

PADDLE CRAB: ALLOWING FOR RETURN TO SEA

Executive Summary

- 1 The Ministry of Fisheries (MFish) is aware some commercial fishers targeting paddle crabs are high-grading (i.e. selecting for high value crabs and returning low value crabs to the sea). Returning harvested crabs to sea is illegal in commercial paddle crab fisheries; commercial fishers are required to land all legal paddle crabs caught and either balance the landed quantity with Annual Catch Entitlement (ACE) or pay the deemed value.
- 2 The logical response to illegal activity is to increase compliance effort. However, because the high-grading activity is not having a negative impact on sustainable utilisation of paddle crab fisheries, this paper also considers options that allow fishers to return paddle crabs to the sea.
- 3 MFish's preferred option is to amend Schedule Six of the Fisheries Act 1996 (Schedule Six) to allow fishers using potting methods to return to the sea paddle crabs that are likely to survive. MFish considers this amendment would pose little risk to sustainable utilisation of paddle crab fisheries (the survival rate of returned pot-caught crabs is likely to be high) and would enable commercial fishers to maximise economic returns from their ACE.
- 4 More information is required before deciding whether fishers should be allowed to return paddle crabs taken by other methods such as trawl, set net or dredge. Paddle crabs taken by these methods are more likely to suffer damage than pot-caught crab, and the survival rates of damaged paddle crabs after return to sea are unknown. MFish invites stakeholders to submit information on survival rates of paddle crabs taken by these methods.
- 5 MFish also proposes removing the minimum legal size (MLS) applying to paddle crab taken in PAD 3, 4, 5 and 6. MFish considers the MLS is probably not required for biological reasons and that addition to Schedule Six provides for more robust management of returns to sea. Schedule Six management reduces the quantity of unknown paddle crab mortality, improves information available on the quantities of paddle crab returned to the sea, and better enables value maximisation in the commercial fishery.
- 6 Removing the MLS would however impose a cost on fishers that take paddle crabs as bycatch in PAD 3, 4, 5 and 6. MFish estimates the cost would be small but acknowledges information on the quantity of undersize paddle crab returned to sea is limited. MFish invites stakeholders to provide more information to enable a better estimate of the economic impact.

Summary of Options

- 7 This paper considers, and seeks feedback on, the following options regarding returning paddle crab to the sea.

Option 1 – Focussed compliance effort

- 8 Under option 1, commercial fishers would continue to be required to land all legal paddle crabs¹ taken and balance their landings against ACE. MFish would apply focussed compliance effort to deter high-grading.

Option 2 – Add paddle crab to the Sixth Schedule

- AND Either a) retain the minimum legal size that applies to paddle crab in PAD 3, 4, 5 and 6;
- Or b) remove the minimum legal size that applies to paddle crab in PAD 3, 4, 5 and 6.

- 9 Under Option 2, commercial fishers would be able to return any paddle crabs considered likely to survive after return to the sea. Option 2 also considers whether or not to retain existing MLSs.

Option 3 – Add paddle crab taken by the potting method to the Sixth Schedule

- AND Either a) retain the minimum legal sizes that apply to paddle crab in PAD 3, 4, 5 and 6;
- Or b) remove the minimum legal sizes that apply to paddle crab in PAD 3, 4, 5 and 6.

- 10 Under Option 3, only commercial fishers taking paddle crab by the method of potting would be able to return to the sea any paddle crabs considered likely to survive. Option 3 also considers whether or not to retain existing MLSs.

Rationale for Management Options

The Management Problem – Returning paddle crabs to the sea

- 11 MFish is aware that some commercial fishers targeting paddle crabs are high-grading. When high-grading, fishers seek to maximise their economic return against ACE by landing high-value crabs (in this case, large, meatier crabs) and returning smaller crabs of a lesser value to the sea.
- 12 Returning harvested crabs to sea is illegal in commercial paddle crab fisheries. Commercial fishers are required to land all legal paddle crabs caught and either balance the landed quantity with ACE or pay the deemed value.

The Impact on Management Objectives

- 13 A key management objective for paddle crab fisheries is to ensure sustainable utilisation.

¹ “Legal paddle crabs” include all paddle crabs able to be taken. It is not legal to take berried paddle crabs in PAD 3,4,5,6,7 & 8, or paddle crabs less than 75mm carapace width in PAD 3, 4, 5 & 6.

- 14 There is no evidence to indicate the current practice of high grading is affecting the sustainable utilisation of paddle crab fisheries. This could be because:
- i) Information is uncertain; consequently the impact of returning fish to sea is not detectable
 - ii) Catches are below sustainable levels and therefore mortalities among returned fish, if occurring, are not yet affecting sustainability
 - iii) The practice of returning fish to sea is not causing significant mortality and therefore is not affecting sustainability.
- 15 Reasons (i) and (ii) both apply to paddle crab fisheries. Information on paddle crab fisheries is limited and uncertain, and the MFish Shellfish Working Group considers it likely paddle crab fisheries are only lightly exploited.
- 16 MFish considers reason (iii) is also likely to be true. Although information on the survival rate of paddle crab returned to the sea is absent², fishers targeting paddle crab mostly use potting methods and pot-caught crabs suffer little damage as a result of the activity of fishing. Survivability after return to the sea in potting fisheries for other crustaceans (e.g. rock lobster) is high.
- 17 Another key fisheries management objective is to enable New Zealanders to achieve the maximum value from utilising fisheries sustainably. Commercial fishers targeting paddle crab high-grade to achieve maximum value from their ACE. Allowing commercial fishers to maximise value by returning paddle crabs to sea is only appropriate if the activity does not impact on sustainable utilisation of paddle crab or any interconnected fisheries, or reduce the value able to be achieved by other fishing sectors.
- 18 The impact of returning targeted crab to sea on the sustainability of paddle crab fisheries is discussed above. Interconnected fisheries that might be affected by changing abundance in paddle crab fisheries are coastal shellfish fisheries and inshore finfish fisheries (paddle crabs prey on shellfish and are prey for a range of finfish). If most paddle crab survive on return to the sea, paddle crab abundance is not likely to be significantly affected by returns to sea.
- 19 Information on customary and recreational values and catches is limited for paddle crab fisheries. However, allowing fishers to return paddle crab would not affect access to paddle crab fisheries, and, if most paddle crab survive on return to the sea, would not affect availability of paddle crabs to other sectors.
- 20 A third objective is credible fisheries management. That is, fishery stakeholders understand the reasoning behind the components of the management framework. MFish Fisheries Surveillance Officers report a lack of understanding among fishers targeting paddle crabs for the current ban on returning pot-caught paddle crab to sea. Fishers consider that returning unwanted crabs enhances the fishery, as the crabs survive and continue to

² Some research has been conducted overseas on survivability of returned decapod crustaceans (which includes crabs). For example, research on the United Kingdom scampi fishery indicates returned decapod crustaceans have mortality rates of between 2 and 25%, depending on species.

breed. Fishers also consider the forced landing of unwanted and unmarketable crabs to be wasteful.

- 21 From an MFish perspective, poor fishery information also contributes to poor management credibility. Currently, MFish has limited information on paddle crab fisheries and the quality of existing information is lessened by illegal returns to sea and associated non-reporting. Any review of return to sea rules therefore needs to consider associated reporting requirements.

Potential Management Approaches

- 22 A logical response to illegal activity is to focus compliance effort to deter the activity. Focussed compliance effort is presented as Option 1.
- 23 Analysis of the management objectives for paddle crab fisheries suggests fishers returning unwanted crabs to sea may not have a negative impact on management objectives. Consequently, two options that allow fishers to return paddle crabs to the sea are presented:
 - Option 2: Amend the Sixth Schedule to enable paddle crabs to be returned to the sea if they are likely to survive
 - Option 3: Amend the Sixth Schedule to enable paddle crabs taken by the potting method to be returned to sea if they are likely to survive.
- 24 Paddle crabs are mostly taken by potting methods but are also targeting using other methods (e.g. set nets) and taken as bycatch in inshore trawl, set net and dredge fisheries. Option 2 would enable paddle crabs taken by all methods to be returned to the sea if considered likely to survive.
- 25 Option 3 would enable only paddle crab taken by the method of potting. Option 3 seeks to manage risks associated with uncertainty in information by limiting the ability to return crabs to methods considered likely to have a high survival rate.

Associated Issues – Minimum Legal Size

- 26 A MLS applies in PAD 3, 4, 5 and 6. The MLS requires fishers in PAD 3, 4, 5, and 6 to return to the sea any paddle crab of a size less than of 75 mm carapace width (CW). MFish considers it appropriate to review the MLS where addition to the Sixth Schedule is considered. Removing the MLS would standardise rules relating to the return of paddle crabs to the sea³.
- 27 MLSs are used chiefly to ensure future recruitment to fishstocks; an MLS allows for a proportion of individuals within the stock to reach sexual maturity and breed before being harvested. Zero or very low catches have been reported in PAD 4, 5 and 6 since paddle crab were introduced into the Quota Management System in 2002. Catches in PAD 3 have ranged from 11 to 30 tonnes (11-30% of the TACC) over the same period. This low exploitation

³ An exception occurs for berried crabs - different rules govern the taking of berried crabs in different paddle crab areas. This paper does not consider options relating to the taking of berried crab as more information is required to assess the efficacy of the different rules.

combined with the high productivity of paddle crab indicates the MLS is probably not required to ensure future recruitment to paddle crab fisheries.

- 28 Addition of paddle crab to the Sixth Schedule potentially provides more robust management of returns to sea by improving information on paddle crab fisheries, decreasing unknown mortalities, and better enabling commercial fishers to achieve maximum value from sustainable utilisation of paddle crab fisheries. Under Schedule Six management, only crabs considered likely to survive are returned to sea, the quantity of returned crabs are reported on commercial catch, effort and landing returns (CELRs) or catch landing returns (CLRs), and fishers targeting crabs can select for paddle crabs that achieve the highest value in the marketplace. Under an MLS, all paddle crabs under 75 mm CW are returned to sea whether dead or alive, the returned crabs are not reported on CELRs or CLRs so the quantities of returns are unknown, and fishers must land all legal crabs over 75 mm CW so have limited flexibility to maximise economic return against ACE.

Minimum Legal Size as an alternative to Schedule Six

- 29 MFish considered applying the MLS (or an amended MLS) to all paddle crab stocks as an alternative way of enabling paddle crabs to be return to the sea. As already noted, MLSs are used chiefly to ensure future recruitment to fishstocks. The need for an MLS to ensure future recruitment to paddle crab fisheries has not been established.
- 30 Furthermore, although an MLS can assist value maximisation in fisheries, MFish does not consider it the best tool to maximise commercial value. Commercial markets for fishery products like paddle crab change regularly as a result of innovation, changing fashions, or the preferences of newly identified international markets. Therefore, an MLS set based on today's marketplace may in the future act to constrain, rather than assist, value maximisation.

Assessment of Management Options

Option 1- Focussed compliance effort

- 31 The cost of focussed compliance effort to curb illegal high-grading activity in paddle crab fisheries is potentially high.
- 32 Curbing high-grading is unlikely to contribute to sustainable utilisation of paddle crab fisheries. Catches would likely increase in the short term as target fishers land more crabs in total (big and small) to meet market demand for large crabs. However, increased utilisation would be managed to within sustainable levels through the application of catch limits and associated catch balancing tools.
- 33 Curbing high-grading would constrain the ability of New Zealanders to achieve maximum value from paddle crab fisheries. The economic value achieved by commercial paddle crab fishers would be constrained as fishers would not be able to select for higher-value crabs. This value loss would be partially offset by increased incentives to find markets for low value crabs to

avoid wastage. For example, some inshore trawl fishers have found a market for damaged crabs as burley.

- 34 Enforcing the requirement for fishers to land all legal paddle crab taken would improve reporting of catch in CELRs and CLRs. This improved information may assist monitoring and management of paddle crab fisheries.

Option 2 – Addition of paddle crab to Sixth Schedule

- 35 Allowing all fishers to return paddle crabs to sea if they are likely to survive would enable commercial fishers to increase the value of the commercial paddle crab fishery. Fishers targeting paddle crab would be able to select for high-value crabs and return low value crabs to sea. Fishers taking paddle crab as bycatch would be able to return unwanted paddle crab likely to survive, thereby freeing up ACE for use in the target fishery and reducing their costs of fishing. MFish has no information to enable an estimate of the additional total value that would be achieved if Option 2 were implemented.
- 36 Lack of information about the survival rate of paddle crab after return to sea means allowing all fishers to return paddle crabs to sea if likely to survive may not provide for more credible fisheries management. Without information on survival rates of paddle crabs after return to sea, “likely to survive” is difficult to assess or enforce, and it is expected fishers would choose to discard crabs regardless of condition if there was an economic incentive to do so.
- 37 Lack of information about the survival rate of damaged paddle crab after return to sea also makes it difficult to assess the impact of Option 2 on sustainable utilisation. Although most paddle crab (over 90%) is taken using potting methods, crabs are also taken in trawl, set net and dredge fisheries. Pot-caught crabs are likely to survive return to sea because potting methods cause little or no damage to the crabs, but crabs taken by other methods can suffer considerable damage and their survival after return to sea is much less certain.
- 38 In 2005-06, nine tonnes (six percent of total reported catch) of paddle crab catch was reported as taken by non-potting methods. This is likely to be an underestimate of actual catch by other methods because it does not include undersize paddle crab taken in PAD 3, 4, 5 and 6 or unreported catch. At current exploitation levels, the risk to sustainable utilisation of fishers discarding this bycatch may be low, even if mortality rates are high, because catches in most fisheries are well below levels considered sustainable. However, the risk increases should catch increase to the level of current total allowable commercial catches.

Retain or remove the MLS in PAD 3, 4, 5, and 6

- 39 Retaining the MLS (Option 2(a)) would not change the sustainable utilisation or value effects presented above for Option 2. Removing the MLS (Option 2(b)) potentially reduces value, particularly for fishers taking paddle crab as bycatch, by requiring fishers to land undersize paddle crab that are not likely to survive on return to the sea. In 2005-06, the total cost of ACE used to cover all legal-size bycatch in paddle crab fisheries (including those more than and

less than 75mm) was approximately \$1,100⁴. MFish therefore considers the additional cost of having to land crabs smaller than 75mm considered unlikely to survive is likely to be small. Further, any value loss may be offset by the ability to return unwanted, legal size crabs to the sea.

- 40 Removing the MLS would mean estimate quantities of crabs returned to the sea are captured on CELRs or CLRs (as per the regulatory requirements that all species discarding under Schedule Six of the Fisheries Act be reported). Undersize crabs returned to the sea are not currently recorded on reporting forms. Capturing information on returns to sea may assist future monitoring and management of paddle crab fisheries.

Option 3 – Addition of pot-caught paddle crab only to the Sixth Schedule

- 41 Option 3 reduces the level of risk to sustainable utilisation by only allowing crabs taken by the method of potting to be returned. Paddle crabs taken by the method of potting are considered much more likely to survive on return to the sea than crabs taken by other methods because potting methods cause little or no damage to the crabs.
- 42 Like Option 2, Option 3 provides fishers with opportunities to maximise returns to ACE. Under Option 3 these opportunities are limited to fishers taking paddle crabs using potting methods. MFish has no information to estimate the additional total value that would be achieved by fishers if Option 3 were implemented. Fishers targeting paddle crabs using other methods or taking paddle crabs as bycatch, would continue to be required to land all catch and balance against ACE.
- 43 Option 3 provides for more credible fisheries management than Option 2 as only crabs taken by low-damage methods are able to be returned. The requirement to assess whether a crab is likely to survive is not completely eliminated however, as some pot-caught crabs will suffer damage.

Retain or remove the MLS in PAD 3, 4, 5, and 6

- 44 Retaining the MLS (Option 3(a)) would not change the sustainable utilisation or value effects presented above for Option 3. Removing the MLS (Option 3(b)) would impose a cost on fishers taking paddle crab by methods other than potting, by requiring these fishers to land all paddle crabs taken. As noted, MFish considers the additional cost of having to land crabs smaller than 75mm is likely to be small.
- 45 As for Option 2, removing the MLS would mean estimate quantities of crabs returned to the sea are captured on reporting forms. Capturing information on returns to sea may assist future monitoring and management of paddle crab fisheries.

⁴ Based on the average price of ACE trades for the year in each fishery.

Conclusion

- 46 At this time, and based on available information, Option 3(b) is MFish's preferred approach to management of returns to sea in paddle crab fisheries.
- 47 Over 90% of current paddle crab catch is targeted using pots. Allowing pot-caught paddle crab that are likely to survive to be returned to sea would enable fishers to maximise the value of the target fishery with little risk to the sustainable utilisation of paddle crab fisheries. MFish considers more information on the survivability of damaged crabs is required before a decision can be made about allowing return to sea of crabs taken by other methods such as trawl, set net or dredge.
- 48 Removing the MLS in PAD 3, 4, 5, and 6 simplifies return to sea rules. Low exploitation levels in these fisheries and the high productivity of paddle crab suggest the MLS is not required to ensure future recruitment to the fisheries and MFish considers adding paddle crabs to Schedule Six provides for more robust management of returns to sea than an MLS regime. Schedule Six management reduces the quantity of unknown paddle crab mortality, improves information available on the quantities of paddle crab returned to the sea, and better enables value maximisation in the commercial fishery.
- 49 MFish recognises that information on paddle crab fisheries is limited and invites stakeholders to provide additional information to inform decision making. In particular, MFish invites information on:
- i) Size frequencies in target and bycatch catches of paddle crab
 - ii) The value of different sizes of paddle crabs
 - iii) The damage caused to crabs by trawl nets, set nets and dredges
 - iv) The proportion of catch being returned to the sea as undersize in PAD 3, 4, 5 and 6
 - v) The practicality of MLS and Schedule Six requirements in respect of paddle crab fisheries

Statutory Considerations

- 50 In forming the options for addressing the problem of illegal high-grading in paddle crab fisheries, the following statutory considerations under the Fisheries Act 1996 have been taken into account.
- a) **Section 5(a):** A wide range of international obligations relate to fishing. MFish is unaware of any international obligation that would be affected by the management options proposed.
 - b) **Section 5(b):** MFish considers the options are consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. None of the options considered negatively impact availability of, or access to, paddle crabs for customary purposes, and the impacts of each management option on commercial stakeholders (including Maori commercial stakeholders) are fully explored.

- c) **Section 8:** None of the management options proposed is contrary to the purpose of the Act, which is to provide for utilisation of fisheries resources whilst ensuring sustainability. Options 2 and 3 potentially improve utilisation, by improving the effectiveness and value of commercial ACE. Surviving returned paddle crabs would be able to be harvested again after further growth, and would also be available to recreational and customary fishers.
- d) **Section 9(a) and (b):** Interactions between species have been identified (eg, predator-prey relationships). It is unlikely any of the management options proposed would materially affect these interactions.
- e) **Section 9(c):** None of the management options proposed would affect impacts on habitats of particular significance for fisheries management. Methods used to target paddle crabs are sensitive to the environment, and, as a matter of practice, fishers generally remain in attendance of their pots.
- f) **Section 10:** Best available information is incorporated into this assessment of management options, and uncertainties in information (for example in survivability rates and stock status) are identified and discussed. The uncertainties in information make it difficult to accurately quantify costs and benefits to sustainable utilisation; these uncertainties are clearly identified and discussed. At this time, MFish considers further information on survivability of damaged paddle crabs is needed before Option 2 can be implemented. MFish has included this option for discussion with stakeholders in order to provide stakeholders with an opportunity to provide additional information if available.
- g) **Section 11(1)(a):** Paddle crabs typically occupy areas of high exposure (eg, an ocean beach) that are subject to fluctuations in the physical environment (eg storm events) and therefore the biological diversity of an area is unlikely to be significantly affected at modest fishing levels. No other information has been considered about any effects of fishing on any stock or on the aquatic environment.
- h) **Section 11(1)(b):** No existing controls under the Act for paddle crabs that are not discussed in this paper will be affected by the management options presented.
- i) **Section 11(1)(c)** There is natural variability of paddle crab abundance, mostly due to the impact of changes in environmental conditions on their habitat. The management options proposed are not likely to make paddle crab fisheries more or less vulnerable in terms of natural variability.
- j) **Section 11(2)(a) and (b):** There are no provisions applicable to the coastal marine area known to exist in any policy statement or plan under the Resource Management Act 1991, or any management strategy or plan under the Conservation Act 1987 that are relevant to the management options proposed.
- k) **Section 11(2)(c):** MFish notes the options, as they relate to PAD1, are discussed in a manner consistent with s7 and s8 of the Hauraki Gulf Marine Park Act 2000. This Act's objectives are to protect and maintain the natural resources of the Hauraki Gulf.

- l) **Section 11(2A)(a and c):** Any relevant conservation services or fisheries services have been considered in this paper. No decision has been made not to require a service in this fishery.
- m) **Section 11(2A) (a and c):** MFish is not aware of any provisions applicable to the coastal marine area known to exist in any policy statement or plan under the Resource Management Act 1991, or any management strategy or plan under the Conservation Act 1987, which are relevant to putting paddle crabs on the Sixth Schedule.
- n) **Section 13:** The TACs for paddle crab would not be affected by these proposals. MFish notes that options presented that include removing the MLS in PAD 3, 4, 5 and 6 change the management framework for these fisheries and might provide justification for a TAC review. PAD 3, 4, 5, and 6 are currently well undercaught, information on stock size is limited, and there is no information to indicate the MLS is providing a sustainability benefit. Consequently, at this time, MFish does not consider it necessary to review the TAC, TACC or associated allowances.
- o) **Section 21(1)(a and b) and (4)(I and ii) and (5) statement:** As the TACC, customary and recreational allowances are not altered, there are no implications for section 21 from these proposals.

REGULATORY IMPACT STATEMENT

Paddle Crab: Allowing for Return to the Sea

Executive summary

The Ministry of Fisheries (MFish) is aware that some commercial fishers targeting paddle crabs are sorting catches for high value crabs and returning low value crabs to the sea (ie, high-grading). Returning harvested paddle crabs to sea is illegal; fishing regulations require commercial fishers to land all legal paddle crabs caught and either balance the landed quantity with annual catch entitlement (ACE) or pay the deemed value.

Because returning paddle crabs does not appear to be negatively affecting management objectives, MFish's preferred option is to allow fishers to return pot-caught paddle crabs likely to survive to sea by adding pot-caught paddle crabs to Schedule Six of the Fisheries Act 1996 Schedule Six. The survival rate of returned pot-caught crabs is likely to be high, therefore returned crabs will continue to contribute to the fishery. Requiring fishers to land low value crabs reduces the ability of the commercial sector to maximise value from the fishery.

MFish also proposes removing the minimum legal size (MLS) that applies to paddle crab in PAD 3, 4, 5 and 6. MFish considers addition of paddle crab to Schedule Six provides a more robust method of managing returns to sea, given the MLS does not appear to be required to ensure future recruitment to the stock. Compared with MLS, Sixth Schedule management reduces the level of unknown mortality in paddle crab fisheries, increases information on returns to sea, and better enables commercial value maximisation. Removing the MLS will impose a cost on fishers that take paddle crab as bycatch in PAD 3, 4, 5 and 6. MFish estimates the cost will be low (less than \$5,000 per annum) and will be outweighed by the benefit achieved of allowing target paddle crab fishers to return low value paddle crab to sea, as over 90% of paddle crab is taken using potting methods..

Adequacy statement

This Regulatory Impact Statement has been reviewed by the Ministry of Fisheries' (MFish) Regulatory Impact Analysis Review Committee and is considered adequate according to the criteria agreed by Cabinet.

Status quo and problem

At present, commercial fishers are required to land all legal paddle crabs caught and either balance the landed quantity with ACE or pay the deemed value. The Ministry of Fisheries is aware some commercial fishers targeting paddle crabs are high-grading. The incentive for fishers to high-grade is economic; fishers select for high-value crabs (in this case large crabs) and discard smaller crabs of lesser value to maximise their return against ACE.

A logical response to any illegal fishing activity is to increase compliance effort to protect the fishery. However, there is no evidence to indicate the current practice of returning paddle crab to the sea is affecting the sustainable utilisation of paddle crab

fisheries. There is evidence to suggest other management objectives are negatively impacted by the requirement to land all legal paddle crab taken, for example the objective of achieving maximum value from the paddle crab resource and the objective of credible fisheries management. Commercial fishers are not able to achieve maximum value because as they must land low value crabs and credible fisheries management is not achieved as fishers do not understand the ban on high-grading as they consider returned paddle crabs survive the return to sea and are available to the fishery, either to be harvested again either by commercial fishers after further growth, or to be harvested by recreational and customary fishers.

Objectives

The key fisheries management objectives for paddle crab fisheries are:

- The paddle crab resource is sustainably utilised
- The value of the paddle crab resource is maximised
- Management of the paddle crab resource is credible

Preferred option

Including pot-caught paddle crab on the Sixth Schedule would allow fishers targeting paddle crabs using pots to return to the sea any crab likely to survive after its return. MFish considers this amendment would enable commercial fishers to maximise economic returns from their ACE and would pose little risk to sustainable utilisation of paddle crab fisheries because the survival rate of returned pot-caught crab is likely to be high. Surviving returned paddle crabs would be available to be harvested again by commercial fishers after further growth, or would be available to recreational and customary fishers.

A MLS applies in PAD 3, 4, 5 and 6. The MLS requires fishers in PAD 3, 4, 5, and 6 to return to the sea any paddle crab of a size less than of 75 mm carapace width (CW). MFish considers it appropriate to review the MLS where addition to the Sixth Schedule is considered. Removing the MLS would standardise rules relating to the return of paddle crabs to the sea⁵.

MLSs are used chiefly to ensure future recruitment to fishstocks; an MLS allows for a proportion of individuals within the stock to reach sexual maturity and breed before being harvested. Zero or very low catches have been reported in PAD 4, 5 and 6 since paddle crab were introduced into the Quota Management System in 2002. Catches in PAD 3 have ranged from 11 to 30 tonnes (11-30% of the TACC) over the same period. This low exploitation combined with the high productivity of paddle crab indicates the MLS is probably not required to ensure future recruitment to paddle crab fisheries.

Addition of paddle crab to the Sixth Schedule potentially provides more robust management of returns to sea by improving information on paddle crab fisheries, decreasing unknown mortalities, and better enabling commercial fishers to achieve

⁵ An exception occurs for berried crabs - different rules govern the taking of berried crabs in different paddle crab areas. This paper does not consider options relating to the taking of berried crab as more information is required to assess the efficacy of the different rules.

maximum value from sustainable utilisation of paddle crab fisheries. Under Schedule Six management, only crabs considered likely to survive are returned to sea, the quantity of returned crabs are reported on commercial catch, effort and landing returns (CELRs) or catch landing returns (CLRs), and fishers targeting crabs can select for paddle crabs that achieve the highest value in the marketplace. Under an MLS, all paddle crabs under 75 mm CW are returned to sea whether dead or alive, the returned crabs are not reported on CELRs or CLRs so the quantities of returns are unknown, and fishers must land all legal crabs over 75 mm CW so have limited flexibility to maximise economic return against ACE.

Removing the MLS would affect fishers taking paddle crab as bycatch in inshore fisheries. MFish estimates the impact would be less than \$5,00 per annum (based on the estimated cost of ACE to cover paddle crab taken by methods other than potting in all paddle crab fishers (including paddle crab fisheries without MLSs) in 2005-06, which was \$1,100) but acknowledges information on the quantity of undersize paddle crabs returned to sea is limited and bycatch of paddle crab may be under-reported. MFish considers this cost is outweighed by the value benefits achieved by allowing fishers targeting paddle crab using potting methods to return low value crabs likely to survive to sea. MFish has no information to estimate the value benefit but notes 94% of total paddle crab catch is taken using potting methods compared with approximately six percent taken using other methods.

Alternative options

MFish proposes the non-regulatory option of increasing compliance effort to curb high-grading as an alternative to the preferred approach. Effectively curbing high-grading is likely to be costly as it would require a very high level of targeted compliance effort. MFish considers the benefits arising from the increased compliance effort are likely to be minimal as high-grading does not appear to be adversely affecting sustainable utilisation of paddle crab fisheries or the availability of paddle crabs to other fishery participants.

MFish also proposes adding paddle crabs to Schedule Six without any restriction on method as an alternative to the preferred option. While this option is assessed as enabling the commercial sector to achieve best value from paddle crab fisheries, MFish considers more information on the survivability of paddle crabs is required so the impact of this option on management objectives can be assessed. Paddle crabs taken by methods such as trawl, set net or dredge are much more likely to suffer damage as a result of the activity of fishing making their survivability on return to the sea is much less certain. Consequently this option poses a greater (but unquantifiable) risk to sustainable utilisation of paddle crab fisheries. It also creates a credibility issue as, without information on survivability, assessing whether a crab is likely to survive is difficult. In this situation, it is expected fishers would choose to discard crabs regardless of condition if there was an economic incentive to do so.

The alternative to removing the MLS that applies in PAD 3, 4, 5 and 6 is to retain the MLS. Retaining the MLS is not the preferred option because the biological need for the MLS is not evident (that is, it does not appear to be needed to ensure future recruitment into the fishery) and because the MLS could act to constrain the ability of commercial fishers targeting paddle crab to maximise value in the future if market preferences change.

Implementation and review

It is proposed that changes relating to returning paddle crabs to sea would come into force on 1 April 2008. Commercial fishers will be notified of changes via material distributed by FishServe, sent to the New Zealand Seafood Industry Council, and posted on the MFish external website and through contact with MFish Fisheries Surveillance Officers and Fisheries Operations staff. Enforcement of the proposed options would be achieved through fishers' interactions with MFish Compliance Staff.

Consultation

MFish will consult with all persons and organisations considered by the Minister to be representative of those classes of persons having an interest in options to legalise the returning of crabs, likely to survive on return to the sea. This will include (but not limited to) tangata whenua, commercial and non-commercial fishing sectors, and environmental organisations.

Once feedback from the above consultation has been reviewed and final advice drafted and considered by the Minister of Fisheries, MFish will also seek feedback from relevant government departments.