

SURF CLAM DREDGE SIZE

Executive Summary

- 1 Commercial dredge regulations (ie, dredge size and design) apply equally across all dredge fisheries, preventing commercial surf clam fishers from maximising harvesting efficiency.
- 2 The Ministry of Fisheries (MFish) considers the regulations should allow commercial surf clam fishers to use wider dredges than currently permitted because (i) the overall environmental effect of wider dredges in surf clam habitat (ie, the surf zone) is neutral and (ii) commercial fishers will better maximise value in the fishery¹.
- 3 The overall environmental effect of wider dredges is neutral because (i) the area of surf zone swept will not increase; and (ii) fewer tows will be necessary to harvest the Total Allowable Commercial Catch (TACC).
- 4 Wider dredges better enable commercial surf clam fishers to maximise value by minimising operating costs (ie, fewer tows). Commercial surf clam fishers also claim that technology they can use on wider dredges will better enable fishers to maximise value by increasing harvest efficiency (catch per unit of effort) and reduce mortality of small, non-marketable, surf clams and non-target species.²
- 5 Commercial fishers are unlikely to illegally target other dredge fisheries with wider dredges. Surf clam habitat is spatially separated from other dredge fisheries such that wider dredges operating outside surf clam habitat will be easily distinguished. Surf clam dredges in other dredge fisheries are inefficient.

Summary of Options

Status quo

- 6 Retain the existing rules for size and design parameters for dredges in all commercial dredge fisheries (ie, a standard dredge). Regulation 78 of the Fisheries (Commercial Fishing) Regulations 2001 (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.

¹ Dredge 'width' means the length of the bar or bit on a dredge.

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

Amend regulation 78 to set a new maximum new surf clam dredge width

- 7 Amend r 78 of the Regulations by setting a maximum dredge bar or bit length of 3.6 m for dredges used in the target commercial surf clam fishery. Commercial fishers have developed a longer, 3.6m bar or bit on their new dredges.

Exempt the surf clam fishery from regulation 78

- 8 Exempt the target commercial surf clam fishery from r 78 of the Regulations to enable commercial surf clam fishers to use a dredge with a bar or bit of any length.

Rationale for Management Options

- 9 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 technology into the new dredge that, fishers claim³:
- a) Gathers more surf clams per swept area than a standard dredge (ie, increased CPUE)
 - b) Minimises the mortality of small non-marketable surf clams and non-target species.
- 10 Commercial surf clam fishers claim the new dredge enables them to maximise value by:
- a) Achieving greater catch per unit of effort (CPUE) - efficiency of harvest;
 - b) Better targeting marketable surf clams – achieving better value; and
 - c) Minimising mortality of smaller surf clams.
- 11 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 3.6 m long (see paragraph 7).
- 12 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. Further, dredge size limits were an allocation mechanism between fishers; this is now irrelevant as the species is now managed under the QMS.
- 13 The current limit on dredge length might be appropriate for dredge fisheries in more sensitive, soft-bottom habitats, but surf clam habitat (that is, the surf zone) is turbulent and resilient. Physical disturbance caused by surf clam

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

dredging is relatively short lived, with any disturbance dissipated after a few tidal cycles⁴.

- 14 MFish considers the overall effect of the wider dredge in the surf clam habitat will be neutral because:
 - a) Fewer tows will be necessary to catch the TACC
 - b) The area of surf zone swept will not increase.
- 15 Decreased tow frequency and no change in area swept leads MFish to conclude that the wider dredge poses no perceivable sustainability threat to surf clam habitat. MFish foresees no change in the volume of the surf clam harvest because catches will still be constrained by the TACC.
- 16 MFish also notes that should new technology fishers intend to use with the wider dredge increase CPUE and minimise mortality of small surf clams and non-target species:
 - a) The total area of the surf zone swept will decrease
 - b) Non target bycatch survival will increase (reduced environmental effect)
 - c) Pre recruit surf clam mortality will decrease.
- 17 Consideration of the effect of the new technology is not directly relevant to the Minister of Fisheries' 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 sized dredges
 - b) Commercial fishers have not proven the effectiveness of the technology in increasing CPUE and minimising non target mortality.
- 18 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 the 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.

Assessment of Management Options

Status quo

Environmental effect

- 19 Maintaining the status quo introduces no environmental concerns because there would be no change in current harvesting activity.

⁴ Other dredge fisheries (eg, scallop and oyster) are conducted over more sensitive habitat. MFish does not intend to review other dredge fisheries at this time.

Sustainability effect

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

Utilisation effect

- 21 Maintaining the status quo ignores the potential for commercial surf clam fishers to further develop the surf clam fishery to maximise value and provide for well being.

Amend regulation 78 to set a new maximum surf clam dredge width

Environmental effect

- 22 MFish considers the new dredge will not increase any environmental effects in the surf clam fishery. Despite a wider area swept per tow, fewer tows will be necessary to catch the TACC and the total area of surf zone swept would not increase.
- 23 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 waves (ie, environmental effects are not believed to be significant). Surf clams are distributed to depths of 10 meters 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 (stationary) macrofauna abundant in this environment and are therefore the member of the surf zone community most likely to be affected by dredging.
- 24 Non-sessile, paddle crabs are also commonly caught in the surf zone. Surf clam fishers can avoid sustainability problems with paddle crab bycatch by (i) voluntarily electing to use crab exclusion devices on their dredges; (ii) landing paddle crabs and recording them against their annual catch entitlement (ACE) or pay a deemed value; or (iii) returning live paddle crabs to the sea, providing paddle crabs are listed on Schedule 6 as recommended in this paper.
- 25 Commercial fishers also contend that new technology incorporated into the new dredge will increase CPUE and minimise non target mortality. If this is the case, the total area of the surf zone swept will decrease, and the survival of non-target species will increase.
- 26 The widespread use of new and more efficient dredges could potentially modify marine habitat, for example in sheltered inlets or on stable sea beds. However, a number of factors operating on the commercial surf clam fishery prevent extensive fishing over large areas. These include:
- a) The requirement to fish surf clams only from areas subject to certified shellfish sanitation programmes;
 - b) The limitations of the new technology (soft sediments-only); and

- c) The fact that surf clams are found in commercial abundance only at surf zone beaches.

Sustainability effect

- 27 Permitting wider dredges in the surf clam fishery is unlikely to introduce any sustainability concerns for surf clams. Commercial catch is constrained by the TACC.
- 28 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 dredge⁵.

Utilisation effect

- 29 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 and non-target species.
- 30 MFish does not consider that the new dredge will affect the ability of non-commercial fishers to harvest surf clams.

Exempt the surf clam fishery from regulation 78

Environmental effect

- 31 MFish is unable to quantify increased environmental effects associated with surf clam dredges larger than the new dredge that commercial surf clam fishers have developed.

Sustainability effect

- 32 Increasingly wider dredges in the surf clam fishery are unlikely to introduce any sustainability concerns for surf clams. Commercial catch will remain constrained by the TACC.

Utilisation effect

- 33 Wider dredges would increase the potential for fishing gear to become so efficient that harvesting could cause localised depletion of surf clams, even if commercial catch remains within the TACC. Although surf clams could become less accessible to non-commercial users following local depletion, there is little non-commercial harvesting of surf clams at present.

⁵ Scallops and oysters do not burrow into the sand or mud so dredges for these species ride along the top of the seafloor.

Initial position

- 34 MFish considers the regulations should allow commercial surf clam fishers to use the new dredge. MFish considers the effect of the new dredge on sustainability and the environment will be neutral. However, MFish considers the new dredge provides utilisation opportunities for commercial surf clam fishers.
- 35 MFish is unable to quantify the environmental and utilisation effects of dredges wider than the new dredge (that is, >3.6m). Although MFish would be concerned if dredges became so large and efficient that harvesting caused localised depletion of surf clams, until there is better information to quantify these effects, MFish recommends not placing an upper limit on commercial surf clam dredge width.
- 36 Accordingly, MFish recommends the target surf clam fishery is exempted from regulation 78 of the Fisheries (Commercial Fishing) Regulations 2001.

Statutory Considerations

- 37 In forming the management options the following statutory considerations have been taken into account.
- a) **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, enables people to provide for their social, economic and cultural well-being.
 - b) 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.
 - c) **Section 11(1)(c) : Sustainability Measures** - Natural Variability The Minister may vary sustainability measures after taking into account the natural variability of the stock concerned. The management options proposed in this paper do not include varying the TAC or TACC, so the volume of surf clams removed will remain unchanged and natural variability in the surf clam stock need not be considered further.
 - d) **Section 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. MFish notes that under the management options, the same area of surf zone

will be swept, if not less. MFish also notes that the surf zone is not a habitat of particular significance for fisheries management.

- e) There is no 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 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. MFish considers issues arising under international obligations and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 are adequately addressed in the management options for this stock.
- h) **Section 11(1) (b)** - TAC, TACC, and allowances, minimum size limits, a bag limit for recreational fishers, etc are in place for this stock.
- i) **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.
- j) **Section 11(2)(a) and (b) and (c)** - 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 setting or varying of any sustainability measure for surf clams. Nothing in the management options contradicts s 7 & s 8 of the Hauraki Gulf Marine Park Act 2000.
- k) **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. However, MFish is of the view that the accuracy of this information can be verified following regulatory amendments, and any future concerns can be addressed with further amendments to the regulations at that time, should they be required.

REGULATORY IMPACT STATEMENT

Surf Clam Dredge Size

Executive summary

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. However, current commercial dredge regulations prevent commercial surf clam fishers from legally using the new dredge because the new dredge has a bar or bit that is longer than the maximum of 2.5m (it is 3.6 m long).

The preferred option is to allow commercial surf clam fishers to use the new dredge. Accordingly, MFish recommends the target surf clam fishery is exempted from regulation 78 of the Fisheries (Commercial Fishing) Regulations 2001.

This Regulatory Impact Statement (RIS) has addressed all relevant aspects of the RIS requirements contained in Cabinet Office Circular CO (07) 3. Where a requirement has not been addressed it is considered to be not relevant to this proposal.

Adequacy statement

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

Status quo and problem

Current commercial dredge regulations prevent commercial surf clam fishers from legally using dredges having a bar or bit that is more than 2.5m long. This prevents fishers using their desired dredge design of 3.6m long. The limit on dredge width is more appropriate for dredge fisheries in more sensitive, soft-bottom habitats, but not for surf clam habitat (that is, the surf zone) since it is turbulent and resilient. Physical disturbance caused by surf clam dredging is relatively short lived, with any disturbance dissipated after a few tidal cycles or even a few waves⁶.

Government action is needed because the current regulations are unreasonably limiting the commercial surf clam fishery. 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.

MFish considers the Regulations should allow commercial surf clam fishers to use a wider dredge. The current regulation is largely irrelevant to the sustainable use of the surf clam fishery under the Quota Management System (QMS) as the TACC provides for sustainability. This regulation is not there to manage the environmental impacts on this fishery. The maximum dredge size was also partly about managing environmental impacts but this is not the case for the surf clam fishery because of the dynamic nature of the habitat. Further, dredge size limits were a mechanism that attempted to allocate catch fairly between fishers; this is now irrelevant as the species is now managed under the QMS.

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

The costs of the status quo are the opportunity cost to commercial surf clam fishers, who are unable, under current regulation, to use optimal-sized dredges. There is no benefit from maintaining the status quo, since (i) there is no perceived sustainability threat to surf clam or surf clam habitat by using a wider dredge – in other words, a narrower dredge has no advantage over a wider dredge with respect to habitat disturbance, and (ii) there is no perceived threat to the sustainability of the surf clam fishery should a wider dredge be permitted, since MFish foresees no change in the volume of the surf clam harvest because catches will still be constrained by the total allowable commercial catch (TACC).

Objectives

The objectives that options are measured against are those articulated under s8 of the Fisheries Act 1996 generally: “the purpose of this Act is to provide for the utilisation of fisheries resources while ensuring sustainability,” and the Statement of Intent (SOI) specifically: “Increasing the value achieved from fisheries ... through the Government’s economic transformation agenda which seeks to encourage development and assist in resolving impediments.” (SOI 2007-2012, p16). The preferred option therefore seeks to enable fishers to harvest surf clams in a cost-effective manner while appropriately managing environmental effects of that harvest.

Alternative options

An alternative option is to amend regulation 78 to allow a maximum dredge width of 3.6m for surf clams only.

MFish does not prefer this option, because it still unnecessarily constrains innovations in harvesting techniques (for example, development of surf clam dredges >3.6m), with no benefit of reduced risk. In other words, a potential cost would remain with respect to utilisation, but no additional benefit over option 3 with respect to sustainability or the environment. This option would unnecessarily restrict innovation, is not needed to manage sustainability or environmental impacts, and if an issue did arise, MFish could quickly use a gazette notice to impose emergency measures.

Preferred option

MFish’s preferred option is to exempt the target commercial surf clam fishery from r 78 of the Regulations to enable commercial surf clam fishers to use a dredge with a bar or bit of any length.

The major benefits of the new dredge are thought to be that they gather more surf clams per swept area than a standard dredge (ie, increased CPUE), and minimise the mortality of small non-marketable surf clams and non-target species⁷.

MFish would be concerned if surf clam dredges approached a width and efficiency that caused local depletion and affected other users. If this occurs, regulation changes could be implemented relatively easily to place an upper limit on dredge width size at that time.

A maximum dredge width may be appropriate in other dredge fisheries (for example, oyster and scallop), accordingly, the proposed regulation changes would only apply to

⁷ Note that it is not the greater width per se that is thought to reduce impact on the sea floor, but the hydraulic apparatus used with the wider dredges.

surf clams. Therefore, reg 78 would be amended, rather than removed, from the Fisheries (Commercial Fishing) Regulations 2001

Implementation and review

The proposal will be given effect by an amendment to the Fisheries (Commercial Fishing) Regulations 2001. MFish has consulted on the basis that, if approved by Cabinet, the regulatory amendment would come into force on 1 April 2008.

In addition to *Gazette* notice, a copy of the Minister's decision letter will be sent to all surf clam quota and permit holders in order to inform them of changes to the regulations.

Catch and effort patterns will be assessed as part of the annual sustainability rounds. Any future concerns can be addressed with further amendments to the regulations at that time, should they be required.

Consultation

MFish will carry out a consultation process required by section 25 of the Act. That section requires the Minister, before recommending the alteration of any regulation, to consult the persons and organisations considered by the Minister to be representative of those classes of persons having an interest in the relevant fisheries, including Maori, recreational, commercial and environmental interests. Submissions will be invited from stakeholders in the review consultation process. Any submissions will further inform the final advice to the Minister.