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Donna Darm, Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
1201 NE Lloyd Bld., Suite 1100
Portland, OR 97232
Submitted via www.regulations.gov

RE: NOAA-NMFS-2011-0216, Pinniped Removal Authority [76 FR 56167, September 12, 2011]

October 12, 2011

Dear Ms. Darm,

On behalf of the more than 11 million members and constituents of The Humane Society of the United States (The HSUS), of whom over 450,000 reside in Oregon, Washington and Idaho; I am writing to provide comments and information on the application for intentional lethal taking of California sea lions that was submitted to you by the states of Washington, Oregon and Idaho under the authority of Section 120 of the Marine Mammal Protection Act (MMPA), 16 U.S.C. § 1389. The HSUS holds a seat on the Congressionally-mandated Pinniped-Fishery Interaction Task Force (PFITF) that has met numerous times since 2007 and we have regularly challenged the conclusion that the situation at Bonneville Dam merits lethal removal of sea lions.

The HSUS believes that the current application presents a misleading picture of the role and significance of predation in the recovery of Endangered Species Act (ESA) listed salmonids in the Columbia River and we believe that both the information available at the time of the 2008 authorization and information available since 2008 clearly show that lethal taking is not warranted. We also disagree with the National Marine Fisheries Service's (NMFS) proposed definition of "significant negative impact" used for purposes of authorizing the lethal removal of sea lions under Section 120 of the MMPA. The fact remains that killing sea lions at Bonneville Dam will not have a beneficial impact on the recovery of salmonid stocks in the Columbia River.

In the Federal Register (FR) notice, the NMFS specifically requests comments on seven issues: (1) new information on pinnipeds in the action area since 2008; (2) new information on salmonids since 2008; (3) new information on non-lethal deterrence measures since 2008; (4) the effect of permanent removal carried out under the 2008 LOA; (5) new information concerning predation on salmonids by other species since 2008; (6) recommendations made by the pinniped task force at its 2010 meeting concerning the 2008 LOA; and (7) the NMFS' proposed

interpretation of the MMPA standard "significant negative impact" including a list of factors the NMFS proposes to consider in deciding whether the standard is met. In addition to addressing each of these issues, we will also provide information regarding inaccurate or misleading information in the states' application.

(1) New information on pinnipeds in the action area since 2008.

Reports from the Dam generated by the Army Corps of Engineers (ACOE) document the numbers and identities of both California and Steller sea lions seen at the Bonneville Dam. Although the number of Steller sea lions frequenting the Dam may have increased since 2008, there were fewer per day in 2011 than in the previous 3 years (Stansell, *et al*., 2010 and Stansell *et al*., 2011). Since Steller sea lions are still listed as threatened under the Endangered Species Act (ESA), and therefore not subject to removal under the authority of Section 120, we will only discuss them in a very narrow context and will focus most of these comments on new information on California sea lions at the Dam.

<u>New Information on Abundance of California sea lions</u>
In the draft Stock Assessment for California sea lions for 2011, the NMFS proposes to increase the minimum abundance estimate to 153,337, and change the Potential Biological Removal (PBR) level to 9,200 (NMFS 2011), and thus the states' request to remove 1 percent of PBR would result in increasing the number that would be killed beyond the maximum of 85 per year considered in the 2008 Environmental Assessment (EA). A request to remove one percent of PBR would result in removal of up to 92 California sea lions per year, for a five-year total of 460. The impact of killing a higher number of sea lions would need to be examined in the context of a supplemental EA or an Environmental Impact Statement (EIS). It is also not clear from either the Federal Register notice or the application itself whether the analysis undertaken as part of the 2008 EA, which projected lethal take of approximately 30 sea lions each year, would remain unchanged. If the NMFS is proposing to increase the number likely to be removed beyond the 30 that was analyzed as part of the 2008 EA then the NMFS must conduct additional environmental analysis under the National Environmental Policy Act (NEPA) that evaluates the potential impacts of the newer number. *See* 40 C.F.R. § 1502.9(c)(1)(i), (ii) (an agency must prepare a supplement EA or EIS if "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.").

<u>New Information on Numbers of California Sea Lions at the Dam</u>
The 3-year summary report from the Dam by the ACOE, documents that the number of individual California sea lions seen dropped from 82 in 2008 to 54 in 2009 and rose in 2010 to 89. The ACOE concluded that the overall average of approximately 75 is almost unchanged from the average prior to 2008 to the average after 2008. (Stansell, *et al*., 2010). However, the same report noted that the highest number of California sea lions seen "dropped every year since the peak of 52 in 2007 to 26 the past two years" (i.e., 2009 and 2010) (*ibid.).* In the last weekly report from the Dam on May 27, 2011, the ACOE provided a preliminary summary of

interactions to date indicating that 2011 saw "the fewest average California sea lions per day to date since 2002" (Stansell, et al., 2011a). This is despite the fact that there was virtually no lethal removal in 2011. Thus, lethal removal does not affect the numbers of animals frequenting the Dam.

New Information on the Presence of Individually Identifiable Animals at the Dam

Both the 2010 and 2011 ACOE reports show a constant flux of new animals at the Dam. There are new animals coming and going at the Dam each year. The ACOE reported to the PFITF that "[o]f the 78 highly identifiable animals observed in 2010, 51 (65.4%) were new additions to that category (including 14 branded and 8 more given brands while at Bonneville). The percentage of [California sea lions] returning each year was at least 19.2%, 51.2%, 77.1%, 62.3%, 65.6%, 66.2%, 69.8%, and 34.6% for 2003 through 2010, respectively. This year [2010] had the fewest returning individuals since 2003" (Stansell, *et al.,* 2010).

There were far fewer California sea lions (referred to by the ACOE as CSL) present daily on average in 2011 than any year since 2004 and the maximum number seen on any one day in 2011 (26) was the same as 2009 and less than any year since 2002 (Stansell, *et al*, 2011). Far from being a resident group, these 26 seen on a single day was a fraction of the total number individuals (89) seen at the Dam (*ibid.).* Different individuals came and went. The ACOE report speculated that "[t]he increase in CSL abundance at Bonneville Dam in 2010, many which were not seen at the dam before, could be the result of a large group of young males exploring new areas, such as the Columbia River, to prey on fish" (Stansell*, et al,* 2011.). These data demonstrate that sea lions regularly come and go from the Dam.

It is also apparent that the California sea lions at the Dam do not stay as long as they did previously. The 2010 ACOE report states that "the most number [sic] of days an individual CSL was observed at Bonneville Dam was 39 days in 2010, much fewer than any of the previous four years. This could be due to the many new individuals seen staying only for a short period of time, unlike most of the returning older individuals, which have learned where the best haul out locations are and have become comfortable staying at the dam for longer periods" (Stansell, *et al.,* 2010). We would add that it may also be that these newer animals are more responsive to non-lethal hazing and/or have not yet lost hearing as a result of the loud explosives and acoustic devices used to harass them, making these techniques more effective on newer animals.

In its Supplemental Information Report accompanying an earlier authorization for lethal taking, the NMFS itself acknowledged that the mean residency time declined from 20 days in 2008 to 9.3 in 2010 (NOAA 2011). The large number of new individuals combined with a shorter average residency time indicates that this is not a resident population that might be controlled or reduced. The report also acknowledges that "the number of animals present on any one day represents a subset of a larger pool of animals that frequent the dam..."(i*bid*.). New animals come and go.

This constant interchange of new animals will always confound any attempt to reduce their presence at the Dam. In fact, this well documented interchange of animals reinforces the

statement in the 2008 EA that "eventually new sea lions would likely take the place of sea lions that had been removed." Thus, the EA concluded that the possible benefits "*are too uncertain; however, to support a reliable estimate of any decrease in pinniped predation* (and corresponding increase in salmonids survival)" (NMFS 2008 at 4-11) (emphasis added). The new information gathered since 2008 simply reinforces this acknowledgement, as new animals continually arrive at the Dam and the number of fish eaten has not declined in association with permanent removals. The lethal removal program is clearly futile, and thus reauthorization would be arbitrary and capricious, because the data shows that killing individually identifiable sea lions will not reduce predation.

The states indicate in the cover letter to their application that retaining their lethal taking authority in 2011 could have helped in "continuing to reduce the number of California sea lions consuming salmonids as they attempt to pass the Dam" (August 18, 2011 letter from the states to Eric Schwaab). We disagree that killing them has reduced the number of sea lions and the facts do not support the attainability of this apparent goal. In fact, permanently removing 40 California sea lions from the area of the Dam since 2008 has not reduced the number of sea lions consuming salmonids, nor has it reduced the consumption in years when lethal authority was granted. New California sea lions continue to arrive and be individually identified at the Dam without appreciably affecting predation.

<u>Steller Sea Lions and the Impact of a Lethal Removal Program</u>
According to the ACOE reports, the mean number of pinnipeds observed per day during the study period was higher each of the last three years. However, the report opines that "this is primarily due to an increase in the daily presence of larger numbers of SSL, as mean daily CSL figures dropped the last two years" (Stansell, *et al.,* 2010). The report also states that presence of Steller sea lions (SSL) averaged 5.0 per year before 2008 and 46.7 from 2008 to 2010 (*ibid.)* Although the number of Steller sea lions was lower in 2011, they were at the Dam in numbers similar to 2009 (Stansell, *et al*., 2011a). The ACOE also acknowledged that this greater presence and their increasing predation could complicate understanding of the effects of removing California sea lions (Stansell, *et al*., 2011a and b)

In the EA that was finalized in 2008, the number of Steller sea lions at the Dam in 2007 (the last year considered in that EA) was 9 animals (NMFS 2008). At that time the NMFS stated that "only a few Steller sea lions have been observed in the project area over the past few years" (*ibid*.). In 2010, the number of Steller sea lions at the Dam was 75 (Stansell, *et al*., 2010). This is a more than 8 fold increase. The NMFS can no longer consider, as it did in the 2008 EA, that there are that there are "only a few" and must analyze the effects of the proposed action in light of this new information *See* 40 C.F.R. § 1502.9(c)(1)(i), (ii).

In 2011, 70 different individual Steller sea lions were identified, only 26 of whom were identified at the Dam in prior years (Stansell, *et al*., 2011). These animals are occurring more frequently at the Dam and, much as is the case with California sea lions, they come and go from the area rather than being a resident group.

Steller sea lions are often in close proximity to the California sea lions. Cleptoparasitism has been documented, whereby Steller sea lions regularly steal fish from California sea lions (Stansell, *et al.,* 2010 and 2011). Both Steller and California sea lions use the traps placed at the Dam, as was tragically illustrated when 6 animals died in 2008 in one of the traps, including two Steller sea lions (Stansell *et al*., 2010). The ACOE also states that the use of the traps by Steller sea lions often precludes entry by California sea lions (*ibid*.). These animals are often juxtaposed in the water and in the traps.

When the initial EA was written, Steller sea lions were an unusual sight at the Dam but this is no longer the case. The impact of trapping and lethal removal of nearby California sea lions needs to be reconsidered beyond the discussion in the 2008 EA. The greater number of Steller sea lions, and their frequent proximity to California sea lions, place this ESA-listed stock at greater risk, particularly if shooting is to be conducted while they are in the water near California sea lions or from significant distance in the turbid water where visibility is compromised. This greater risk of accidental death was not considered in the original 2008 EA and must be considered if the NMFS authorizes lethal removal. *See Idaho Sporting Congress Inc. v. Alexander*, 222 F.3d 562, 566, n.2 (9th Cir. 2000) ("NEPA imposes on federal agencies a continuing duty to supplement existing EAs and EISs in response to 'significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts'" (citing 40 C.F.R. § 1509(c)(1)(ii)); *Marsh v. Oregon Natural Res. Council,* 490 U.S. 360, 374 (1989) (to satisfy NEPA, agencies must take a "hard look" at the environmental effects of their planned action, even after a proposal previously received approval).

(2) New information on salmonids since 2008

Since completion of the 2008 EA, run sizes of salmonids in the Columbia have been increasing. The 2011 run size appears to be the third largest since 2002 (Stansell, *et al*., 2011a and b). Table 5 in the states' application documents run sizes for the years 2008-2010 showing ever greater returns: 2008—147,558; 2009—186,058; and 2010—267,166. As of the ACOE report from the Dam on May 27, 2011, the run size was 205,000 but was still in process, so is likely to reach a size similar to that of 2010 (Stansell, *et al.,* 2011a). The run sizes indicate a runs that are stable or increasing, and not on the verge of collapse.

While we do not dispute the ESA-listing status of the salmon, their status is generally portrayed to the public as dire with predation having a significant negative impact on their decline or recovery. We do not see this sort of portrayal supported by facts. The agency's 2011 Supplemental Information Report, provided when the NMFS temporarily granted authorization for lethal take in 2011, and prior to rescinding the permit, states that "overall the abundances of Chinook and steelhead potentially impacted by pinniped predation have increased or stayed the same since the last status review was conducted prior to 2005." The runs continue to improve despite pinniped predation, and even despite other sources of much greater salmonid mortality (e.g., commercial and recreational fishing, hydropower operations, and predation by non-native bass and walleye).

In addition, NOAA submitted a 2010 report to Congress on recovery actions for species under its jurisdiction. In this report, NOAA asserted that the status of all these stocks was either stable or increasing (NOAA 2010). NOAA also acknowledged in this report that most of these Columbia River spring stocks still lack final recovery plans, despite being listed for more than a decade in some cases. Further, although the report to Congress singles out hatchery and harvest management as limiting factors in recovery of spring salmon runs, predation is barely mentioned as a limiting factor (*ibid*.). The threat to listed salmonids from pinniped predation clearly does not warrant lethal response at this point.

Since 2008, rates of pinniped predation (expressed as a percentage of the run) have declined in the face of large salmon runs. According to the ACOE, predation in all years from 2008 was lower than the rate evaluated in the 2008 EA (Stansell, *et al.,* 2010). In the past three years, the predation rate was approximately 2 percent of the run each year, even as the overall number of fish consumed was higher each year until 2011, when *both* the percentage of the run consumed and the overall number of fish eaten fell. While no predation estimates for 2011 are finalized, the final weekly summary for May 2011 from the ACOE states "expanded estimated predation on salmonids will be around 3,100… [t]his will end up being about 1.4% of the January 1 through May 31 salmonid run. Total salmonid catch for CSL is going to be much lower than the last few years…" (Stansell, *et al.,* 2011a) as indeed it was (Stansell, *et al.,* 2011b)

The Federal Register notice misleadingly states that impacts from predation may be underestimated because "[estimates] only apply to daylight predation within ¼ mile of the Bonneville Dam tailrace and forebay structures" and that "[i]n addition to salmonids killed immediately by predation, many fish are also injured by predation attempts which may contribute to delayed mortality that has not been quantified" [Federal Register at 56169]. These statements are not accurate.

According to the ACOE reports, adjusted estimates of predation do in fact consider nighttime predation in addition to that during the daylight, saying "we estimated night-time consumption to add approximately 3.5% to the daily estimates based on our work in 2009" (Stansell *et al*., 2010). The ACOE also says that adjusted estimates include extrapolations for hours and days not observed (*ibid*.). Further, a recent peer-reviewed publication casts doubt on the assumption that there is significant delayed mortality from predation attempts. A 2011 study of mortality of Columbia River Chinook following attempted predation by pinnipeds found that "[c]ontrary to our survival hypothesis, pinniped-caused injuries were not or were only weakly associated with survival of adult salmon and steelhead"(Naughton, *et al.,* 2011). The assertions in the Federal Register that the effects of predation are substantially underestimated are contradicted by the fact that the adjusted predation estimates do indeed include consideration of predation in other than daylight hours and also take into consideration predation that occurs at times when observers are not present; and by recent literature that found that there is not a high correlation between injuries and later mortality. Thus, it appears that the estimates of mortality resulting from predation may not be as downwardly biased as the states and the NMFS are painting them.

It is clear from this new information that the runs are stable or increasing despite predation by pinnipeds. The states provide a misleading picture in averring that predation estimates are low because of limited observations and delayed mortality. In fact the adjusted estimates factor in night time predation and predation when no observers are present and recent literature indicates that the impact of injuries to fish is not having a significant effect on survival of spawners who escape predation attempts. Despite the agencies' stated concern over the recovery of fish, most runs still lack final recovery plans and many of the factors that do limit the fish recovery remain unaddressed, as we will discuss below.

(3) New information on non-lethal deterrence measures since 2008

The ACOE's three-year summary report on predation at Bonneville Dam states that "individuals spent less time at Bonneville Dam [in 2010] which may also be due to the concrete blocks placed on the favorite haul out for pinnipeds along the PH2 tailrace Cascades Island west end shoreline, forcing the animals to either haul out on rip-rap, traps, rest in the water, or go back to Astoria or some other location to get out of the water" (Stansell, 2010). Further elimination of convenient haul out sites may further reduce the presence of sea lions as they lose the convenience of being able to both eat and rest at the Dam. Stansell's 2011 Final Report also recommends the use of additional traps and that the ACOE "should work with the states "to determine if the use of barriers to prevent sea lions from hauling out near the dam is effective and beneficial to the long term goal of reducing the presence and predation of sea lions near the dam" and, if so, the ACOE should provide the states with the necessary funding and resources to develop permanent structures. (Stansell, et al., 2011b).

For its 2010 meeting, PFITF member Robert DeLong of the NMFS provided a spreadsheet with information for the years 2002 to 2010 on the Bonneville Dam water spill rates, salmonid passage and the percentage of predation that occurred before 1,000 salmonids had passed the Dam. Based on this information, it appears that the increase in the rate of passage of adult fish coincided with increased spills and there was subsequently a reduction in predation (e.g., in some years over 40 percent of the observed predation occurred prior to the spill of water held behind the Dam). The ACOE stated that the flow was primarily timed for juvenile passage and may or may not correlate with adult passage. The task force suggested that agencies consider earlier release of water from the Dam as a potentially non-lethal means of speeding adult fish passage and thereby reducing predation (PFITF, 2010). We do not believe this recommendation has been investigated.

The International Marine Animal Trainers Association made recommendations regarding non-lethal deterrence. At the November 2010 PFITF meeting, an observer from the Marine Mammal Commission noted that a number of the recommendations did not appear to have been pursued but probably should be (PFITF, 2010, November 9-10, 2010). We agree. Moreover, the MMPA specifically requires that the NMFS, when considering whether to authorize lethal removal, *must consider* ". . . whether the applicant has demonstrated that no feasible and prudent alternatives exist and that the applicant has taken all reasonable nonlethal steps without success." 16 U.S.C. § 1389(d)(2). The new information regarding the existence of feasible, non-lethal deterrence

methods clearly indicates that the states have not met their burden to show that they have first utilized all reasonable methods without success. The NMFS cannot authorize lethal removal unless and until the states have met this burden.

(4) The effect of permanent removal carried out under the 2008 LOA

The main effect of permanent removals is that there are at least 40 fewer sea lions in the Columbia River, with no apparent effect on predation.

Forty sea lions were permanently removed, most from the list of sea lions that was approved by the NMFS for lethal take as of 2010 (Stansell, *et al.,* 2010). According to the ACOE, of the 78 individual California sea lions (CSL) remaining on that list, 37 have not been seen for two or more years and 6 more were not seen in 2010 (Stansell, *et al.,* 2010). The ACOE further states that "[w]e know from observations of branded CSL seen at Bonneville Dam over the years, that if they do not return in consecutive years, they are unlikely to return at all" (*ibid*.). The number of California sea lions sighted at the Dam has not decreased as a result of the permanent removals. Some animals visit the Dam and do not return, others come regularly and new animals come and go regularly.

The 2010 ACOE report stated that, in the face of removals of animals who had frequented the Dam for multiple years "we expected the results from the 2010 season to show a steep decline in CSL numbers, which should have also resulted in reduced salmonid predation by CSL. However, this was not the case, as many new CSL ventured up to Bonneville Dam this year, if only briefly" (i*bid*.). This is striking.

According to the Supplemental Information Report issued by the NMFS earlier this year, Robin Brown of Oregon DFW estimated that between 1,357 - 4,921 salmon were saved over the life of the three-year project (NMFS, 2011b). Estimates of salmonids saved based on projections of likely consumption rate of the individual sea lions that were removed do not consider that other sea lions moved in to replace them such that the overall number of fish consumed did not decline in those years. This fact was pointed out to the states by task force members during the 2010 task force meetings (PFITF, 2010).

The 2008 EA assumed that permanently removing older more experienced animals would reduce predation. The EA stated on page 4-11 that "the lethal removal of some California sea lions might deter other sea lions from the action area, either because exposure to the lethal activities would cause newly arriving animals to avoid the area or because the removal of experienced sea lions would make it less likely that they would learn to forage successfully" (NMFS, 2008). This clearly has *not* come to pass. The failure of this assumption can be clearly seen in the increasing numbers of sea lions documented at the Dam that were not identified in previous years and by the ACOE's acknowledgement that "[t]he increase in CSL abundance at Bonneville Dam in 2010, many which were not seen at the dam before, could be the result of a large group of young males exploring new areas, such as the Columbia River, to prey on fish" (Stansell, et al., 2010). Despite removals, new animals arrive and forage successfully.

Section 120 of the MMPA requires the states to include in their application "a detailed description of the. . . expected benefit of the taking." 16 U.S.C. § 1389(b)(2). However, the States' cursory conclusion that the benefits "will be to reduce this recent, unmanageable (without removal authority), and growing source of mortality that has jeopardized the States' ongoing efforts to recover ESA-listed salmonids in the Columbia River and Snake River Basins" falls far short of meeting this burden. Indeed, the preceding discussion highlights the fallacy of this statement—the abundance of new information demonstrates that lethal removals have not met and cannot meet the States' goal of reducing the number of sea lions at the Dam, reduce the number of fish that are eaten, or otherwise provide a beneficial impact to salmonid populations. As such, granting the States' application would not only be futile and unnecessarily waste the lives of animals otherwise afforded significant federal protections, but would divert attention and resources away from addressing the true threats to salmonid recovery.

(5) New information concerning predation on salmonids by other species since 2008

There is abundant new information that predation by sea lions has far less of an impact to the fish than that of other removals by human and non-human sources. For purposes of these comments, we will not enumerate the enormous number of salmonids killed by the various dams through which they must pass, though we incorporate our prior comments on this issue by reference. Instead, we will focus our comments on direct mortality to the Evolutionarily Significant Units (ESUs) that interact with pinnipeds and several other non-pinniped species.

<u>Human Fisheries</u>
In 2010, the U.S. Court of Appeals for the Ninth Circuit overturned the 2008 lethal removal authorization due to the discrepancies between NMFS's factual findings regarding different sources of threats to the same populations of salmonids. Specifically, the Ninth Circuit found that the NMFS had failed to adequately explain its finding that sea lions were having a significant negative impact on the decline or recovery of listed salmonids in light of earlier findings by the NMFS that human fisheries that cause similar or greater mortality to the same populations are *not* having a significant negative impact. *HSUS, et al v. Locke*, 626 F.3d 1040, 1049 (9th Cir. 2010). That discrepancy has not only continued, but it has grown in magnitude. Since the 2008 removal authorization, the rate of salmonid take by human fisheries has been permitted to increase, while the rate of sea lion predation has decreased. And the NMFS continues to fail to articulate a rational basis for its decision to kill federally protected sea lions while authorizing human fisheries to take many times the amount of salmonids taken by the sea lions. The NMFS's finding that sea lions are having a significant negative impact on ESA-listed salmonids, particularly in light of new information, would once again "raise questions as to whether the agency is fulfilling its statutory mandates impartially and competently." *Id.*

New information since 2008 confirms what has long been the case—that fisheries take far more of the ESA-listed salmonids than California sea lions. According to the NMFS's 2011 Supplemental Information Report, the fisheries harvest rates set under the court-approved Joint Staff Report were far higher than removals by sea lions, and they are not well controlled as has

been asserted. For 2008, fisheries harvest was initially permitted at a level of 12 percent and subsequently adjusted downward to 11 percent of the spring run; however fisheries harvested 16 of the run that year, exceeding the catch limits (NMFS, 2011b). In 2009, the fisheries stayed within the Joint Staff Report allocation of 13 percent, harvesting 10.2 percent of the spring run (*ibid*.). In 2010, the in-season adjustment to the fisheries harvest rate set it at 13 percent; however, the actual harvest level of 17 percent far exceeded that allowable catch limit (i*bid*.). In these same years, the ACOE estimated predation by California sea lions at 2.9, 2.4 and 2.0 percent, respectively (Stansell, *et al*., 2010).

In the Decision Memorandum accompanying the aborted issuance of the authorization of lethal take of sea lions earlier this year, the NMFS asserted that adjustments to the fisheries' harvest rates can be implemented during the season if runs do not meet pre-season projections, implying that this is an effective means of assuring fisheries do not kill higher levels of fish than mandated. But the efficacy of this is contradicted by information in the Supplemental Information Report showing continual high harvests by fisheries that exceed the allowable percentages during 2 of the past 3 years even when mid-season adjustments/reductions in quota are implemented (NMFS, 2011b). Far from being the controllable source of mortality that is asserted in both the States' application and the Federal Register, in-river fisheries have regularly exceeded the maximum rate allowable under the Joint Staff Report with no subsequent penalty.

A Biological Opinion assessed the harvest rate schedule that authorizing takes of the spring run ranging from 5.5 to 17 percent of the run. This Biological Opinion resulted in a "finding of no significant impact" with the notation that the cumulative impacts of the proposed action would be "minor if at all measurable." (EA on the Biological Opinion and Associated Incidental Take Statement on Treaty Indian and Non-Indian Fisheries in the Columbia River Basin in the Years 2005-2007 at 69, 79). These court-approved in-river harvest guidelines (allowing between 5.5 percent and 17 percent human harvest) will be in place until 2017.

There is also additional, though as yet poorly quantified, mortality resulting from bycatch of these ESUs in ocean fisheries. This year, reports in the popular press expressed concern about bycatch of over 54,000 Chinook (King) salmon in Alaska, some of which may originate in the Columbia River (CBB, 2010). A 2010 report by NMFS acknowledges that three of the listed Evolutionarily Significant Units (ESUs) in the Columbia have been caught in Alaskan trawl fisheries. These include Chinook salmon from the Lower Columbia River, Upper Willamette River and Upper Columbia River Spring ESUs that were recovered in the Gulf of Alaska trawl fisheries (NOAA, 2010b). According to information from the U.S. Fish and Wildlife Service, that reviewed data through 2006, Chinook and Coho salmon from the Columbia River have also been found as bycatch in the northwest's sardine trawl fishery and the whiting/hake fishery (Yuen, undated). News reports from 2008 indicated that up to 11,000 Chinook would be killed as bycatch in the ocean whiting fishery, at least some of which may be from protected stocks (Oregon Live, 2008). Bycatch of Chinook salmon in Canadian fisheries is even less well understood.

In any event, the documented in-river mortality resulting from human fisheries in the Columbia far exceeds that of California sea lions at Bonneville Dam, and ocean fisheries simply add to that total.

Harvest management has also been criticized by a blue ribbon panel in its 2009 report to Congress on hatchery management and harvest reform (HSRG, 2009). Despite recommendations for better integration of harvest and hatchery management, and better science-based justification for both, the 2010 NMFS Supplemental Information Report admitted "no change relative to harvest levels or hatchery practices" have been undertaken (NMFS, 2011b).

Predation by Other Wildlife

As the NMFS acknowledged in its 2011 Supplemental Information Report, a variety of other species besides sea lions and humans kill listed Columbia River salmonids (NMFS 2011b). Among wildlife species that prey on wild salmon are hatchery-raised fish, non-native fish that are deliberately stocked by the government, and a variety of birds. Very little, if anything has been done to address this mortality and much of what has been tried has reaped unanticipated consequences due to a failure to understand ecosystem dynamics. We will discuss each below.

Competition with Hatchery-Produced Fish

The risk to wild runs from the poorly managed hatchery system in the Columbia was highlighted by the blue ribbon Hatchery Scientific Review Group (HSRG) in 2009. Their report to Congress stated that the HSRG was created by Congress because "with many species listed as threatened or endangered under the Endangered Species Act (ESA), conservation of salmon was a high priority and many hatchery programs—as currently operated— were contributing to the risks those stocks were facing" (HSRG 2009). The HSRG also found that "competition between hatchery and natural steelhead juveniles in the Columbia River Basin is of concern to the HSRG, with adverse effects on the natural population having been documented (e.g., Kostow 2008). The concern is that although hatchery steelhead may compete effectively at the juvenile stage, they appear to have inferior reproductive success" (*ibid.).* The HSRG also criticized weaknesses in the scientific bases underlying hatchery production, with a lack of clarity as to whether hatcheries were managed for harvest success or to promote conservation and recovery (*ibid*.). This independent expert panel also recommended a series of changes to both the hatchery system and harvest practices to reduce competition and promote recovery of wild runs. As noted above, despite the HSRG critiques and recommendation of 2009, the NMFS 2011 Supplemental Information Report noted "no change relative to harvest levels or hatchery practices" have been undertaken (NMFS, 2011b).

Non-Indigenous Fish Predation

Also in 2009, and subsequent to the 2008 EA, NMFS scientists co-authored a report that documented the continued stocking of non-native sport fish in the Columbia River (Sanderson, et. al., 2009). This study estimated that non-native walleye alone consume up to 2 million juvenile salmon in the Columbia each year (*ibid*.). This species is introduced to the river solely to enhance sport fishing opportunities as are other non-indigenous fish. Further, this research study documented that less than 1 percent of funds for salmon recovery allocated by the Bonneville

Power Authority goes to addressing impacts of non-native fish predators, while upwards of 5 percent is spent on control of native predators such as birds (*ibid*.) Even more alarmingly, far from trying to reduce this source of mortality, in the years considered by the study, half a million dollars was spent to *enhance* populations of non-native fish predators that are consuming salmon in the Columbia (*ibid.).* Were it not for the fact that these fish are deliberately stocked, they would be considered noxious invasive species. The NMFS 2011 Supplemental Information Report acknowledges that predation by non-indigenous fish on juvenile salmonids in the Columbia river could equal or exceed the impacts from each of the more commonly addressed factors affecting salmonids, such as habitat impacts (NMFS, 2011b).

Although the States aver in their application, and NMFS repeats in the Federal Register notice, that these other sources of impacts on listed salmonids are being addressed, they are not. The Sanderson study concluded that "the effect of nonindigenous species on salmon could equal or exceed that of four commonly addressed causes of adverse impacts—habitat alteration, harvest, hatcheries, and the hydrosystem; we suggest that managing nonindigenous species may be imperative for salmon recovery" *(ibid*.) However, despite this imperative, the only "action" described in the states' most recent application is that "there is a commitment to study and develop plans concerning predation of salmon by non-indigenous fish populations" (application at 12). In other words, in response to the 2009 publication that stated that addressing this impact merited "imperative" action; the States have simply committed to study it more and develop plans at some future undetermined date. This is hardly addressing the major impacts as they aver.

Although the interactions with non-native fish were ongoing at the time of the 2008 EA, they were not known to the public until this compilation was published in scientific literature in 2009. Nor was this information on non-native predatory fish (other than northern pikeminnow) fully considered as a part of the EA process in determining the significance of various impacts on salmonids. It should have been included in the analysis done for the EA if the agency was, as it has stated, aware of them. Further, this information must be fully disclosed to the public and addressed by the agency in a new EA process prior to issuance of any new Section 120 authorization.

<u>Avian Predation</u>

In their application, the States claim that they have addressed avian predation on juvenile salmon by relocating a colony of Caspian terns to alternative locations to reduce impact and are "coordinating an action plan" to address cormorant predation. What this claim omits is an admission that this relocation effort has been less than successful and might even be considered something of a failure, as reported both in the popular press and by University researchers (Oregon Live 2011, and CBB, 2011). In 1998, the tern colony in the estuary was estimated to eat 12.4 million salmon smolt each year and, when the colony was moved, this dropped by 4 million smolt a year (*ibid*.). However, cormorants and pelicans have now moved into that area and have became a more dominant presence and predator of salmon. Their recent predation on salmonids is estimated at 19 million salmon smolt—far more than the terns ever ate (Oregon Live 2011). In moving the terns, ostensibly to reduce predation, nesting birds were also made more vulnerable to predation by eagle and gulls. While gulls and raptors also predated cormorant nests; they

wiped out 5,000 tern nests in 2 weeks this past spring, with chicks, eggs and adults killed by these avian predators (Oregon Live 2011). The tern colony ultimately failed to produce any chicks in 2011 (CBB, 2011). Far from alleviating avian predation on the young salmon, the artificial manipulation of the Caspian tern colony led to even greater levels of predation by a different avian species and a failure of the tern colony. Contrary to assertions, the role of avian predation as factor in salmon recovery is not being addressed in any meaningful manner. The failure of this plan may even give a preview of the fate of the plan to "manage" pinniped predation. Both appear predicated on misguided notions regarding underlying ecological interactions between species and the estimation of likely reductions in predation.

Far from being "beyond the scope of…the application," as the NMFS asserts in the Federal Register notice, understanding the relative contribution of all sources of mortality helps to determine whether the contribution of California sea lions is in fact having a "significant negative impact" on recovery. Given that little action has been taken to intervene in predation that takes a much greater toll on salmonids, it is hard to argue that predation by sea lions should be a high priority. Further, when Section 120 was enacted, Congress explicitly "recognize[d] that a variety of factors may be contributing to the declines of these stocks" and made it clear that "current levels of protection afforded to seals and sea lions under the Act should not be lifted *without first given careful consideration to other reasons for the decline*" H.R. Rep. No. 103-439 (1994) (emphasis added). Moreover, Congress has explicitly stated that the protective provisions of the MMPA supersede the ESA unless all the conditions of Section 120 are met. *See* 16 U.S.C. § 1543 ("no provision of [the ESA] shall take precedence over any more restrictive conflicting provision of the Marine Mammal Protection Act of 1972").The impact of human removals, the mortality from other predators and the operation of hatcheries that are producing fish to compete with wild run fish are all important factors in causing the decline or limiting recovery and all have a much greater impact than that of sea lion predation. The NMFS must first give actual consideration to these other, far more significant sources of mortality, before authorizing the lethal removal of sea lions. Should the NMFS once again choose to authorize lethal removal, the new information detailed in the preceding paragraphs constitute new information or circumstances since the 2008 authorization that are "relevant to environmental concerns and bear[]on the proposed action or its impacts" and must be considered by the NMFS in the context of a supplemental EA or EIS in order to meet the agency's requirements under NEPA. 40 C.F.R. § 1509(c)(1)(ii).

(6) Recommendations made by the pinniped task force at its 2010 meeting concerning the 2008 LOA

While the States and the NMFS appear to have retained some of the recommendations made by the task force majority, others have been rejected.

The majority of the task force recommended retaining the interim goal of reducing predation to 1 percent of the run. The NMFS has chosen not to use this goal, acknowledging, as the task force majority would not, that this number is an arbitrary choice and difficult to justify. Instead the NMFS and the States have chosen substitute a quantitative standard for a "review [of] the lethal

removal program on an annual basis and evaluat[ing] its effectiveness in reducing sea lions predation on salmonids at Bonneville Dam" (FR at 56169). The Federal Register states that this review will determine "whether the states will continue the removal program in each subsequent year" with the apparent expected benefit that it will reduce ESA-listed salmonid mortality. This is vague and somewhat subjective and it does not explain how the decision will be made.

New sea lions arrive at the Dam even as others have been permanently removed which makes it impossible to quantify any reduction in overall predation, something that the NMFS itself predicted would be the case in discussions in chapter 4 of the 2008 EA. Further, if we examine the number of fish eaten in years when lethal removals were approved, we see no reduction in overall numbers of fish being consumed (Stansell, *et al.,* 2010). Had this criterion of "reducing sea lion predation" been in place in 2009 or 2010, we would assume that there would be no justification for continuing the program, since it had failed to reduce overall numbers of fish eaten. The only year since 2008 in which absolute numbers of salmonids consumed by sea lions declined was 2011, when the overall numbers of fish consumed and the percent of the run that was consumed declined even when lethal take was not authorized (Stansell, *et al*., 2011).

We do not agree that the task force recommendation that additional lethal removal is warranted and we disagree with the States' proposal for a "review" that is non-specific in providing criteria for success. Lethal take did not reduce overall numbers of fish eaten in any year in which it occurred. If this vague criterion of "reduction" is being seriously considered, then the NMFS must address the question of whether the lethal removal should have been (or would have been) halted after the first year that it failed to reduce the overall number of fish estimated to have been eaten at the Dam. If the failure to reduce the number of fish consumed would not have been justification for halting removals, then this too warrants explanation.

Although the majority of the task force recommended that subjecting sea lions to hazing should not be a pre-condition for lethal removal, the MMPA states that in approving or denying an application the Secretary must consider "past efforts to non-lethally 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" 16 U.S.C § 1389 (d)(2). If non-lethal hazing is discontinued, then it is impossible to assert that for any new pinniped added to the list, that the animal would *not* have been deterred and that the applicant first utilized all reasonable nonlethal steps, but was unsuccessful. Therefore adding such an animal to the lethal removal list would appear to be premature and unlawful. In fact, the arrival of new animals each year virtually assures that there will be animals added to the list for lethal removal who would not have been previously exposed to non-lethal deterrence if it is discontinued. Further, in the 2010 task force meeting, the States presented information that hazing was about 20 percent effective (PFITF, 2011). We believe that it must be continued.

Although the majority of the task force recommended using firearms to kill sea lions, this was not a consensus. The Army Corps of Engineers itself expressed reservations about shooting taking place in and around a secure federal facility and expressed their concern to the task force over shooting animals during times when the public was in the area, both for safety reasons and

their concern over public perception of shooting sea lions (PFITF, 2010 minutes of November 9-10). To that end, they would want to restrict shooting to the night time hours, when the public was not present (*ibid*.). It may be that the use of firearms is not practical.

Shooting is also not likely to be humane. Under the application and the prior authorization, sea lions could be shot while in the water, making it possible that animals would be wounded and not killed. However, the MMPA places a strong emphasis on the humane treatment of marine mammals. *See* 16 U.S.C. § 1362(4) (defining "humane" as "in the context the taking of a marine mammal . . . that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved"; *id.* § 1374(b)(2)(B) (requiring that NMFS, in order to issue a take permit, to specify . . . the location and manner (which must be determined by the Secretary to be humane) in which [marine mammals] may be taken"); *id.* § 1379(h) (authorizing states, federal agencies, and local governments to take marine mammals for the protection of the mammal or public health "in a humane manner (including euthanasia)"). Indeed, in enacting Section 120, Congress consistently expressed its intent that the lethal removal of pinnipeds under Section 120 be done in a humane manner. *See* S. Rep. 103-220, at 18 (1994) (the "new section . . . of the MMPA [will] govern the lethal and *humane* removal of identifiable nuisance pinnipeds") (emphasis added); 140 Cong. Rec. S3288, S3296 (1994) (statement of Senator Kerry) (same).

The 2008 EA acknowledged that animals may only be wounded when shot saying that "small boats would be used to attempt retrieval of sea lions that may enter the water after being shot on land [and] monitor nearby downstream areas for stranded animals that have been shot." (EA at 2-13). It is not clear that shooting as previously authorized would meet the test for being "humane" as it causes unnecessary pain and suffering.

(7) The NMFS' proposed interpretation of the MMPA standard "significant negative impact"

The NMFS has also requested comments on its proposed interpretation of whether California sea lions are having "significant negative impact," a key requisite of granting a permit for intentional lethal take under Section 120 of the MMPA. *See* 16 U.S.C. § 1389(b) (NMFS may only authorize lethal removal if individually identifiable pinnipeds "are having a significant negative impact on the decline or recovery" of ESA-listed salmonids). We believe that the criteria outlined in the Federal Register are not appropriate. Nor does what we know of the interactions between California sea lions and salmonids in the Columbia River appear to comport with even the vague criteria outlined in the Federal Register.

First, the NMFS states that the plain meaning of the word "significant" should be used; that is, that the impact has to be " 'meaningful' and not 'insignificant' or 'meaningless.'" This standard is impossibly vague and subjective and makes it unlikely that one could measure change such that lethal taking would ever *not* be warranted.

The determination of "significance" requires a numeric standard as was recommended by the Marine Mammal Commission in its comments on the 2007 application and the 2008 EA and as was in place for permitted removals at the Ballard Locks in the 1990s (MMC, 2007, 2008). In comments submitted in November 2007, the Commission recommended that the NMFS use a clearly articulated and quantitative standard under which progress can be measured such as a specific delay in recovery time or a rate comparable to that of "no jeopardy" findings used in prior Section 7 consultations under the ESA for impacts to salmonids. The Commission reiterated the need for quantitative standards in February 2008. The Commission recommended that the NMFS explain why the standard that was used for lethal take in the case of Ballard Locks was not used here. In that case, the run size was much smaller (hundreds of fish rather than hundreds of thousands of fish as is the case in the Columbia) and the impact of a few sea lions imperiled their survival. For Ballard Locks, a predation rate of 10% of the run of steelhead within a 7 day period was used as the proverbial "trigger" of significance (MMC, 2007, NMFS 1997). Yet, once again, the NMFS has disregarded the need for a quantifiable standard against which impacts can be measured and instead chosen to substitute relatively subjective evaluations.

The Federal Register says at that, "consistent with our interpretation and view of MMPA Section 120, and guided by the inquiry Congress required in section 120 we propose that the determination of whether pinnipeds are having a "significant negative impact" on salmonids should also be informed by the following factors" (FR at 56170). The NMFS then enumerated seven factors to be considered. Noting first that the NMFS has determined that the term "significant" has a plain meaning, and that these "factors" are purportedly provided to help guide the task force and others in the Section 120 decision-making process, we will address each.

(1) Predation is measurable, growing and could continue to increase. Although predation *could* increase, it should be noted that it fluctuates annually and in 2011 went down substantially in both numbers and percentage of the run consumed (Stansell, *et al.,* 2011b). The mere fact that it *could* increase does not guarantee that it will and is not sufficient for considering whether it "significant."

(2) The level of adult mortality is "sufficiently large" to have a measurable effect of the numbers of adults contributing to viability of the ESUs. Words such as "sufficiently large" are subjective and not quantifiable. The consumption of a single adult salmonid spawner is measurable and that fish's contribution to the ESU's viability is lost; but is it "sufficiently large?" If it is not, then what is? This factor is too vague and subjective to know what is intended.

(3) The mortality rate is comparable to mortality from other sources that have led to corrective action. As we have discussed above, the predation by sea lions is *less* than other sources of mortality, including that of fisheries-related mortality that is far higher and has been deemed negligible. Further, a number of lethal impacts on the salmonids that result in the deaths of millions of juveniles (e.g., from competition with hatchery fish, predation by avian species and predation by deliberately introduced non-native fish) remain unaddressed (i.e., they are not subject to "corrective action").

(4) Non-lethal deterrence efforts have been unsuccessful in reducing the numbers of sea lions or amount of predation. Although the task force heard from the states that the non-lethal hazing was likely 20 percent effective, hazing has not resulted in major reductions in the number of sea lions or the amount of predation. However, we must point out that prior lethal taking of sea lions *also* has not been successful in reducing either the numbers of sea lions or the amount of predation. New sea lions appear each year and the overall number of California sea lions and the total number of fish estimated to have been consumed did not go down until 2011, when factors other than lethal removals (e.g., weather, water temperature, slower fish runs, non-lethal hazing, etc.) reduced both the number of animals present and the number of fish eaten. Lethal taking itself does not appear successful.

(5) The predation rate increases when run sizes decrease. Since run sizes have increased each year since the 2008 authorization of lethal taking, it is difficult to predict that this would necessarily follow. In the states' application they indicate on page 5 that lower rates of salmonid consumption by sea lions in 2011 might be due to a diminished number of fish entering the run in the early spring. If this is true, then it may well be true that when there are fewer fish to eat, there may be fewer sea lions coming to eat them and so fewer fish eaten. It is not clear that this criterion is currently being met.

(6) The combined effect of California sea lion and Steller sea lion predation on at-risk salmonids at Bonneville Dam. This factor is inappropriate. Whether or not ESA-listed Steller sea lions are eating the salmonids and adding to the consumption by California sea lions does not necessarily provide a rationale for considering that the impact of predation by *California* sea lions is "significant." The application was to intentionally kill California sea lions, not all pinnipeds at the Dam.

(7) The fact that California sea lion numbers reached their highest since 2004, thereby demonstrating that their numbers are unpredictable and can easily grow. The year 2004 was the year with the highest number of individual California sea lions at the Dam since monitoring began at the Dam a decade ago. While 2010 was second highest since that year (at 89), California sea lion numbers at the Dam fluctuated between 2005 and 2010 and all years were less than 2004. The number counted at the dam from 2005-2010 was respectively 81, 72, 71, 82, 54, and 89 (Stansell, *et al*., 2010). The final number of individually identified California sea lions reported for the 2011 season at the time of the last weekly update of May 27, 2011 by the ACOE was substantially *lower* than 2011 at only around 54 individuals and further, "the fewest average California sea lions per day to date since 2002" (Stansell, *et al*., 2011b). Numbers of animals fluctuate independently of lethal removal and can be expected to continue to fluctuate rather than to necessarily continue to grow.

In summary, the NMFS's standard proposed by which "significance" is to be judged is vague and subjective and not consistent with the plain meaning of the term. It is also not readily subject to objective evaluation to determine success of management measures. Moreover, the guidance factors on which NMFs appears to want to rely do not support its case for the necessity

or efficacy of intentional lethal removals. The mortality of salmonids from California sea lions is not comparable to other factors contributing to mortality in the ESUs; it is *less than* those factors. While non-lethal deterrence has not eliminated predation, it has apparently had some positive effect—but it can also be said that the intentional lethal taking that was previously authorized has itself been shown to be ineffective in reducing either the numbers of sea lions at the Dam or numbers of fish eaten. The predation fluctuates from year to year and, in 2011 when fewer fish entered the river earlier in the season, the numbers of sea lions went down and so did both their rate of impact (expressed as a percentage) and their numerical consumption; thus one might opine that fewer fish does not necessarily lead to greater rates of predation. When justifying the significance of the predation by California sea lions, the combined effect of ESA-listed Steller sea lions is not a relevant factor. The fact that 2010 was the second highest number of sea lions observed at the Dam ignores the fact that numbers since the highest year (2004) have fluctuated noticeably from year to year and 2011 appears to be among the lowest numbers since monitoring began at the Dam.

The criteria for listing individual sea lions for lethal removal seem inappropriate as well. We understand the need for multiple observations as a means of determining an animal's willingness to continue to forage in the area of the Dam. However, the criteria for listing an animal seem to indicate (and the past lethal removal list appears to confirm) that being seen eating as little as a single fish is sufficient to warrant a death sentence. Even if the individual is contributing to an aggregate consumption that is much higher, the consumption of a single fish by an individual sea lion seems inappropriately lax. New sea lions come and go at the Dam with a season and across years. This is not a resident population readily subject to reduction when individuals are lethally removed. The ACOE has stated that an animal that has not returned in consecutive years is unlikely to return at all (Stansell, *et al*., 2010). NMFS has indicated to the states that any animal on the list for lethal removal can be taken at any time, even if seen far from Bonneville Dam. Thus, a young sea lion might be observed at the Dam eating a single fish during a five-day period within one single year and be added to the list as having met the criteria, but then never return to the Dam again in any subsequent year. Nonetheless, the animal may still be killed three or more years later when he is hauled out at Astoria even though he has never returned to the Dam. This does not appear to be what was intended by the limited exception to the MMPA's otherwise broad prohibition on the take of marine mammals contained in Section 120.

Finally, the NMFS cannot, as it attempts to do in the Federal Register notice, explain away the dramatic *factual* inconsistences between its findings that sea lions are having a significant negative impact on ESA-listed salmonids and its findings that other, greater sources of mortality to the same populations are *not* having a significant negative impact by relying on the differences between the statutory schemes under which the decisions were made.

Conclusion

The killing of sea lions is not warranted in this situation. Lethal removals to date have not been successful in reducing either the numbers of sea lions at the Dam or the numbers of fish estimated to have been consumed. New sea lions simply replace those that are removed as was

speculated by NMFS in its 2008 EA. Predation by California sea lions is occurring at a lower rate (and in lower numbers) than removals by human fisheries that have been deemed to be having a negligible effect and have regularly exceeded quotas set to limit their impact. Further, sea lion predation is having a *lesser* effect than other unaddressed or inadequately addressed impacts (including mortality) resulting from interactions with hatchery-raised salmonids; predation by non-native fish species deliberately stocked in the Columbia; and avian predation. Moreover, there is evidence that these other sources of greater mortality to salmonids are not well-controlled as asserted, and greater control and regulation of these sources of mortality (e.g., human fisheries, hatcheries, and stocking of non-native fish) would more than make up for the amount of salmonids eaten by sea lions.

The situation at Bonneville Dam is not at a critical juncture such that intentionally killing a natural predator is warranted. Predation fluctuates from year to year and it appears from preliminary reports that predation in 2011 was far below that of other years even though this was a year without lethal removals. Fish in the ESUs subject to predation have been deemed "stable or increasing" by NMFS. Further, the standard being proposed for determining "significant negative impact" under Section 120 of the MMPA is impossibly vague and subjective. The more immediate crisis of predation at Ballard Locks in the 1990's had a far higher threshold for triggering lethal removals (i.e., 10 percent of the run) than has been proposed here, even though that run numbered only a few hundred fish whose immediate survival was threatened.
In the 2008 EA, the NMFS acknowledged that it could not predict the benefit of permanently removing California sea lions at the Dam, since others would likely replace them. That is indeed what has happened, even as sea lions have been killed, new sea lions have arrived. The manipulation of the tern colony at the mouth of the Columbia (touted by the states and NMFS as a "corrective action" taken to protect the fish) has led to dire consequences that managers failed to predict. We believe that there has been a similarly limited consideration of ecosystem interactions between sea lions and salmonids and a blind eye turned to the ongoing failure to address much larger mortality consequent to anthropogenic impacts resulting from poor hatchery and harvest management and the unmitigated introduction of non-native fish. Moreover, shooting may be impractical and it is arguably inhumane.

Award-winning Canadian scientist David Suzuki has written about the wisdom of manipulation of predator-prey interactions. Although not specifically addressing the predator-prey interactions in the Columbia, Dr. Suzuki criticized the response of managers wishing to recover endangered species of automatically proposing to kill their predators. Despite the prominence of anthropogenic factors in causing declines and retarding recovery, killing predators often rises to the top of the list of strategies proposed by managers, as it has in the Columbia River Basin. Dr. Suzuki wrote: "We know that nature is decidedly complex and we know that invasive management techniques to recover species at risk rarely work" and "[t]rying to take conservation short cuts by culling other creatures may be politically expedient, but it's a risky strategy that history tells us is doomed to fail" (Suzuki, 2006).We believe that the ill-conceived proposal to kill California sea lions for eating salmonids is doomed to fail—indeed it has already failed to reduce numbers or predation in years in which it was undertaken. But in failing, it wastes time and money that should be directed toward alleviating other factors leading to greater mortality or

known to be retarding recovery. Killing sea lions will do little more than waste their lives with no appreciable benefit to the fish.

Sincerely,

Sharon B. Young
Marine Issues Field Director
The Humane Society of the United States
syoung@hsus.org

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