

SURF CLAM DREDGE SIZE - FINAL ADVICE

Executive Summary

- 1 The Ministry of Fisheries (MFish) seeks your decision on whether to allow commercial surf clam fishers to use wider dredges¹ than currently permitted because:
 - a) The overall environmental effect of wider dredges within the surf clam habitat (i.e. the surf zone) will be neutral; and
 - b) Commercial fishers will be better able to maximise value in the fishery.
- 2 An Initial Position Paper (IPP), released 29 June 2007, presented three options with respect to dredge width:
 - a) *Status quo* – retain the existing maximum size and design parameters for dredges in all commercial dredge fisheries;
 - b) *Option one* - set a maximum dredge bar or bit length of 3.4 m for dredges used in the target commercial surf clam fishery; and
 - c) *Option two* - enable commercial fishers targeting surf clams to use a dredge with a bar or bit of any length.
- 3 Currently, regulation 78 of the Fisheries (Commercial Fishing) Regulations 2001 (the Regulations) specifies the maximum dredge size that applies to the majority of dredge fisheries. These restrictions may constrain commercial surf clam fishers from maximising harvesting efficiency.
- 4 MFish considers the overall environmental effect of wider dredges will be neutral because: (i) it is unlikely the area of surf zone swept will increase; (ii) it is unlikely that more tows will be necessary to harvest the Total Allowable Commercial Catch (TACC); and (iii) mortality of small, non-marketable, surf clams and non-target species² will be reduced.
- 5 Wider dredges will better enable commercial surf clam fishers to maximise value by minimising operating costs (i.e. fewer tows) and increasing harvest efficiency (catch per unit effort (CPUE)). As such, MFish considers the best way to facilitate sustainable development in the surf clam fishery is to approve the wider dredge.

The Issue

- 6 In order to incorporate new technology³, commercial surf clam fishers have developed a new dredge that sweeps a wider area than a standard dredge and therefore collects more surf clams on a single tow.
- 7 However, current regulations prevent commercial surf clam fishers from legally using the new dredge optimally because the new dredge has a bar or bit that is longer than

¹ Dredge ‘width’ means the length of the bar or bit on the lower lead opening of a dredge.

² Fishers can return live surf clams to the sea because they are on the Sixth Schedule of the Fisheries Act 1996.

³ The “Piper Winnowing Clam Rake” uses high pressure water jets in front of the dredge to force sediment into suspension. A bag behind the rake then collects the surf clams.

3.4 m. Regulation 78 of the Regulations specifies that commercial fishers must not use:

- a) More than 1 dredge with a bar or bit that is more than 2.5 m long; or
- b) More than 2 dredges, either of which has a bar or bit that is more than 1.4 m long.

8 MFish considers the Regulations should allow commercial surf clam fishers to use the new dredge. The current regulation is largely irrelevant to the sustainable use of the surf clam fishery under the Quota Management System (QMS) where catch limits provide for sustainability and quota allocation provides for access.

Summary of Options

Initial Proposals

9 The IPP proposed the following options:

- a) **Option one - status quo** (no action): Retain the existing rules for size and for dredges in all commercial dredge fisheries (i.e. a standard dredge).
- b) **Option two:** Set a new maximum dredge bar or bit length of 3.4 m for dredges used in the target commercial surf clam fishery.
- c) **Option three:** Enable commercial fishers targeting surf clams to use a dredge with a bar or bit of any length.

Final Proposal

10 MFish recommends that you:

AGREE to

- a) Retain the existing rules for size and design parameters for dredges in all commercial dredge fisheries (i.e. a standard dredge);

OR:

AGREE to

- b) Set a new maximum dredge bar or bit length of 3.4 m for dredges used in the target commercial surf clam fishery;

OR:

AGREE to

- c) Enable commercial fishers targeting surf clams to use a dredge with a bar or bit of any length.

(MFish preferred option).

Consultation

- 11 The three options presented in this final advice paper were consulted on, with Option 3 expressed as MFish's preferred option.

Submissions Received

- 12 Submissions regarding this proposal were received from:
- New Zealand Recreational Fishing Council (NZRFC)
 - New Zealand Seafood Industry Council Limited (SeaFIC)
 - Te Ohu Kai Moana (Te Ohu)
- 13 Submissions are summarised in Volume 2 of this paper.

MFish Discussion

- 14 SeaFIC and Te Ohu support Option three to enable commercial fishers targeting surf clams to use a dredge with a bar or bit of any length. Neither submission raised any substantive or pertinent issues.
- 15 NZRFC supports Option one (status quo) on the grounds that there is insufficient scientific information to determine whether an increase in dredge width would have any adverse effects on the benthic biodiversity, and that changes to the surf clam environment will have a significant impact on the onshore and near-shore environments. NZRFC suggests that before any increase in dredge width is permitted, annual benthic surveys of the area to be dredged should be performed, along with trialling the wider dredge over several years.
- 16 MFish does not agree with the implication that wider dredges will necessarily have a significant impact on onshore and near-shore environments. MFish re-emphasises its assertion in the IPP, that although the current limit on dredge length may be appropriate for dredge fisheries in more sensitive, soft-bottom habitats, the surf clam habitat (i.e. the surf zone) is turbulent and subject to frequent and substantial natural disturbance. Physical disturbance caused by surf clam dredging is relatively short lived, with any disturbance probably dissipated after a few tidal cycles.

Rationale for Management Options

- 17 Commercial surf clam fishers have developed a new, modified surf clam dredge that sweeps a wider area than a standard dredge and therefore collects more surf clams on a single tow. Commercial surf clam fishers have also developed technology⁴ into the new dredge that, fishers claim⁵:
- a) Gathers more surf clams per swept area than a standard dredge (i.e. increased CPUE)

⁴ The "Piper Wining Clam Rake" uses high pressure water jets in front of the dredge to force surf zone sediment into suspension. A bag behind the rake then collects the surf clams.

⁵ Although there is currently no evidence to support this claim

- b) Minimises the mortality of small non-marketable surf clams and non-target species.
- 18 MFish considers the Regulations should allow commercial surf clam fishers to use the new dredge (Option 2 or 3). The current regulation is largely irrelevant to the sustainable use of the surf clam fishery under the QMS where catch limits provide for sustainability and quota allocation provides for access. The current limit on dredge length might be appropriate for dredge fisheries in more sensitive, soft-bottom habitats, but surf clam habitat (i.e. the surf zone) is turbulent and subject to frequent and substantial natural disturbance. Physical disturbance caused by surf clam dredging is relatively short lived, with any disturbance probably dissipated after a few tidal cycles⁶.
- 19 MFish considers the overall effect of a wider dredge (Option 2 or 3) in the surf clam habitat will be neutral because the area of surf zone swept is unlikely to increase.
- 20 Because there will be no change in area swept, MFish concludes that a wider dredge poses no perceivable sustainability threat to surf clam habitat. Catches will still be constrained by the TACC.
- 21 Consideration of the effect of the new technology is not directly relevant to your decision to approve or decline the new dredge length for surf clam fishers because:
- a) Commercial fishers are able to use the new technology on standard-width dredges; and
 - b) Commercial fishers have not proven the effectiveness of the technology in increasing CPUE and minimising non-target mortality.
- 22 MFish notes that should the new technology that fishers intend to use with the wider dredge increase CPUE and minimise mortality of small surf clams and non-target species:
- a) It is unlikely surf clam fishers will require more tows;
 - b) Non-target bycatch survival will increase (reduced environmental effect); and
 - c) Pre-recruit surf clam mortality will decrease.
- 23 However, commercial surf clam fishers are unlikely to continue investigating and developing this technology on standard dredges. MFish foresees no sustainability concerns associated with use of a wider dredge and considers the best way to facilitate sustainable development in the surf clam fishery is to approve the wider dredge so fishers can use the new technology.

⁶ Other dredge fisheries (e.g. scallop and oyster) are conducted over more sensitive habitat. MFish does not intend to review dredge size regulations for other dredge fisheries at this time.

Assessment of Management Options

Option 1 – Status Quo

Environmental Impact

- 24 Maintaining the status quo introduces no additional environmental concerns because there would be no change in current harvesting activity. Furthermore, the recent addition of surf clams to the Sixth Schedule of the Act was done on the basis that fishers would use the new harvesting technology.

Sustainability Impact

- 25 Maintaining the status quo introduces no additional sustainability concerns because all commercial surf clam catches are constrained by the TACC.

Utilisation Impact

- 26 Although utilisation is currently provided for, maintaining the status quo would fail to recognise the potential for commercial surf clam fishers to further develop the surf clam fishery to maximise value and provide for wellbeing.

Costs

- 27 The current commercial dredge regulations prevent commercial surf clam fishers from legally using the new dredge (although it does not prevent fishers using the new technology) because the new dredge has a bar or bit that is 3.4 m long.

Benefits

- 28 There are no known benefits to maintaining the status quo from an environmental or sustainability perspective.

Option 2 – Amend regulation 78 to set a new maximum new surf clam dredge width of 3.4m and Option 3 – No Size Limit for Dredge Size in the Surf Clam Fishery

Environmental Impact

- 29 MFish considers a wider dredge (Option 2 or 3) will not increase any environmental effects in the surf clam fishery. Since a wider area would be swept per tow, catching the TACC would require fewer tows and the total area of surf zone swept would not increase.
- 30 In addition, surf zone sediments are being constantly re-suspended as the energy of waves is dissipated on the beach. The immediate effect of surf clam dredging is usually indiscernible after the passage of a few tidal cycles (i.e. environmental effects are not believed to be significant). Surf clams are distributed to depths of 10 metres in, and immediately beyond, the turbulent surf zone of exposed sandy beaches, and are highly adapted to maintaining themselves in the mobile sand of the surf zone. Surf clams are the only sessile macrofauna abundant in this environment and are therefore the member of the surf zone community most likely to be affected by dredging.

- 31 The widespread use of new and more efficient dredges, for example in sheltered inlets or on stable sea beds, could significantly modify marine habitat. However, MFish notes that there are a number of factors relevant to the commercial surf clam fishery that mean extensive fishing over large areas is not feasible. These include the requirement to fish surf clams only from areas subject to certified shellfish sanitation programmes, the limitations of the new technology (which will only be used in the surf zone) and the fact that surf clams are found in commercial abundance only at surf zone beaches.

Sustainability Impact

- 32 Permitting wider dredges in the surf clam fishery (Option 2 or 3) is unlikely to introduce any sustainability concerns for surf clams. Commercial catch will remain constrained by the TACC.
- 33 MFish also considers that commercial fishers are unlikely to illegally target other dredge fisheries with wider surf clam dredges. Surf clam habitat is spatially separated from other dredge fisheries such that wider dredges operating outside surf clam habitat will be easily distinguished. In addition, the new surf clam dredge is not suitable for harvesting other shellfish commonly caught by dredge⁷.
- 34 If claims by commercial fishers that new technology incorporated into the new dredge will increase CPUE and minimise non-target mortality are true, survival of non-target species will increase.

Utilisation Impact

- 35 The current dredge width regulation is largely irrelevant to the sustainable use of the surf clam fishery under the QMS where catch limits provide for sustainability and quota allocation provides for access. The current limit on dredge length might be appropriate for dredge fisheries in more low energy environments, but surf clam habitat (i.e. the surf zone) is turbulent and subject to frequent and substantial natural disturbance. Physical disturbance caused by surf clam dredging is relatively short-lived, with any disturbance probably dissipated after a few tidal cycles⁸.
- 36 MFish does not consider that the new dredge (Option 2 or 3) will affect the ability of non-commercial fishers to harvest surf clams. Commercial catch will still be constrained by the TACC, although there may be the potential for local depletion if the new dredge and technology prove very efficient. MFish considers potential risks low; submitters did not provide information to the contrary.

Costs

- 37 Although greater utilisation opportunities would be provided for with a 3.4m wide dredge (Option 2) compared with the status quo (Option 1), Option 2 would constrain the potential for commercial surf clam fishers to further develop the surf clam fishery to maximise value and provide for wellbeing, compared with no restriction on size (Option 3).

⁷ Scallops and oysters do not burrow into the sand or mud so dredges for these species ride along the top of the seafloor.

⁸ Other dredge fisheries (e.g. scallop and oyster) are conducted over more sensitive habitat. MFish does not intend to review dredge size regulations for other dredge fisheries at this time.

- 38 Option 2 would require enforcement for compliance with dredge size and associated offence provisions and penalties. Since this occurs already, there would be no increase in compliance costs.

Benefits

- 39 Fishers claim that wider dredges will better enable commercial surf clam fishers to develop the surf clam fishery further by minimising operating costs (e.g. time and fuel savings through fewer tows). Commercial surf clam fishers also maintain that new technology they can adopt on wider dredges will enable them to continue with ongoing initiatives to increase harvest efficiency (CPUE) and minimise mortality of small, non-marketable surf clams (pre-recruits) and non-target species.
- 40 MFish considers the overall effect of the wider dredge in the surf clam habitat will be neutral at worst because the area of surf zone swept is unlikely to increase, since the volume of the surf clam harvest will still be constrained by the TACC. Therefore, fewer tows would be required to harvest the TACC. Fewer tows should result in safer working conditions for fishers, given that they operate in the surf zone.
- 41 Excluding the target surf clam fishery from the requirements of r 78 of the regulations (Option 3) provides for commercial surf clam fishers to develop a dredge of optimum width without regulatory impediment.
- 42 Option 3 would not require enforcement for compliance with dredge width limitations. Consequently there would be a decrease in current compliance costs or compliance costs associated with Option 2.

Other Management Controls

- 43 Non-sessile, paddle crabs are also commonly caught in the surf zone. Fishers targeting surf clams currently may either land paddle crabs and record them against their annual catch entitlement (ACE), or pay a deemed value.

Appendix 1

Statutory Considerations

44 In forming the management options the following statutory considerations have been taken into account:

- a) **Sections 5(a) and (b) International Obligations and Treaty of Waitangi Obligations:** There is a wide range of international obligations relating to fishing (including sustainability and utilisation of fishstocks and maintaining biodiversity). MFish considers there are no specific issues arising under international obligations and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 with respect to allowing wider dredges to be used in the surf clam fishery
- b) **Section 8 – Purpose:** The management options provided are unlikely to adversely impact upon the surf clam fishery’s ability to meet the reasonably foreseeable needs of future generations. The effect on the aquatic environment will be no greater than that currently occurring. The options provided seek to improve utilisation opportunities by enabling fishers to use innovations to increase the efficiency of their surf clam dredges. At the same time, allowances for recreational and customary fishers, as well as commercial fishers, enable people to provide for their social, economic and cultural well-being.
- c) The management options MFish proposes (with the exception of the status quo) attempt to recognise the development potential in the surf clam fishery by enabling commercial fishers to use new and innovative technology to increase the value they get from using surf clams. MFish notes that the management options do not seek to maximise value across different fishing sectors but neither should they affect the value that non commercial fishers get from using surf clams.
- d) **Sections 9(a) and (b) - Environmental Principles - Associated Species and Biodiversity:** MFish considers that impacts on associated or dependent species, and biological diversity, will be neutral at worst. MFish notes that under the proposed management option, the area of surf zone swept is unlikely to increase. MFish also notes that the surf zone is not a habitat of particular significance for fisheries management.
- e) There is no significant bycatch of any associated or dependent species in this fishery due to the method of harvesting. Interactions between species have been identified, but there is no evidence that these interactions are of sufficient magnitude to unduly impact on associated and dependent species, or on biological diversity. No other information has been considered about any effects of fishing on any stock or on the aquatic environment.
- f) **Section 9(c) Environmental Principles - Habitats of Significance:** No habitats of particular significance for fisheries management have been identified. It is considered unlikely that the method of harvesting would have a demonstrable adverse effect on such habitats due to the dynamics of the surf zone.
- g) **Section 10 Information Principles:** The information sources with respect to likely impacts of a wider dredge upon surf clam stocks and the surf zone environment are largely anecdotal. Therefore, there is considerable uncertainty in

the adequacy and reliability of the information used. MFish has taken uncertainty into account and any future concerns that may arise will be addressed at that time.

