



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

700 NE Multnomah Street, Suite 1200
Portland, Oregon 97232

(503) 238-0667
F (503) 235-4228
www.critfc.org

Testimony of
The Honorable Leotis McCormack
Nez Perce Tribe
and
Commissioner, Columbia River Inter-Tribal Fish Commission
on
“The Costly Impacts of Predation and Conflicting Federal Statutes on Native and Endangered Fish Species”
to the
House Natural Resources Committee
Subcommittee on Water, Power and Oceans
February 10, 2016

Chairman Fleming, Ranking Member Huffman and distinguished Members of the Water, Power and Oceans Subcommittee, on behalf of the Nez Perce Tribe and the Columbia River Inter-Tribal Fish Commission (CRITFC), thank you for inviting me to testify on the costs, impacts and management implications related to the various form of predation upon native and endangered fish species. My testimony will provide an overview of the three main sources of predation: Marine Mammals; Avian; and freshwater fish, against Columbia River salmon, sturgeon and lamprey. I will offer a brief history of the CRITFC and our legal authorities related to salmon management before discussing successes and challenges managing these forms of predation on Columbia Basin salmonids. My testimony will conclude with recommendations for improving predation management.

An Overview of Predation on Columbia River Salmonids

Predation is a keystone agent that controls fish population dynamics. Although predation is a naturally occurring population control agent, management becomes necessary in a highly modified environment, such as the Columbia River Basin. Since the implementation of the Tribes’ Spirit of the Salmon Plan, an alarming increase in predation of sturgeon juveniles, salmon and lamprey by birds, marine mammals and other fish has occurred (Rieman et al. 1991; Collis et al. 2002; Evans et al. 2012; Stansell et al. 2010). In the basin, newly created habitats from dredge spoils increased predacious bird populations, along with changes to primary food sources bringing more hungry sea lions upriver, the creation of reservoirs and the introduction of predatory species have resulted in ballooning predator populations. The negative changes in avian, mammalian, and fish species population dynamics have tipped the predator/prey balance to the point that active management is required to rebalance predator populations and reduce salmon, lamprey and sturgeon losses.

Avian predation refers to predation by piscivorous (i.e., fish eating) birds on salmonids. Key avian predator species in the Columbia Basin include Double-Crested Cormorants

(*Phalacrocorax auritus*), Caspian Terns (*Hydroprogne caspia*), California Gulls (*Larus californicus*), Pelicans and Ring-Billed Gulls (*Larus delawarensis*). The abundance and distribution of double-crested cormorants and Caspian terns has increased dramatically in recent years, from a few hundred to tens of thousands in a less than 20 years (Roby et. al. 2012). In 2011, the combined loss was approximately 23 million salmon smolts (BRNW 2012). Smolts may also be subject to predation by marine seabirds off the Pacific Coast. Estimates of these oceanic predators are upwards of a hundred thousand birds or more (NMFS personal communication).

Marine Mammal predation is a growing problem in the lower Columbia River. California Sea Lion (*Zalophus californianus*) abundance and their impacts on listed salmonids (*Oncorhynchus* spp.) increased dramatically at Bonneville Dam since the turn of the century, stabilized for a couple of years and since 2013 have increased to the highest levels ever recorded. In 2008, the National Marine Fisheries Service granted the states of Oregon, Washington and Idaho authority to lethally remove nuisance California sea lions under section 120 of the Marine Mammal Protection Act (MMPA). CRITFC estimates that over 50,000 ESA-listed spring chinook salmon have been taken in the Columbia River by California sea lions since the year 2000. Since 2009, Steller sea lion (*Eumetopias jubatus*) abundance in the Columbia River has also increased. In 2012, Steller sea lion predation at Bonneville Dam actually exceeded that of California sea lions. However by 2015, California sea lions were again the dominate species at Bonneville Dam and they teamed with Steller sea lions to take approximately 8,500 salmon and steelhead. Bear in mind that this take was observed within ¼ mile of Bonneville Dam and represents only an index of predation since sea lions were distributed throughout the river from the Dam to the estuary (about 150 miles). In 2015, 2,340 sea lions were counted at the East Mooring Basin on March 20, in Astoria, OR near the mouth of the Columbia River. Abundance of sea lions using the East Mooring Basin in 2013 was about 700, this number approximately doubled in 2014, and doubled again in 2015. California sea lion abundance was estimated at 296,750 animals in 2010 (Carretta et al. 2011) indicating that the population is robust and expanding. California sea lions are present year round in Bonneville Dam's reservoir.

Fish predation (i.e., fish on fish predation) is well studied or barely studied, depending on the species of predator. Baseline research efforts in the John Day reservoir on the Columbia River in the 1980s identified a native fish, the Northern Pikeminnow (*Ptychocheilus oregonensis*), as a significant predator of salmonid smolts, along with non-native walleye, smallmouth bass and channel catfish (Vigg et al. 1991). Estimates of smolt predation were in the millions, with most eaten by northern pikeminnows, which are not protected as a game fish by the states of Oregon and Washington. An intensive government sponsored public control program on northern pikeminnows was initiated in 1990 and continues to this day. The program has removed nearly 4 million pikeminnow from the Columbia and Snake rivers. Management action to remove non-native piscivorous fishes has not been taken, although sufficient information confirms their direct and indirect impacts to salmon (ISAB 2008). In 2013, Washington State removed the size and daily limits on catfish, walleye and smallmouth bass on selected areas of the Columbia and Snake River and their tributaries upstream of McNary Dam. In 2015, the state of Oregon enacted similar regulation for the mainstem Columbia from the Pacific Ocean upstream to the state boundary with Washington upstream of McNary Dam. However, major salmon bearing tributaries such as the Willamette, Hood River, John Day River, and the Umatilla still have

restrictive regulations that protect largemouth and smallmouth bass, also known predators of juvenile salmon and lamprey. Similarly, portions of the Snake River in Oregon have bag and possession restrictions to protect largemouth and smallmouth bass

Commission History and Legal Authorities

The Columbia River Inter-Tribal Fish Commission was formed in 1977 by resolutions from the four Columbia River treaty tribes: Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes and Bands of the Yakama Nation, and Nez Perce Tribe. CRITFC's mission is to ensure a unified voice in the overall management of the fishery resource and to assist in protecting reserved treaty rights through the exercise of the inherent sovereign powers of the tribes. CRITFC provides coordination and technical assistance to the tribes in regional, national and international efforts to ensure that outstanding treaty fishing rights issues are resolved in a way that guarantees the continuation and restoration of our tribal fisheries into perpetuity.

The combined ancestral homelands of our four tribes cover roughly one-third of the entire Columbia River Basin in Washington, Oregon and Idaho. Our existence on the Columbia River stretches beyond 10,000 years to time immemorial. Salmon has always been a unifying force and we rely on its abundance for physical and cultural sustenance. Collectively, we gathered at places like Celilo Falls to share in the harvest, forging alliances that exist today. Our fishing practices were disciplined and designed to ensure that the salmon resource was protected, and even worshipped, so it would always flourish.

Salmon is so fundamental to our society that in 1855 when our four sovereign tribes¹ and the United States collaborated and negotiated treaties, our tribal leaders explicitly reserved—and the U.S. agreed to assure—our right to fish in perpetuity within our ancestral homelands as well as to “take fish at all usual and accustomed places”. We kept our word by ceding roughly 40 million acres of our homelands to the U.S., while the U.S. pledged to honor our ancestral rights. It was the expectation of our treaty negotiators then that we would always have access to abundant runs of salmon; it is our expectation now that the U.S. government will honor that commitment and take the steps necessary to protect our treaty resources. The treaties of 1855 were all ratified by the Senate of the United States. The Supremacy Clause of the Constitution applies to all such treaties.

The importance of fish, especially salmon, to our tribes cannot be overstated. In *U.S. v. Winans*, the U.S. Supreme Court stated that fishing was “not much less necessary to the existence of the Indians than the atmosphere they breathed.” The salmon are an integral part of our cultural, economic and spiritual well-being. They are a primary food source and our consumption of this First Food is nearly ten times higher than the national average. Salmon is fundamental to a healthy tribal diet and plays a significant role in combating the risks of heart disease and diabetes in our communities.

¹ Treaty with the Yakama Tribe, June 9, 1855, 12 Stat. 951; Treaty with the Tribes of Middle Oregon, June 25, 1855, 12 Stat. 963; Treaty with the Umatilla Tribe, June 9, 1855, 12 Stat. 945; Treaty with the Nez Perce Tribe, June 11, 1855, 12 Stat. 957.

Our livelihood evolved over thousands of years and our physical and cultural survival was intimately tied to the salmon. Ceremony became essential to insure the continued survival of the salmon, our traditions, and thus ourselves. Without salmon and without ceremony, we would cease being Indian people. We are longhouse people and these ceremonies have gone on without interruption for thousands of years. For these reasons, in conjunction with modern fisheries management principles, we are alarmed over the increasing impact by sea lions and other predators on these vital treaty and public resources.

A Brief History of Salmon Decline

The Columbia Basin and its tributaries began seeing major changes in the 1800's as agricultural lands were developed and dams harnessed the natural flows to build a western economy with low cost electrical power, navigation, and irrigation. Commercial fishing lacked restraint decimating salmon runs without regard for future generations. Logging, mining and agriculture bit into the earth, fouling clean waters, and degrading riparian habitat crucial to salmon survival. Nature's bounties were exploited to build bigger cities with bigger economies, and the energy and infrastructure to support them was siphoned from the river. As more lands were flooded, more promises flowed. Tribal leaders were told the dams would actually make life easier on salmon as the roaring pace of the river was reduced. We were also told that if any impacts occurred they would be mitigated.

The mitigation and recovery of our treaty fishing resources has been slow but methodical. Thirteen salmon and steelhead populations in the Columbia Basin are listed under the Endangered Species Act (ESA). Pacific lamprey and white sturgeon populations are also depressed and resources to rebuild them are slim, making us worry if they too will be listed under ESA.

Regional Recovery Efforts

We have been doing our best to bring the salmon back. Our tribal members have long shouldered a heavy conservation burden through voluntary harvest reductions on our fishery. Now, in cooperation with States, Federal Agencies, and our neighbors in the Columbia Basin we are making huge financial and social investments in recovery efforts.

In 2008, CRITFC and its member tribes successfully concluded lengthy negotiations resulting in three landmark agreements: 1) the Columbia Basin Fish Accords² with federal action agencies overseeing the federal hydro system in the Columbia Basin, 2) a Ten-Year Fisheries Management Plan with federal, tribal and state parties under *U.S. v OR*, and 3) a new Chinook Chapter of the Pacific Salmon Treaty.³ These agreements establish regional and international commitments on harvest and fish production efforts, commitments to critical investments in habitat restoration, and resolving contentious issues by seeking balance of the many demands within the Columbia River basin.

² The Nez Perce Tribe is not a Columbia Basin Fish Accord signatory

³ See "Salmon Win A Triple Crown" at http://www.critfc.org/text/wana_w09.pdf

Impacts of Predation on Tribal Families

Salmon are central to the ceremonial, subsistence and commercial lives of our people. Salmon fishing has long been a traditional way of providing the necessary means to safeguard our families economically. Even the settlers who descended upon our ancestral homelands capitalized on the abundant salmon runs to secure an economic foothold in the region. In the middle of the 1900's, spring salmon runs dwindled and we had to forgo a tribal commercial harvest. However, when runs rebounded slightly from 2000 to the present we were able to open limited commercial tribal harvests.

A commercial tribal fishery diversifies economic opportunities in what are traditionally hard hit rural economies. We have made considerable investments to rebuild our salmon economy and increase the commercial value of tribally caught salmon. Not long ago, the tribal commercial fishermen were receiving 30 to 40% less than market value. Today, we have overcome this disparity through innovative marketing strategies, individual training and public outreach. It has taken several years to build a brand identity for tribally caught salmon. The public is embracing the benefits of buying the products of our tribal fishery and demand is outpacing supply.

Predation is most notable and alarming to tribal communities in the spring when spring Chinook, the mainstay of our salmon culture, is exploited by marine mammals in the lower Columbia and especially at migratory bottlenecks, such as passage points at dams. Prized for ceremonial, subsistence and commercial uses, these important uses have all suffered from predation's impact. Some fish buyers won't purchase damaged fish and the value can drop as much as 50%. The growing level of sea lion predation can devastate the hard earned the value of the tribal commercial fishery.

Impacts by predation to juvenile salmon, while sometimes less visible, are no less harmful to tribal families by the alarming numbers of juvenile salmon killed.

Marine Mammals – a Growing Management Concern

California Sea Lions, Steller sea lions and other marine mammals historically had a very limited presence in the Columbia River with a functional and mutually respectful relationship between them and tribal people. Tribal members harvested them for their skins and oils. Tribal members also killed marine mammals that were disruptive to fishing activities. Though well intentioned, the MMPA has made the river more hospitable to opportunistic sea lions and less hospitable to salmon, lamprey and sturgeon survival by limiting traditional and modern management methods. The sea lions have learned to profit from the abnormal situation by preying on salmon and other treaty protected resources particularly at vulnerable areas like Bonneville Dam. They are cunning, proven by their ability to outmaneuver the exclusion devices placed in the fish ladders and their ability to ride the shipping barges through the dam's locks. While we admit that the Creator intended a place for them, it doesn't lessen the problem they are causing by exploiting an unnatural environment.

There was a time when a portion of a state fishing license fees were used to manage the sea lion population to reduce their predation. Historically, when sea lions made it up to those parts of the

river where the dams now sit, they would be shot and they would be bled out in the river. Sea lions were shrewd enough to understand that this was an area they needed to avoid. Things have changed for the worse now because man has changed the nature of the river. Now, returning salmon must pass artificial dams and go up man made cement fish ladders to get upstream. They are trapped by sea lions who understand the salmon must go right by them if they hang out close to the ladders. We ask our friends in the animal rights community to understand that we are dealing with basic nature when the ability of endangered salmon to defend themselves has been so compromised.

Some people claim that placing blame on the sea lions is a ruse to divert attention away from the dams' impact on salmon survival. If they understood our dilemma, they would clearly recognize that attention is actually being drawn to Bonneville Dam where a growing number of sea lions have learned to exploit an artificial situation to disproportionately impact depressed salmon runs. Increasing numbers of sea lions have been documented returning year after year. In the last five years, over a hundred animals have learned to prey on threatened and endangered spring Chinook as they converge on the entrances to the dam's fish ladder.

Significant predation at the dam is rising, evidenced by the number of salmonids eaten by sea lions. But growing data sets paint a troubling picture of increasing depredation throughout the lower Columbia River. We have previously estimated that 18% to 25% of the spring Chinook salmon run are lost to sea lions annually between Bonneville Dam and the mouth of the river, but based on recent NOAA research, it could be as high as 45% of the run. In addition, impacts by sea lions are disproportionally distributed on the early portion of the run. During March and April there are many days when the take by sea lions exceeds the fish count in the ladders. We are concerned that these early returning fish may be from stocks that are most at risk of extinction.

Every year a few sea lions pass through the Bonneville Dam lock. These animals damage fishing gear and steal salmon from our fishers. Some California sea lions have spent over 4 years in the Bonneville pool. Studies show that the farther upstream the sea lions travel, the higher percentage of salmon and steelhead in their diet. Additional studies indicate that salmon comprise 10-30% of their diet. The latest available sampling data beginning in 2001, shows that each year slightly over 30% of the spring salmon passing through Bonneville's fish ladder have suffered some form of injury caused by marine mammals. Those salmon that escape with harsh wounds are less likely to survive their upstream journey and unlikely to successfully spawn. Tribal and non-tribal fishermen who harvest these injured fish cannot fully utilize them for their subsistence, sport and commercial value.

Facts on Marine Mammal Predation in the Columbia River:

- An unprecedented explosion of pinnipeds in the lower Columbia River has caused spikes in predation levels of salmon despite years of hazing and cumbersome removal authority;
- California sea lions are completely recovered and expanding, current population estimate is >325,000 with an annual growth rate of 9.2%;
- The large and growing surplus of male Sea lions, far in excess of the reproductive needs of the population, is expanding their range in reaction to increasing salmon and smelt runs;

- Sea lions killed over 8,474 salmon within ¼ mile of Bonneville Dam (146 miles from the Ocean) in 2015, a staggering 140% increase over the previous 12 year average;
- California Sea Lions have routinely passed through the locks into the Bonneville Pool, 146 miles from the mouth of the Columbia, some residing there for over four years;
- The aggressive feeding behavior threatens the safety of sport, commercial and tribal fishermen trying to land catch;
- NOAA Fisheries estimated an unaccounted for loss of 45% (99,000 fish) of the 2014 Spring Chinook Salmon run between the estuary and Bonneville Dam, this loss is over 4 times greater than in 2010 when the losses were estimated at only 10%;
- Tribal ceremonial, subsistence and commercial fisheries experience unique and unmitigated damage from growing sea lion predation; and
- Anticipated downturns in future salmon runs due to the present drought conditions would increase sea lion impacts even more. Management tools are needed now to help address this anticipated impact and attempts to address California Sea Lion predation under the existing constraints of the MMPA have been inadequate and hampered by protracted litigation by special interests exploiting ambiguities in the law.

Avian Predation

Juvenile salmonids and juvenile lamprey in the Columbia River basin are subject to extensive predation by fish eating (i.e. piscivorous) birds throughout their entire migration route. In the Basin, there are over a dozen species of birds whose diet is primarily fish, but the key predators are double-crested cormorants, Caspian terns, several gull species, and in some areas, white pelicans. Birds are predators on juvenile salmonids and juvenile lamprey during the entire course of the outmigration, but dam tailraces and the estuary are the areas of greatest impact. Annual losses in the estuary are staggering. During the last 4 years of record keeping (2010, 2011, 2012 and 2013), losses ranged from 17 to 21 million smolts annually by a double-crested cormorant colony on East Sand Island, near the mouth of the Columbia River. This equates to approximately 20% of the entire outmigration of all juvenile salmonids each year. Many of these fish are wild and are listed as threatened or endangered under ESA.

Additionally, Caspian terns nesting on the same island, also consumed an additional 3-5 million smolts annually during the same time period. Ironically, both of these colonies are the largest for their species in the entire world. Both species are common, with the Caspian tern found throughout the world, while the double-crested cormorants is a North American species with numbers in the hundreds of thousands. Smaller colonies of double-crested cormorants, gulls and Caspian terns nest upstream and eat well over an additional million smolts annually, but with a greater per capita impact. For example, a small colony (< 300 pairs) of Caspian terns that nested on Goose Island in Potholes Reservoir, annually consumed approximately 10-15% of the entire upper Columbia River juvenile steelhead outmigration.

Management actions have initiated on Caspian terns and double-crested cormorants. Populations of Caspian terns in the estuary and inland have been the focus of habitat alterations and reductions, but with limited success. The focus has been to “push” them from areas of high salmonid predation to areas of lower impacts. However, this process takes years, is highly

unpredictable and during the transition period, juvenile salmonids continue to be eaten by the millions.

A different strategy has been implemented on the East Sand Island double-crested cormorant population. Following an exhaustive environmental review, the preferred alternative is nest destruction and lethal removal of ~ 50% of the existing population. Legal challenges followed the approval of the preferred alternative, but did not prevent the initial year of management efforts, which achieved that year's goal of destroying over 5,000 nests and the lethal removal of approximately 3500 adult birds. There are 3 years remaining in this effort. Subsequent management actions will be necessary to maintain the population at this level, which unfortunately will still continue to eat millions of juvenile salmon each year, but likely less than the 10's of millions that were eaten prior to management actions. Additional efforts will be necessary to provide a more balanced and safe environment for migrating juvenile salmonids and lamprey.

Predation by Freshwater Fish Species

Historically, the Columbia River basin fish fauna was composed of salmon, small minnow species, small sculpins, burbot, sturgeon, and several species of lamprey, less than 40 species total. Piscivorous fish were limited to white sturgeon, northern pikeminnow and burbot. Today, the number of fish species in the basin is close to 80 species, ~half of these fish are not native and many of these species are partially or wholly piscivorous. Some early studies showed that the native northern pikeminnow was the primary fish predator of juvenile salmon. Consequently, an aggressive campaign to reduce the numbers of this native fish has been ongoing for over 20 years. However, many of the non-native fish including largemouth and smallmouth bass, walleye, channel catfish, yellow perch, and crappies are primarily fish predators, but are given protection as gamefish and managed to maximize their populations for sport angling purposes. Given their numbers and distribution throughout the Columbia and Snake rivers and most major tributaries, this is cause for concern, given that initial research show the propensity of these species to eat juvenile salmon and lamprey. Like predation by pinnipeds and birds, predaceous fishes, particularly introduced species this needs greater focus and management and now is the time to initiate such efforts.

Hazing and Other Non-Lethal Actions– Necessary but Insufficient

Necessary but insufficient measures that are required to protect one species can be very detrimental at protecting other equally important resources. The MMPA and the MBTA, were created to protect marine mammals and birds from unregulated persecution and in some cases, extinction. However, given the rebound in many populations of these predators, the use of hazing and other non-lethal measures is insufficient to protect other resources. In certain instances, hazing and other non-lethal measures can be effective if the predators being hazed have a similarly productive habitat (i.e. food, nesting or living space) available. However, in many cases habitat is already limited and protected populations of predators continue to expand, there are no alternative habitats available. In these cases much time, money, studies, and other resources can be used as a way to avoid lethal removal, with no measurable success. In such instances, lethal removal is not preferred but maybe a necessity to alleviate predation impacts on salmon,

lamprey, sturgeon and other important resources. There is a finite amount of habitat and other resources and if predatory populations are not maintained at a fixed level, then prey species will suffer. Therefore, it is appropriate to reconsider the extent of how long non-lethal measures can be exercised before lethal measures can be implemented to protect other resources.

Since 2005 CRITFC, along with Washington and Oregon, have tried dispersing sea lions from the sensitive area immediately below Bonneville dam through daytime hazing from boats. Our actions have been limited to a 5-mile zone just downstream from the dam and not the entire 150 river miles from the dam to the Pacific Ocean. Non-lethal hazing has a very short-term effect at best. After the crew is done for the day the sea lions move back into the prime feeding positions. Hazing is difficult and risky due to daylight-only limitations and frequent hazardous water conditions. Even under ideal conditions hazing alone is inadequate to remedy the predation problem.

We do recognize that some animals respond to hazing better than others and that it will remain a component of any future robust management package. CRITFC and tribal crews wish to continue implementing hazing functions, as well as estimating sea lion abundance in the lower river. We are also collaborating with the states to develop techniques that may in future be useful for estimating sea lion predation rates in the lower Columbia River. Initially CRITFC diverted a portion of our Bureau of Indian Affairs funding to pay for our hazing efforts, however Bonneville Power Administration has funded our hazing efforts since 2007.

Justification of Support for Congressional Action to Improve Predation Management

We should not be forced to stand back as sea lions, birds, and non-native fishes cause other species, such as salmon, steelhead sturgeon and lamprey, to decline or even become listed under ESA. Specific actions by Congress related to the MMPA and the Migratory Bird Act could assist co-managers, including our tribes, strike a better balance between species interactions, especially in altered ecosystems.

Such actions could:

1. Place tribes on equal footing as states for access to authorities, permits and management tools;
2. Emphasize population management rather than individual animals;
3. Provide clear and respectful deference to Endangered Species when in conflict with non-endangered or Protected Species;
4. Provide clear and respectful deference to tribal treaty protected species;
5. Provide emergency exemptions to the National Environmental Policy Act; and
6. Require the Secretaries of Commerce and Interior to provide reports on predation on ESA listed and treaty protected species.

We do not take exemptions to the National Environmental Protection Act lightly. However, short term, emergency-based exemptions focused exclusively on managing the most aggressive and severe predation circumstances may be necessary and sound. Such exemption may be necessary to give the fishery managers the ability to respond swiftly to avoid extraordinary delay that puts the species, our investments, and our livelihood at risk.

We are appreciative that H.R. 564, currently being considered in the House of Representatives, designates each of our four member tribes as eligible entities for MMPA permitting, and identifies the Columbia River Inter-Tribal Fish Commission as an eligible entity to delegate permit authority. This is good and appropriate as our tribes are very capable, professional fishery managers with the necessary skills to administer and implement the provisions of a permit.

There are provisions for delisting species under the ESA—something we all aspire to achieve with salmon. The same consideration should be given to bird and marine mammal species who have achieved their optimum sustainable populations as provided under their protecting laws. MMPA is overdue for reauthorization and we urge Congress and the administration to take this matter up and reconcile the disparity of one species being caught in the middle when two environmental protection laws clash.

If we continue to use the same insufficient measures we are using today, it will be difficult to answer to the region, ratepayers, taxpayers and the region's fishermen, who have invested in salmon restoration across the Columbia Basin.

Recommendations for Effective Comprehensive Predation Management

Active management can keep predators at levels more in balance with the environment and reduce losses of Columbia River salmon and other native fish populations.

Management efforts can be aided by the following:

- Develop a common metric for fish, bird and marine mammal predation (i.e., adult equivalents) so that comparisons and impacts can be properly assessed;
- Investigate, monitor, evaluate and propose solutions to habitat changes at Columbia River tributary confluences where hydrologic modifications have resulted in increased sediment deposition and potentially attracted predator responses;
- Investigate indirect food web effects of predation;
- Apply active, adaptive management practices to predation sources;
- Persuade co-managers to prioritize salmon management in anadromous waters and remove barriers to harvest of non-native fish species;
- Recognize the benefits of native fish communities and balanced ecosystems;
- Develop greater cross-agency cooperation and investigation opportunities;
- Place greater emphasis on seasonal mainstem and tributary-based predation research and management of predatory non-native fishes and avian predators, particularly during the spring outmigration period;
- Include “several gull species, mergansers, and pelicans” to the list of bird predators and include upstream and tributary areas;
- Support regional efforts by actions agencies to actively manage populations of double crested cormorants and other piscivorous birds with lethal control if habitat modifications and dissuasion efforts are not successful in the Columbia River estuary, as well as inland reaches of the Basin to reduce losses of juvenile anadromous salmonids; and
- Work with co-managers to determine reasonable population ceilings for piscivorous waterbirds and predatory non-native fishes and reduce overall population sizes, including

lethal removal for all fish-eating birds and non-native fishes that persist in boat restricted zones, hatchery release points, low head irrigation diversion, tributaries, overwintering habitat, and other areas where temporal and species constraints bring juvenile salmon and lamprey into proximity with predacious species.

In conclusion, the United States made many promises beginning in 1855 with our treaties and subsequently when the dams were constructed. The treaty rights are meant to preserve our physical, cultural and economic livelihood—the U.S. committed to protecting these rights. We were further promised that any harm done to our fisheries attributed to the dams would be taken care of—Bonneville Dam has created an artificial situation the sea lions have learned to exploit. We have run out of options and any new technology will not be available in the near future to deal with the current dilemma.

We need a full suite of authorities and tools to deal with growing depredation from marine mammals, growing bird colonies and freshwater fish. We need timely solutions to protect our ceremonial, subsistence and commercial harvests for salmon, lamprey and sturgeon.

Again, thank you for this opportunity to share our concerns and to express our support for this legislation.

CRITFC Contact:

Charles Hudson

hudc@critfc.org

Phone: 503-238-0667

Fax: 503-235-4228

Columbia River Inter-Tribal Fish Commission

700 NE Multnomah, Suite 1200

Portland, OR 97232

www.critfc.org