what was then thought to be a large concentration of sub-legal PHC rock lobsters.
430. Commercial catches have fluctuated since 1990, reaching a peak of 24 tonnes in the 1995/96 season. The reported landings are 16.2 tonnes 1998/99, 12.6 tonnes in 1999/2000, 10.4 tonnes in 2000/01, 7.8 tonnes in 2001/02, 8.3 tonnes in 2002/03, and in 2003/04 16.9 tonnes. It is thought that the shortfall of catch against quota reflects the low levels of target effort being directed at the fishery which is known to have variations in abundance possibly determined by weather and sea temperatures.
431. In 2003/04 an estimated 24 commercial vessels reported PHC catch. Less than five are known to be target fishing the species, all of these operating in either CRA 1 or CRA 2. The value of the landed catch is estimated to be in excess of \$500,000.
432. There are no estimates of amateur catches for the species but divers using UBA are known to target PHC in Northland and the Bay of Plenty as “trophy” fish. There are no estimates of customary harvest.

Part Seven

SUMMARY OF RECOMMENDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

The National Rock Lobster Management Group

Recommendation

433. The NRLMG recommends that the Minister:
- a) note that whilst supporting and encouraging the development and implementation of Fishery Plans for rock lobster, the NRLMG will continue to operate the current management framework outlined in this document and will work within the roles and responsibilities confirmed in the most recent review.
 - b) confirm the NRLMG as the primary source of TAC, TACC and management advice for New Zealand rock lobster fisheries; and
 - c) confirm the NRLMG as an appropriate body to consult on any matters relevant to the management of rock lobster fisheries.

Strategic Vision and Framework for Rock Lobster Fisheries

Recommendation

434. The NRLMG recommends that the Minister:
- a) **confirm** the framework for managing rock lobster fisheries contained in this Report.

Matters considered by NRLMG in 2004

CRA 3

Recommendation

435. The NRLMG recommends that the Minister:
- a) note that the NRLMG has considered the CRA 3 issues raised during 2004 and recommends action where appropriate;
 - b) note that this Annual Report contains recommendations to reduce CRA 3 catches to address sustainability concerns;
 - c) note that the NRLMG currently proposes no additional management measures for the CRA 3 fishery.

Capture Methods

Recommendation

436. The NRLMG recommends that the Minister:
- a) **note** the conclusion of the NRLMG review of amateur methods used in rock lobster fisheries.

Catch Identification

Recommendation

437. The NRLMG recommends that the Minister:
- a) **note** the establishment of the Catch Identification Sub-Group, the members of which are drawn from NRLMG stakeholder representatives including MFish;
 - b) **note** the intention of the NRLMG to review and evaluate catch identification options.

Domestic Sales of Rock Lobsters

Recommendation

438. The NRLMG recommends that the Minister:
- a) **note** the issues in relation to the domestic sale of imported and concession rock lobsters and the rules that apply to Otago concession rock lobsters.

Otago Closed Season

Recommendation

439. The NRLMG recommends that the Minister:
- a) **note** the industry proposal to remove the seasonal closure to commercial fishing in CRA 7 and the intention of the Otago Rock Lobster Industry Association to complete a consultation round with non-commercial stakeholders before presenting the proposal to the IPP process in 2005.

Research Activities

Recommendation

440. The NRLMG recommends that the Minister:

- a) **note** the scope of current rock lobster fisheries research;
- b) **note** the level of industry involvement in stock monitoring, including catch sampling, Logbooks, and tag release and recapture, undertaken to MFish agreed standards and specifications; and
- c) **note** the role of the NRLMG in the Rock Lobster Research Planning Process, the results of which form the basis of research services described in the MFish Business Plan.

Management Procedures and Harvest Control Rules

Recommendation

441. The NRLMG recommends that the Minister:

- a) **note** that management procedures continue to be evaluated to discover rules that deliver the desired outcomes while being robust to wide varieties of uncertainty.

NSS Bio-Economic Modelling

Recommendation

442. The NRLMG recommends that the Minister:

- a) **note** the development of the bio-economic model and the future management options being considered by commercial stakeholders in CRA 7 and CRA 8;
- b) **note** that the bio-economic model extends the utility of the current NSS Management Procedure in that it anticipates a maintenance strategy for CRA 7 and CRA 8 once the NSS stock is rebuilt;
- c) **note** that the work commissioned by industry will not affect the operation of the NSS Management Procedure for 2006/07, and that the calculation will be run during 2005 using CPUE data from the three most recent fishing years; and
- d) **note** that the NRLMG will provide more detailed advice on options for the NSS in the 2005 Annual Report.

Stock Assessment Overview

Recommendation

443. The NRLMG recommends that the Minister:

- a) **note** that assessments were updated in 2004 for CRA 3;
- b) **note** the detail of the CRA 3 stock assessment in the Mid-Year Fishery Assessment Plenary Report (November 2004) [Annex 1 to this Report];
- c) **note** the discussion in this report related to the use and choice of reference periods, and in particular the distinction between “target” and “limit” reference points;
- d) **agree** the choice of reference periods used for stock assessments, noting that the goals of sustainability and utilisation are encompassed in the reference points used in catch projections;
- e) **agree** that no sustainability issues for any stock (other than CRA 3) require action for the 2004/2005 fishing year;

Sustainability Decision – CRA 3

Recommendation

444. The NRLMG recommends that the Minister:

- a) **note** that for CRA 3 the model results suggest that the levels of catch used in the assessment appear to be sustainable, but that any increase in future catch levels would result in an increased probability of a decrease in biomass;
- b) **note** that the base case model projections to April 2007 using 2003/04 catch levels, 59% of the model runs resulted in a biomass greater than the current biomass, Bcurr. 86% of model runs resulted in a biomass greater than Bmin. The median of all model runs shows an April 2007 biomass at 72% of the target biomass, Bref;
- c) **note** that in principle the NRLMG would prefer an even chance (50% probability) of being at the reference biomass level in the longer term;
- d) **note** that the NRLMG would ensure a very high probability (90%) of the CRA 3 stock being above the limit reference point Bmin;
- e) **note** that a catch reduction of 20 tonnes than that used in the base case projection will provide greater certainty (91%) of the CRA 3 stock being above Bmin and should take the stock to 80.3% of Bref in three years;
- f) **agree** an aggregate catch reduction to 319 tonnes, comprised of allowances of 20 tonnes for customary harvest, 20 tonnes for amateur catches, 89 tonnes for other sources of fishing related mortalities (illegal removals) and a commercial catch limit of 190 tonnes;
- g) **note** that the NRLMG proposes two options to effect that catch reduction –

- i.) to reduce the TAC from 453 tonnes to 319 tonnes and agree that within the new TAC the allowances made for customary and amateur should remain unchanged, the allowance for other sources of fishing related mortalities be increased to 89 tonnes, and the TACC set at 190 tonnes; or
 - ii.) to make no change to the TAC or to the current allowances but allow the ACE shelving option described above to effect the necessary catch reduction;
- h) **note** that in proposing option ii) above the NRLMG will confirm that the required ACE transactions have been completed when compiling final advice in February 2005;
- i) **note** the discussion in relation to the choices between TAC setting and alternative limits on catches and allow the NRLMG to provide additional advice on these matters in February 2005;
- j) **note** that during 2005 the NRLMG will provide a recommendation for a CRA 3 Management Procedure that will guide future TAC and sustainability decisions for the fishery.

Uncertainty in Estimates of Total Removals

Recommendation

445. The NRLMG recommends that the Minister:

- a) **acknowledge** that accurate and reliable data for all sectors are essential to the stock assessment process;
- b) **acknowledge** that accurate and reliable data for all sectors are essential to the fishery management decision making process, particularly in circumstances where catch reductions are considered necessary to maintain or improve stock abundance;
- c) **ensure** that sufficient resources are deployed by MFish to monitor non-commercial removals from rock lobsters fisheries in order to maintain the integrity of the TACs set for stocks and to maintain the integrity of the allowances made to extractive users within the TACs and the fishing opportunity associated with those allowances;
- d) **note** that the NRLMG recommends that greater emphasis should be placed on the full implementation of the North and South Customary Regulations.

Compliance and Enforcement Issues

Recommendation

446. The NRLMG recommends that the Minister:
- a) **note** the significance of the illegal catch component and its negative effect both on the stock and on legitimate extractive users;
 - b) **note** that all user groups recommend that the Minister take steps to ensure that compliance strategies and services (including enforcement and education services) are sufficient to minimise illegal catch;
 - c) **ensure** that sufficient resources are deployed by MFish Compliance to constrain illegal unreported removals in the first instance to the levels of the allowances made in setting TACs, and ideally to much lower levels so as to improve the quality of the fishing experience to be enjoyed by legitimate users.

Allocation Principles

Recommendation

447. The NRLMG recommends that the Minister:
- a) **note** the positions of the stakeholder group representatives together with their concerns and urgently take steps to define the rights and allocative requirements needed for management of rock lobster and other fisheries resources.

Southland Concession Regulations

Recommendation

448. The NRLMG recommends that the Minister:
- a) **note** that the NRLMG saw merit in this proposal and that stakeholders are disappointed that it was unable to be progressed in 2004 and expect it to be reconsidered in 2005.

Annex 1

Rock Lobster Fishery Assessment Working Group

2004 PLENARY REPORT