Response to Public Comments – NOAA-NMFS-2019-0073

Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, the Idaho Department of Fish and Game; the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation; and the Willamette Committee

Marine Mammal Protection Act Section 120(f) Application for Lethal Removal of Sea Lions in the Columbia River Basin

August 2020

The National Marine Fisheries Service (NMFS) published the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, the Idaho Department of Fish and Game; the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation; and the Willamette Committee[1] (hereafter called – "eligible entities")[2] Marine Mammal Protection Act (MMPA) section 120(f) application in the Federal Register (84 FR 45730) on August 29, 2019. We accepted comments from the public for 60 days. We received 22,225 public comments, most of which were generic letters opposing (21,756) or supporting (181) the eligible entities' application to permanently remove (place in captivity or kill) California sea lions (CSL) and Steller sea lions (SSL) in the Columbia River Basin. Two hundred eighty-eight (288) comment letters stated no clear preference supporting or opposing the eligible entities' application. Of the 22,225 comments submitted, we received three substantive comment letters: the Animal Welfare Institute (AWI), a joint comment letter from the Humane Society of the United States (HSUS), the Humane Society Legislative Fund (HSLF), and the Whale and Dolphin Conservation (WDC), and the Marine Mammal Commission (Commission). We reviewed and considered all of the comments received on the application as part of the MMPA decision-making process.

[1] MMPA section 120(f)(6)(D) Committee.

[2] The Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation; and the section 120(f)(6)(D) Committee. The 120(f)(6)(D) Committee fulfills the requirements for an eligible entity under section 120(f)(6)(A)(iii) of the MMPA. Pursuant to this section of the statute, the Committee members include the Oregon Department of Fish and Wildlife, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community, and the Confederated Tribes of the Siletz Indians of Oregon.

Response to Generic Letters

The bulk of the public comments received raised the concept that NMFS should first address other sources of salmon and steelhead mortality in the Columbia River Basin, such as flood-control and hydropower operations, habitat degradation, fisheries harvest, etc., as important to salmon and steelhead recovery, in lieu of approving the eligible entities application.

> **Response:** While NMFS recognizes that there are a many sources of salmon and steelhead mortality in the Columbia River Basin that still require action to achieve recovery, it is clear from the statutory language that section 120(f) of the MMPA applies specifically to addressing salmon and steelhead mortality associated with sea lion predation. Furthermore, section 120(f) of the MMPA does not require NMFS to take any affirmative steps to address all sources of mortality in conjunction with the proposed action. The eligible entities presented NMFS with a specific proposal, which is the lethal removal of sea lions that are having a significant negative impact[3] on at-risk fish stocks in the Columbia River Basin. Therefore, NMFS determined that other sources of salmon and steelhead mortality, such as those caused by flood-control and hydropower operations, habitat degradation, fisheries harvest, etc., that are being managed through existing Endangered Species Act (ESA)-guided recovery plans, is the appropriate mechanism to address these threats to salmon and steelhead.

Animal Welfare Institute

Comment 1: Description of the problem interaction

> *We find the description of the problem interaction to be biased, focused as it is on the impact a natural predator is having while essentially ignoring the impact human predators (fisheries), as well as other human actions (including the presence of artificial barriers to spawning such as dams), are having. We realize this is a permit application for the lethal removal of pinnipeds, so clearly the animals' impacts would be the focus, but the point we are making is that the over-emphasis on single-species management in this situation is and always has been profoundly flawed. All the effort managers in the Columbia River basin have placed on predator control has deflected much needed attention, effort, and funding away from far more necessary and effective actions to recover endangered salmonid stocks, including effective restoration of salmonid spawning habitat.*

Response: NMFS recognizes that there are a many sources of salmon and steelhead mortality in the Columbia River Basin that still require action to achieve recovery. We agree that sea lions eat fish. However, we disagree with the notion that the distribution, numbers, and residence times, as well as the impact of sea lion predation, throughout the action area, especially at Bonneville Dam and Willamette Falls, which are 145 and 128 miles from the Pacific Ocean, respectively, is

[3] As defined in section 120(f)(8) of the MMPA.

natural. Rather, the current pinniped-fishery interaction at Bonneville Dam is due in part to an oceanic-atmospheric regime-shift phenomenon in the California Current Ecosystem and North Pacific Ocean rather than causally linked to the construction of Bonneville Dam in 1938, as implied. We recognize that seals and sea lions have been present in the Columbia River, as far up-river as Celilo Falls, for millennia, but the forensic evidence suggests that the bulk of these pinnipeds in the action area (river mile 112 to river mile 292) were seals, not sea lions. We also disagree with the statement regarding the impacts of fisheries and habitat restoration. Federal and state agencies, tribes, landowners, watershed councils, and private organizations have undertaken a large number of actions aimed at reducing the losses of at-risk fish stocks from a number of sources. These combined actions represent an extraordinary and unprecedented cooperative effort in the Columbia River Basin to protect and recover salmon and steelhead. ESA-guided recovery plans have been developed and implemented in every watershed, including actions to: restore important habitat; improve dam passage survival; re-tool hatchery programs to assist production in wild populations; and close, reduce or reshape fisheries to limit fishery-related mortality of listed stocks and focus on selectively harvesting healthy stocks. These efforts equate to hundreds of millions of dollars invested annually and billions over the past decades.

Comment 2: Description of past efforts to non-lethally deter pinnipeds

> *We understand that previous efforts to deter pinnipeds nonlethally have failed. They have failed because sea lions are remarkably intelligent when it comes to getting food, meaning any nonlethal deterrent methods must take this into account. At least one such method (seal bombs) has failed in the past because it deafened animals exposed to it, rendering it completely ineffective after a short time. However, the most obvious and effective nonlethal method to deter these animals has yet to be used—the removal of artificial pinch points (i.e., barriers such as dams). The sea lions are attracted to these pinch points because of the concentration of fish working to get past them—remove the barriers, remove the problem.*

Response: Non-lethal deterrence measures have been unsuccessful as an effective management tool to eliminate predation because non-lethal deterrence measures have limited or short-term effectiveness as the stimuli that cause startle and flight responses in pinnipeds eventually are ignored or avoided. We do not disagree that predation occurs at these pinch points because there are concentrations of fish, but the notion that removing barriers, such as Bonneville Dam, ignores some basic facts. For example, pinniped predation at Bonneville Dam is a recent phenomenon. Prior to 2000, there were few if any sea lions preying on at-risk fish stocks in the area of Bonneville Dam for decades following its construction. In addition, recent research by Rub et al. (2019) estimated that non-harvest mortality of spring Chinook salmon varied from 20-44% between the mouth of the Columbia River and Bonneville Dam, with, for example 82% and 100% of the mortality occurring between the mouth of the Columbia River and river mile 37 in 2010 and 2011, respectively. So clearly, removing artificial barriers would not remove in-river predation by pinnipeds on at-risk fish stocks.

Comment 3: Description of the extent to which pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem, including fish populations

> *The application's discussion of this point is largely speculative, almost entirely based on models of simplistic ecosystems with minimal empirical input. While the application focuses primarily on the observed impact of pinniped predation at two pinch points, Bonneville Dam and Willamette Falls, the discussion is essentially hypothetical for the rest of the river basin. The Applicants assume that pinnipeds will eventually be seen in increasing (and high) numbers wherever a pinch point, natural or artificial, exists in the river basin and that all sea lions now observed within the river basin are "guilty" of preying on salmonids.*

Response: The bioenergetics model used by the applicants provides an estimate of the expected benefits of the taking of sea lions (fish escaping sea lion predation) based on consumption requirements. As such, we find the bioenergetics model used by the applicants, as well as the predation data from Bonneville Dam, Willamette Falls, and the research by Rub et al. (2019), to provide a good description and estimate of the extent to which pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem, including fish populations.

The 2018 amendments to section 120(f) of the MMPA established as a matter of law that CSL and SSL in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

Comment 4: Detailed Comments on the Application

> *p. 5—The Applicants' overarching rationale for this proposed cull is to "rapidly" remove animals who have moved into the Columbia River Basin to prey on salmonids concentrated at various artificial or natural pinch points, with the intent of removing fewer sea lions over time by reducing the social component to recruitment. However, we note that recruitment has only very recently increased substantially (for Steller sea lions, numbers have reached double digits at Bonneville Dam only within the past 11 years—see Table 1, p. 16 of the application). This suggests strongly that as long as a healthy number of sea lions (of either species) remains downriver and beyond to serve as a recruitment pool, additional sea lions are highly likely to return upriver to take advantage of these pinch points within a decade or two of the "rapid removal" of this current group of animals.*

Response: The action proposed by the Applicants is not to eliminate sea lion predation in the Columbia River Basin, but to manage it in select areas. As such, sea lions would remain in the Columbia River and may act a source of recruitment to up-river locations. However, one of the goals of the program is to reduce the social interactions and learned behaviors to reduce the

recruitment of sea lions to up-river areas like Bonneville Dam. The removal of sea lions in the action area is one of the required steps to reduce or eliminate the social component to recruitment of sea lions to up-river areas and thus the need for a lethal removal program. Without removing sea lions from these up-river areas where they have become habituated predations, the pinniped-fishery interaction will continue and would likely expand into additional areas.

> *p. 6 and 49—The application first mentions darting on p. 6, but describes the method at length in Appendix 1, on p. 49. AWI firmly believes that darting pinnipeds cannot be done humanely, thus violating §§ 120(f)(4)(A) and (B) and §3(4). Darted pinnipeds on land are highly likely to flush into the water and darted pinnipeds already in the water are highly likely to escape or require a rapid chase in a boat to be secured (in essence, the "struck-and-lost" rate will be very high and even when captured, the animals will be excessively stressed by the process).*
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> *Also stated in this section: "If animals do enter the water upon darting or are already in the water at the time of darting it [sic] will be followed and seine or tangle nets, hoop or gaff will be used to recover the anesthetized animal" (p. 49, emphasis added—the sentence in the repeated section corrects the grammar error and is otherwise slightly modified, but the meaning remains the same). A gaff as a means of securing a live animal cannot possibly be considered humane for a mammal (or a fish, for that matter), so this description violates § 120(f)(4)(A).*
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> *This section goes on to state: "Darts will include appropriate agency contact information and warnings in the event the dart or animal is located by a member of the public" (p. 49—this sentence is the same in both versions). The Applicants are conceding the point that darted animals may escape and be found by the public (alive or dead—it is interesting that the application is silent on this point).*

Response: Should NMFS approve the eligible entities' application, and prior to implementation, the eligible entities would be required to appoint an Institutional Animal Care and Use Committee (IACUC). The IACUC would be required to develop, and NMFS to approve, the specific methods and protocols for darting and removal of free-ranging sea lions subject to this authorization. NMFS would require on an annual basis that the IACUC reevaluate the methods and protocols, and determine any needed modifications. NMFS would also on an annual basis review the IACUC methods and protocols for darting and removal of free-ranging sea lions administered by the eligible entities and affirm that lethal removals are consistent with the definition of humane within the meaning of section 3(4) of the MMPA.

> *p. 7—AWI notes that the application firmly states that firearms will not be used to kill free-ranging pinnipeds, which would violate § 120(f)(4)(B). However, we are concerned that the statute allows the Applicants to hire virtually anyone to undertake the killing. How strictly such hired individuals might "stick to the plan" when in the field strikes us as highly uncertain. In addition, we can envision scenarios where, for*

example, a darted sea lion that swims away is subsequently shot in the water in an effort to prevent it from escaping entirely. It will be difficult to oversee all of the killing operations, now that they may take place elsewhere besides the more heavily trafficked Bonneville Dam and Willamette Falls sites. While we are not claiming that firearms will be used with any certain frequency, we simply do not see how their use can be entirely prevented, given the expansion under the 2018 MMPA amendments of who may kill these animals and of sites where they may be killed.

Response: Should NMFS approve the eligible entities' application, NMFS would prohibit the use of firearms by the eligible entities to kill sea lions as part of this authorization as we do not think it is consistent with the definition of humane within the meaning of section 3(4) of the MMPA.

p. 8—The Applicants indicate that the number of animals to be "removed" (killed) ranges from 249 on the low end (both species combined) to 416 on the high end. This latter number is well below the upper limit set in § 120(f)(3) of the MMPA (approximately 1,170 animals, both species combined). It is curious that the upper removal limit was set at 10 percent of the Potential Biological Removal level (PBR) of a species during the legislative process when the entities most closely involved and invested in lethal removal of pinnipeds do not think the range of potential removal numbers will even approach 10 percent of PBR at the upper end. This discrepancy suggests that legislators did not adequately consult with these entities during the legislative process.

Response: Should NMFS approve the eligible entities' application, NMFS would set a limit on the number of sea lion authorized for lethal removal based on the information regarding the problem interaction and expected benefits provided in the June 13, 2019, application, and in part on the recommendations by the Pinniped-Fishery Interaction Task Force.

p. 9—The application states: "A growing body of evidence suggests that the rise in abundance of seal and sea lion populations on the US west coast is now having a significant negative impact on the survival of many salmon and steelhead populations, both in the ocean and freshwater…This is important because in areas where salmonid abundance is low, even a modest unmanaged increase in mortality can result in a serious negative impact to the recovery of threatened and endangered individual salmonid populations" (p. 9, emphasis added). AWI does not argue that pinnipeds are not having an impact on salmonid recovery. Rather we are saying that this cull will not materially improve the outlook for these salmonid stocks because it is not happening as part of an effective comprehensive salmonid recovery strategy (despite the claim to the contrary found in the Federal Register notice).

The statement quoted above from the application is a case in point; while proposing to kill natural predators in the Columbia River Basin, managers still allow human predation, i.e., industrial, recreational, and tribal fisheries, on these stocks. This take

may be very "modest" compared to historical fishery removals, but it is still far greater than the biomass removed by sea lions and is almost certainly higher than estimated by managers (this is undoubtedly true of virtually all fisheries where take estimates rely heavily on reporting by fishers). Until all salmonid fisheries are closed and a degree of habitat restoration is undertaken that actually has a material impact on economic interests in the region, this cull will not have the positive impact the Applicants claim is the objective.

Response: We agree that there are additional sources of salmon and steelhead mortality, including fisheries and habitat degradation. However, ESA-guided recovery plans have been developed and implemented in every watershed, including actions to: restore important habitat; improve dam passage survival; re-tool hatchery programs to assist production in wild populations; and close, reduce or reshape fisheries to limit fishery-related mortality of listed stocks and focus on selectively harvesting healthy stocks. Additionally, recent research by Rub et al. (2019) estimated that non-harvest mortality of spring Chinook salmon varied from 20-44% between the mouth of the Columbia River and Bonneville Dam. So clearly, this level of impact exceeds the impacts of in-river fisheries, especially when added to the impacts of pinniped predation at Bonneville Dam and Willamette Falls. Therefore, we do not agree with the statement that the removal program would not materially improve the outlook of the affected at-risk fish stocks, or that recovery efforts already taken have not had a positive impact on the economy of the region.

p. 10—Regarding the likelihood noted above that the cull proposed in this application will be repeated within 10–15 years, the application states that the purpose behind killing pinnipeds present in very low numbers (1–10) in tributaries of the Columbia River is to prevent the social transmission of salmonid predation at pinch points. In other words, the cull of these animals seeks to eliminate the seed of a future problem, killing these pinnipeds before they can become a problem for salmonids in these tributaries.

Once again, AWI emphasizes that this cull is treating a symptom rather than curing a disease—as long as the artificial pinch points remain, the salmonid stocks will not recover, because, among other things, there will always be another "Herschel" who starts the cycle over again. A healthy pinniped population is simply not compatible with dams on rivers used by endangered salmonids for spawning.

Response: The Applicants requested a 5-year authorization, not a 10-15 year authorization. The action proposed by the Applicants is not to eliminate sea lion predation in the Columbia River Basin, but to manage it in select areas. As such, sea lions will remain in the Columbia River and may act a source of recruitment to up-river locations. However, one of the goals of the program is to reduce the social interactions and socially transmitted behaviors to reduce the recruitment of sea lions to up-river areas like Bonneville Dam. The removal of sea lions in the action area is one of the required steps to reduce or eliminate the social component to recruitment of sea lions to

up-river areas and thus the need for a lethal removal program. Without removing sea lions, and therefore reducing social interactions and diminishing socially transmitted behaviors, from these up-river areas where they have become habituated predations, the pinniped-fishery interaction will continue and would likely expand into additional areas.

p. 10—The fact that the application treats the recovery of Steller sea lions as a negative is, on its face, evidence that the approach to managing the Columbia River Basin ecosystem is skewed and illogical. The eastern stock was only delisted from the Endangered Species Act (ESA) in 2013; yet now the Applicants propose to cull this stock to the tune of over one hundred animals annually until Steller sea lions disappear (at least temporarily) from the river basin. Clearly there is something wrong with this predator-control management approach, when the recovery of a recently-threatened mammal stock is seen as upsetting ecosystem balance rather than restoring it.

Response: The 2018 amendments to section 120(f) of the MMPA established as a matter of law that CSL and SSL in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

As neither marine mammal stock is listed as a threatened species under the ESA, has been designated a depleted stock under the MMPA, or has been designated a strategic stock under the MMPA, their status is not the subject of this proposed action.

> *p. 23—We note, from footnote 12, that the method of estimating the range of how many animals will be targeted for removal—144–286 California sea lions and 105–130 Steller sea lions—is largely a matter of educated conjecture (aka "best professional judgement," p. 23). This is a concern we have had throughout this process. The methods used for determining the relative impact pinnipeds are having on salmonid stocks—compared to the impact fisheries (both direct and in bycatch) and habitat alteration and degradation are having—and the prospects for improvement in escapement after up to 420 pinnipeds are removed, are relatively subjective.*
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> *In addition, there is no metric offered for determining success (or lack thereof) of this cull. We consider this omission to be the application's weakest element. For example, the application does not recommend a recovery number for salmonid recruitment that will be considered a success, after which the cull can be discontinued. In our advocacy work, AWI noted the lack of such success metrics in the amendments to § 120 of the MMPA and during the southern resident killer whale task force deliberations convened by Governor Jay Inslee of Washington State last year. Without providing such success metrics, this "temporary" authorization seems likely to continue in perpetuity, clearly not Congress' intention.*

Response: Recent research by Rub et al. (2019) estimated that non-harvest mortality of spring Chinook salmon varied from 20-44% between the mouth of the Columbia River and Bonneville Dam. So clearly, this level of impact exceeds the impacts of in-river fisheries, especially when added to the impacts of pinniped predation at Bonneville Dam and Willamette Falls.

We agree that the methods to estimate the number of pinnipeds in the action area represents best professional judgment. Unfortunately, AWI did not provide NMFS with an estimate on the range of how many animals they expect to be targeted for removal, so we are unable to compare that method and estimate to what was provided in the application as an alternative approach.

Nonetheless, the bioenergetics model used by the applicants provides an estimate of the expected benefits of the taking of sea lions (fish escaping sea lion predation) based on consumption requirements. As such, we find the bioenergetics model used by the applicants, as well as the predation data from Bonneville Dam, Willamette Falls, and the research by Rub et al. (2019), to provide a good description of the extent to which pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem, including fish populations.

Should NMFS approve the eligible entities' application, NMFS may adopt Task Force recommendations regarding monitoring in addition to the monitoring and periodic review (i.e., program evaluation) requirements identified in the MMPA section 120(f)(2)(C) Procedures Document.

> *p. 25—AWI notes, in Table 6, that even by the Applicants' estimation, salmonids make up no more than a quarter of the prey found in Steller sea lion scats. This hardly seems to justify killing up to 130 animals a year of a stock only recently removed from the threatened species list under the ESA, and the percentage is lower in the upper Columbia River basin. We also note the absence of information in these tables (or elsewhere in the application) about the prominence of salmon predators such as mackerel and pike minnow in the pinniped diet, whether inside or outside of the Columbia River basin. Indeed, such data are difficult to find anywhere.*

Response: The applicants did not propose to kill up to 130 Steller sea lions per year. As noted in the application, this was the number of Steller sea lion estimated to be in the action area and subject to removal. Based on that number, plus an annual rate of removal of 50% plus an annual recruitment rate of 10 percent, equals up to 151 Steller sea lions over the 5-year period of the authorization. Regardless of the diet composition, the 2018 amendments to section 120(f) of the MMPA established as a matter of law that California sea lions and Steller sea lions in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

> *p. 34—From Table 16, it is apparent that sea lions are having minimal additional impact on the Calapooia steelhead population on the Willamette River. This*

population is highly likely to be extirpated regardless of the presence of sea lion predation. In contrast, the Molalla population has a low probability of extirpation even with sea lion predation, although its outlook is slightly less rosy under the 2017 sea lion predation rate. Only the North and South Santiam populations have a distinctly less positive outlook when sea lion predation is average or high (their outlook under low sea lion predation pressure seems acceptable). To AWI, this table is hardly compelling support for a sea lion cull in the Willamette River.

Finally, the assumption of this risk analysis was that "there is no additional mortality beyond incidental fishery mortality during the adult life stage" (p. 34). In Appendix 2 (p. 66), it is noted that "There has not been a directed fishery on Willamette River winter steelhead since 1992." This assumes that the only way for adult steelhead to die is via natural predation and incidental take in fisheries. As noted above, this seems an overly simplistic view of a complex ecosystem and does not take into account anthropogenic mortality due to various aspects of habitat degradation (e.g., pollution).

Response: Our interpretation of the population viability analysis provided in the application was that that it looked at two generalized scenarios, i.e., impacts on Willamette River fish stocks with no sea lion removal, and impacts on Willamette River steelhead sea lion removal (based on the annual maximum rate of removal in the state of Oregon's 2017, MMPA section 120 application). The model predications of disproportionate impacts across population is simply a function of the model inputs and what may happen if no action is taken verses what may happen if action I taken, and is not intended to look at impacts and actions related to all sources of mortality. It is clear from a modeling exercise perspective that the impacts on three of the four steelhead populations is severe if sea lion predation were to persist verses the no-sea lion alternative.

Regardless of model parameters and predictions, the 2018 amendments to section 120(f) of the MMPA established as a matter of law that CSL and SSL in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

pp. 36–38—AWI notes that the application relies heavily on modeling to support its claims for both the negative impact pinnipeds are having, and the positive impact removing pinnipeds will have, on the runs. This is understandable, but we also note that several of the assumptions made for these modeling exercises are neither precautionary nor even particularly conservative. For example, most of the assumptions for the modeling that resulted in Figure 10 are relatively arbitrary rather than based on empirical data. Even the assumption that sea lions consume prey species in the proportions these prey are found in the environment is arbitrary—most predators show prey preferences and in fact it is possible, and possibly as likely, that

sea lions (particularly smaller, younger ones spending time in the Columbia River basin) prefer shad (indeed, Rub et al. [2019] made this assumption, in contrast to the Applicants' assumption here).

In general, regarding the benefits the Applicants anticipate by removing these pinnipeds, AWI finds the modeling undertaken to assess these benefits to be subtly (and perhaps not so subtly) biased against the pinnipeds. None of these models take into account that the sea lions would be unlikely to be both as attracted to the Columbia River Basin in the first place and as successful at eating endangered salmonids once in the basin if the artificial pinch points (dams) were not there. We are not suggesting the removal of Bonneville Dam, as we recognize this is a highly unlikely prospect, but we do believe far more dams can be removed than are currently being considered for removal. "Green" energy is rarely without its own problems, perhaps less damaging than fossil fuel energy, but nevertheless needing to be factored into decisions about environmental protection and endangered species recovery.

Response: We agree that there is more to do to improve fish passage in the Columba River Basin.

p. 42—Under "Predation," the application states "Although the predation of salmon by birds, fish, and marine mammals may be natural, there are specific circumstances in the Columbia River where the predation has grown to a level where it is significantly out of balance with historic levels" (p. 42, emphasis added). The implication of this statement is that these "specific circumstances" are beyond the control of the regional authorities, but they are not, by and large. The specific circumstance that has led to the present level of pinniped predation within the Columbia River Basin is the existence of artificial barriers to salmonid passage. The existence of these dams is what has put everything in the basin "significantly out of balance" with natural conditions. This should be acknowledged in the application and addressed in any truly "comprehensive" recovery effort.

Response: Recognizing that NMFS has no jurisdiction when it comes to removing artificial barriers, e.g., dams, we agree that there is more to do to improve fish passage in the Columba River Basin. In fact, such efforts are underway. For example, Federal and state agencies, tribes, landowners, watershed councils, and private organizations have undertaken a large number of actions aimed at reducing the losses of at-risk fish stocks from a number of sources. These combined actions represent an extraordinary and unprecedented cooperative effort in the Columbia River Basin to protect and recover salmon and steelhead. ESA-guided recovery plans have been developed and implemented in every watershed, including actions to: restore important habitat; improve dam passage survival; re-tool hatchery programs to assist production in wild populations; and close, reduce or reshape fisheries to limit fishery-related mortality of

listed stocks and focus on selectively harvesting healthy stocks. These efforts equate to hundreds of millions of dollars invested annually and billions over the past decades.

The Humane Society of the United States, the Humane Society Legislative Fund, and the Whale and Dolphin Conservation

Comment 1: (1) Population trends, feeding habits, the location and timing of the pinniped interaction and number of animals involved.

> *We take no issue with the population trends discussed in the Application, nor with the assertion that there are pinnipeds likely present in a number of the rivers illustrated in figure 1 of the Application, nor that at least small numbers of pinnipeds are present in portions of the river much of the year. Nor do we dispute that pinnipeds eat fish. However, the diet of pinnipeds, particularly in downriver areas, is likely quite different than at areas where salmonids are artificially aggregated at fish ladders by Bonneville dam or Willamette Falls. The results of scat analysis of sea lions downriver in Astoria (most of whom do not travel further upriver) has shown shad and other fish make up a substantial portion of their diet. These sea lions also consume non-native fish (e.g., bass and walleye pike and northern pike minnow) that are were introduced into the river and are themselves predators of salmon. By also consuming these non-native species or other piscine competitors, sea lions are contributing to reducing the abundance of these predators of juvenile salmon.*

Response: We agree that diet analyses of sea lion scat in down-river areas is comprised of fish species other than salmon. However, we also recognize that the diet analyses of sea lion scat in up-river areas is largely comprised of salmon and steelhead. While it is true that bass and walleye are non-native fishes, northern pike minnow are native to the Columbia River.

> *We also note that the applicants have requested authority to kill pinnipeds in rivers in which they themselves have not documented pinnipeds preying on salmonids or other species listed in the Application. Indeed, the applicants have requested authority to kill pinnipeds in areas where no sea lions have even been documented. Rather, the applicants are requesting authority to kill sea lions in order to prevent potential future problem interactions. If NMFS were to grant such authority, such as an action would contravene the text of the MMPA.*
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> *Section 120(b) requires that an application "shall include a means of identifying the individual pinniped or pinnipeds, and shall include a detailed description of the problem interaction and expected benefits of taking." As the NMFS Memorandum explained, there is no functional or procedural distinction regarding the information requirements that need to be included in an application submitted by a state under section 120(b) or by an eligible entity under section 120(f) since the procedures for approval or denial of an application were not amended.*

Response: The 2018 amendments to section 120(f) of the MMPA established as a matter of law that CSL and SSL in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

> *The one exception NMFS finds is that applicants are no longer required to "include a means of identifying the individual pinniped or pinnipeds and expected benefits of taking"—but NMFS agrees that applicants must continue to provide a "detailed description of the problem interaction." However, the NMFS Memorandum unlawfully expands this requirement to allow an application for taking sea lions to resolve a "future potential interaction." Such authorization is far beyond the scope of what Section 120 allows. Therefore, NMFS must not grant authority to remove pinnipeds based on "future potential interaction," as it is only statutorily permitted to grant removal authority based on documented, existing problem interactions.*

Response: The 2018 amendments to section 120(f) of the MMPA established as a matter of law that CSL and SSL in the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292 are having a significant negative impact on at-risk fish stocks.

> *It concerns us that the Application is not clear with regard to the total number of animals that the applicants propose to kill if granted authorization for lethal removal. The Application enumerates removing a "minimum" number of 144-286 California sea lions and 105-130 Steller sea lions. However, the applicants state in the summary that they seek authorization "described above for a period of 5-years per the stipulations in subsection 120(f)(2)(d)." Thus the Application is unclear as to whether the numerical ranges provided in the Application represent the total number of sea lions proposed for lethal removal during the life of the 5 year permit (i.e., 416), or whether they represent the annual number that the applicants propose to remove. These are very different numbers, with the latter equating to removal of thousands of animals over the life of a 5 year permit. The maximum number of sea lions that could be killed over the life of a 5 year permit should be made clear.*

Response: Should NMFS approve the application; NMFS would set a limit on the number of sea lion authorized for lethal removal based on the information regarding the problem interaction and expected benefits provided in the June 13, 2019, application, and the recommendations by the Pinniped-Fishery Interaction Task Force.

We call attention to the language in the 2018 MMPA amendment stating at (2)(D)(3) that the number "…authorized to be taken each year under all permits in effect under this subsection shall not exceed 10 percent of the annual potential biological removal level for sea lions." [emphasis added] The Potential Biological Removal level (PBR) for California sea lions is approximately 14,000 and that of Steller sea lions is 2,498, such that that killing 10 percent of the PBR for each species would total 1,649 (i.e., 1,400 + 249) annually. The total number of animals projected to be killed over the 5-year life of an initial permit should be clearly specified in the *Application given the large number of sea lions seaward of Astoria that could continue to follow fish up the river even as upriver animals are killed.*

Before granting an Application, the applicants must make it clear to the NMFS and the public whether they are proposing to kill 416 sea lions over the life of the 5 year permit or whether 416 is the potential annual kill that would result in killing potentially thousands of sea lions over a 5 year period. Should NMFS issue the requested permit, the agency must be clear in specifying the maximum number of sea lions for which it is authorizing removal, as the Application presents these numbers as the minimum.

Response: Should NMFS approve the application; NMFS would set a limit on the number of sea lion authorized for lethal removal based on the information regarding the problem interaction and expected benefits provided in the June 13, 2019, application, and the recommendations by the Pinniped-Fishery Interaction Task Force.

Furthermore, the NMFS Memorandum is unclear, inconsistent, and self-contradictory in describing permissible areas for pinniped removal. The NMFS Memorandum states:

…based on our interpretation of section 120(f), we interpret the geographic scope of the sea lion removal authority under section 120(f) to apply to: (1) the mainstem of the Columbia River, from river mile 112 to river mile 292; and (2) any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA and discharges into the Columbia River below river mile 292.

NMFS goes on to interpret Section 120(f)(6) in an inconsistent and illogical manner. The NMFS Memorandum interprets Section 120(f)(6)(A)(i) to allow the states to apply to take sea lions in the mainstem of the Columbia River from river mile 112 to river mile 292; any tributary in Washington that discharges anywhere below river mile 292; and any tributary in Oregon above river mile 146 that discharges from river mile 146 to river mile 292.

The NMFS Memorandum interprets Section 120(f)(6)(A)(ii) to allow the enumerated tribes to apply to take sea lions in the mainstem of the Columbia River from river mile 112 to river mile 292; any tributary in Washington that discharges anywhere below

river mile 292; and any tributary in Oregon (regardless of location) that discharges from river mile 146 to river mile 292.

Then, NMFS interprets Section 120(f)(6)(C) to allow the states to delegate their authority to the tribes to take sea lions in the mainstem of the Columbia River from river mile 112 to river mile 292; any tributary in Washington that discharges from river mile 112 to river mile 292; and any tributary in Oregon (regardless of location) that discharges from river mile 146 to river mile 292.

The problems here are twofold. First, with respect to tributaries in the state of Oregon, NMFS' interpretation nonsensically allows the states to delegate authority to kill sea lions in areas broader than areas in which they have authority. It is similarly unclear why the tribes' authority with respect to Oregon tributaries appears broader than the states'. NMFS must apply its interpretation of Section 120(f)(6)(A)(i) to (A)(i) and (C), and must not permit take by the applicants in any tributary in Oregon below river mile 146.

Response: We disagree with the above-mentioned interpretations. It is our interpretation of Public Law 115-329, as well as the intent of Congress, that the states have the discretion to delegate removal authority to the entities identified in section 120(f)(6)(B) and (C) of the MMPA. It is also our interpretation of Public Law 115-329, as well as the intent of Congress, that the geographical area in the 2018 amendments to section 120(f) of the MMPA includes the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA.

Second, with respect to tributaries in the state of Washington, NMFS does not explain why it allows take below river mile 112 for tributaries, but delegation of that authority only between river miles 112 and 292. NMFS correctly interpreted Section 120(f)(6)(C), but not (A)(i) or (A)(ii); take in tributaries under Section 120(f)(6)(A)(i) and (A)(ii) must align with the river miles that constrict take in the mainstem. NMFS must not permit take by the applicants in any tributaries in Washington below river mile 112.

Response: We disagree with the above-mentioned interpretations. It is our interpretation of Public Law 115-329, as well as the intent of Congress, that the geographical area in the 2018 amendments to section 120(f) of the MMPA includes the mainstem of the Columbia River between river mile 112 to river mile 292, or any tributary within the state of Washington and Oregon that includes spawning habitat for species of salmon or steelhead listed as threatened or endangered under the ESA.

Comment 2: (2) Past efforts to deter such pinnipeds, and whether the applicant has demonstrated that no feasible and prudent alternatives exist and that the applicant has taken all reasonable nonlethal steps without success.

While we acknowledge that non-lethal hazing by boats and acoustic-harassment has, so far as we are aware, largely proven to be ineffective due to pinnipeds habituating to such harassment, they may still be effective in deterring "new arrivals" or at downriver locations. It is also true that the use of "cracker shells" and other intense noise sources to harass sea lions and drive them from the area may have had a paradoxical effect. Their repeated use in close proximity of the animal's head near Bonneville Dam or Willamette Falls may well have rendered animals deaf, obviating any benefit of acoustic deterrents. A more responsible approach to using non-lethal deterrents in the secondary and tertiary sites downriver, where they have not been tried, has the potential to be more effective than was the case in the turbulent high energy environments of Bonneville Dam and Willamette Falls where their indiscriminate use may have led to either acclimatization or deafness.

Response: Should NMFS approve the eligible entities' application, NMFS would determine what non-lethal measures, as well as where, based in part on the recommendations by the Pinniped-Fishery Interaction Task Force.

We also note that there has been no attempt to haze animals at other sites. Only two sites (i.e., Bonneville Dam and Willamette Falls) have been subject to hazing, although lethal removal is proposed for literally hundreds of miles of rivers. Both Bonneville and Willamette Falls are "choke points" in the river where fish must aggregate prior to trying to move upriver, a situation that may not exist downriver or in tributaries. Therefore, it may be premature to assume a failure of non-lethal deterrents in less restricted areas with free swimming fish.

Response: Should NMFS approve the eligible entities' application, NMFS would determine what non-lethal measures, as well as where, based in part on the recommendations by the Pinniped-Fishery Interaction Task Force.

Comment 3: (3) the extent to which such pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem, including fish populations.

While we understand that pinniped predation is the focus of this Application, it is worth noting that the decline of the salmon predates, and appears quite independent of, the predation, with annual fluctuations in run sizes that cannot be explained by predation rates. Because of this, we question the efficacy of a lethal control program focused on pinnipeds when the proximal causes of the "imbalance" are human-related challenges to fish recovery.

In weighing the merits of the Application and making a finding that sea lions are having a "significant negative impact" on the decline or recovery of listed salmonids, NMFS must consider their predation rates in the context of other, often more significant, reasons for the decline. The Application states that "nearly all other sources of in-river mortality for ESA-listed salmonids in the Willamette River are being

actively managed," and that "[r]ecovery plans have been developed for these stocks to reduce threats to recovery." This statement is somewhat disingenuous. The implication is that comprehensive and effective action is being, or has been, taken, yet repeated court rulings have found that threats to the runs are not being adequately addressed. Moreover, many of the recommendations of the government's blue ribbon Hatchery Reform Group for increasing salmonid spawning and reproductive success remain largely ignored. Indeed the Application itself acknowledges that anthropogenic impacts were themselves what necessitated listing salmon populations under the ESA, and many of these threats remain inadequately addressed.

Regarding the ability of this lethal management program to change the probability of functional extinction of the fish runs, we note that, even Table 6 of the Application indicates that most of the fish eaten by Steller sea lions, based on samples collected in the Columbia and Willamette Rivers, are not salmonids.

Response: We agree that there are additional sources of salmon and steelhead mortality, including fisheries and habitat degradation, and that there is more work to do. However, we disagree that recovery actions taken to recover salmon and steelhead in the Columbia River Basin are inadequately as these efforts equate to hundreds of millions of dollars invested annually and billions over the past decades. Additionally, recent research by Rub et al. (2019) estimated that non-harvest mortality of spring Chinook salmon varied from 20-44% between the mouth of the Columbia River and Bonneville Dam. So clearly, this level of impact exceeds the impacts of in-river fisheries, especially when added to the impacts of pinniped predation at Bonneville Dam and Willamette Falls. Therefore, we do not agree with the statement that the removal program would not contribute to salmon and steelhead recovery.

Moreover, the difference in probability of extinction of the most vulnerable populations is not much changed even without the modeled California sea lion predation. For example, as shown in the figures in this application, and as presented to the Willamette Falls task force; there is a high probability of extinction for the Calapooia steelhead run in the Willamette River, regardless of the presence of sea lions. This is perhaps the most extreme example of what is likely true for many of the salmonid runs—sea lion predation is not the principal cause of extinction risk. Nor in many cases does sea lion predation alter the likelihood of recovery, since some runs, such as Calapooia steelhead, are imperiled regardless of predation, and others show increasing run sizes even in the face of predation.

It may be premature to conclude from Table 3 in the appended Population Viability Analysis (PVA) that the extinction risk is the same for all runs, when the analysis was undertaken "with maximum CSL" [i.e., California sea lions] or "no CSL" for the McKenzie run, which clearly has a relatively higher risk of extinction than the other two runs that were modeled in the same fashion (i.e., no difference appears

calculated with or without sea lions). Even with maximum sea lion predation, the risk of quasi-extinction within 100 years at the McKenzie run was less than 50%.

The Application indeed recognizes the turnover in individuals over the season. The implication of this fact is that the state's calculations of improved recovery trajectory in the application and PVA, weighed simply on the basis of a scenario of "no sea lions" (which, for example, moves the scenario for the Molalla population to a zero risk) is likely unrealistic. Other scenarios, including having the same number of sea lions as 2015 or 2017, are also likely insufficient to model likely success of a lethal removal program. If the only options weighed appear to be status quo predation or "no sea lions," then it would be disingenuous to grant the state authority to kill sea lions based on an assumption that killing them will end predation. As we point out, and as the states have long acknowledged, new sea lions generally arrive to replace those who are killed. The information in the PVA is not helpful in assuming a likely change in recovery probability if the currently-present sea lions are killed, when we know that other sea lions continue to enter the river system and replace them over time (in greater or lesser numbers).

Response: The bioenergetics model used by the applicants provides an estimate of the expected benefits of the taking of sea lions (fish escaping sea lion predation) based on consumption requirements. As such, we find the bioenergetics model used by the applicants, as well as the predation data from Bonneville Dam, Willamette Falls, and the research by Rub et al. (2019), to provide a good description of the extent to which pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem, including fish populations.

Comment 4: Additional Concerns with the Application

Failure to Include a Plan for Monitoring and Reporting Results of the Program

Neither the Application nor its cover letter indicates a commitment to transparency in the lethal management of a public trust resource. The applicants should provide at least annual reports of the number of animals killed and the general location of the actions. Figure 1 of the Application delineates three categories of locations for killing sea lions within the broad action area. Category 1 focuses on the areas around the Bonneville Dam and Willamette Falls. Category 2 and 3 are downstream areas and tributaries of the Columbia River. Given the implications of this program for both sea lions and for hoped-for salmonid recovery, it is important that permittees report annually on whether actions were concentrated at the "Category 1" areas around the Bonneville Dam and Willamette Falls, or whether animals were also killed in the lower priority areas downstream and in the tributaries (and if so, where).

Given the significant range in numbers of animals proposed for removal, there should be a mandate to report how many animals were killed annually and the precise areas

and locations (i.e., mainstem Columbia, Willamette River, each of named tributaries, etc.) of each animal killed.

Response: We agree that any MMPA section 120 authorization should require monitoring. In addition to the monitoring requirements identified in the Memorandum, should NMFS approve the eligible entities' application, NMFS would also consider the monitoring recommendation by the Pinniped-Fishery Interaction Task Force.

Comment 5: Addressing Predation as Part of a Comprehensive Fish Recovery Strategy

Section G of the Application avers that "all other sources of in-river mortality for ESA-listed salmonids in the Columbia basin are being actively managed." We note that "actively managed" and "effectively managed" are not the same thing. Courts have repeatedly ruled that the dams and water management structures blocking upstream passage of fish should be removed or mitigated as they are a proximal factor in the failure of fish to recover, and courts generally found that blocked passages were being inadequately addressed. Additionally, loss of access to historic habitat and continued degradation of the habitat itself is widely recognized as the driving factor of salmon declines.

Response: We agree that there are additional sources of salmon and steelhead mortality, including dams and water management structures, and that there is more work to do. However, we disagree that recovery actions aimed at dam removal, passage improvement, and operational changes taken to recover salmon and steelhead in the Columbia River Basin have not been effective in improving the status of at-risk fish stocks.

In addition, there remains only limited evidence that pinnipeds are having an outsized impact on the recovery trajectory of fish runs. Table 13 in the Application estimates predation by both California and Steller sea lions at Bonneville Dam. The annual percentage of the run lost is estimated to be 1.4-5.8 percent of the run during the period of the past 10 years, with declining percentages lost to predation for the 2 most recent years, even as the number of sea lions removed has also declined. This calls into question the assertion that there is a correlation between declining run sizes of salmon and the number of 'predatory' sea lions. Regarding the wider impacts of predation downstream of Bonneville, the application cites a report by Rub et al. with estimates of predation as high as 44%. However, this paper relied on the netting and tagging of migrating fish that were subsequently not detected passing through the fish ladders at Bonneville Dam. The authors attempted to tag fish during runs believed bound for the Dam but, as the HSUS has pointed out in the past, the 6 years of data used to derive predation estimates include years during which the tags emitted a weak acoustic signal that could be heard by the sea lions and thus biased the estimates of consumption (e.g., if sea lions were more likely to chase and consume the tagged fish that they could both see and hear, then extrapolating this number would lead to erroneous conclusions of total predation). In addition, the

study does not completely account for fish from other overlapping runs that may have turned off before the counters at Bonneville Dam and thus been "lost" to factors other than sea lion predation. Moreover, it was assumed all fish survived the capture and tagging, and that non-sea lion predators were not eating them.

Response: The severity of the impact of sea lion predation on at-risk fish stocks in the Columbia River Basin is open for debate, but the impact is real and it is significant. Furthermore, section 120(f) of the MMPA does not require the impact to be an outsized impact. The amendments to section 120(f) of the MMPA established as a matter of law that sea lion predation on at-risk fish stocks in the Columbia River Basin is having a significant negative impact on the recovery trajectory of these at-risk fish stocks. Therefore, the only reasonable interpretation is that the impact of sea lion predation in the Columbia River Basin is having an outsized impact on the recovery trajectory of these at-risk fish stocks.

We disagree with the interpretations provided by the Humane Society regarding the research by Rub et al. We recognize that the field research results are model-based, and the results are open for debate. Nonetheless, whether the percentage of the impact is spot-on or not, the fact is that the impact of sea lion predation on spring-run Chinook salmon in the lower river is severe and is having a significant negative impact on the recovery trajectory of these at-risk fish stocks.

Moreover, the scat analysis and diet studies that the state has undertaken have apparently not attempted to discern this consumption to a degree that allows understanding of the possible positive aspect resulting from pinnipeds foraging on these predatory fish species, and the possible adverse impacts of removing a major predator of non-native and predatory fish. Until there is a plan for the effective and timely removal of these other predators of salmon that also compete with them for spawning habitat, it is premature imply that all sources of "in-river mortality" are being actively managed—let alone "effectively" managed.

Response: We agree that there are additional sources of salmon and steelhead mortality, including non-native and native predatory fish, and that there is more work to do. However, we disagree that recovery actions implemented so far at reducing piscine predation to recover salmon and steelhead in the Columbia River Basin have not been effective in improving the status of at-risk fish stocks.

Comment 6: The Likelihood of Success of the Program in Eliminating Predation and/or Lowering the Salmonid Extinction Risk Is Far from Assured

As we have discussed, the application itself leads to questions about the likelihood of success of the proposed program. Among the problems we have identified above, data are missing on predation for many of the areas and management timeframes included in the Application. As a result, the magnitude of the likely impacts of a lethal program on fish recovery is far from clear.

In its meeting in 2017, the Bonneville Dam Pinniped Interaction Task Force (of which The HSUS is an appointed member) reached a unanimous conclusion that, despite years of authorization for lethal removal and hundreds of deaths, the list of individually identifiable sea lions targeted for lethal removal has continued to grow, and "task force members present [unanimously] agreed that the removal program has not eliminated the problem interaction." In 2016, the states of Oregon and Washington themselves reached the same conclusion with regard to the documented failure of lethal action to ameliorate predation near Bonneville Dam. It is simplistic to assert—as appears to be the case in this application—that the applicants just need to kill more.

Also missing from this Application is a plan to monitor and report whether improvements in survival and recovery trajectory of listed salmon will result from the proposed Section 120 authorization. This should be mandated to assure accountability and to document whether, in fact, the program actually improved survival probability for listed fish and did not just kill sea lions to no real purpose.

The need for accountability in lethal control programs is reflected in a document prepared by a panel of experts at the request of the Northwest Power and Conservation Council. These independent experts focused largely on examining predation at the Bonneville Dam (where more data are available than for Willamette Falls and no data were available for any other site enumerated in the Application), and recommended an approach far more rigorous than that used in the non-peer reviewed Willamette PVA, included as an appendix in the application. For example, the independent experts noted that compensatory mortality should be considered since it is dependent on the demographics of the prey being targeted, and noted that hatchery-origin fish (who are resource competitors with wild fish) appear to suffer greater losses to predators than wild fish. They recommended, though the states have apparently not undertaken, developing a standardized predation metric to enable evaluating a "change in population growth rate metric (also called delta lambda, Δλ), which can be used to compare how different predation scenarios affect rates of population recovery or decline." This expert recommendation has not been followed.

Response: Section 120(f)(2)(C) required the Secretary (NMFS) to establish procedures to coordinate issuance of permits, including application procedures and timelines, delegation and revocation of permits to a between eligible entities, monitoring, periodic review, and geographic, seasonal take, and species-specific considerations. On June 4, 2019, the Regional Administrator, NMFS West Coast Region, approved a Decision Memorandum: Procedures to Coordinate Issuance of Section 120, subsection (f) Permits of the Marine Mammal Protection Act. That memorandum established the procedures for eligible entities regarding application requirements and program implementation procedures for prospective and approved authorizations issued to an eligible entity under section 120(f).

Furthermore, should NMFS approves the application and adopt the Task Force recommendations linking the benefits of the removal program to population parameters such a changes in population growth, the eligible entities would be required to implement an extensive monitoring program as a condition of authorization.

Comment 7: Reliance on a Non-Peer-Reviewed Energetic Model in Making Assumptions of Benefits of a Lethal Program

> *In its assertion of likely efficacy of a lethal removal program, the Application relies heavily on a model that has not undergone peer review. Nor is this model or its author identified in the Application, such that reviewers can fully evaluate the sufficiency of the underlying assumptions in the model or the data used. The bioenergetic model that is used—and has been previously discussed in overview presentations provided to Section 120 task forces—also makes questionable assumptions. A bioenergetic model was used in Alaska with Steller sea lions who face recovery challenges and themselves eat commercially valuable fish. That study was published in a peer-reviewed journal. Given the different habitat conditions, some dietary differences (i.e., salmonids made up a minor portion of the diet in Alaska), the absolute sex-bias in the individuals involved in the predation in Oregon and Washington rivers (i.e., all males vs. mixed sex in Alaska) this model should have undergone peer-review by now. It is inappropriate to continue to rely on this unpublished, non-peer-reviewed model, given the use of this model to estimate the consumption of salmonids by sea lions in the river system—and to use that model as a justification for lethal management.*

Response: The bioenergetics model used by the applicants provides an estimate of the expected benefits of the taking of sea lions (fish escaping sea lion predation) based on consumption requirements. As section 120(b)(2) of the MMPA only requires that such application shall include a description of the expected benefits of the taking, we find the bioenergetics model used by the applicants satisfies that statutory requirement.

Comment 8: The 3.6.D Committee Does Not Appear to Have Been Lawfully Formed

> *The NMFS Memorandum sets forth a process by which entities may properly form a 3.6.D Committee:*
>
> *[T]he Committee shall submit a letter to the Secretary regarding establishment of a Committee as described in section 120(f)(6)(D). Upon receipt, the Secretary will recognize the establishment of a Committee, and that members of the Committee are eligible entities as described in subsection 6 (A)(iii), by means of written concurrence to the Committee.*
>
> *There is no evidence in the Application to indicate that this process has been followed. Rather, the Application merely includes a footnote indicating that the*

Committee fulfills the statutory requirements by including the appropriate entities. It appears that the 3.6.D Committee formed independently, and seeks recognition through its application. This violates the requirements that the Committee first submit a letter and be formally recognized prior to being eligible to apply for Section 120 authorization—the Committee does not exist and therefore is not an "eligible entity" prior to submitting a letter and being formally recognized. Therefore, to the extent the Committee has not gone through the proper process prior to application for a Section 120 permit, NMFS must adhere to its own guidance and deny the Application with respect to the 3.6.D Committee.

Response: On April 24, 2019, NMFS received a letter from the Director of the Oregon Department of Fish and Wildlife requesting recognition of the Committee that was formed by the state of Oregon, Confederated Tribes of the Siletz Indians of Oregon, the Confederated Tribes of the Grand Ronde Community, the Confederated Tribes of the Warm Springs Reservation, and the Confederated Tribes of the Umatilla Indian Reservation in accordance with section 120(f)(6)(D of the MMPA. On June 4, 2019, NMFS sent the Director a letter recognizing the establishment of the Committee in section 120(f)(6)(D) as being an eligible entity for the purposes of section 120(f)(6)(A)(iii).

Comment 9: NMFS Must Prepare an Environmental Impact Statement

NMFS must prepare an environmental impact statement (EIS) prior to issuing the requested take authorization in order to comply with the National Environmental Policy Act (NEPA). NEPA requires that federal agencies prepare an EIS for all "major Federal actions" that may significantly affect the environment. NEPA regulations offer several criteria that an agency must consider in deciding whether or not to prepare an EIS, and NEPA mandates that agencies consider both "context" and "intensity."

The Application proposes to kill both California and Steller Sea Lions on an unprecedented scale—with the goal of completely eradicating those species from hundreds of miles of river. The applicants have applied to kill every single sea lion within the geographic scope of the Application. As discussed above, it is unclear what that number will be, but it will likely be between hundreds and the maximum of over 1,600. The action proposed by the Application is exponentially broader and more impactful than any previous Section 120 authorization; therefore, NMFS cannot rely on previous NEPA analyses to justify granting the Application.

Due to the scale of the proposed action, and the fact that the Application aims to seriously disrupt the current balance of the ecosystem, granting the Application would be a major Federal action that will be environmentally significant both in context and intensity. Therefore, NMFS must prepare an EIS to fully analyze the impacts of its action prior to granting the Application.

Response: Should NMFS approve the eligible entities' application; NMFS would comply with the requirements of the National Environmental Policy Act.

Comment 10: Lethal Management is Rarely a Successful Management Tool for Marine Mammals

> *The Application cites a report by Scordino, with excerpted text quoting Brown, stating that "the only effective measure was removal of the pinniped. ODFW and WDFW had the same results in attempting to deter California sea lions from Bonneville Dam." We take issue with this statement. Clearly, removing pinnipeds was not "effective" as this statement implies, since new animals simply took the place of those that had been removed. Killing some of the animals on the states' growing list of sea lions targeted for lethal removal at Bonneville Dam did little deter new animals from finding this site. Moreover, many new animals were seen at the Dam in a single year, added to the list for removal, but never returned, only to be replaced by others who readily followed fish to the choke point. There is nothing in the current Application that appears likely to significantly change the natural behavior by sea lions who have seasonally foraged in the river for millennia. It is a cycle that is likely to repeat with new animals simply replacing those that are removed.*
>
> *In 2012, Bowen et al. conducted an extensive review of marine mammal predator control programs. As Bowen notes, undertaking predator control is a management decision, not a scientifically-based decision. Moreover, the authors' exhaustive review of global marine mammal culling programs found them generally flawed because they lack measurable objectives to allow evaluation of their success. The authors cite a National Research Council report that concluded that, to be effective, control must be both intense and frequent, and they state that there is no factual basis for assuming that short-term control will have long-term effects. Yet this current application appears to propose a time-limited program with little or no evidence provided that demonstrates the how a short-term lethal pinniped program will effect a goal of long-term recovery of listed fish populations. If the applicants are considering that lethal control on this scale will be undertaken in perpetuity, this should have been discussed in the proposal rather than implying that a short-term lethal program will provide a long-term end to a natural predator-prey relationship.*

Response: We agree that lethal management of pinnipeds has produced mixed results. However, the success of the lethal removal program at Willamette has exceeded expectations, and may serve as a case study where lethal management is the most effective management option at reducing pinniped-fishery interactions.

Comment 11: Methods used to kill sea lions are arguably inhumane

> *Despite several pages of text in several places in the Application, there is still uncertainty regarding the methods that will be used and whether they are humane.*

Page 7 of the Application states that firearms will not be used to "euthanize live, free ranging animals." Troublingly, this wording implies they might be used on trapped or otherwise captive animals, although Appendix 1 appears to discuss methods related solely to lethal injection. The earlier, more general, text in the body of the application should be clarified to state simply that "firearms will not be used."

We also call attention to the list of methods described in the appendix stating that animals that "enter the water upon darting or are already in the water at the time of darting… will be followed and seine or tangle nets, hoop or gaff will be used to recover the anesthetized animal." Gaffing a live animal—whether or not it is anesthetized—is arguably inhumane. This method should be denied.

Moreover, the text is not entirely clear as to whether the "darts" used against sea lions in the rivers would contain a fatal dose of the anesthetic or whether they merely contain a sedative with the expectation that the animal would then be easier to capture for subsequent humane euthanasia. This should be clarified. We are also concerned that, if the "dart" does not contain a dose that is immediately fatal, a sea lion may flee, only to drown as the sedative takes effect. This would hardly meet the MMPA standard for "humane" treatment. The discussion of "recover[ing] the anesthetized animal" appears to acknowledge an expectation that that darted animals can and will flee, only to later die and require "recovery."

An additional concern with this section of the Application is raised in the language that states that "[a]nesthetized animals may be euthanized boat side following IACUC approved procedures" [emphasis added]. This too is arguably inhumane. Animals that are anesthetized and attempt to flee may still be able to struggle as they are brought to a boat and somehow secured prior to being killed by another injection. Are the applicants proposing to capture a groggy, but still panicked animal, secure it to a boat and then kill it? If not, the language should be clarified since, as written, it seems to allow for this possibility.

Response: Should NMFS approve the eligible entities' application; NMFS would prohibit the use of firearms by the eligible entities to kill sea lions, as we do not think this method is consistent with the definition of humane within the meaning of section 3(4) of the MMPA.

Furthermore, prior to implementation, the IACUC would be required to develop, and NMFS to approve, the specific methods and protocols for darting and removal of free-ranging sea lions subject to this authorization. NMFS would require on an annual basis that the IACUC reevaluate the methods and protocols, and determine any needed modifications. NMFS would also on an annual basis review the IACUC methods and protocols for darting and removal of free-ranging sea lions administered by the eligible entities and affirm that lethal removals are consistent with the definition of humane within the meaning of section 3(4) of the MMPA.

The Marine Mammal Commission

Comment 1: Implementation of Section 120(f)

Although section 120(f) requires that NMFS and the task force follow pre-existing procedures and timelines under subsection (c), the new provision is substantively quite different than the authorization process under the other provisions of this section. New section 120(f) is based on the premise that all pinnipeds within certain areas in the Columbia River and its tributaries are having significant negative impacts on the identified fishery stocks. As such, some of the considerations under section 120(d) no longer are relevant. Thus, in the interest of efficiency, the Commission recommends that the task force be instructed to constrain its review to those factors that have a direct bearing on the findings required under section 120(c) and 120(f). For instance, the task force need not spend its time reviewing "the extent to which…pinnipeds are causing undue injury or impact to, or imbalance with, other species in the ecosystem…." Despite the relevance of this issue to the overall question of whether pinnipeds should be removed, in enacting Section 120(f), Congress has determined that pinnipeds are having such impacts.

Response: Although we agree with the Commission here, we also think it is important that the applicants address and the Task Force consider the MMPA section 120(d) considerations to provide context regarding the problem interaction.

Relevant Considerations

Numbers/Coordination of Permits — Section 120(f)(3) requires NMFS to specify annual taking limits and caps the allowable limit at 10 percent of the sea lion stocks' potential biological removal (PBR) levels. Applying current PBR levels, this would allow up to 1,401 California sea lions and up to 249 Steller sea lions to be removed lethally each year. The application is unclear concerning the number of removals for which authorization is being sought. In the section entitled "number of animals to be removed" the applicants note only how many sea lions it estimates to be within the geographic scope of the application—144-286 California sea lions and 105-130 Steller sea lions—not the number they are seeking authorization to remove. The requested number of takes needs to be clarified. Is it at the lower end of the identified range, the upper end, somewhere in between, or some other number? Also, it is unclear how the applicants are accounting for sea lions that have not previously been seen within the removal areas, but that could move into those zones during the five-year period that would be covered by the requested permit, particularly as other sea lions are captured and killed.

On a related point, the level of authorized removals should reflect not only the number of sea lions within the areas where removals are allowed, but the capability of the applicants to trap and euthanize animals. Although NMFS legally could authorize up to

1,650 lethal removals per year, it would be nonsensical to do so if (1) the number of sea lions within the Columbia and its tributaries is far less or (2) the applicants could not possibly remove that number of animals given the constraints on removal methods and available resources. The Commission recommends that NMFS seek clarification from the applicants about how many removals, by species and by year, they are requesting and ask the task force to provide advice on the number of annual removals to allow for each of the two sea lion species.

Response: Should NMFS approve the eligible entities' application; NMFS would rely in part on the Task Force recommendations regarding the number of sea lions subject to removal. We think this approach is the best way to address the number of sea lions that constitute the problem interaction as well as capability of the eligible entities to implement the program.

It also is not clear whether the current application is intended to supplement or supplant the existing authorizations allowing the removal of pinnipeds at Bonneville Dam and Willamette Falls. Those authorizations already permit the states to remove up to 280 California sea lions per year, provided that those animals meet the removal criteria. This is a relevant consideration in setting appropriate removal levels in any new authorization. Specifically, the applicants should be asked to clarify whether they intend the authorization sought under section 120(f) to replace the existing authorizations and, if so, NMFS should revoke the earlier authorizations.

One possible reason to retain the existing authorizations is that they ostensibly provide greater flexibility in the removal methods that can be employed. Several years of observations at Bonneville Dam have documented that certain individual sea lions consume many more salmonids than others. The Commission has recommended in the past that pinniped removal strategies be designed to target selectively the greatest contributors to the predation problem. The Commission also has noted that the current practice of trapping sea lions does not effectively target those individuals that are the greatest contributors. In fact, some sea lions, perhaps including major consumers of salmonids at Bonneville Dam and Willamette Falls, may not be susceptible to trapping at all. If that turns out to be the case, the states may want to avail themselves of more selective removal methods. In addition, as discussed further below, this is one reason to continue to monitor fish consumption by individual sea lions at certain locations, although doing so would no longer be required to meet the requirement of section 120(b) pertaining to "individually identifiable pinnipeds."

Response: The current MMPA section 120 authorizations expire on June 28, 2021 (Bonneville Dam) and November 14, 2023 (Willamette Falls), respectively. The states have not requested that NMFS revoke these authorizations, nor do we see reason to do so as the states may still want to remove qualified (those CLS that have met the criteria and are listed in Appendix 1 of the respective authorizations), in areas outside of the MMPA section 120(f) action area.

Location and Time of Removals *— Section 120(c)(3)(A) directs the task force to provide recommendations concerning the location, time, and method of taking. The applicants are seeking removal authority throughout the areas specified in section 120(f)—i.e., in the mainstem of the Columbia River above river mile 112 and below McNary Dam and in tributaries that provide spawning habitat for endangered or threatened salmon or steelhead. However, they state that the primary capture sites will be in the vicinity of Willamette Falls and Bonneville Dam (category 1 sites). Captures at Willamette Falls are planned year-round, and at Bonneville Dam during two three-month periods in the spring and fall, although those could be expanded based on the presence of sea lions at other times and the availability of resources needed to carry out taking. The applicants also have identified secondary (category 2) and tertiary (category 3) capture sites, where sea lions could be trapped or darted for removal as the need arises and if resources are available. Low to moderate numbers of sea lions (less than 10) have been observed in Category 2 areas and are present only periodically. Category 3 areas have no documented observations of either California or Steller sea lions or such low numbers of sea lions that they are not currently deemed a conservation risk to salmonids.*

The Commission agrees that greatest attention should be given to removal activities at Willamette Falls and Bonneville Dam. This is where salmonid passage is slowed by artificial barriers and the fish are most vulnerable to predation. These areas also are where the predation problem has been best documented and appears to be most acute. In fact, there are few data to support the view that predation of salmonids by sea lions is a significant problem elsewhere in the river system despite the inclusion of other areas in the 2018 legislation. Thus, the Commission encourages NMFS, the states, and others to conduct additional monitoring and research directed at understanding the extent of salmonid predation in these other areas and to determine the extent to which salmonids are vulnerable to predation elsewhere.

One concern that the Commission has about approving the trapping of sea lions in category 3, and perhaps even in category 2, areas is the possibility that the haulouts created by the placement of floating traps at or near the mouth of tributaries could serve to attract animals that may not otherwise have ventured into those areas. As such, the Commission recommends that NMFS and the task force consider whether to limit the placement of traps in tributaries to areas where sea lions cannot see them unless they have first traveled some distance up the tributary.

Response: NMFS agrees with the Commission that the eligible entities should concentrate removal efforts where the problem interaction is well known, well documented, and most severe.

Should NMFS approve the eligible entities' application; NMFS may adopt Task Force recommendations regarding monitoring in addition to the monitoring requirements identified in the MMPA section 120(f)(2)(C) Procedures Document.

Non-Lethal Alternatives *— Section 120(c)(3)(B) requires the task force to consider whether non-lethal alternatives to lethal removal are available and practicable. The applicants are requesting that they not be required to conduct non-lethal hazing of sea lions as a condition of any removal authority. In support of this request, the applicants recount non-lethal efforts to deter sea lions from becoming established and eating fish at Ballard Locks, Bonneville Dam, and Willamette Falls, all with limited success.*

The Commission acknowledges the efforts at Bonneville Dam to deter habituated animals have been unsuccessful. In part, that may be because of the size of the area and the ability of sea lions subject to harassment to move elsewhere in the tailrace. However, we continue to believe that non-lethal deterrence measures might be more effective in on naïve animals or in more confined areas and should not be ruled out completely without additional evidence that such measures are not effective in other settings (e.g., in category 2 and 3 areas) . The Commission is particularly interested in learning more about the basis for the assertion in the application that "more recent evidence suggests that they have minimal effect on naïve animals," an assertion based on "unpublished data."

Pending a review of that information, the Commission continues to recommend that non-lethal deterrence efforts not be abandoned completely. Not only might they be more effective with naïve animals or in confined areas where sea lions cannot merely move to adjacent areas and continue to feed, but these efforts may be more effective in areas other than Bonneville Dam or Willamette Falls, two places where fish passage is slowed and predation by sea lions likely is more productive. Even if the new task force concludes (as have past task forces) that non-lethal deterrence of sea lions is ineffective and should not be required at Bonneville Dam or Willamette Falls as a condition of the requested authorization, the Commission recommends that the task force be asked to consider whether non-lethal measures should be required in other areas. In particular, such measures may be effective in deterring sea lions from becoming established in category 3 areas or from increasing their presence in category 2 areas.

Response: NMFS agrees with the Commission that the eligible entities should continue to consider non-lethal measures. Should NMFS approve the eligible entities' application; NMFS may adopt Task Force recommendations regarding non-lethal measures.

Monitoring/Evaluation of Effectiveness *— Section 120(f)(2)(C) specifies that the procedures to be established by NMFS include requirements for monitoring. In addition, section 120(c)(3)(A) requires the task force to recommend criteria for evaluating the success of a removal action and section 120(c)(5) calls for the task force to conduct such an evaluation.*

Under the procedures issued by NMFS on 4 June 2019, an "eligible entity" is required to develop and implement a monitoring program to evaluate (1) the impacts of sea lion predation on at-risk fish stocks and (2) the effectiveness of permanent removal of predatory sea lions as a method to reduce mortality of at-risk fish stocks.

The application provides scant information about the monitoring program being proposed in this instance. Although the states, the Army Corps of Engineers, and others have carried out robust monitoring programs over the years, it is not apparent whether the applicants intend to continue them unchanged. In particular, given the changes in how individual sea lions eligible for removal are identified, the applicants need to clarify whether they will be continuing to monitor the comings and goings of individual sea lions at Bonneville Dam and Willamette Falls and to record predation events by individuals when possible. It is also unclear whether the applicants intend to continue, or even expand, current efforts to mark sea lions near Astoria and elsewhere to help facilitate identification in the event they travel up-river. NMFS should ask the applicants to provide a more complete description of their proposed monitoring plan, and supplement it as necessary to ensure that the agency and the task force have the information necessary to evaluate whether the proposed removal program is successful of not.

To date, monitoring efforts have been focused on Bonneville Dam and Willamette Falls. This is understandable given the concentration of sea lions and predation events at these locations and the previously applicable requirements for identifying problem pinnipeds individually. However, if lethal removals are to be authorized in other areas, more regular and systematic monitoring of those areas is needed to develop the baseline information necessary to assess the extent of the problem and whether removal efforts are successful. The Commission therefore recommends that NMFS and the task force consider what monitoring programs are needed in areas other than Bonneville Dam and Willamette Falls.

Response: Should NMFS approve the eligible entities' application; NMFS may adopt Task Force recommendations regarding monitoring in addition to the monitoring requirements identified in the MMPA section 120(f)(2)(C) Procedures Document.

In addition, the task force should be asked to recommend criteria for assessing the effectiveness of the lethal removal program or non-lethal alternatives in eliminating or reducing problem interactions. There are several possible metrics. Ultimately, success should be measured on the basis of the recovery, or at least improved status, of listed fish stocks or on the extent to which mortality of at-risk fish stocks is being reduced. However, given the number and diversity of factors other than predation by pinnipeds that are known or suspected to be contributing to the imperilment these stocks, and given all of the other ongoing recovery activities, improved status of stocks is not a realistic measure of the success or failure of pinniped removal.

Likewise, ascertaining whether pinniped removal is translating into reduced mortality of at-risk fish (or merely shifting predation to other areas or if "saved" fish are dying from other causes) will be difficult to determine unless the monitoring program is sufficient to detect predation events and possible offsetting increases in mortalities from other causes throughout the Columbia River and its tributaries.

Other possible measures of success are the number of pinnipeds removed and, building on that, the estimated number of fish "saved" using an energetics model to estimate what those sea lions would have eaten to sustain themselves. As the Commission has noted previously, the Columbia River is not a closed system, and removals only save fish if the removed sea lions are not replaced. There are many sea lions downstream or at the mouth of the Columbia that could fill the niche vacated by animals that are lethally removed. If sea lions are at or near the carrying capacity of key areas to support them, the effectiveness of the removal program depends on whether, and the rapidity with which, new sea lions replace those that are removed. An effective monitoring program should be designed to collect the types of information needed to determine the carrying capacity of the habitat around Bonneville Dam and Willamette Falls to support sea lions, and to document whether, and how quickly, removed sea lions are replaced.

A related measure of effectiveness would be a reduction in the number of sea lions congregating where predation on at-risk fish stocks is concentrated. The monitoring requirements established by NMFS in its procedures presumably would be sufficient to allow for documentation of any such reduction. By this measure, though, ongoing removal programs at Bonneville Dam and Willamette Falls have not been very effective in reducing the number of sea lions at those locations or the observed number of predation events, adding credence to the view that new sea lions are moving into these areas almost as quickly as others are being removed.

Another factor to consider in assessing the effectiveness of a removal program is whether it is targeting the individuals that are the biggest contributors to the predation problem. Data collected at Bonneville Dam indicates that some sea lions are much more successful consumers of salmon than others. If one considers only how many sea lions are removed, or even the extent to which the numbers of sea lions within the areas of greatest concern are reduced, but not whether the major contributors are among those removed, a key aspect of the evaluation may be overlooked. For this reason, the Commission recommends that the monitoring programs continue to attribute predation events to individual sea lions whenever possible.

The enactment of section 120(f) raises the stakes of the pinniped removal program in many ways. It allows more sea lions to be killed, within a broader area, and without the need to document that each animal to be removed is a significant contributor to

the predation problem. As such, it might be more successful than past programs in contributing to the conservation of listed salmonids and other at-risk fish stocks. It also presents a higher risk of killing sea lions needlessly (e.g., if some sea lions within the specified removal areas are not significant contributors to the predation problem, or if removals do not result in reduced predation). Because of these possibilities, invoking section 120(f) also should prompt us to improve the monitoring programs and evaluation criteria so that we can ascertain whether the right sea lions are being targeted and whether removals are being translated into any appreciable net savings of at-risk fish stocks. For this reason, the Commission recommends that the composition of the task force include expanded representation of individuals from the research and academic communities who have the expertise necessary to establish appropriate evaluation criteria and to design effective monitoring requirements.

Response: Should NMFS approve the eligible entities' application, NMFS may adopt Task Force recommendations regarding monitoring in addition to the monitoring and periodic review (i.e., program evaluation) requirements identified in the MMPA section 120(f)(2)(C) Procedures Document.

Humaneness *— Section 120(f)(4) requires that intentional lethal taking under this new authority be conducted in a humane manner. It also requires that methods of capture, husbandry, transportation, and euthanasia be developed or reviewed by an Institutional Animal Care and Use Committee (IACUC). Although the humane taking requirement is one element of an authorization under section 120(f), the Commission sees little point in having the task force weigh in on humaneness issues. Unless structured differently than past task forces, this task force would have no particular expertise in this area, and certainly less than an IACUC constituted separately to focus on this aspect.*

Response: Should NMFS approve the eligible entities' application; NMFS would require the eligible entities to establish an IACUC. The IACUC would be required to develop, and NMFS to approve, the specific methods and protocols for removal of sea lions subject to an authorization. NMFS would require on an annual basis that the IACUC reevaluate the methods and protocols, and determine any needed modifications. NMFS would also on an annual basis review the IACUC methods and protocols for darting and removal of free-ranging sea lions administered by the eligible entities and affirm that lethal removals are consistent with the definition of humane within the meaning of section 3(4) of the MMPA.

Suspension if no longer necessary (or if not effective) *— Section 120(f)(5) directs NMFS to review the new lethal removal program in December 2023 to determine whether that authority "is no longer necessary to protect salmonid and other fish species from sea lion predation." That provision, however, is silent on the criteria that will be used to make such a determination. Clearly, such a finding would be warranted if the removal program had reduced predation and the prospect of future*

predation to the point where it no longer is a concern. The Commission would like to postulate a second alternative. A removal program should also be considered unnecessary if it is demonstrated that it is unlikely to address the predation problem successfully (e.g., if predatory sea lions are being replaced almost as quickly as they are removed).

Response: Should NMFS approve the eligible entities' application; NMFS would conduct a program evaluation by the end of December 2023.