State of Washington
DEPARTMENT OF FISH AND WILDLIFE

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September 12, 2001

Mr. William Hogarth
Acting Assistant Administrator Fisheries
Department of Commerce
NOAA
National Fisheries Service
Silver Spring, Maryland 20910

Dear Mr. Hograth,

I am writing to request a five-year extension of the state's authorization under Section 120 of the Marine Mammal Protection Act for the lethal removal of California sea lions at the Ballard Locks (Locks) and Lake Washington Ship Canal to June 30, 2006. While California sea lion occurrence and predation rates in this area have declined, the Lake Washington winter steelhead run remains severely depressed. I therefore wish to retain our authority to lethally remove sea lions if significant steelhead predation should recur.

It is the Agency's intention to exercise its authority as we have for the past five years. We are not requesting any modification to the existing letter of authorization (LOA) of September 30, 1997. We feel that the current conditions of existing LOA are adequate to ensure that the authority would be used only if it is absolutely necessary. However, our past studies of California sea lion predation in this area indicate that there is a very real risk that even one sea lion could be enough to make the difference in the survival of the severely depressed Lake Washington steelhead stocks. It is critical that we recover this stock and this LOA needs to be held as a contingency to prevent this steelhead sub-population within the ESU from becoming extirpated.

Following, you will find a discussion of the status and management of both fish and sea lion populations as they relate to the Lake Washington system. This information is the basis and rationale for our request.

Fish Status and Management

Currently, WDFW in conjunction with NMFS, tribes, and local government are taking extraordinary efforts to restore winter steelhead in the Lake Washington system. The decline of

the Lake Washington wild steelhead run has been well documented. The first year that spawning escapement in the system was estimated was 1983. This was the highest recorded escapement at 2,575 steelhead (table 1). Between 1983 and 1994 escapement generally declined each year to a low of 70 fish in 1994. There were several immediate responses by the management agencies to increase wild steelhead escapements. Recreational and Tribal fishing for wild steelhead was halted in 1985. Hatchery steelhead releases were terminated and recreational trout fishing was curtailed in the basin. All tributaries to Lake Washington and Lake Sammamish were closed to fishing.

Table 1.) Recent history of Lake Washington winter-run steelhead harvests, predation and escapements

Year	Total Wild Catch	Wild Predation	Wild Escapement	Total Run Size	Percent Predation
82-83			2575		
83-84	916		1250	2166	
84-85	554		474	2527	
85-86	116	329	1816	2261	14.55%
86-87	571	1254	1172	2997	41.84%
87-88	238	1178	858	2274	51.80%
88-89	0	1287	686	1973	65.23%
89-90	27	1065	714	1806	58.97%
90-91	0	899	621	1520	59.14%
91-92	0	a/	599		
92-93	0	a/	184		
93-94	0	6	70	76	7.89%
94-95	0	11	126	137	8.03%
95-96	0	0	234	234	0.00%
96-97	0	8	620	b/ 652	1.23%
97-98	0	2	584	c/ 608	0.33%
98-99	0	0	220	d/ 229	0.00%
99-00	0	0	48	48	0.00%
00-01	0	0	42	42	0.00%

a/ There was no predation monitoring in 1991-92 and 1992-93
b/ The total runsize includes 24 adult steelhead collected for broodstock
c/ The total runsize includes 22 adult steelhead collected for broodstock
d/ The total runsize includes 9 adult steelhead collected for broodstock

There were also efforts to reduce predation by sea lions. During the precipitous decline in returns in the mid to late 1980s, predation rates averaged over 50 percent of the returning steelhead. The cooperators tested a variety of predation control methods during that time. Procedures or methods tested to date include acoustic harassment (seal bombs and electronic noisemakers) (Gearin *et al.* 1986; Gearin *et al.* 1988;), taste aversion conditioning (Gearin *et al.* 1988), barrier

exclusion (Pfeifer *et al.* 1989), active capture (Gearin *et al.* 1988), sea lion relocation (Pfeifer 1989 and 1990b), and tactile harassment (Pfeifer 1990b). Despite these efforts predation rates remained high (nearly 60 percent in 1991).

When monitoring began in 1985, there was no predation monitoring at the Ballard Locks in 1992 or 1993 and consequently there is no estimate of predation. Observations resumed again in 1994 and predation has been estimated each year through 2001. Since observations have resumed, rates have been much lower. The predation rate was 7.89 percent in 1994 and no kills have been observed since 1999.

Fish biologists were encouraged by the run sizes of over 600 fish two years in a row (1997 and 1998). These numbers indicated that returns per spawner had improved dramatically and if that trend continued the 1600 fish escapement goal could be achieved. However, escapements have recently declined to a low of 42 in 2001. The previous low had been 48 in 2000 (table 1). Considering that returning adult steelhead is generally four or five years old, the 42 adults returning in 2001 would have been produced from escapements of 234 in 1996 and 620 in 1997. The past two years' returns represent far less than one adult return per spawner. While return rates for Puget Sound river systems in general indicate below average marine survival rates (Leland 1995-2000), Lake Washington return rates are much lower than the Puget Sound average. The following management measures for the protection and enhancement of Lake Washington steelhead have been initiated to bolster these return rates.

Harvest Management

Fishing seasons have been curtailed to reduce or eliminate harvest of Lake Washington steelhead. Some regulations protect juveniles as they rear in the system while others protect returning adults.

- The system remains closed to the taking of steelhead year round (since 1985)
- Marine areas are closed to the harvest of wild steelhead (since 1993)
- Increased minimum size for trout to 12 inches in Lake Washington March through June
- 14 inch minimum size for trout in Lake Sammamish
- All tributaries, including the Cedar River are closed to fishing year round

Hatchery Production/Supplementation

- There have been no releases of hatchery (Chambers Creek) stock steelhead since 1993. This eliminated any competition with wild juveniles and possible genetic transfer.
- Hatchery rainbow trout are no longer released into Lake Washington.
- A hatchery supplementation program using wild Lake Washington stock was initiated in 1997. To date, more than 35,000 smolts and 50,000 fry have been released into north system tributaries. This objective of this program is to reestablish spawning steelhead into important spawning and rearing areas.

Improvements to Downstream Fish Passage at the Ballard Locks
Studies conducted at the Ballard Locks since 1994 have indicated that losses to out-migrants can be substantial when they leave Lake Washington. Over 50 percent of the smolts may be injured if they exit the lake through the locks filling culverts (Seiler pers. comm.; WDFW Science Brief). An interagency scientific task force was formed in the early 1990s. This group has recommended several modifications at the Locks facility to improve fish passage that will benefit steelhead.

- Four permanent smolt passage flumes were installed in 2000 at the Locks to provide alternative downstream fish passage to allow smolts to pass unharmed past the locks
- Gate control mechanisms within the filling culverts have been modified to allow slower lock fills. This reduces juvenile fish entrainment and drastically reduces the injury rate (Seiler 2001 pers. com.).

Habitat/Water Management
In 2000, the Cedar River Habitat Conservation Plan was signed. There are provisions to provide fish passage past Landsburg dam and make available supplemental water for steelhead incubation.

- Approximately 13 miles of steelhead habitat will be accessible to steelhead when passage is completed past the diversion dam at Landsburg. This is excellent steelhead habitat and will greatly increase steelhead production from the system.
- The agreement provides additional water during the spring steelhead incubation period. Recent studies conducted by biologists from the city of Seattle indicate that more than 50 percent of the redds in some years could be impacted by de-watering under some conditions (Burton and Little 2000). Flows have been managed to minimize these impacts since 1995.

California Sea Lion Status and Management

California sea lion abundance in Washington is at historically high levels, coinciding with the increases in the California sea lion population over its range. NMFS (2000) recently estimated the range wide population at over 200,000 animals, with an annual growth rate of 6 percent. In recent years, record high counts of 3,000 to 5,000 animals have been present in state waters seasonally (see Gearin et al 2001 attached). Abundances in Puget Sound continue to range from 200-1,000 animals, with between 20-50 animals present seasonally in Shilshole Bay near the Locks. WDFW plans to continue to work cooperatively with NMFS to conduct surveys to track sea lion abundances in Washington waters, as well as to capture and mark individual sea lions in the vicinity of the Locks.

We learned from experiencing the declines in the Lake Washington winter steelhead run caused by sea lion predation that if predation is not stopped, even a few individual sea lions have the potential to cause significant predation losses to the continued viability and recovery of this run.

Although we continue to use non-lethal techniques to discourage sea lion presence and predation on steelhead at the Locks, we still need to be allowed the option of lethal removal as a potential tool in order to respond in a timely manner to uncontrollable sea lion predation situations. We believe that the Ballard Sea Lion Task Force's recommendations support the continued use and long-term availability of lethal removal as a mitigation option to rebuild this run as well (see attached Task Force Recommendations).

Thank you for considering this request. WDFW looks forward to continuing to work with NMFS, in protecting steelhead from sea lion predation at the locks. If you need additional information please contact Rocky Beach at (360) 902-2510 or e-mail at beachrjb@dfw.wa.gov.

Sincerely,

Jeff P. Koenings, Ph.D.
Director

cc: Donna Darm, NMFS
Joe Scordino, NMFS
Bob Everitt
Dave Brittell
Steve Jeffries
Rocky Beach

References Cited

Burton K. D., and R. Little. 2000. Cedar River Monitoring Program Report 2000. City of Seattle Public Utilities, unpublished.

Leland, Bob 1995-2000. Anadromous game fish investigations in Washington. Washington Department of Fish and Wildlife annual reports

Gearin, Patrick, Bob Pfeifer, and Steven Jeffries. 1986. Control of California sea lion predation of winter-run steelhead at the Hiram
M. Chittenden locks, Seattle, December 1985 - April 1986 with observations on sea lion abundance and distribution in Puget Sound. WA Dept. Game Fishery Mgmt. Report 86-20. 108 pp.

Gearin, Patrick J., Robert Pfeifer, Steven J. Jeffries, Robert L. DeLong, and Michael A. Johnson. 1988. Results of the 1986-87 California sea lion - steelhead trout predation control program at the Hiram M. Chittenden locks. NWAFC Processed Report 88-30. USDC-NMFS. NW and Alaska Fisheries Center. 111 pp.

Pfeifer, Bob, Patrick J. Gearin, Steven J. Jeffries, Michael Johnson, and Robert L. DeLong. 1989. Evaluation of the 1987-88 California sea lion predation control program in the Lake Washington estuary. Wash. Dept. Wildlife Fishery Mgmt. Rep. 89-9. 216 pp.

Pfeifer, Bob. 1987. Managing around marine mammal predation on winter-run steelhead returning to Lake Washington. Wash. Dept. Wildlife, Fish. Mgmt. Div. 99 pp.

Pfeifer, Bob. 1989. Monitoring of the 1988-89 California sea lion predation control program in the Lake Washington estuary. Wash. Dept. Wildlife Fishery Mgmt. Rep. 89-12. 71 pp.

Pfeifer, Bob. 1991. Monitoring of the 1989-90 California sea lion control program in the Lake Washington estuary. Wash. Dept. Wildlife, Fish. Mgmt. Div. F.M. No. 90-17. 94 pp.

Seiler, Dave. 2000. Personal communication. Wa. Dept. of Fish and Wildlife research scientist

WDFW. 2000. Washington Department of Fish and Wildlife science brief, attached.