9 October 2020

Ms. Alexa Cole, Director
Office of International Affairs and Seafood Inspection
1315 East-West Hwy
Silver Spring, MD 20910

Dear Ms. Cole:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors, has reviewed the National Marine Fisheries Service's (NMFS) "Notification of Receipt of a Supplemental Petition to Ban Imports of All Fish and Fish Products from New Zealand That Do Not Satisfy the Marine Mammal Protection Act," published on 29 September, 2020 (85 Fed. Reg. 60946), the underlying petition,[1] and related documents. Sea Shepherd Legal, Sea Shepherd New Zealand Ltd., and the Sea Shepherd Conservation Society filed the supplemental petition for emergency rulemaking seeking to compel NMFS to find that certain New Zealand fisheries are having significant adverse impacts on the critically endangered Māui dolphin (*Cephalorhynchus hectori maui*).[2] Such a finding would require a U.S. ban on imports of fish and fish products from those fisheries. Based on its review of the petition and related documents, the Commission offers the following comments and recommendations.

Background

Original Petition — The petition under review supplements an earlier petition ('the original petition') submitted to NMFS by the same organizations on 6 February 2019 (84 Fed. Reg. 5977). The original petition argued that, because Māui dolphins are critically endangered and at risk of extinction due to high rates of mortality incidental to set-gillnet and trawl fisheries, the United States should ban imports of all fish and fish products from those fisheries. The original petition acknowledged efforts taken by the New Zealand government to restrict use of set gillnets and trawls in core areas of the Māui dolphin's range, and to increase observer coverage in these fisheries, but argued that those measures were inadequate to protect the Māui dolphin from unsustainable mortality levels. NMFS requested comments on the original petition, particularly on the following issues:

1) Whether the apparent decline in the Māui dolphin population due to commercial fishing met the standard of "immediate and significant adverse impact on a marine mammal stock" within the Marine Mammal Protection Act (MMPA);

[1] Available on October 1, 2020, at: https://www.regulations.gov/document?D=NOAA-NMFS-2019-0013-0055
[2] The Māui dolphin is a subspecies of Hector's dolphin (*Cephalorhynchus hectori*), a species that is endemic to New Zealand. The nominate subspecies (*C. h. hectori*) is found mainly around the South Island, while the *maui* subspecies is currently found primarily off the northwestern coast of the North Island.

2) Whether the existing measures regulating commercial fishing throughout the range of the Māui dolphin are adequate;
3) Whether such measures can be considered comparable in effectiveness to the measures taken under similar circumstances in the U.S. regulatory program; and
4) Which specific fisheries are or may be directly associated with potential mortality of Māui dolphin, and therefore fall within the scope of the petition for emergency action.

Commission Comments — The Commission submitted comments on 27 March 2019.[3] It agreed with the petitioners that Māui dolphins faced a high risk of extinction primarily due to incidental take in gillnet and trawl fisheries. In part, the Commission's comment letter recommended that NMFS:

- promptly ban imports of fish or fish products from fisheries known or likely to take Māui dolphins in excess of U.S. standards, unless it receives new information that supports a conclusion that New Zealand is implementing additional mitigation measures that are highly likely to reduce mortality and serious injury of Māui dolphins incidental to gillnet and trawl fisheries to a level below the species' potential biological removal (PBR) level; or
- if the agency concludes that New Zealand has adopted measures comparable to U.S. standards, it make the information on which such a conclusion is based available to the public and provide an additional opportunity for public comment.

NMFS's Decision — NMFS declined to take the actions advocated in the original petition on 10 July 2019 (84 Fed. Reg. 32853) and found that the New Zealand government:

1) had at the time an existing regulatory program designed to reduce Māui dolphin bycatch;
2) had evaluated the effectiveness of its regulatory program in meeting its bycatch reduction target, PST (population sustainability threshold, an analog to the U.S. PBR standard); and
3) was developing additional regulatory measures likely to reduce risks from fisheries and Māui dolphin bycatch below PBR.

NMFS based its decision to reject the original petition on data, analyses, and information received from the government of New Zealand, not all of which was available to the public. NMFS reported that data provided by the New Zealand government indicated that the bycatch rate in the set-gillnet and trawl fisheries was 0.11 dolphins per year. This was less than PST, which New Zealand estimated at 0.28 or 0.14 over a three-year period (2014-2017), depending on the recovery goal, which had yet to be revealed at the time. In addition, NMFS noted that New Zealand had recognized that the very small population size of Māui dolphins meant the subspecies was at an extreme risk of extinction, and that New Zealand had committed to reducing fishery-caused mortality to as close to zero as possible. Further, the New Zealand government had stated its

[3] https://www.mmc.gov/wp-content/uploads/19-03-27-Doremus-Maui-dolphin-petition.pdf

intention to include in a new threat management plan (TMP) additional mitigation measures and a bycatch limit to reduce the bycatch risk to Māui dolphins by 50 percent, and therefore NMFS concluded that the new measures likely would reduce fishery-caused mortality of Māui dolphins to well below PST.

Sea Shepherd's Response — On 21 May 2020, the petitioners filed a complaint in the Court of International Trade (CIT), claiming that the Department of Commerce's 2019 denial of their petition was "arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law" under the Administrative Procedure Act, 5.U.S.C. § 706(2)(A).[4] The complaint alleged that:

- Scientific evidence shows that fishing gear interactions are having an immediate and significant adverse impact on the very small Māui dolphin population and that any additional human-caused mortality could result in increased risk of extinction;
- New Zealand's regulatory program has not adequately reduced bycatch risks;
- Supplemental measures slated to be adopted by New Zealand this year still do not meet U.S. standards and will not prevent an adverse impact on the population from fishing; and
- The documents NMFS used to reach its conclusion do not fully assess the risk of commercial fishing to Māui dolphins.

The petitioners' complaint included supporting declarations from three expert scientists supporting its claims.[5]

The CIT's Action — On 13 August 2020, at NMFS's request, the CIT remanded the matter to the agency to enable it to reconsider its findings in the light of recent changes to New Zealand's fisheries management program and other new information. The voluntary remand requires NMFS to make a determination on the petition by 30 October 2020. The court also afforded the plaintiffs in the lawsuit the opportunity to supplement their original petition to address changed circumstances.

Supplemental Petition — On 27 August 2020, NMFS received the supplemental petition from Sea Shepherd,[6] which reiterates the grounds for actions sought in the original petition, presents information that has become public since submission of the original petition, and provides additional arguments to support its position that NMFS should find that New Zealand's bycatch mitigation program for the Māui dolphin does not meet the MMPA's requirements. The petition contains new information, including:

1) Sightings data obtained from the New Zealand government, through an OIA (Official Information Act)[7] request, document the apparent presence of Māui dolphins on the east

[4] Downloaded on October 3, 2020, at: https://law.lclark.edu/live/files/30029-maui-dolphin-complaint
[5] All declarations downloaded on October 1, 2020, at: https://www.dropbox.com/sh/j98zmwd8f2hpz3n/AABqmqoMr-uNixRpELbBZlFda?dl=0
[6] Available on October 1, 2020, at: https://www.regulations.gov/document?D=NOAA-NMFS-2019-0013-0055
[7] An OIA request is similar to a FOIA (Freedom of Information Act) request in the United States.

side of the North Island, where no fishery measures are in place or proposed to eliminate or reduce dolphin bycatch; and

2) An announcement made by New Zealand in June 2019 concerning a new threat management program (TMP), which includes revised mitigation measures, some of which were expected to go into effect on 1 October 2020.

Roughly one month later, on 29 September 2020, NMFS published a *Federal Register* notice announcing receipt of the supplemental petition and inviting public comment. Citing the 30 October deadline set by the court, NMFS gave the public just eight business days to review these new materials and provide comments. While the Commission can appreciate the need to adhere to the court's schedule, it is also apparent that the unreasonably truncated review and comment period provided in this case is largely due to the one-month delay between receipt of the supplemental petition and the *Federal Register* notice. In particular, we note that the notice is relatively short, simple, and straightforward, and contains no analysis of the supplemental petition that would justify such a delay.

MMPA Import Rule

Section 101(a)(2) of the MMPA[8] provides that "[t]he Secretary of the Treasury shall ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards." That provision further requires the Secretary of Commerce to "insist on reasonable proof from the government of any nation from which fish or fish products will be exported to the United States of the effects on ocean mammals of the commercial fishing technology in use for such fish or fish products…." Those regulations (the Import Rule) require each nation that exports fish or fish products, designated in the rule as an 'export nation', to the United States to provide evidence that its management program and measures to mitigate marine mammal bycatch are comparable to those of the United States. As noted in the preamble to the Import Rule, to receive a comparability finding "the harvesting nation must…demonstrate it has adopted and implemented, with respect to an export fishery, a regulatory program governing the incidental mortality and serious injury of marine mammals in the course of commercial fishing operations in its export fishery that is comparable in effectiveness to the U.S. regulatory program."[9] Although the Import Rule established a five-year exemption period during which exporting countries would be expected to achieve and demonstrate comparability, it includes an exception under which NMFS can "consider emergency rulemaking to ban imports of fish and fish products from an export or exempt fishery having or likely to have an immediate and significant adverse impact on a marine mammal stock."[10]

Emergency Rulemaking

The Import Rule anticipates that NMFS will consult with the nation with the relevant export fisheries before initiating emergency rulemaking, and urge that country "to take measures to reduce the incidental mortality and serious injury, and effectively mitigate such immediate and significant

[8] 16 U.S.C. § 1371(a)(2)
[9] Ibid at 54391
[10] Ibid at 54395

adverse impact on the marine mammal stock(s)." In addition, the Import Rule states that "[i]f the harvesting nation fails to take measures to reduce the incidental mortality and serious injury and mitigate such immediate and significant adverse impact, NMFS would consider prohibiting the imports of fish and fish products from the relevant export or exempt fishery through notice and comment rulemaking."[11] Further, the regulations note that the same criterion, 'having or likely to have an immediate and significant adverse impact,' is used in the MMPA's domestic emergency rulemaking (MMPA section 118(g)), reinforcing the central principle of the Import Rule that an export country's management program must be comparably effective to that of the United States. Although this language suggests that NMFS has broad discretion in deciding whether or not to ban imports in such situations, the court in *NRDC* v. *Ross*, which considered a similar challenge concerning vaquita (*Phocoena sinus*) bycatch in fisheries in Mexico, found that an import ban was required if the exporting country did not meet the MMPA's comparability requirements.

In the present case, the critical questions are whether the measures taken by New Zealand are or will be sufficient to "reduce the incidental mortality and serious injury and mitigate such immediate and significant adverse impact," and whether New Zealand has provided reasonable proof of such.

Conservation Status and Fisheries Interactions

The Commission agrees with the petitioners' assertion that fishing has been the primary cause of the decline in Māui dolphin numbers and has, for decades, had an "immediate and significant adverse impact" on the subspecies. The subspecies is listed as endangered under the Endangered Species Act,[12] "critically endangered" on the IUCN Red List,[13] and "nationally critical" in New Zealand's Threat Classification system (NZDOC 2011). In addition, the Scientific Committee of the International Whaling Commission (IWC) has repeatedly cautioned that the risk of extinction for this subspecies would be increased by the death of even a single individual (IWC 2018, IWC 2019). Estimates of the subspecies' abundance and its rate of decline have varied among analyses as methods have been refined and data added. There have been several recent efforts to estimate the size of the Māui dolphin population (Hamner et al. 2012, Baker et al. 2016, Slooten & Dawson 2018). These studies have produced abundance estimates ranging from 55 to 63 animals, with the population having declined from over 80 animals in 2000-2001 (Roberts et al. 2019a), 111 in the late 1990s (Slooten et al. 2004), and 140 in 1985 (Dawson and Slooten 1988). Most striking, the latest estimate is less than 4 percent of the roughly 1500 Māui dolphins believed to have existed in the 1960s. Using different analytical methods, Slooten and Dawson (2018) estimated that the population has been declining at a rate of 2 percent per year between 1985 and 2016, Baker et al. (2016) estimated a 1-2 percent annual rate of decline between 2001 and 2016, and Cooke et al. (2019) estimated an annual rate of decline of 3-4 percent between 2001and 2016. Although Slooten and Dawson (2018) acknowledged uncertainty as to whether the population is still declining at their estimated rate, Bayesian population projections indicate a high probability that the population is still declining and will continue to do so (Slooten and Dawson 2018, Cooke et al. 2018).

[11] 16 U.S.C. § 1371(a)(2) at 54395
[12] 82 Fed. Reg. 43701, 7 September 2017
[13] https://www.iucnredlist.org/species/39427/44200192

Using DNA profiles of Māui dolphins, Baker and colleagues estimated that the effective population size has declined by 50 percent, from 69 in 2001-2007 to just 34 in 2015-2016 (Baker et al. 2016). Thus, assuming a 50:50 sex ratio, the reproductive potential and fate of the population is likely dependent on just 17 females.

Incidental catch in gillnets and trawl nets has been identified as likely the primary source of human-caused mortality of Māui dolphins over the past 50-60 years. A risk assessment conducted by the New Zealand government in 2012 estimated that 95.5 percent of all human-caused deaths were the result of fisheries interactions (Currey et al. 2012). The same assessment estimated that five Māui dolphins, on average, were killed each year due to fisheries interactions. Furthermore, other studies have indicated that Currey et al. likely underestimated the incidental mortality rate due to a number of factors (e.g., bias due to low observer coverage, low reporting rates for stranded dolphins, and other forms of cryptic mortality; Slooten and Dawson 2018, Slooten and Dawson 2017). Applying the U.S. management standard (PBR), Slooten and Dawson (2018) concluded that the Māui dolphin population could sustain losses no greater than one individual roughly every 8 to 20 years. This corresponds to PBR values of between 0.12 and 0.05 removals per year. The range in these values reflects different possible choices about the appropriate intrinsic rate of population growth to use in calculating PBR.

To support the development of a revised TMP, Fisheries New Zealand and the New Zealand Department of Conservation undertook a new risk assessment in 2017 (Roberts et al. 2019b). Applying the outcomes of model simulations, Roberts et al. concluded that the impact of incidental take by fisheries in recent years would not compromise the population's likelihood of recovery to at least 95 percent of the expected population level in the absence of fishing impacts. However, when considering the upper 95-percent credible interval of model outcomes recovery was unlikely, reflecting the possibility that bycatch rates could be substantially higher than the model's estimated mortality rate from fisheries interactions of 0.12 deaths per year. In contrast, a similar analysis by Cooke et al. (2019) found that the fisheries-related mortality rate was highly dependent on the various reasonable assumptions made in their model. Using a different set of assumptions, they estimated the mortality rate to be 15-20 times higher (1.5-2.4 deaths per year recently, compared to 3-6 per year in the early 2000s). And, basing the analysis on yet another set of assumptions, suggested that the mortality rate has not declined and remains elevated.

Toxoplasma gondii infections (toxoplasmosis) have been identified as the cause of death in 25 percent of carcasses of Hector's and Māui dolphins necropsied between 2007 and 2011 (Roe et al. 2013). Modeling based on the data on deaths caused by toxoplasmosis (Roberts et al. 2019) suggests that much of the recent population decline has been due almost entirely to disease, rather than fishery-related deaths. However, Slooten and Dawson (2020) have called these conclusions into question, noting that increased survival of Hector's dolphins, the trends in the population estimates, and the absence of toxoplasmosis-related deaths since 2013 are not consistent with the hypothesis that toxoplasmosis is the major source of mortality.

In general, the Roberts et al. 2019 risk assessment models and analyses have been strongly criticized by Māui dolphin researchers, Drs. Slooten and Dawson of the University of Otago. They point to potentially substantial problems or issues with model data, assumptions or estimates of population size, reproductive rate, fishing effort, observer coverage, the bycatch limit, and the importance of toxoplasmosis, at least some of which could have led to overly-optimistic assessments

of the fishery impacts on the population (or overly pessimistic assessments of the impact of disease; see Taylor et al. 2018) (Slooten & Dawson 2020). Slooten and Dawson summarized their concerns as follows:

> The first overarching problem is that the Roberts et al. (2019) approach combines several estimates that are biased, and the biases consistently act together to underestimate the level of bycatch and overestimate the species' ability to absorb impacts. In essence, the approach uses abundance estimates that are likely biased high, multiplies them by a reproductive rate that has been arbitrarily raised, multiplied by an assumed figure for calf survival, to reach a number of dolphins that would be added each year if the population were to remain stable. From this number, Roberts et al. (2019) subtract their estimates of bycatch, which are almost certainly biased low. The remaining number of dolphins is apportioned a cause of death according to autopsy data from 55 Hector's and Māui dolphins found dead on beaches. This is then compared to estimates of what level of takes would be sustainable, calculated using a formula that is not well understood and less conservative than the PBR. This is a poor basis for rational management of an endangered, endemic marine mammal.

Although there is considerable uncertainty in some of the estimates used, the best available information supports the conclusions that the population has been greatly reduced, abundance is at a precariously low level, the subspecies may continue to decline and faces a substantial risk of extinction in the foreseeable future, and fisheries interactions have had major impacts on the population (Slooten and Dawson 2020). Whether they are having major impacts at this time is not clear given the different conclusions reached by Roberts et al. 2019 versus Slooten and Dawson 2020. Neither the MMPA nor NMFS's implementing regulations give specific guidance as to what constitutes "an immediate and significant adverse impact" on a marine mammal stock. Nevertheless, given the small numbers of Māui dolphins remaining, the population's trend over recent decades, the low capacity of the species to withstand further losses, and the ongoing number of deaths of Hector's and Maui dolphins attributed to fisheries bycatch, it is plainly evident that commercial fisheries have and may be continuing to have such an impact on the Māui dolphin.

Given the complexity of these issues and the inordinately short comment period, the Commission is not going to attempt, at this juncture, to assess or critique the New Zealand government's science or the criticisms leveled by Slooten and Dawson 2020, and others (e.g., Sea Shepherd and its experts). Rather, the Commission notes that the uncertainties raised in modeling done by Roberts et al. (2019) and other significant issues raised by critics of those efforts, suggest substantial uncertainty remains in assessing the level of impacts on Māui dolphins from fishing and other human activities. Therefore, the Commission recommends that, until those uncertainties can be resolved, NMFS apply a precautionary approach in assessing the supplemental petition. The Import Rule puts the onus on New Zealand to provide "reasonable proof" that its fisheries are not having an unsustainable impact on Māui dolphins. New Zealand has provided what could be considered reasonable proof. However, reliance by NMFS solely on New Zealand's analyses is undermined by the problems and questions raised in the supplemental petition, the petitioners' experts, and by Slooten and Dawson (2020) and Taylor et al. (2018), which call into question the reasonableness of that "proof."

Adequacy of Existing[14] Regulations

In 2003, New Zealand created "prohibition zones" to protect Māui dolphins from fishing and other sources of potential impacts (seabed mining and noise from seismic surveys), and these remain in place.[15] However, those zones protect only a small portion of Māui dolphin habitat. Set-gillnetting has been prohibited in less than 30 percent and trawling in just 8 percent of the currently recognized Māui dolphin habitat (Leathers and Leslie 2018). Nevertheless, Māui dolphins are not distributed uniformly within their range, and the effectiveness of the prohibition zones depends on the extent of their overlap with the dolphins' high-density use areas. For example, although Māui dolphins occur from inshore waters to deeper waters occurring more than 10 nm from shore (Nelson and Radford 2018), protection is provided for only a portion of that range. As mentioned above, data recently obtained by the petitioners (Figure 1 in the supplemental petition) from the New Zealand government include many more reported sightings of what could be Māui dolphins on the east side of the North Island than previously had been widely known, including nearly twenty in the last decade.[16] The data include sightings as recent as this year and go back decades, including seven sightings on the southeast coast in the decade preceding the creation of the prohibition zones in 2003 (Figure 3, supplemental petition)[17]. However, the prohibition zones and other regulations apply only to areas and fisheries on the west side of the North Island and provide no protections to Māui dolphins on the east side.

Observers have been placed on some fishing vessels fishing on the west side of the North Island, but coverage has been too low to estimate precisely or accurately the magnitude of incidental catch of Māui dolphins or to detect trends in that bycatch. A rule of thumb established for U.S. fisheries is that observer coverage should be sufficient to provide an incidental catch estimate with a coefficient of variation (CV) less than 0.3. Coverage rates to achieve that criterion typically exceed 20 percent, and only rarely can it be achieved with coverage rates less than 10 percent. In the case of Hector's dolphin (here meant to refer to both subspecies of *C. hectori*), researchers have estimated that observer coverage between 56-83 percent is needed to achieve a CV of 0.3 (Baird and Bradford 2000). However, coverage rates for set-gillnet and trawl fisheries in New Zealand (throughout the combined ranges of both Hector's dolphin subspecies) have averaged less than 5 percent over the past two decades (Slooten and Dawson 2018).

Population estimates of Māui dolphins covering the period since establishment of the prohibition zones have varied between 55 and 69 individuals (Table 2 in Roberts et al. 2019a; Baker et al 2013, Hamner et al. 2012). These and earlier estimates, suggest that protection provided by the prohibition zones had slowed the population's decline (Fig. 7 in Slooten and Dawson 2018), a possibility also raised in Cooke et al. (2019). However, uncertainty in those estimates, which are

[14] At the time of NMFS' receipt of the supplemental petition, 27 August 27 2020
[15] https://www.doc.govt.nz/sanctuary-variation; Anon 2016
[16] While the sightings shown in Figure 1 of the supplemental petition are labeled as "Māui dolphin sightings", it is likely that some are Hector's dolphin sightings, given the genetic detection of the latter in biopsy samples collected from dolphins around the North Island (Baker et al. 2016). It is possible that some of the sightings are of Māui dolphins transiting from the west side, or of Hector's dolphins from the South Island (pers. comm., Scott Baker, Oregon State University). It is also possible that the sightings reflect the presence of a small resident population on the east coast of unknown origin.
[17] Available at: https://www.regulations.gov/document?D=NOAA-NMFS-2019-0013-0055

based on just two studies, makes it very difficult to determine with confidence whether existing regulations are having a positive effect, or enough of an effect to support a finding that fisheries are not having a significant adverse impact on the Māui dolphin sufficient to warrant emergency action by NMFS. Slooten and Davies (2011) estimated that the protection zones established off the east coast of the South Island in 2008 reduced the incidental catch of Hector's dolphins in that area by 50-66 percent, but data necessary to make a similar assessment for Māui dolphin are lacking due to the very low observer coverage in the set-gillnet fishery on the west side of the North Island. Moreover, the extremely low level of observer coverage in set-gillnet and trawl fisheries makes it nearly impossible to determine if the incidental take rates have changed since 2008.

New Regulations

In 2018, Fisheries New Zealand and the New Zealand Department of Conservation began to develop a new TMP for Hector's and Māui dolphins;[18] the previous plan was released in 2012 (Currey et al. 2012). The new plan recommends establishing a goal of achieving recovery of the Māui dolphin population to 95 percent of the carrying capacity of the environment, i.e., to the level it would obtain in the absence of human impacts.[19] Objectives were established to prevent 1) fisheries impacts from exceeding bycatch limits set to achieve the population recovery goal, 2) local depletion, and 3) creation of substantial barriers to dispersal or connectivity between subpopulations.[20]

Based on new risk assessments conducted in 2018-2019 (Cooke et al. 2019, Roberts et al. 2019a, b), and an interagency consultation,[21] the New Zealand Department of Conservation and Fisheries New Zealand presented a suite of management options, along with their recommended options, to their respective ministers.[22] Those recommendations were based on conclusions from the risk assessment that fisheries not be allowed to account for more than one Māui dolphin death every 9 years (range 3 to 50). The two agencies acknowledged that, "because the population of Māui dolphins is very small, there is rationale to reduce the risk of all human-induced deaths to as close as possible to zero to provide the best chance of preventing further population decline, and allow the population to increase as rapidly as possible." Accordingly, they recognized that the risk from fisheries would have to be reduced by at least 50 percent.

In June 2020, the Ministers of Fisheries and Conservation announced their decisions regarding new regulations to protect and enable the population recovery of Māui dolphins. In addition, they accepted the recommended management goal of achieving the Māui dolphin population's recovery to at least 95 percent of the level it would reach in the absence of fishing

[18] https://www.doc.govt.nz/our-work/protecting-species/protecting-marine-species/our-work-with-maui-dolphin/hectors-and-maui-dolphin-threat-management-plan/review/
https://www.fisheries.govt.nz/news-and-resources/consultations/hectors-and-maui-dolphins-threat-management-plan-review/
[19] https://www.mpi.govt.nz/dmsdocument/34971; https://mpigovtnz.cwp.govt.nz/dmsdocument/34974
[20] Ibid.
[21] Ibid.
[22] https://www.doc.govt.nz/globalassets/documents/getting-involved/consultations/2020/hectors-maui-tmp/hectors-maui-tmp-outcomes-briefing.pdf
https://www.fisheries.govt.nz/dmsdocument/40922-DolphinTMP-MInisters-decision-letter-reduced.pdf

impacts. The new fisheries regulations,[23] which were expected to take effect on 1 October 2020, include:

- extending and creating new protected areas, in which commercial and recreational set gillnets are prohibited;[24]
- expanding trawl fishing closure within the core of the Māui dolphin's habitat;
- limiting fishing-related mortality limit to one Māui dolphin within its habitat zone; and
- prohibiting the use of drift gillnets in all New Zealand waters.

The Fisheries Minister explained that, if the fishing-related mortality limit of one Māui dolphin is reached (i.e., if a single dolphin is killed in the Māui dolphin habitat zone due to a fishing interaction), then the Minister "will take immediate measures to prohibit all (or specified) fishing methods in an area, taking into account the circumstances of the capture event," and subsequently undertake a "detailed review of the incident, [which] will determine what longer-term measures are required." Key questions arise from these statements include: (1) over what period of time would fishing be prohibited, and (2) would such prohibitions include all fishing with the potential to take dolphins? Nominally, to maintain the mortality rate below the PST, it would be necessary to prohibit all set-gillnet and trawl fishing throughout the range of the Māui dolphin for nine years. The regulation, however, applies the mortality limit only within the Māui dolphin habitat zone, which encompasses just the northern two-thirds of the west side of the North Island. It is unclear whether a fishing-related death on the southwest coast, or on the east coast, would count toward the mortality limit. Assuming there is a single Māui dolphin population, a death would have the same adverse impact, and increase the risk of extinction equally, regardless of where it occurs. If there are sub-populations (Taylor et al. 2018), then the impact would likely be worse.

Conclusions

The preamble to the Import Rule anticipates that NMFS will consult with the export nation and urge it to take corrective measures before undertaking emergency rulemaking to impose an import ban on fish and fish products. It appears that NMFS has done so, at least with respect to the original petition. Thus, the remaining question is whether New Zealand has implemented measures sufficient to reduce the incidental mortality and serious injury of Māui dolphins and mitigate any immediate and significant adverse impacts. If they are not sufficient, the appropriate action is to proceed with emergency rulemaking to ban imports of fish and fish products from fisheries within the Māui dolphin range. In fact, given the ruling in *NRDC* v. *Ross*,[25] NMFS might not have a lawful alternative other than imposing such a ban.

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[23] Accessed on 5 October 2020 at: https://www.fisheries.govt.nz/dmsdocument/40922-dolphintmp-ministers-decision-letter-reduced-pdf

[24] Maps showing new and modified protected area boundaries can be found in the Hector's and Māui dolphins Threat Management Plan – North Island fisheries measures fact sheet;

[25] The court found that "it is undisputed that because of bycatch in the gillnet fishing technology, the vaquita is being killed and is on the verge of extinction -- a result which perforce contravenes United States standards. Countenancing a regulations-imposed delay until 2022 for consultations with the Mexican government…while the vaquita goes extinct, would be inconsistent with the MMPA's general moratorium on marine mammal takings and the Imports Provision's direction that the Secretary of the Treasury "shall ban" offending imports in order to meet the "immediate goal that the incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate."

A central question facing NMFS in responding to the supplemental petition, is whether the set gillnet and trawl fisheries around the North Island "are having or likely to have an immediate and significant adverse impact on a marine mammal stock," and whether those impacts "could result in increased risk of extinction." It is clear from the current and previous threat assessments conducted by the New Zealand government that those fisheries have had adverse impacts and that the additional loss of even a single Māui dolphin would increase the subspecies' risk of extinction. Less clear is whether fisheries are having an *immediate* adverse impact, given that the rate of decline in the population has slowed and possibly stopped since imposition of the 2003 regulatory measures. While demonstrating that a population is declining rapidly is compelling evidence of an immediate adverse impact, it is not necessarily the only indicator. Even if one takes the New Zealand government's very low estimates of the bycatch rate at face value, and ignores the numerous concerns raised by scientists regarding their robustness, the margin for error in this case is very small. The loss of even one animal arguably has an immediate adverse impact on the subspecies by demonstrably raising the likelihood of its extinction. Applying a PST- or PBR-based analysis, that loss might be acceptable if no additional removals from the population from human sources occurred over the next decade or two. In this case, New Zealand's estimated bycatch rates are not zero, and therefore the death of a Māui dolphin incidental to fishing activities could occur at any time.

While the new regulations include a mortality limit of one dolphin, as discussed above, several questions regarding its implementation and effectiveness remain. A mortality limit by itself will not reduce the population-level impacts sufficiently, unless there is a high likelihood of detecting dolphin deaths and any documented death of a Māui dolphin is followed by a fishery closure lasting (in this case) at least nine years, or other measures are taken that further reduce the likelihood of bycatch are implemented in the future and prove effective. A more fundamental problem associated with relying on effectiveness of the mortality limit is that, given the extremely low observer coverage in the set-gillnet fishery, it is almost certain that fishing-related Māui dolphin deaths will go undetected unless they occur in very large numbers, which would signal a far worse crisis than the subspecies apparently is facing now. The New Zealand government had announced that a "requirement for the use of on-board cameras for commercial fishing vessels using high-risk fishing methods in the inshore area" on the western side of the North Island (FNZ & NZDOC 2019), apparently as part of the monitoring plan included in the TMP. However, as announced in June 2020 by the Fisheries Minister, the TMP includes camera monitoring only on the South Island.[26]

Given the available information, it is impossible to know with much certainty whether fisheries conducted within the Māui dolphin range are likely to have an "immediate and significant adverse impact" in the future. The new regulatory measures established by New Zealand, primarily increased area closures, certainly reduce the risk of serious injury and mortality of Māui dolphins, but by an unknown amount. The risk assessment modeling suggested that, depending on the underlying assumptions a "reduction in risk of 50% would be borderline sufficient to arrest the decline…, whereas a reduction of 75% would be sufficient to arrest the decline and allow for some recovery" (Cooke et al. 2019, Roberts et al. 2019). What was not estimated, however, is how much risk reduction is expected to be achieved through the new regulations.

[26] https://www.fisheries.govt.nz/dmsdocument/40922-DolphinTMP-MInisters-decision-letter-reduced.pdf

As discussed above, the effectiveness of recent changes to New Zealand's fisheries management programs designed to reduce incidental serious injury and mortality of Māui dolphins is uncertain. There are as yet no empirical data on which to judge the program's effectiveness and it will likely be several years before we can say with any confidence whether or not they have been successful in stemming the population decline of this subspecies, let alone putting it on a trajectory toward recovery.

Given this uncertainty, how NMFS responds to the rulemaking petition must depend in part on where the burden of proof lies. The Court of International Trade, in (*NRDC* v. *Ross*), a similar case concerning the vaquita, took issue with NMFS delaying the imposition of the comparability requirements of MMPA section 101(a)(2). In particular, the Commission calls attention to footnote 17 in that opinion, in which the court stated "[s]pecifically, the Regulation *requires that a foreign fishery demonstrate* that it does 'not exceed the bycatch limit for that [marine mammal] stock or stocks' individually or cumulatively (emphasis added)." If the burden is on the exporting country to demonstrate that its fisheries bycatch program does not exceed U.S. standards, then New Zealand has not met this burden. That is, New Zealand has not yet submitted any data, analyses, or comparability arguments (at least not any that are available as part of this review process) to support a finding that the recent changes to its take-reduction programs are sufficient to reduce serious injury and mortality to New Zealand's bycatch limit for Māui dolphins (i.e., no more than 1 every 9 years, at least) or to below the subspecies' PBR level. The program could be deemed sufficient nevertheless if, for instance, observer coverage in fisheries within the range of the Māui dolphins were sufficient to have a high likelihood of detecting entanglements that result in serious injury or death of a dolphin and any resultant fishery closures were of long enough duration to ensure that additional incidents do not occur at least for several years. However, that seems unlikely given that the TMP does not increase what is now seriously inadequate observer coverage in the set-gillnet fishery, which poses the greatest fishing threat to Māui dolphins.

If, on the other hand, the burden of proof lies with the petitioners to demonstrate that the fisheries at issue, taking into account recent management changes, are having or likely to have an immediate and significant adverse impact on Māui dolphins, it is unclear if they have met this burden. The Commission, in its 27 March 2019 letter, expressed the view that certain fisheries were then having such adverse impacts, and it remains uncertain whether the revised fisheries management measures will reduce bycatch sufficiently to ameliorate this concern. Given the generally precautionary character of the MMPA, and the ultimate burden on the exporting country to demonstrate comparability with U.S. standards, the Commission does not support placing the burden of proof entirely on the petitioners. They, and the declarations submitted by their experts, have made a *prima facie* case that New Zealand's fisheries, even with recent changes to reduce marine mammal bycatch, may be continuing to have immediate and significant adverse impacts on Māui dolphins and that these impacts exacerbate the subspecies' decline or, at least, impede its recovery. The petitioners' case is at odds with the New Zealand government's risk assessment, but without additional information, it is not apparent which view is the most realistic. As such, the supplemental petition should be viewed as sufficient to require NMFS to provide a thorough and well-reasoned rationale for any finding that New Zealand fisheries are not likely to result in serious injury or mortality in excess of PBR, should it determine that the petitioned action is unwarranted. Unless NMFS can support such a finding, the Commission recommends that NMFS promptly initiate emergency rulemaking to ban imports of fish or fish products from fisheries known or likely to take Māui dolphins until such time that New Zealand can resolve the numerous uncertainties associated

with past and anticipated bycatch rates, and address the other shortcomings of the TMP identified above. Given the extreme extinction risk faced by the very small remaining population of Māui dolphins and the threat posed by human activities, including those from fisheries, no further human-caused deaths are acceptable. Taking into account the very low likelihood that any fishing-caused death would be detected, the best way to ensure that fisheries are not contributing to the risk of the extinction of the subspecies is to close all set-gillnet and trawl fishing around the North Island that falls within Māui dolphin habitat.

We hope these comments and recommendations are helpful. Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

References

Anon. 2016. Māui Dolphin: 2016 Update on New Zealand's Research and Management Approach. Ministry for Primary Industries and Department of Conservation, New Zealand. 6 pp.

Baird S. and E. Bradford. 2000. Estimation of Hector's Dolphin Bycatch from Inshore Fisheries, 1997/98 fishing year. Report for Department of Conservation, Wellington, New Zealand.

Baker, C.S., D. Steel, R.M. Hamner, G. Hickman, L. Boren, W. Arlidge, and R. Constantine. 2016. Estimating the Abundance and Effective Population Size of Māui Dolphins Using Microsatellite Genotypes in 2015–16, with Retrospective Matching to 2001–16. Department of Conservation, Auckland, New Zealand. 70 pp.

Cooke, J.G., D. Steel, R. Hamner, R. Constantine, and C.S. Scott. 2018. Population Estimates and Projections of Māui dolphin (*Cephalorhyncus hectori maui*) Based on Genotype Capture-Recapture, with Implications for Management of Mortality Risk. Unpublished document submitted to the International Whaling Commission Scientific Committee. Document SC/67b/ASI/05. 15pp.

Cooke, J.G., R. Constantine, R.M. Hamner, D. Steel, and C.S. Baker. 2019. Population Dynamic Modelling of the Māui Dolphin Based on Genotype Capture-Recapture with Projections Involving Bycatch and Disease Risk. New Zealand Aquatic Environment and Biodiversity Report No. 216. Ministry for Primary Industries, New Zealand. 38 pp.

Currey, R.J.C., L.J. Boren, B.R. Sharp, and D. Peterson. 2012. A Risk Assessment of Threats to Māui Dolphins. Ministry for Primary Industries and Department of Conservation, Wellington, New Zealand. 51 pp.

Dawson, S.M. and E. Slooten. 1988. Hector's Dolphin *Cephalorhynchus hectori*: Distribution and Abundance. *Reports of the International Whaling Commission,* Special Issue 9:315-324.

FNZ and NZDOC (Fisheries New Zealand and New Zealand Department of Conservation. 2019. Protecting Hector's and Māui Dolphins – Supporting Information and Rationale. Fisheries New Zealand Information Paper 2019/01. 116 pp.

Hamner, R.M., M. Oremus, M. Stanley, P. Brown, R. Constantine, and C.S. Baker. 2012. Estimating the Abundance and Effective Population Size of Māui's Dolphins Using Microsatellite Genotypes in 2010–11, with Retrospective Matching to 2001–07. Department of Conservation, Auckland, New Zealand. 44 pp.

IWC (International Whaling Commission). 2018. Report of the Scientific Committee. *Journal of Cetacean Research and Management* Supplement 19, Section 17.7.1, p. 68.

IWC (International Whaling Commission). 2019. Report of the Scientific Committee. *Journal of Cetacean Research and Management* Supplement 20, Section 17.7.3, pp 52-53.

Leathers, A. and A. Leslie. 2018. Gear Switching to Remove Threats to Māui Dolphin and Address the Socio-Economic Barriers to Effective Conservation. Unpublished document submitted to

the International Whaling Commission Scientific Committee. Document SC/67a/HIM/12. 17 pp.

Nelson, W. and C. Radford. 2018. Occurrence of *Cephalorhynchus hectori* in the Coastal Waters of Manukau and Taranaki, New Zealand. Second Deployment. Identifying Temporal and Spatial Information for Review of the 2012 Threat Management Plan. Department of Conservation, University of Auckland, and National Institute of Water and Atmospheric Research. 22 pp.

NZDOC (New Zealand Department of Conservation). 2007. New Zealand Threat Classification System Lists – 2005. Wellington: Science & Technical Publishing, Department of Conservation. p. 32.

Roberts, J., R. Constantine, and C.S. Baker. 2019a. Population Effects on Commercial Fishery and Non-Fishery Threats on Māui Dolphins (*Cephalorhynchus hectori maui). New Zealand Aquatic Environment and Biodiversity Report* No. 215. Ministry for Primary Industries, New Zealand. 18 pp.

Roberts, J.O., D.N. Webber, W.D. Roe, C.T.T. Edwards, and I.J. Doonan. 2019b. Spatial Risk Assessment of Threats to Hector's and Māui dolphins (Cephalorhynchus hectori). *New Zealand Aquatic Environment and Biodiversity Report* No. 214. Ministry for Primary Industries, New Zealand. 168 pp.

Roe, W.D., L. Howe, E.J. Baker, E. Burrows, and S.A. Hunter. 2013. An atypical genotype of *Toxoplasma gondii* as a cause of mortality in Hector's dolphins (*Cephalorhynchus hectori*). *Veterinary Parasitology* 192: 67–74.

Slooten E., S.M. Dawson, and W.J. Rayment. 2004. Aerial surveys for coastal dolphins: abundance of Hector's dolphins off the South Island west coast, New Zealand. *Marine Mammal Science* 20: 117–130.

Slooten E. and N. Davies. 2011. Hector's dolphin risk assessments: old and new analyses show consistent results. *Journal of the Royal Society of New Zealand* 42: 49-60.

Slooten, E. and S.M. Dawson. 2017. Bycatch and PBRs for Māui and Hector's dolphin. Unpublished document submitted to the International Whaling Commission Scientific Committee. Document SC/67a/HIM07rev1. 16 pp.

Slooten, E. and S.M. Dawson. 2018. Updated Population Viability Analysis, Population Trends and PBRs for Hector's and Māui Dolphin. Available at: https://www.regulations.gov/document?D=NOAA-NMFS-2016-0118-0076

Slooten, E. and S.M. Dawson. 2020 (preprint). The scientific basis for currently proposed management options Hector's and Maui dolphins: a critiques. https://doi.org/10.1101/2020.05.15.098889

Taylor, B., M. Lonergan, and R. Reeves. 2018. Appendix 1 – Hector's and Māui Dolphin Threat Management Plan Review, Risk Assessment Workshop, 9-13 July 2018. Panel Comments and Recommendations.