

5 August 2016

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By e-mail to: marine@doc.govt.nz

Dear Lou and Martyn,

Submission: Proposed New Zealand Sea Lion Threat Management Plan 2016

Background

Deepwater Group Ltd (DWG) appreciates the opportunity to make this submission on your proposed New Zealand Sea Lion Threat Management Plan 2016 (TMP). Overall we are supportive of the contents in this document but make the following comments on where we are of the view that it is 'on the mark' and where we think more work is required to protect this unique animal.

DWG comprises of 50 individual registered companies, all of which are quota-owners and whose businesses and enterprises reflect an even larger number of people dependent on their enterprise. Shareholders of DWG collectively own around 96% of the quota for deepwater fish stocks including those for hake, hoki, jack mackerel, ling, orange roughy, oreos, scampi, southern blue whiting and squid.

Occasional interactions occur between New Zealand sea lions (NZSL) and deepwater fishing activities in the SBW6I, SQU6T and SCI6A fisheries and, very occasionally, in other fisheries within FMA5.

DWG is a non-profit organisation working in partnership with the Ministry for Primary Industries (MPI) with the vision to ensure New Zealand's deepwater fisheries are recognised as the best managed deepwater fisheries in the world. To this end, 74% of the catch from deepwater fisheries has been independently assessed and certified under the Marine Stewardship Council's programme as meeting the world's highest standard for sustainability. This programme includes assessments of our interactions with endangered, threatened and protected species, including with NZSL.

DWG has a 10 year track record of responsible, collaborative and active participation in improving science based knowledge and performance in regard to impacts on protected species and the wider marine environment.

Since its formation in 2006, DWG has worked assiduously with the relevant Government departments, institutions and organisations to better understand the issues involved with changes in the sub-populations of NZSL, to support improved science, and to provide further resources with the objectives of improving knowledge and reducing the real risks to NZSL populations (and to those of other protected species) from fishing activities.

We are mindful that there are, 'changers' and 'blamers' in the discussions on how best to conserve and protect species such as NZSL. As a 'changer' DWG will continue to work actively and positively with the Department of Conservation (DOC) and other 'changers' to obtain and implement effective conservation outcomes.

DWG Engagement on the Conservation of New Zealand Sea Lions

Examples of specific actions in improving management of the NZSL population include:

- Direct involvement in the MFish SLED Working Group (convened at the request of the Minister of Fisheries and independently chaired)
- Delivery of a comprehensive programme to ensure that all SLEDs are used by all vessels and certified as meeting the required design standards before each squid and southern blue whiting season
- Engagement with and provision of data/laboratory samples to Massey University and NIWA
- Support for MPI SQU6T and SBW6I Operational Plans, including enhanced monitoring
- Resourcing for additional veterinary work, extended field seasons and pup counts at Campbell Islands
- Full and active participation in all relevant DOC and MPI technical groups
- Support for Pup Mortality Workshop and disease research.

DWG Submits on the Proposed TMP for NZSL that:

1. This TMP, in that it addresses all of the known risk factors to NZSL, is a welcome change from the former narrow management view.
2. DWG supports many of the broad propositions made noting reservations on some matters as outlined in the appended table.
3. Conservation and management costs money. It is unclear what funds are available for the necessary conservation work. We note with concern that it appears some important scientific work may be side-lined due to funding issues and seek discussion with DOC on options to source further resources to ensure the required work can be undertaken.
4. DWG will continue to work with both DOC and MPI to support scientific and management programmes that reduce real risks to sea lions from fishing where effective, practical and affordable options exist. We have a strong track record in this and will maintain it.
5. DWG remains concerned that pseudo-science and political expediency, unless set to one side, will remain the biggest threats to good conservation management for New Zealand sea lions.
6. Our further submission on the details of the TMP is appended to this letter.

Contact

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DWG Comments on TMP

Goals

1. Population Goals: DWG supports the goals for the NZSL populations. Those proposed make as much sense as is useful. As noted below, there is a clear miss in the lack of monitoring of the Campbell sub-population, which currently provides approximately 30% of the reported NZSL pup production.
2. Partnership Goal: DWG welcomes the inclusion and recognition of Ngai Tahu in these processes. However, DWG is of the view that the partnership model should also be considered to be extended to include other major entities, both national and international, who are prepared to provide resources, skills, knowledge and action to undertake programmes that will assist DOC in meeting the requirements of the TMP (e.g. the New Zealand Navy for logistic support, international conservation trusts who may be persuaded to support these programmes with funding and expertise).
3. Research and Monitoring Goal: Any framework that ensures relevant, cost effective and timely scientific work is undertaken is welcomed. The splintered and *ad hoc* approach of the past, including work that has remained non-transparent and the lack of access to essential scientific data must not continue to occur. Centralisation of scientific direction, data and reporting are paramount. This includes DOC obtaining and making available all previously collected data, including those that remain inaccessible for further analyses.
4. Community Goal: Better management of protected species of concern is not the role of a single entity or sector. Community involvement is paramount and should form part of a broader campaign and include other species with similar issues such as yellow-eyed penguin.

Population Status and Trends

5. DWG has been closely engaged in tracking the various models and processes run and directed by DOC and MPI (previously MFish) over the last decade to assess NZSL sub-populations. We support the transparent processes in which most of this work has been carried out, and the use of international expertise when bringing the TMP to crystallisation. No modelling is totally perfect, and we consider that some aspects of the modelling (such as the use of multiple discount factors in the “best estimate” runs) make the assessments of the impacts of fishing more pessimistic. Nevertheless we consider that NIWA have used their best ability to integrate all of the available data into their work and have delivered results that provide a very sound basis for the development of this TMP.
6. We note that our understanding is that the Expert Panel verbally stated in the final TMP workshop that this was the most comprehensive and best modelling that they had encountered. It was one of the few failings of the TMP workshop process that the Expert Panel were not required to document their support of this work.
7. We note that the TMP technical process provided the opportunity for other modelling work to be presented and reviewed, in particular the modelling carried out by an Otago University PhD student (Meyer *et al*). We note that this work was published in the scientific literature before it was considered by the peer review processes operated by DOC and MPI and, as a result, a number of methodological and other errors were not identified prior to that publication. We note and support DWG's view that this work falls short of the standards of reliability and objectivity required by MPI's Research and Science Information Standard.
8. There is a need to continue to collect certain data and to maintain these assessments on an ongoing basis.

TMP Objective and Scope

9. We support the TMP objective as stated. We also support the scope but not the priorities as proposed.

Proposed TMP Actions

10. The TMP signals a marked and welcome departure from previous long and firmly held beliefs that, based on the best available science, there is no single factor “to blame” for the decline in pup production at the Auckland Islands. This shift in perspective gives the TMP its greatest chance of success.
11. Although the actions refer to integration and monitoring across all sub-populations, we find this somewhat wanting in certain areas. We presume that the “*potential for more work*” (page 3) is in fact a statement that available funds will continue to limit some desired conservation actions.

National Programme

12. Population monitoring: We do not support leaving the Campbell population unmonitored for four years. It is a significant part of pup production, the sub-population seems to be operating differently to the Auckland Islands colonies and there are important things to address and learn here. Information from the sub-population(s) on the South Island also needs to include other data, such as when animals have been moved etc. Much of the information on the Stewart Island sub-population(s) (Rakiura) remains unavailable. It is essential within the TMP that all relevant information on NZSL colonies and populations is available for open assessment. We look forward to more information about this region and whether sea lions also exist on other off-lying islands.
13. New Zealand sea lion forum: DWG will actively engage and contribute as a part of such forum for as long as it maintains its relevance, coherency, reliance upon evidence-based information, and real world efficacy.
14. National engagement campaign: DWG supports this initiative to the extent that it does not reduce or distract resources available to take action on more pressing threats (e.g. disease and other causes of pup mortality). DWG recognises that it is time for DOC and the Regional Councils to take a stronger line on access to areas where NZSL are present to reduce the risk of harm or harassment from human activities. Of particular concern is the need to restrict access to NZSL by dogs and vehicles.
15. Disease research: Insufficient information is known about the epidemiology of the disease *Klebsiella pneumoniae* (*Kp*), its significant adverse impacts on sea lion production (due to pup deaths in particular) and on options to mitigate or to eliminate its reduction of NZSL population sizes. Nearly two decades have been squandered by Government in acknowledging the presence and the now chronic effects of *Kp* in NZSL, particularly on the Auckland Islands colonies. Finding solutions to mitigate the effects of this disease is a matter of both high importance and urgency. We acknowledge the lead role Massey University has taken in getting this matter into the open and we applaud their focus and work in this field.
16. *Kp* is not the only disease causing problems amongst iconic protected species. Diphtheria in yellow-eyed penguins and toxoplasmosis in Hector's type dolphins are also having adverse effects on the populations of these species. MPI and DOC must now work rapidly and effectively to create an integrated response that recognises, understands and manages such disease occurrences. This must include the development of a robust framework that can be used to respond to both existing and future disease events that put at risk any of our protected species or economic bio-capital.
17. There are significant contradictions in the current responses to disease events in protected species. On the face of it there appears to be an "out of sight, out of mind" approach. When protected species are not dying in a publicly visible and unseemly fashion on a populated coastline, it appears that the current approach is to "let nature take its course". For example, compare the responses to date of not treating (or even exploring options to treat) NZSL for *Kp* with the response to treat diphtheria yellow-eyed penguins with antibiotics. The lack of consistency in policy causes confusion and concern. This extends as far as euthanasia policy on offshore islands where there is an implied rule to not euthanise sea lion pups clearly dying from disease and other causes whereas on mainland New Zealand these situations do lead to euthanasia. NZSL have been listed as Nationally Critical by DOC and therefore husbandry in any effective and affordable form should be up for consideration.
18. Overall, there seems to be very little appetite in recent years within DOC to actively intervene with populations of protected species where risks or threats to their continued survival have been identified. New Zealand has a proud and internationally recognised reputation for effective interventions that have achieved remarkable conservation outcomes, particularly with our native birds. DWG applauds and fully supports the aspirational goal of the New Zealand Government to remove the introduced predators of New Zealand's native species. We urge DOC to consider the same approach of active engagement in the conservation of our marine species, including birds and mammals. We remain prepared to continue to actively engage in effective conservation projects to this end, such as the removal of pigs from Auckland Islands, the treatment of disease in NZSL and other species, and the removal of other hazards that are restricting the growth of these populations (e.g. filling in the holes that cause unacceptable numbers of NZSL pup deaths every year in the Campbell Island breeding colonies).
19. DWG strongly submits that DOC urgently establishes a national programme to address disease across a range of protected species, using NZSL as a priority and primary case study. Seeking effective interventions for disease is not only essential it is also justified in order to conserve and protect this, and other, at risk species. Undoubtedly New Zealand will be able to make these conservation projects of sufficient international interest that will enable us to seek and obtain 'partnerships' that will provide technical and scientific expertise along with funding to resource this programme. It is critical to know as soon as possible if any such interventions are available and could be used to mitigate the damaging effects of disease.
20. We suspect that any major focus on vector control and quarantine may prove to be distracting and ultimately of little benefit to the conservation of NZSL. While we harbour concerns that previous use of dogs on Auckland Islands along with human visits could have been possible avenues of transfer, the reality is that adult male sea lions habitually travel between mainland New Zealand, Stewart Island, the Snares, Auckland and Campbell Islands. These activities could alone prove to be the most likely links, without even

contemplating seabird vectors. We understand that *Kp* is present in NZSL colonies at Campbell Island and on mainland New Zealand.

Regional Programme

Pups drowning in holes:

21. As previously noted, DOC's current intervention policy appears to be inconsistent, both between protected species and between locations within New Zealand. Achieving a real reduction in the number of annual deaths of NZSL pups is simple. Every year a concerted effort needs to be made to ensure as few sea lion pups as possible die needlessly from causes that are 'fixable'. Campbell Island is a main area of immediate opportunity. The TMP proposes that there will be no further work at Campbell Island until 2020-21. This is entirely unacceptable. In proposing this course of inaction, DOC is essentially 'writing off' some 1,400 sea lion pups (i.e. based on 50% loss of 700 births, which is somewhat less than mortality measured in the last three censuses). These are not made up or modelled deaths, they are real and they are happening year on year. A report on the issues with breeding site terrain is available here: <http://www.doc.govt.nz/pagefiles/162947/bmp-final-report-sealions-campbell.pdf>.
22. DWG submits this proposed approach is unacceptable, is inconsistent with New Zealand's duty of care to protect and conserve NZSL, and is not good husbandry given that the risks are both known and can be easily remedied. We propose a combined inter-governmental effort to put the necessary technical expertise and equipment onto Campbell Island to fill rock pools with native rock and modify as much of the remaining peat bogs as can be done without threatening the landscape and biological values of the area.
23. We also suggest that annual visits occur at Campbell Island to undertake the following work programme: pup counts, disease analysis, tagging and resights, hole death management and translocation experiments (to understand the ability to move sea lions and pups to new areas safely) at least until the population is deemed to be secure.
24. Some high level comments on other conservation matters:
 - Quarantine and tourism: Manage it but don't overdo it. As stated above these issues are well managed by DOC now and the reality of risk from uncontrollable vectors limits the effectiveness of any efforts here
 - Beach management: Important in context of a wide range of species and the communities' understandings that conservation management is a shared responsibility not something 'to be done by others'
 - Incident response and monitoring: A necessary part of mainland improvement and not limited to NZSL
 - NZSL male aggression: We do not consider this proposition pragmatic at any scale that makes sense. Any relocation of females with pups needs to be fully reported to ensure that it is both informative to all regarding future management options and any impact on localised demographics can be monitored
 - Monitoring of captures and fishery operational plans: We have been supportive of these processes and will continue to work in constructive and collaborative ways with MPI and DOC to ensure robust monitoring is in place, robust data on interactions with fishing activities continue to be collected and the Operational Plans are effective and documented
 - Cost benefit analysis of restricting fishing in sea lion foraging areas: This proposition is fraught for two reasons. Firstly, some of the data gathered on the foraging range of female sea lions at Auckland Islands is not available for independent review and analysis – it must be. Secondly, and as very obvious during 2016, squid abundance varies widely by season, area and specific trawl grounds. This year the majority of the total squid catch was taken on the south eastern grounds of Auckland's (SQU6T) fishery. Next year it will be different, that is the only certainty. The concept that any such analysis can assess, let alone predict future benefits (i.e. less NZSL caught) and losses (i.e. loss of catch opportunity) based on sea lion behaviour known to date and catches of squid is both extraordinarily simplistic and flawed
 - It is relevant to any such assessments that very few sea lions are now caught in the SQU6T fishery due to the efficacy of SLEDs, coupled with the large reduction in deepwater trawler capacity in New Zealand. Due to changes in policy (e.g. the exclusion of FCVs from New Zealand waters), changes in economics and changes in the TACCs for other stocks (e.g. the large increase in the HOK1 TACC), the presence of up to 35-45 trawlers in the SQU6T fishery are likely gone forever. The future lower levels of fishing effort by itself will reduce the risk of foraging sea lions encountering trawl gear.

Research Programme Priorities

The table below reproduces Table 3 in the TMP (pp 20-22) and provides DWG's views and comments on priorities. We seek considerable further discussion with DOC on research priorities, resource constraints and a range of options to ensure New Zealand is effective in protecting, conserving and rebuilding our sea lion populations.

Threat	Project	DWG Suggested Priority	Our comment
Disease	Environmental and necropsy analysis last field season	High	Supported
Disease	Analysis of all past necropsy samples	High	Supported
Disease	Desktop review of <i>Kp</i>	High	Supported
Disease	Genetic investigation	High	Supported
Disease	Effect of hookworm	Medium	Supported but not critical
Disease	Development of vaccine	Low but....	There are other intervention options that need research
Changes in food resources	Analysis of scats and etc	Low	Not supported unless outside usual data collection timing. Desktop summation of work to date required first
Changes in food resources	Estimating changes in diet using Bayesian modelling	Medium but.....	Project needs presentation to a working group (WG) to understand what is actually proposed and what probable value may ensue
Changes in food resources	Stable isotope analysis	Medium but.....	10 year horizon too short. Needs WG consideration
Changes in food resources	Fatty acid signature analysis	Low	Not supported until evidence produced that can show level of discrimination in signature that is useful
Male aggression	Monitoring male behaviour	Low but if zero marginal cost do it	We note there are no plans to go to Campbell Island till 2021. We would like to see monitoring of shark bite scarring reinstated at Auckland Islands
Male aggression	Colony formation	Low	Not supported. Money better spent at Campbell Island
Poor habitat/holes and drowning	Trialling translocation	High	Needs to happen at Campbell Island. Results of mainland translocations need to be made available
Understanding risk to NZSL	Stewart Island population study	High	Supported. Need iwi support for comprehensive programme
Effects of fishing	SLED efficacy	Low-medium but.....	We would support evaluation of any rational, practical and affordable means to address the small residual uncertainty in SLED efficacy. Whilst more than a decade of SLED related research has demonstrated that direct measurement of efficacy is not particularly tractable there is nevertheless good – if indirect – evidence of SLED effectiveness. This evidence was summarised by MPI in advice to the Minister of Fisheries in 2011. Furthermore, demographic estimates from modelling based on ongoing population monitoring do not support the proposition that there is significant cryptic mortality attributable to the introduction and use of SLEDs