

Sea Lions and Salmon in the Columbia River Basin



~ Kristen Monsell ~ Troutdale, OR ~
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ESA-Listed Salmon

- In mid-late 1990's NMFS began listing many species of west coast salmon due to depressed condition from several "human-induced factors" including "habitat degradation, water diversions, harvest, and artificial propagation." See 64 Fed. Reg. 14,308, 14,316 (Mar. 24, 1999) (final rule listing Upper Columbia River Spring-run Chinook as E and 3 other populations as T).
- Also mentioned impacts of pinniped predation could be a major impact where pinnipeds & salmon co-occur, but further studies needed
- In late 1990's NMFS established West Coast Pinniped Program pursuant to an annual line-item funding from Congress to "study of the impacts of California sea lions and harbor seals on salmonids and the West Coast ecosystems"
- From 1997-2008 program studied: pinniped affects on ESA-listed or declining stocks of salmonids; pinniped conflicts with fisheries; pinniped population assessments; other coastal ecosystem pinniped impacts.



NOAA

- Found that "pinnipeds can have negative impacts on salmonids in certain situations... Pinniped predation on salmonids needs to be taken into consideration in recovery measures for ESA-listed salmonids."

The Marine Mammal Protection Act

- Sea lions, like seals, sea otters, whales and other marine mammals, are protected by the MMPA, 16 U.S.C. §§ 1361-1423h.
- The MMPA, enacted in 1972, implements a moratorium on the take of marine mammals, and specifically makes it unlawful :
 - For any person or vessel subject to the jurisdiction of the U.S. to take a marine mammal on the high seas; and
 - For any person or vessel to take any marine mammal in waters or on lands under the jurisdiction of the U.S.
 - To import marine mammals into the U.S. *Id.* §§ 1371(a); 1372(a)
- Defines “take” broadly to mean “harass, hunt, capture, or kill” or attempt to do so. Defines “harass” as any act of pursuit or annoyance which (i) has the potential to injure a marine mammal in the wild; or (ii) has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. *Id.* § 1362(13), (18).



Hugh Ryono

Eastern population of Steller sea lions are also listed as threatened under the ESA. 50 C.F.R. §§ 17.11; 223.102(a). NMFS has extended the take prohibitions of Section 9 of the ESA to Steller sea lions. 50 CFR § 223.202(a).

The Marine Mammal Protection Act

16 U.S.C. § 1379(h) (1) -- Nothing . . . shall prevent a Federal, State, or local government official or employee. . . from taking, in the course of his or her duties as an official, employee, or designee, a marine mammal in a humane manner (including euthanasia) if such taking is for--

(A) the protection or welfare of the mammal,

(B) the protection of the public health and welfare, or

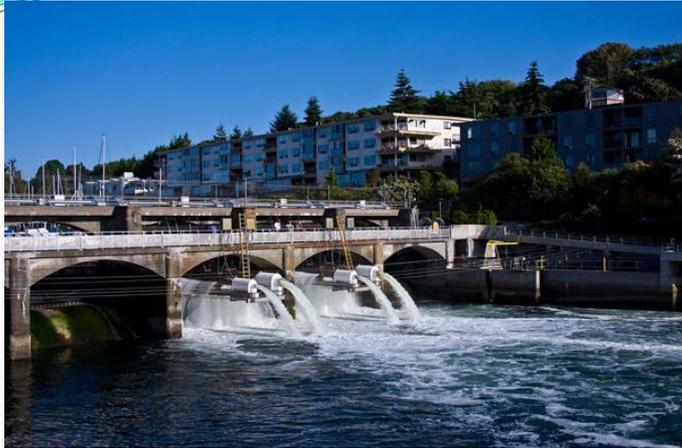
(C) the nonlethal removal of nuisance animals. . . .

(3) In any case in which it is feasible to return to its natural habitat a marine mammal taken or imported under circumstances described in this subsection, steps to achieve that result shall be taken.

Similar exemption for the take of Stellers under the ESA. 50 CFR §223.202(b)(2).

16 U.S.C. § 1371(a)(4) -- Exempts the acts of owner, employee or agent of fishing gear or catch, to deter a marine mammal from damaging the gear or catch, provided such acts are in compliance with NMFS's guidelines for use in safely deterring the animals. NMFS can prohibit certain deterrence methods if, based on BAS, determines such methods have a significant adverse effect on marine mammals.

Ballard Locks



University of Wash.

Bonneville Dam



Joanna Slusarz

- NMFS has said that pinnipeds and salmon have always interacted to some degree
- Archaeological data indicate CSLs were present along Oregon coast during at least last 3,000 years
- Evidence of harbor seals in the lower Columbia River that date back 10,000 years
- CSLs seen at Willamette Falls started in the mid-1990s
- CSLs seen at Bonneville Dam for months at a time in 1997; official counts didn't begin until 2002

Willamette Falls



ODFW

Non-lethal Hazing



Oregonian



Adam Connah

Ballard Locks

From mid 1980's-1990's sea lions consumed between 15 -65% of winter steelhead run each year and NMFS had determined that sea lion predation by itself had been documented to prevent achievement of steelhead conservation measures

States and NMFS instituted a variety of non-lethal alternatives including capturing sea lions and holding them temporarily until run over, closing both sport and tribal fisheries, improving fish passage, and altering flow

In 1993-94, winter steelhead run diminished from historic run of 2500 fish per year to only 70 fish



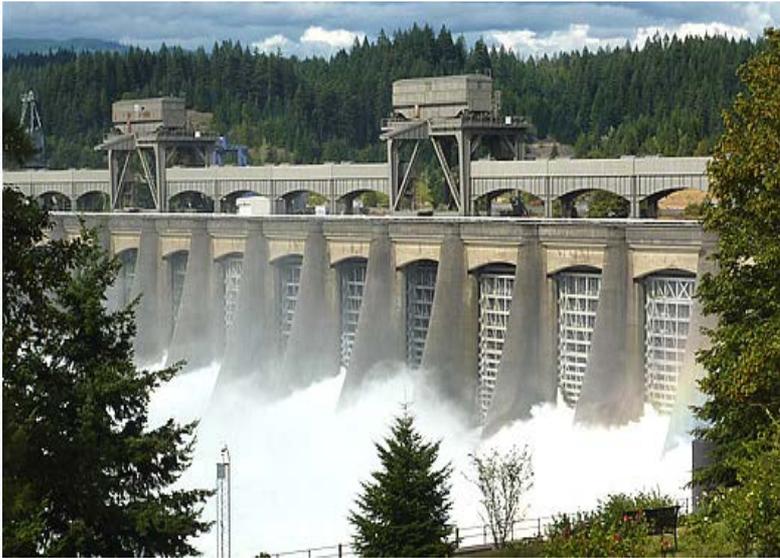
Section 120 of the MMPA

- Enacted in 1994 specifically in response to situation at Ballard Locks
- Allows NMFS to authorize a State to lethally remove “*individually identifiable* pinnipeds which *are having a significant negative impact* on the decline or recovery of salmonid fishery stocks that”—
 - (A) are listed as threatened or endangered under the ESA;
 - (B) are approaching threatened or endangered status (as defined in the ESA); or
 - (C) migrate through the Ballard Locks at Seattle, Washington. 16 U.S.C. § 1389(b).
- Requires the State to submit an application describing “the problem interaction,” include a means of identifying the individual pinniped or pinnipeds, and shall include a detailed description of the problem interaction and expected benefits of the taking. *Id.*
- If NMFS determines application provides sufficient evidence, must convene Pinniped-Fishery Interaction Task Force and request public comment on the application. Task Force then meets and advises NMFS on whether it should grant the application. 16 U.S.C. § 1389(c).

Section 120 of the MMPA

- Both NMFS and Task Force must consider:
 - (1) population trends, feeding habits, the location of the pinniped interaction, how and when the interaction occurs, and how many individual pinnipeds are involved;
 - (2) 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;
 - (3) extent to which such pinnipeds are causing undue injury or imbalance with, other species in the ecosystem, including fish populations; and
 - (4) the extent to which such pinnipeds are exhibiting behavior that presents an ongoing threat to public safety. 16 U.S.C. § 1389(d).
- Prohibits NMFS from authorizing killing of ESA-listed pinnipeds. *Id.* § 1389(e).
- In enacting Section 120, Congress recognized that “a variety of factors may be contributing to the declines of these stocks, and intends that the current levels of protection afforded to seals and sea lions under the Act should not be lifted without first giving careful consideration to other reasons for the decline, and to all other available alternatives for mitigation.” H.R. REP. 103-439 (1994)
- Invoked in Ballard Locks but lethal removals only allowed if **10% predation rate** over any 7-day period. Later removed this trigger after NMFS found that the take of **ONE** steelhead would be a significant negative impact on recovery

Bonneville Dam



Joanna Slusarz

- States began non-lethal hazing in 2005; requested lethal authorization in 2006
- NMFS adopted two-part test to determine if IIP were having SNI on decline or recovery of listed salmonids:
 - (1) Determine whether pinnipeds collectively were having SNI;
 - (2) Determine which pinnipeds are significant contributors to that impact and therefore can be lethally removed.
- Used three factors to determine whether CSLs were collectively having SNI:
 - (1) Predation is measurable and growing and will continue to increase;
 - (2) Level of adult salmonid mortality sufficiently large to have measurable effect on numbers of listed salmonids contributing to the productivity of the listed stocks; and
 - (3) Mortality rate comparable to mortality rates from other sources that led to corrective action under the ESA

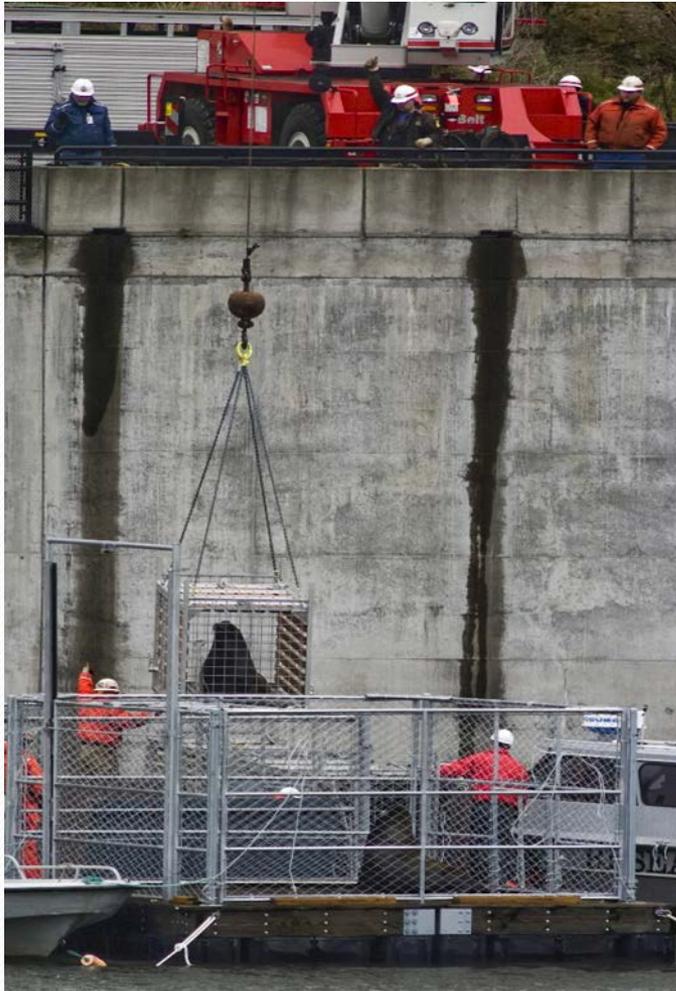
Bonneville Dam



Sea Shepherd Conservation Society



- Authorized killing of up to 85 CSLs per year for 5 years = 425 animals
- “Individually identifiable pinnipeds” = CSLs who display natural or applied features that allow them to be individually distinguished from other CSLs who:
 - (1) have been observed eating salmonids between January 1 and May 31 of any year;
 - (2) have been observed in ‘observation area’ below Bonneville Dam on a total of any 5 days; and
 - (3) are sighted in the ‘observation area’ below Bonneville Dam after subjected to non-lethal deterrence.
- Once met, forever an individually identifiable pinniped and can be killed wherever found except rookeries



Bonneville Dam I

- Significant negative impact
 - Found that CSL predation of 0.4-4.2% = SNI
 - Previously found take by fisheries of very same run of 5.5-17% had “no significant impacts” and impacts would be “minor if at all measurable”
 - Previously found that this take by fisheries would not jeopardize continued existence of listed fish
- Required termination of killing if predation dropped to 1% over 3-year avg.
- “Divergent factual findings with respect to seemingly comparable causes of salmonid mortality raise questions as to whether the agency is fulfilling its statutory mandates impartially and competently.” 626 F.3d at 1050.
- NMFS failed to explain why anything above 1% predation rate constitutes SNI and echoed concerns of marine mammal commission that NMFS needed “identify the level at which predation of salmonids by pinnipeds no longer would be considered significant, because the taking authority should lapse once predation is reduced to a level where it no longer is having a significant impact.” *Id.* at 1053.

Year	Total Salmonid Passage at Dam	Allowable Fishery Harvest	Actual Fishery Harvest	California Sea Lion Predation	Steller Sea Lion Predation
2008	147,534	12% (later reduced to 11%)	16%	2.83%	0.12%
2009	186,060	13% (later reduced to 11%)	10.5%	2.12%	0.24%
2010	267,184	13%	17%	1.87%	0.37%
2011	223,380	11% (later raised to 12%)	10%	1.10%	0.50%

Bonneville Dam

- Differences between findings of “significance”
 - Different statutory schemes; SL predation unmanageable so can have compensatory effect at low run sizes, fisheries take is compensatory
- Significant = “meaningful” and “not insignificant”
- 7-factor Test:
 - (1) predation is measurable, has grown since 2002 and could continue to increase if not addressed;
 - (2) Level of adult salmonid mortality sufficiently large to have measurable effect on numbers of listed salmonids contributing to productivity;
 - (3) Mortality rate is comparable to mortality rates from other sources that have led to corrective action under the ESA;
 - (4) Non-lethal deterrence efforts have been unsuccessful;
 - (5) In 2010, CSL numbers at Dam reached highest since 2004;
 - (6) Predation rate from CSLs increases when salmon run sizes decrease;
 - (7) CSL and SSL predation has a combined effect.
- No termination point – can kill CSLs throughout 5-year term no matter what the level of predation is

Bonneville Dam III

- Agency issued reasonable explanation for disparate findings
- Although we “raised valid concerns” about no cut-off, court did not agree that NMFS acted arbitrarily or capriciously by failing to adopt a more quantitative measure of significance, or in deciding to re-evaluate program in 5-years as states’ counsel assured court “during oral argument that the states would exercise discretion to suspend removals if predation fell to acceptable levels”
- Agree with us that “some of the factors could be applied in ways that would eviscerate the MMPA statutory standard & confer virtually limitless discretion on the agency to make a finding of significant impact and preclude effective judicial review. However, we do not understand the factors considered as a whole to permit such an application.”
- So... sea lion killing can continue no matter how many fish consumed
- Court also noted that it doubted “that NMFS could reasonably conclude that sustained predation below 1 percent could constitute a significant negative impact under the MMPA standard and these seven factors...”



Willamette Falls



H.R. 1308



