SANZ
SUSTAINABLE
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Ministry of Fisheries
P O Box 1020
Wellington

Attn: Trudie MacFarlane
Cc Erin Breen

Harvest management measures to support the introduction of attached bladder kelp stocks (KBB3G, KBB4G) into the QMS.

General Statement: Thank you for the opportunity to provide comments on the IPP document – Harvest management measures to support the introduction of attached bladder kelp stocks (KBB3G, KBB4G) into the QMS.

SANZ strongly supports **Option 2** and the subsequent implementation of all harvest measurement measures including:

i) Maximum cutting depth - Institute a maximum cutting depth of no more than 1.2 metres;
ii) Finer spatial scale reporting – Require the latitude and longitude location of each harvested kelp bed to be reported;
iii) Maximum canopy removal – Allow no more than 50% of any one kelp bed's canopy biomass to be harvested over a period of less than 6 months;
iv) Maximum canopy harvesting frequency – Require that no one area (i.e. kelp bed) may be harvested more than twice in one year;
v) Maximum canopy harvest width – Constrain harvesting of the canopy biomass to strips no greater than 5 metres in width.

We support that implementation of these measures is undertaken via -

Option C
Implement the harvest management measures using a combination of regulation and voluntary industry mechanisms.

After consideration of the IPP several aspects of introducing *M. pyrifera* into the QMS have arisen that we would like MFish to address as part of the development of management measures for the fishery. These are outlined briefly below and we would like to maintain a dialogue with MFish regarding them.

A definition as to what constitutes a "Macrocystis kelp bed" is developed

We are sympathetic to the fact that *Macrocystis* beds are both spatially and temporally (seasonally and annually) variable, however it would be of value to define what exactly constitutes a *Macrocystis* kelp bed. We present a scenario in Annex 1.

Spatial mapping of *Macrocystis* beds within KBB3G, KBB4G

Mapping of beds within KBB3G, KBB4G was a directive set out by MFish in the 2009 IPP concerning the introduction of Macrocystis into the QMS. If this is not going to be undertaken then we propose that as part of requirements of harvesting, individual permit holders map out the spatial extent of each bed including where within the bed they intend harvesting from – this would align with component ii) of management measure Option 2 "Finer spatial scale reporting – Require the latitude and longitude location of each harvested kelp bed to be reported".

If the spatial extents of individual beds are mapped then information on recovery of harvested beds could be easily formulated and could be a requirement of catch reporting as required by MFish. Because localised depletion is a concern highlighted in the IPP, a further advantage of obtaining such information is that focal areas that are fished can be easily evaluated within the context of each FMA.

We anticipate that individual mapped beds are numbered within each area (e.g., south-eastern part of Akaroa Harbour) as is done for commercially harvested beds in Monterey Bay California (Figure 1), although we expect that mapping would be undertaken at a finer spatial scale than that presented in Figure 1 (see Annex 2).

We further advocate that if the onus is placed on the harvester to map *Macrocystis* beds, then by default they would have the sole rights to harvest from those beds. SANZ strongly supports a "One area / One harvester" approach to seaweed harvesting. We therefore support the formation of an industry structure based on a *Macrocystis* Industry Council and area-based Macrocystis Management Companies (MacroMACs) to work on finer spatial areas & useful reporting that ensures the quota holders are accountable for the sustainability of this fishery.

Control beds

SANZ also advocates the establishment of several control beds, i.e., where individual beds are not harvested, but their spatial extents are mapped annually. This would provide harvesters and MFish with information on the natural variation of beds outside of the context of harvesting. Further, control beds established in one area e.g., Akaroa Harbour, could be compared to additional areas that are fished, e.g., Chatham Islands and the exposed mainland coast, to evaluate spatiotemporal patterns across KBB3G and KBB4G.

One harvester one area

SANZ strongly supports a "One area / One harvester" approach to seaweed harvesting. We therefore support the formation of an industry structure based on a *Macrocystis* Industry Council and area-based Macrocystis Management Companies (MacroMACs) to manage the fishery on finer spatial scale.

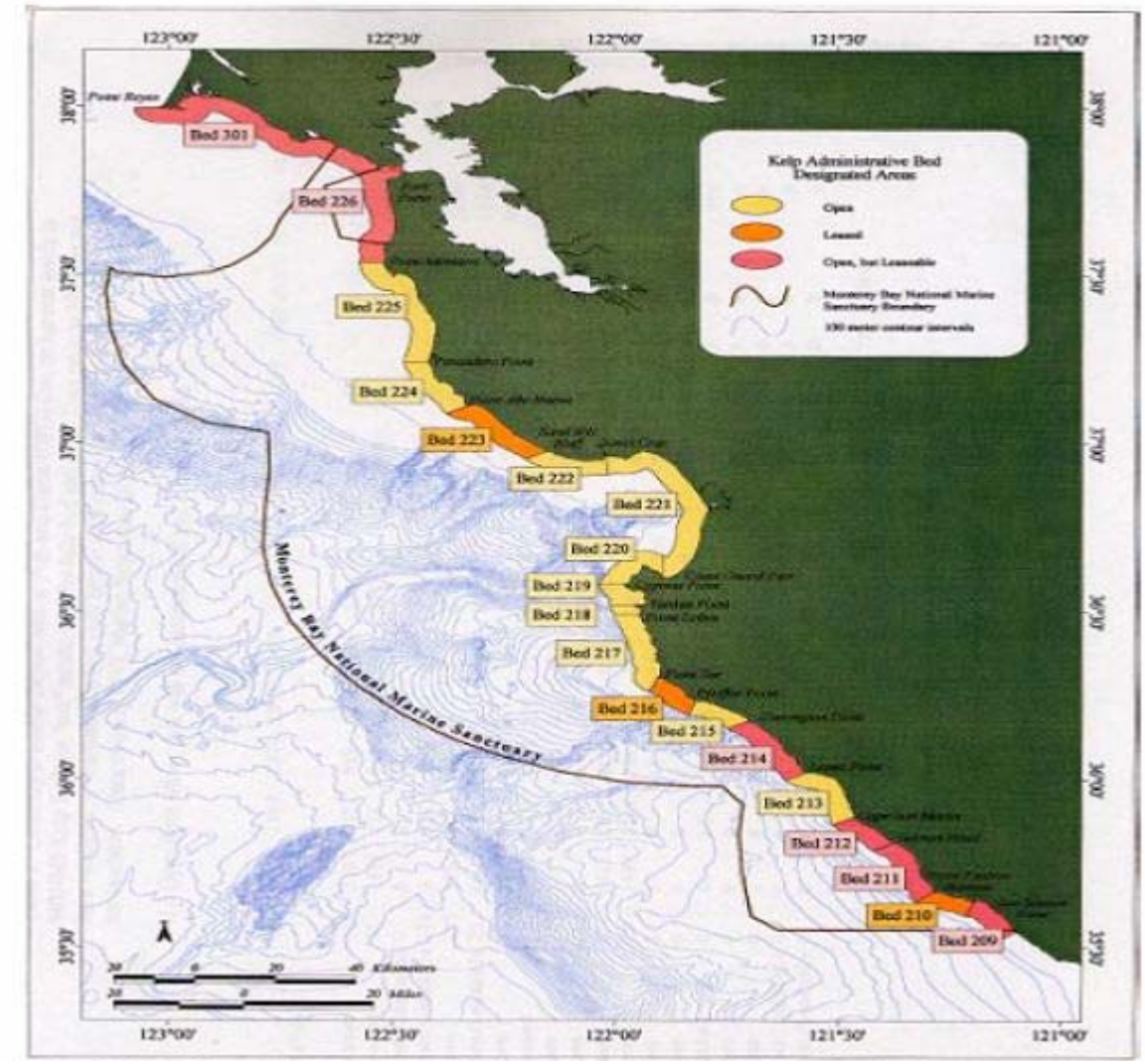

Figure 1. Map of the MBNMS showing locations and associated numbers for the areas designated as " Department of Fish and Game (DFG) Kelp Beds" Each bed is labelled as Open-Any person with a valid DFG kelp harvesting permit may commercially harvest kelp in this bed; Leased – This bed is open to commercial harvest only by the person or company that has leased this bed from the State of California; and, Open and Leasable – This bed is "open" to all commercial kelp harvesting, but it can be leased according to DFG regulations. Source: MBNMS kelp Management Report (2000)

Annex 1

In order for proper management of the *Macrocystis pyrifera* fishery a robust definition of a *Macrocystis pyrifera* bed is required; however difficulties may arise because beds are highly variable through space and time. As an example if we consider Figure 1, which shows an aerial perspective of *Macrocystis pyrifera* between Tikao Bay (north) and Otutereinga (south) it will be difficult (without historical information) to determine whether this is classified as one *Macrocystis pyrifera* bed or two. See corresponding Figures 2 and 3

Figure 2. Area of coastline between Tikao Bay (north) and Otutereinga (south), *Akaroa Harbour* showing aerial extent of *Macrocystis*.

Figure 3. Area of coastline between Tikao Bay (north) and Otutereinga (south), *Akaroa Harbour* showing aerial extent of *Macrocystis* – defined as 1 bed.

Figure 4. Area of coastline between Tikao Bay (north) and Otutereinga (south), *Akaroa Harbour* showing aerial extent of *Macrocystis* – defined as 2 beds.

Annex 2 Mapping Harvest and Control beds within areas.

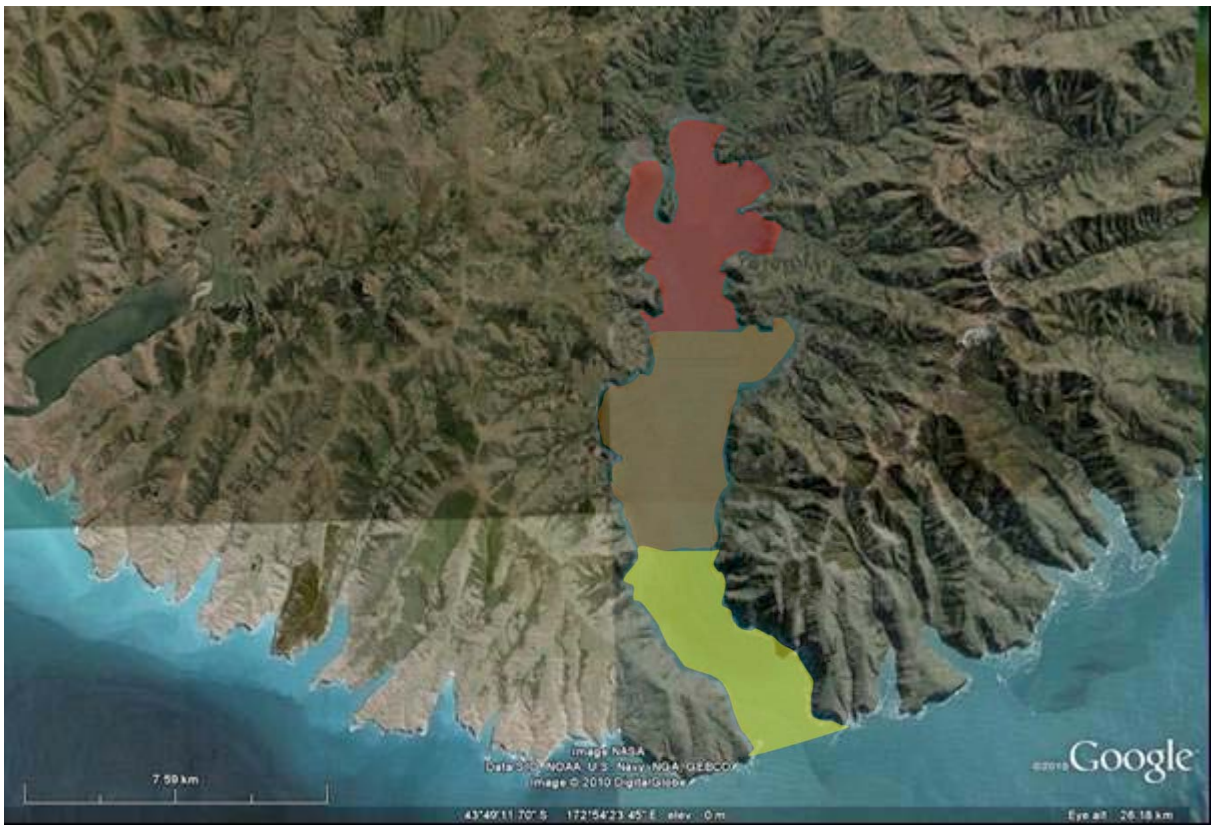

Figure 5. Hypothetical example of Akaroa Harbour Divided into 3 Areas: Northern (Red) – Mid (orange) – and Southern (yellow).

Figure 6. Aerial view of Area 2 – Akaroa Harbour, showing spatial extent of *Macrocystis* beds.

Figure 7. Hypothetical example of spatial mapping of *Macrocystis* beds within Area 2. Red patches denote harvest beds and yellow patches control beds.