

19 August 2019

Consultation: Hector's and Māui Dolphin  
Threat Management Plan  
Department of Conservation  
PO Box 10420 Wellington 6143

Via electronic submission: [DolphinTMP@doc.govt.nz](mailto:DolphinTMP@doc.govt.nz)

**RE: The Department of Conservation (DOC) and Fisheries New Zealand Consultation on the Hector's and Māui Dolphin Threat Management Plan (TMP) Review**

Department of Conservation,

We appreciate the opportunity to comment on the Department of Conservation & Fisheries New Zealand Hector's and Māui Dolphins Threat Management Plan (TMP) Review<sup>1</sup> and associated plan options.

Founded in 1971, the International Association of Geophysical Contractors (IAGC) is the global trade association for the geophysical and exploration industry, the cornerstone of the energy industry. With more than 80 member companies in 50 countries, our membership includes onshore and offshore survey operators and acquisition companies, data and processing providers, exploration and production companies, equipment and software manufacturers, industry suppliers and service providers.

The IAGC focuses on advancing the geophysical and exploration industry's freedom to operate. The IAGC engages governments and stakeholders worldwide on issues central to geophysical operations and exploration access, including prioritizing timely, accessible data acquisition throughout the life of the asset; providing predictability & competition; promoting regulatory & fiscal certainty and promulgating risk- & science-based regulations.

***Consultation Document***

The IAGC appreciates the DOC and Fisheries' aim to analyze and enhance measures to reduce impacts on the Hector's and Māui dolphins. However, as with any proposed regulatory

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<sup>1</sup> <https://www.doc.govt.nz/get-involved/have-your-say/all-consultations/2019/hectors-and-maui-dolphins-threat-management-plan-review/>

measures we urge a measured approach and implementation of restrictions only where impacts are proven and based on sound scientific information. The DOC and Fisheries' goals to implement detailed objectives that are specific, measurable and time-bound should remain focused on actual threats not activities which "may" or "through...indirect mechanisms" affect the dolphins. The IAGC is most interested in and focused on proposals contained in Part D, Management of other non-fishing threats, particularly where "noise" is portrayed as a threat. The consultation document states; "Of these threats, seismic surveying and seabed mining are considered to pose the greatest risk to Hector's and Māui Dolphins – seismic surveying because of the very loud underwater noise produced by the airgun arrays; and subsea mining through a combination of underwater noise, direct seabed disturbance, and the discharge of sediments."<sup>2</sup> This statement is inaccurate and grossly exaggerates how surveys work, 'very loud' for example is not scientific and there have never been measurable negative impacts from seismic survey sound on marine mammals anywhere around the globe. Further, sound generated from seismic surveys is focused at low frequencies, whereas Hector's and Māui dolphins specialize at high frequencies. We urge the agencies to include accurate descriptions of seismic surveys throughout the consultation and supporting documents.

### ***The "options" Proposed***

Part D addresses seismic surveys, along with a number of other ocean use issues. Three potential options are explicitly detailed with increasing restrictions on seismic surveying activities.

Considering the options provided in the consultation document, the IAGC generally supports option 1; Compliance in sanctuaries with the 2013 Code of Conduct for Minimising Acoustic Disturbance to Marine Mammals from Seismic Surveying Operations. As noted below, seismic surveys are temporary and transitory and do not negatively impact marine mammals at the population level. The IAGC urges the DOC and Fisheries agencies to recognize the industry recommended mitigation measures<sup>3</sup>, practices that further minimize the possibility of impacts on marine mammals.

The IAGC finds Option 2; Permitting system for seismic surveying in sanctuaries, with the ability to impose conditions on permits or decline applications, unnecessary if surveys are in compliance with the Code of Conduct. The imposition of conditions in excess of industry recommended mitigation measures along with protocols in the Code of Conduct seem precautionary at best, and at worst, arbitrary.

Finally, Option 3; Prohibition on seismic surveying in marine mammal sanctuaries with exemptions for: urgent hazard assessments in sanctuaries; existing Crown Minerals Act permit holders, as well as any subsequent permits granted with respect to those existing permits, is simply unreasonable. Notwithstanding the use of seismic surveys for energy exploration, there

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<sup>2</sup> Department of Conservation and Fisheries New Zealand Discussion Paper June 2019, page 32.

<sup>3</sup> IAGC-IOGP Recommended monitoring and mitigation measures for cetaceans during marine seismic survey geophysical operations; <https://www.iagc.org/resources.html>

are many uses for the technology today; including locating unexploded ordinances, sand and beach re-nourishment, scientific research, fault line analysis and alternative energy development. Prohibition precludes not only New Zealand’s ability to understand where energy sources may exist but also unnecessary precludes future activities not related to energy exploration.

### ***Supporting Information and Rationale***

Section 8: “Management of other non-fishing threats”, specifically section 8.3 in the supporting information document, addresses seismic surveying. In general, the description of seismic surveying activities is reasonable, and the authors address that potential effects can be dependent on context and range from “mere detection to physical injury”. It is highly unlikely, especially given industry standard mitigation measures, that sound from seismic surveys would lead to physical injury.

It should be noted that both Hector’s and Māui dolphins are high frequency hearing species, with both species’ vocalizations consisting largely of clicks centered at about 125 kHz. Approximately 99% of the energy contained within a seismic pulse is accounted for below 800 Hz, meaning that the only a minute fraction of the energy will be audible to both species. Further, much of the energy from seismic surveys is directed downward, which indicates that the animals would need to be directly below the array to experience the maximum source level – using standard industry marine mammal monitoring and mitigation measures, this is highly unlikely to occur. While, as the report notes, there is no direct experimental evidence showing whether seismic surveys affect either species, their hearing threshold is comparable to harbor porpoise, for which evidence largely suggests that seismic survey impacts are temporary, transitory, and behavioral. While it is possible that responses by Māui and Hector’s dolphins might be somewhat more pronounced as they are naïve to the seismic stimulus, the available evidence hardly indicates that seismic surveying presents a “threat to the dolphins”<sup>4</sup>.

With fewer than 100 Māui dolphins remaining, it is reasonable and prudent to expand the protected area to limit potential interactions with the physical threat associated with fisheries. However, please note, the IAGC does *not* believe this should preclude seismic surveying in these areas. Using industry standard mitigation measures (e.g. observers, PAM) and proper planning (e.g. avoiding breeding grounds during breeding season), the potential impacts are minimal and, similar to harbor porpoise, likely to be limited to temporary behavioral effects.

### ***Spatial Risk Assessment***

The spatial risk assessment document provides more specific information pertaining to surveying activity and underwater noise. The assessment cites a JASCO report (unavailable) that relies on one-month equivalent continuous underwater noise levels ( $L_{eq}$ ) across 3km grid cells. While this makes for a convenient model, IAGC would argue that  $L_{eq}$  is not an appropriate

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<sup>4</sup> Fisheries New Zealand and Department of Conservation Hector’s and Māui Dolphin Threat Management Plan, page 87

choice for assessing the sound produced by seismic surveys, which is impulsive and typically consists of a 1/10<sup>th</sup> of a second pulse every 10 seconds. Equating this to continuous sound over a time frame of a month is inappropriate, particularly as there is a growing body of evidence to suggest that mammalian hearing recovers even between successive pulses. Using SEL over a much shorter time frame would have been a more appropriate choice to assess cumulative sound exposure.

The one-month time frame is again an inappropriate modeling choice, as both the sound source (seismic vessel) and receiver (individual marine mammal) are moving. Interactions between the two are more likely on the scale of hours at most, and repeated interactions are likely to be separated by days or weeks, if they occur at all. Modeling the sound in the environment on the spatial and temporal scales selected does not accurately portray the experience of, and therefore potential risks to, the receiver.

The report includes a summary plot of cumulative underwater noise from seismic and vessel traffic. This again is not an appropriate choice, as vessel noise is continuous and seismic is impulsive. Given that vessel noise is much more prevalent than seismic survey activity, this plot is likely dominated by vessel noise. The report concludes that, “underwater noise from seismic surveys and offshore pile driving pose the greatest risk for causing auditory impairment, but this risk is low if the probable frequency-specific sensitivity of Hector’s dolphin is considered.” While the steep rise time of an impulsive source does present a greater risk of auditory injury than a continuous low-level sound, the relative frequency of exposure to seismic survey versus vessel noise makes this a poor comparison at best. The authors are correct in concluding that the risk is low when frequency sensitivity is considered – mechanical auditory injury does not occur if the sound is not detected. Coupled with standard mitigation measures, the risks are lowered further still.

### ***Conclusion***

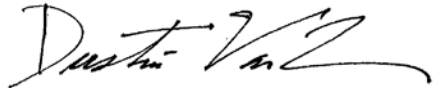
More than five decades of extensive worldwide seismic survey activities and scientific research indicate that the risk of direct physical injury from sound to marine mammals is extremely low. Additionally, there is no scientific evidence demonstrating biologically significant negative impacts on marine mammal populations.

The geophysical and exploration industry supports utilizing effective mitigation measures based on corresponding levels of potential risk or significant potential impacts on marine animals. Such an approach helps to ensure that the scope of mitigation measures implemented in the field are appropriate to the level of potential risk.

Stewardship is a priority for the geophysical industry and part of its core values. The seismic industry is committed to conducting its operations in an environmentally responsible manner and utilizes mitigation measures, such as exclusion zones, soft-starts and protected species observers to further reduce any possibility of impacts to marine populations.

We encourage the DOC and Fisheries to reevaluate the supporting information relied upon to draw inaccurate conclusions about the potential impacts from seismic surveys. We urge a measured approach to increasing restrictions on exploration activities when reviewing the consultation responses to amend the TMP. Should you have any questions regarding the IAGC comment letter, please contact Dustin Van Liew at: [dustin.vanliew@iagc.org](mailto:dustin.vanliew@iagc.org).

Sincerely,

A handwritten signature in black ink that reads "Dustin Van Liew". The signature is fluid and cursive, with the first name "Dustin" and last name "Van Liew" clearly legible.

Dustin Van Liew  
Vice President, Regulatory & Governmental Affairs  
International Association of Geophysical Contractors