

Committee on Resources, Full Committee

- - Rep. James V. Hansen, Chairman

U.S. House of Representatives, Washington, D.C. 20515-6201 - - (202) 225-2761

Witness Statement

**STATEMENT OF WILLIAM F. "ZEKE" GRADER, JR.
ON BEHALF OF
PACIFIC COAST FEDERATION
OF FISHERMEN'S ASSOCIATIONS
TO THE
HOUSE RESOURCES COMMITTEE
Klamath Basin Water Issues
and the Lower Klamath Economy
Klamath Falls, OR
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Good morning. I am the Executive Director of the Pacific Coast Federation of Fishermen's Associations (PCFFA), the west coast's largest organization of commercial fishing families. PCFFA represents thousands of working men and women of the west coast commercial fishing industry and has member fishermen's associations and individual members in ports from San Diego to Alaska.

We are a major west coast industry, generating many billions of dollars annually to the region's economy, and supporting tens of thousands of jobs in coastal communities as well as providing high quality seafood for America's tables and for export. However, it is no exaggeration to say that many of those coastal fishing-dependent economies are now in economic crisis as fisheries have declined coastwide. This is particularly true for salmon fishermen, who have suffered enormously from the loss of salmon habitat and the dewatering of many of our most productive salmon-bearing rivers and streams. This impact has hit especially hard in the Klamath Basin. Now the Klamath River suffers from major fish kills as a result of low flows to such an extent that we now have several basin species listed under the federal Endangered Species Act (ESA), including once abundant coho salmon.

The Klamath Basin (9,691 sq. miles) was once the third most important salmon producing river system in the nation, producing an estimated 660,000 to 1,100,000 million adult fish annually. Now river conditions are so bad that most of these runs are either gone or so reduced in numbers as to be nearing extinction. At present, the 'recovery' goal for this system is to return at least 97,500 natural spawners to the system each year, a very modest goal that has still never been met. Even if met, this still means a total reduction of Klamath salmon populations by 89%. As a result, commercial fishing is almost non-existent throughout the ocean area in which Klamath salmon most frequently travel, the "Klamath Management Zone (KMZ)."

A big part of the problem for downriver salmon is reduced water quality and quantity from upper river sources because of the Klamath Project. The Klamath Basin works as a hydrological whole, and what affects water quality in the upper basin has a huge impact downriver.

Unfortunately, diversion of natural waterways and draining of wetlands has taken an enormous toll on the Klamath Basin's ecology and wildlife. More than 75 percent of the Upper Basin's wetlands have been drained and converted to agriculture, down from 350,000 acres to about 75,000 acres. Each acre of wetlands represents an enormous natural storage sink for water to buffer dry seasons and drought, as well as nature's most efficient water filtration system to keep water quality up. As a result of the loss of both water storage and water quality filtration of wetlands, fish and wildlife populations have declined dramatically. Klamath River Coho salmon are now listed as a federally threatened species and all species of salmon are now extinct above Irongate Dam because that structure provides no passage for fish. C'wam and qadpo (i.e., the Lost River and short-nosed suckers but originally called 'mullet'), once widely abundant and a mainstay in the diet of the Klamath Tribes as well as a major and valuable recreational fishery for the Upper Basin, are now also on the endangered species list.

The Klamath Irrigation Project and other development in the upper Klamath Basin has had three major impacts: 1) wildlife habitat has been destroyed; 2) water quality has been degraded; and 3) the natural water storage capacity of native wetlands and other habitats has been lost. The hydrology of the Klamath River has been greatly altered, both reducing the overall storage capacity of the system as well as compounding the competition for water that is the impetus for this hearing.

A number of restoration projects are underway in the Klamath Basin, but without real change in overall water and land management, the current state of affairs is simply unsustainable. According to the U.S. Fish and Wildlife Service, for example, if water management proposals now under consideration by the Bureau of Reclamation are implemented, 12,000 to 18,000 acres of the 23,000 acres of wetlands on the Lower Klamath National Wildlife Refuge will go dry during the fall waterbird migration in half of all future years. Smaller but still significant impacts would occur in an additional 28 percent of future years. This year, for instance, the refuges may go dry entirely, devastating protected bird populations from all over the west coast who use the Pacific Flyway.

In recent years, water quality from the upper Klamath Basin has been so poor that massive salmon die-offs have resulted far downstream. In 2000, more than 300,000 salmon deaths were recorded in the lower river, directly attributable to elevated temperatures caused by too little flow. Even the Iron Gate Hatchery cannot operate with water conditions so poor as they have been in many recent years.

Crucial Economic Importance of the Klamath Basin to West Coast Fisheries

Both Oregon and Northern California coastal communities are *directly affected* economically by the environmental degradation that has been allowed to occur within the upper Klamath Basin by the operations of the Klamath Project.

First off, Iron Gate Dam in Northern California (just south of the Oregon border) is the end of the line for Pacific salmon, since it was originally built with absolutely no fish passage, and all salmon runs above that dam are now extinct. More important for this discussion, however, is the diminished water quality and quantity flowing through Iron Gate Dam, coming directly from the Klamath Irrigation Project. Water

released by the Klamath Project has for many years been of such poor quality, and such minimal quantity, that Iron Gate Hatchery (the largest and most important salmon hatchery in the basin) functions only very poorly or not at all. Iron Gate Hatchery uses river water for its operations. ***Whenever river water is too hot, too polluted or just too little in flow, that hatchery fails!*** Even if some juvenile fish do emerge from that hatchery, in many years in-river hot water temperatures and pollutants are so bad that water conditions kill them quickly.⁽¹⁾ Furthermore, declining water quality and nitrate pollution coming out of Iron Gate Dam⁽²⁾ lead to downriver water quality problems that extend for many miles downriver, which also disrupts natural production of wild salmonids.

It is not just hatchery fish that suffer, but many wild runs as well. Salmon must have cool, clear and abundant water just to survive. The extremely high volume irrigation diversions managed by the Upper Klamath Irrigation Project have, as a disastrous side effect, literally ***de-watered several key salmon spawning grounds*** in the Klamath River below Iron Gate Dam for parts of most years. It is not uncommon to lose 25% or more of all salmon nests to dewatering, in spite of all efforts to save them, amounting to a huge economic loss to coastal salmon fisheries and triggering major fisheries closures.

Even the water that is released from the Klamath Project is often filled with agricultural fertilizers, pesticide residues and waste from runoff in the fields. These pollutants in and of themselves can kill much of the aquatic life below the dam. Young salmon and salmon eggs are much more sensitive to toxic chemicals than fully mature adults, and scientists have already documented many long-term and debilitating problems, including developmental deformities, as a result of chronic pesticide exposures in even very small amounts well below current expose standards.⁽³⁾

In essence, the lower river system has been engineered to be, and is often treated as, nothing more than a huge drain for the Upper Klamath Basin. However, the Klamath is not a drain, it is a river, and its ecological needs must be respected. This means that adequate water quality and quantity must be released from the Klamath Project sufficient to support salmon spawning and rearing, which in turn supports coastal salmon-dependent economies and communities.

Unfortunately, the way the Klamath Irrigation Project is currently managed has greatly changed both the amount and nature of natural river flows we get downriver. Prior to Project construction, the Upper Klamath contributed as much as 35% of the total flow of the whole Klamath River at its mouth in a typical August. Today as much as 90% of that amount of water is captured by the Klamath Irrigation Project, particularly in a dry year, with the remaining 10% released below Iron Gate Dam essentially agricultural waste water of such low quality that it routinely triggers major downriver salmon fish kills.⁽⁴⁾ In other words, the total impact of Project operations has been ***an order of magnitude reduction in total flows below Iron Gate Dam***, a complete change away from natural seasonal flow characteristics, and highly degraded water conditions for what remains and is released. These highly degraded conditions are clearly major contributing factors in overall salmon declines in the lower Klamath Basin, often resulting in major fish kills.

Klamath River salmon, once they reach the ocean, swim both north and south where some portion of them are then available for harvest. ***In the past, roughly 30% of all fall chinook landed between Coos Bay, OR and Fort Bragg, CA, for instance, were Klamath River stocks in origin (See Table 1).*** Thus when these fish decline, as we have seen in recent years, major fishing ports from Ft. Bragg, CA to Coos Bay and Florence, OR are severely impacted economically. Currently, all ocean and recreational salmon harvests within this "Klamath Management Zone (KMZ)" is specially restricted by the Klamath Fisheries Management Council or by state agencies to promote recovery of these severely depressed fish. As a result,

when stocks are low (as we have seen for many years) most commercial fishing in the KMZ area is either closed or severely restricted, resulting in tens of millions of dollars in losses.

The Klamath stocks are also key indicator species for harvest levels all the way from central California to the Canadian border. All of our ocean salmon fisheries are now managed on a 'weak stock management' basis. ***This means that the weakest stock becomes the limiting factor on ALL OTHER FISHERIES, regardless of how abundant those other stocks might be.*** The requirement to avoid catching any severely depressed Klamath chinook stocks, or any ESA-listed coho, therefore limits harvest opportunities on all the otherwise abundant (hatchery origin) fish populations from the California Central Valley well into areas above Oregon.

In other words, it costs fishermen tens of millions of dollars in lost economic opportunities just in order to reduce fishing impacts to a minimum on all these severely depressed Klamath River stocks. Klamath-driven closures and restrictions thus result in lost fishing opportunities for ports as far south as Monterey Bay and as far north as to the Canadian border.

Restoration of the Klamath Basin's salmon production is thus critical to the future of salmon fisheries over much of the west coast north of central California.

Over-Allocation of Klamath Project Irrigation Water Has Devastated Water Dependent Coastal Communities

To be blunt, the Klamath Project has simply over-allocated the available water. As a direct result, there is too little water for downriver salmon production (and ESA listings there), too little water to maintain fish in the upper Klamath lakes (and ESA listings there) and too little water provided to the national wildlife refuges (and major bird kills there). The Klamath Project is simply using more than its fair share, leaving far too little water to maintain overall aquatic health.

The fact that there are several species of Klamath Basin fish already on the Endangered Species Act list, serious problems with Iron Gate Hatchery operations, and major downriver fish kills nearly every year now should tell us that something is seriously wrong. What has gone wrong is that there are too many acres now irrigated in what has historically always been a very dry and water-limited basin. We will face increasing water conflicts unless the Project either reallocates and conserves the water it now has, including making sure we have adequate instream flows for fish and wildlife and to the refuges, or more water storage is developed quickly. Frankly, things are so bad now that we must do both.

The fate of downriver and ocean salmon fisheries are directly tied to the quality and quantity of water released by the Bureau or Reclamation through Iron Gate Dam. In spite of our arbitrary political boundaries, the whole basin is hydrologically interconnected. Thus, as we have seen, whatever happens in the Upper Klamath Basin dramatically impacts downriver fishing-dependent communities and their allied businesses. In past years, as water released past Iron Gate Dam has been reduced in total flow and become more and more saturated with nitrate-laced runoff, sediment and agricultural chemicals, these downriver impacts, particularly on fishing-dependent communities, have accumulated to the level of an economic disaster.

Downriver economic losses have already been staggering. ***Roughly 3,780 family wage jobs have already been lost in these downriver fishing-based economies (representing a net loss of economic impacts of \$75.6 million/year) by the failure to protect and restore salmon within the Klamath Basin, and several***

thousand remaining jobs are now at risk. (5) While Klamath Project operations have not been the sole factor leading to recent major in-river fish kills, poor water quality, nitrate pollutants and too little in-river flows directly related to over-appropriation of water by the Klamath Project for agriculture have certainly been a major factor.

Every dead salmon in the lower river is another fish that can never be harvested, and will never provide income to hard-working downriver salmon fishermen. Right now very little fishing is allowed in the Klamath Management Zone for just that reason, because the fish are simply not surviving increasingly hostile river conditions.

We support the right of upper Klamath farmers to a fair share of the water, but the irrigators are not entitled to take it all. Sufficient water must be reserved for salmon production for our industries and our families as well, both for sound biological as well as sound economic reasons.

Water left in the river has just as much economic value to coastal Oregon and Northern California ports as it does used on the ground for Klamath Falls agriculture. A fishermen's job is no less valuable than a farmers, a fishermen's family no less deserving.

Millions in federal funding is now going toward salmon restoration in the Klamath. It does no good to pour millions of dollars into ecosystem restoration when federal funds are also simultaneously used to de-water rivers we are trying to save. It is much cheaper to prevent disasters than to fix them once they have occurred.

Water Planning Must Be on a Basin-Wide Basis, Including Both States and All Interests

It is all too often forgotten in Oregon, my home state, that roughly two thirds of the Klamath Basin lies in California. Thus the Klamath Irrigation Project, which over the years has reduced the total flows from the upper Klamath River to California by nearly an order of magnitude and polluted the whole upper river, has had tremendous impacts over the border in California. In a real sense, Oregon has simply exported its pollution to California.

Any solution to Klamath Basin water issues **MUST** involve elected officials as well as the agencies of both states. Any solution **MUST** also involve the full range of stakeholders, including the downriver Northern California coastal communities that have seen their fisheries-based economies systematically strangled, and also including the lower river Tribes whose cultures have been violated and whose fishing rights have been rendered all but meaningless.

Unfortunately, the Bureau of Reclamation has long managed the Klamath Project simply to provide as much water to irrigators as possible, but without regard to the environmental consequences or to other downriver and coastal economic sectors. The consequence has been to create unnecessary conflict between Tribal rights, fisheries and wildlife on the one side with Klamath Falls farmers on the other, a conflict that is unnecessary and ultimately counterproductive. In a wet year, these conflicts were apparent and pervasive but largely ignored by the Bureau and therefore unresolved. Now, in this extremely dry year, these conflicts have reached crisis.

Farmers Should Stop Blaming the ESA and Get To Work Solving Their Real Problems

As small-scale family food providers, commercial fishing families are very similar to, and generally very sympathetic to, the plight of upper basin farmers who may be facing a year with no water because of forces over which they have no control. However, we must also inject a note of reality into the current near-panic. ***The problems facing upper Klamath Basin agriculture are not primarily driven by either water shortages (except on a short term basis) nor the increasing need to protect flows for fish and wildlife.*** Nor can the blame be ascribed, as some would have it, to the Endangered Species Act, which is after all only the messenger. Upper Klamath Basin farmer's problems are much more pervasive and systemic, including:

1. Climate and Location of the Klamath Basin Is Not Ideal for Agriculture: The high elevation of the upper Klamath in and around Klamath Falls (in excess of 4100 feet), and the resulting short growing season with both late and early frosts, has made it difficult to grow a wide variety of crops. Reliance on traditional temperature-hardy crops such as onions, sugar beets and potatoes, however, has created problems in itself because these commodities are in oversupply in both US and world markets.

Likewise, Klamath Falls is not near any major transportation hubs of the region, and so farmers there have more difficulty and expense in shipping their produce to world markets than farmers in many other regions. These problems add to their total production costs.

2. Many Upper Klamath Farming Operations Can No Longer Compete in World Markets: Because of the additional transportation costs, short growing seasons, and other added costs of Klamath Falls agriculture, many growers can no longer compete in the world markets. Some Upper Klamath Basin potato farmers, for instance, chose last year to plow their potatoes into the ground because they would have lost money competing on saturated and depressed world markets. Many of these crops have been declared as 'surplus' and their growing operations are supported not by a healthy market, but by federal surplus crop payments from the federal Treasury. Klamath Basin cannot even compete cost effectively with potato production in Idaho, much less foreign markets, and the same is true for many of its products.

3. Processing Capacity Has Left the Basin: Secondary or value-added processing is one major ways agriculture remains profitable and serves a variety of markets. However, potato and sugar beet processors and other processing plants have left the basin, largely because of the first two factors mentioned. It is no longer economically feasible for major processors to remain in the basin because of transportation costs, limited and uncertain production, and oversupplied world markets.

4. Conflicting Uses: Some 20,000 acres of the national wildlife refuges (public lands) is now leased out to private parties for row crop farming. Oddly, these lease lands have first call on water that would otherwise go to the refuge. In other words, even when the refuge wetlands themselves are threatened with drying up, the farms on the refuge continue to receive full water! Additionally, those farms are allowed to use pesticides and agricultural fertilizers that are well known to damage wildlife in the refuges. Lease land farming on the refuges is clearly a conflicting use, and should be phased out by nonrenewal of these leases, which are on five-year renewable terms. In order to keep those farmers whole, there are a number of opportunities at present to simply move lease holders to farmland now for sale outside the refuges on a willing seller - willing buyer basis, and this would be a good use of federal funds, freeing up additional water for the refuges as well as allowing those farmers who wished to continue in operation to do so.

Most of these problems have little or nothing to do with ESA listed species, but rather with the costs of production, conflicting uses, global gluts and an increasingly volatile and interconnected world market. Klamath Basin farmers are far more oppressed by world trade agreements and increased global competition than by any endangered species.

Fortunately the Klamath County economy has been swiftly diversifying in recent years, and the farming sector now accounts for only about 6 percent of total county employment. Most new jobs in recent years, and those projected over the next several years, will be in other sectors as the economy matures. The Klamath County economy will survive, and even thrive in the long run, if traditional agriculture within the county is cut back to more sustainable, and ultimately more profitable, levels.

Working Toward Long-Term Solutions

However, there are several things that can be done in the long term to prevent future water conflicts, and to move the upper Klamath Basin toward an agricultural base that is truly sustainable. At present there is not enough water to meet Project needs in 6 out of 10 water years, and as the drought this year clearly shows the present water allocation system is not sustainable. The following are some suggested short term and long term actions that should be considered for addressing the current drought situation, for restoring a healthy, naturally diverse, and productive Klamath Basin ecosystem and for meeting future water supply needs:

1. Emergency Relief for the Crisis. The Klamath Basin is in the middle of what appears to be the most severe drought in recorded history for the region, with less than 21% of rain inflow to the Upper Klamath Lake in a region that normally gets less than 12 inches of rain a year. Because of the severity of this water emergency, disaster relief funds should be made available to farmers in the Klamath Basin similar to the support other farmers nationwide receive when they suffer from natural disasters. However, the drought is not caused by the ESA or any other statute. The drought is caused by lack of rainfall. No amount of lawsuits, protests or politicians can make more rain.

Because this is a natural disaster, all necessary steps should be taken to qualify the Klamath Basin farmers for emergency relief funds and to help the many who are likely to have little or no water this year. PCFFA strongly supports the effort to get disaster relief for affected farmers.

2. Reform the Management of the Klamath Project. Protecting fish and wildlife, as well as maintaining the basin's wildlife refuges, should also be explicit purposes of the Klamath Project, not just the delivery of water for farming. The Project should be explicitly managed to first meet the needs of species listed under the Endangered Species Act. The Bureau of Reclamation should meet the river flow, lake-level and refuge water requirements as set forth in the applicable biological opinions and ultimately should seek means to meet the full water requirements of the refuges and downriver fisheries, while recovering fish species to harvestable levels.

The Bureau of Reclamation should also have a drought contingency plan. Reclamation and the Service should look at ground water development that can be brought on line this year, which includes approximately 30,000 acre-feet of groundwater already purchased by Reclamation this year, and using any carryover water from Clear Lake and Gerber reservoirs. In the long term, the State of Oregon has said that 200,000 acre-feet of ground water could be made available from a combination of existing ground water pumps as well as new well development. While it will be too late to make much difference in crop cycles this year, this ground water should be developed in any event to prevent future drought disasters of this magnitude.

3. Terminate Lease Land Farming within the Wildlife Refuges and Use Lease Lands Water to Keep the Refuges Viable and for Wetlands Water Storage: Four years ago Congress passed the National

Wildlife Refuge System Improvement Act of 1997. That law was intended to improve the health of America's wildlife refuges. It directs the Secretary of the Interior to provide necessary water to national wildlife refuges and to maintain the biological integrity and ecological health of these special places.

The official policy of the Bureau of Reclamation is that the wildlife refuges in the Upper Klamath Basin, among the most important in the country for bird migrations, are in fact last in line for water from the Klamath project with a junior water right to almost everyone else. Even more troublesome is the fact that no water has yet been allocated to the refuges this year even to meet the minimum refuge water needs to support ESA-listed bald eagles as required in the current USFWS biological opinion. A secure source of water needs to be obtained to meet the refuges' water requirements. One immediate action that should be taken to meet the water requirements for the refuges is the termination of the refuge lease land farm program.

Currently 20,000 acres of federal refuge land within the Tule Lake and Lower Klamath Wildlife Refuges are leased for commercial agriculture. Commercial agriculture of these lands is simply not compatible with refuge purposes, especially at a time when there is not enough water to meet refuge needs. Commercial agriculture within the refuges should be eliminated and the lands should be returned to their natural habitat condition as wetlands. The water rights associated with these lands could then be transferred to refuge purposes. This would allow management of these lands in a normative manner that could allow for storage of thousands of acre-feet of water that could be devoted to refuge needs. This would greatly reduce water shortages to refuge wetlands while easing the irrigation season water demands on the Klamath Project. This would also allow the conversion of these lands to habitats more productive for wildlife, eliminate the use of pesticides and fertilizer on the refuges, allow refuge personnel to devote more time to refuge management, and help secure a reliable source of water for refuge purposes.

Many basin farmers now have private land for sale on the open market in areas outside the refuge. There is a proposal to buy these for-sale farmlands using a combination of private land trust funds and federal funds, and then to lease these lands back to the local irrigation district so that the district can sublease those lands to farmers now leasing within the refuges as replacement lands as they are moved off the refuges. This would recapture more wetlands for the refuges (i.e., add more total water storage), eliminate conflicts between farming and the refuges, and give those farmers now leasing lands on the refuge itself replacement land for row crops at a comparable price. It appears to be a win-win solution to these conflicts and should be pursued actively. In the meantime, no new farm leases on refuge lands should be issued and those which can be terminated should be. At present these federal leases have a 5-year rollover period by which approximately 20% will terminate each year.

4. Willing Seller Buyouts. Simply put, the limited water resources in the Upper Klamath Basin has been grossly over-allocated in the Klamath Project. A necessary as part of any solution must be to downsize the Klamath Project and to purchase and retire many water rights in the Upper Basin.

The impacts of global competition have been devastating on Klamath county. Farming is no longer very profitable in the arid Upper Klamath Basin. Real personal income from farming and agricultural services declined 66% between 1969 and 1998 in Klamath County, 57% in Modoc County and 26% in Siskiyou County. Most farm families now have second incomes from work outside the farm, and the farm sector now only employs about 6% of the total workforce in Klamath County, 17% in Modoc County, and 7% in Siskiyou County, according to readily available government economic and census data. Income from farming in Klamath County now represents only two-tens of one percent of total county personal income. Agricultural support services accounted for six-tens of one percent of total income in 1997, only a slight

decrease since 1969.⁽⁶⁾ This is why so many have recently offered to sell out, well before the current water crisis has hit the region. The reality is that many of those traditional farming operations in the basin are simply no longer profitable. Most of the crops grown there, with its short growing season and 4100 foot elevation, are now classed as 'surplus crops' (potatoes, sugar beets and onions) that can only be grown profitably in today's worldwide glut of these products because of major agricultural subsidies.

There are currently tens of thousands of acres for sale in the Klamath Basin, most of it for sale long before the current drought. Many farmers in the Klamath Basin were financially stressed long before this year's drought, because of global market competition.

A voluntary but targeted buyout program will give financial assistance to the farmers, who want to sell their lands, by buying their lands at a fair price. This would be an equitable way to reduce overall water demand, provide farm families some transition money, and provide more future water security to those who want to stay in the business. A federally funded buyout program should be developed and implemented for this purpose.

Water right acquisitions should be focused on the Klamath Project, and target areas where acquisition of associated land is also a priority for habitat and refuge restoration, areas where acquisitions would help meet tribal and other federal reserved water right claims, areas where acquisitions would improve water quality, and areas where acquisitions would have multiple benefits. In other words, disaster relief payments in the form of buyouts should be targeted to do the most good toward long-term solutions.

5. Restore Fish and Wildlife Habitats. Although fish and wildlife habitats have been degraded throughout the Klamath Basin, it remains one of the few major river systems in the US where substantial restoration is still possible. Reclaiming and restoring wetlands, especially in the Lower Klamath and Tule Lake Wildlife Refuge areas and around Upper Klamath Lake, are important to obtaining a more natural hydrological regime, improving and increasing fish and wildlife habitat, and improving lower river water quality and quantity for salmon restoration, and generally increasing total water storage.⁽⁷⁾

The area lying north and west of Lower Klamath National Wildlife Refuge known as the Klamath Straits should be among the highest priorities for purchase and restoration. Riparian areas need to be protected and restored, especially in the Upper Basin tributaries in Oregon and the Shasta and Scott Rivers in California. Dams and diversions need to be screened and provided with appropriate fish passage facilities, or removed. No fish screens have ever been installed by the Klamath Project, in spite of obvious need.

Upland impacts also play an important role in water quality. The water retention and flow regulation capability of upland forested ecosystems need to be restored through reforestation, canopy retention and work to reduce the impact of extensive unpaved road systems, a constant source of excessive silt.

There are existing and effective habitat restoration efforts within the Basin, including those of the *Klamath River Basin Fisheries Restoration Task Force*, created by P.L.-99-552 (October 27, 1986) as amended by P.L. 102-570 (16 U.S.C. 460ss-3 *et. seq.*). The Task Force has representation from the whole basin and a well established restoration plan, but pitifully little money with which to accomplish its immense tasks. Providing better funding to the Task Force is certainly one way to assure that Basin habitat restoration efforts continue.

6. Restore Normative Hydrology and Flows: The Upper Basin as a whole has a highly disturbed hydrology, and needs to be brought into more 'normative' conditions. That is not to say that pre-Project

conditions could ever be re-established, but that the Project could operate in such a way as to roughly emulate or imitate the more biologically important natural hydrological conditions under which the many unique species of the Basin evolved.

a) Instream Flow Protection and Water Right Acquisitions. Meaningful instream and lake level flows need to be established and met throughout the basin. Successful adjudication of federal and tribal reserved water rights needs to be completed, and the water needs that ESA-listed fish need for their recovery should be determined and provided for. An active water right acquisition program to transfer water rights from willing sellers to instream purposes should also be established and funded. Again, such a process would allow compensation to those who wanted to discontinue farming for whatever reason, while providing more water certainty to those who continue. Water right acquisitions should be focused on areas where acquisition of the associated land is also a priority for habitat and refuge restoration, where acquisition would help meet Tribal and other federal reserved water right claims, and where the acquisition would have multiple benefits. For instance, acquisitions in the basin above Klamath Lake could assist in meeting Tribal and other federal reserved water right claims in the upper basin, provide needed instream flows in the upper tributaries, assist in maintaining Klamath Lake levels, improve water quality in Klamath Lake, and add to the water supply to meet project water needs, refuge needs and downstream flow needs for the re-establishment of the salmon fishery.

b) Water Conservation and Improved Water Management. Improving water use efficiencies and conserving water can increase water supply at critical times and improve water quality. There should be a thorough analysis of irrigation needs in the basin. Opportunities for improving conveyance system and on farm efficiencies should be carefully assessed, funded, and implemented. Water use efficiency standards and goals should be set. Detailed basin-wide conservation plans, including water conservation plans required of project users under the Reclamation Act of 1982, should be established and implemented to meet the efficiency goals. A full range of other measures should also be considered to reduce irrigation demand, including changing crop types, developing rotation schedules, and fallowing land.

c) Better Water Measurement, Reporting, and Enforcement. Given the demands on the water resource, we can no longer afford to have anyone taking more than their lawful share. This is unfair to other water users and adversely affects instream flow conditions. The States of Oregon and California need to assume greater responsibility in managing and regulating water use. Very little water monitoring or enforcement is actually being done today. Water use measuring and reporting need to be required, and an active enforcement program needs to be implemented. A recent study of water use from the Wood River in Oregon has shown that requiring measuring devices can reduce illegal use and increase streamflow.

d) Reduce Out-of-Basin Transfers. There are approximately 30,000 acre-feet of water transferred each year from the Klamath Basin to the Rogue Basin. Some of this water is managed by the Bureau of Reclamation as part of the Rogue Basin Project. An examination should be made as to how the Rogue Project could be managed differently to help with the situation in the Klamath Basin, and if possible these out-of-basin transfers eliminated at least in low water years.

7. Fully Meet Water Quality Standards. The Klamath River and several of its tributaries have been listed as water quality "impaired" under the Clean Water Act from the headwaters to the ocean. In fact, water in the Klamath River in the Upper Basin is the most polluted in Oregon, and among the most polluted in California. Total maximum daily loads (TMDLs) should be established and implemented for the impaired streams, preferably on a bi-state basis. The U.S.EPA, Oregon DEQ, and California Water Quality Control Board Northwest Region should immediately act to establish and implement interstate TMDLs in the Lost

and Klamath Rivers.

8. Implement and Fully Fund P.L. 106-498 to Develop More Water Storage. Since at least July, 1994, when I personally testified on these very same issues before this very same Subcommittee in a field hearing in Klamath Falls, we have been strong supporters of efforts to increase overall storage of water in the Basin. More recently, we supported the Smith-Wyden Bill (S. 2882) in the 106th Congress, now P.L. 106-498, as a good if belated beginning, and we commend both Senators for their efforts in this regard. I also testified in support of full funding for P.L. 106-498 in a hearing before this same Subcommittee on 21 March 2001.

Now once again we urge this Committee and other Members of Congress to fully fund P.L. 106-498 and urge the Administration to support including that funding in the Budget. No good idea is worth much if it cannot be implemented. Inherent in P.L. 106-498 also is language that allows us to look at some creative solutions:

"Sec 2(3): The potential for further innovations in the use of existing water resources, or market-based approaches, in order to meet growing water needs consistent with State water law."

This means finding creative ways to better conserve and reuse existing water supplies, as well as considering a water marketing system to make more efficient economic use of the supplies we do have. All these are proven methods.

Although the Bureau of Reclamation is using some P.L. 106-498 funds this year to purchase about 30,000 acre-feet of water, conservation, in the short run, is the only option that we have this year to stretch water supplies to their furthest, and even that will be nowhere near enough. However, making more efficient use of a scarce resource always makes sound economic sense. Reduced water demand can also be accomplished in part though aggressive water conservation.

9. Meet all Fish and Wildlife Obligations to the Greatest Extent Possible: Obligations under the ESA to prevent extinction of valuable public resources, and obligations to Tribes to provide instream flows sufficient to assure fisheries and protect their culture, are primary obligations that the courts have ruled must be satisfied ahead of Bureau obligations to water contractors. Klamath Water Users Assn. vs. Patterson, 204 F. 3d 1206 (9th Cir. 1999), *cert. denied*, 121 S. Ct. 44 (2000). See also O'Neal vs. United States, 50 F 3d 677 (9th Cir. 1995). This is the law of the land. Though not as clear in the courts, the same policy considerations should also apply to protection of migratory bird species on the national wildlife refuges, which are protected under the Migratory Bird Treaty Act and under international treaties. Bald eagles on the refuges (which support the largest population in the lower 48 states) are also protected under the ESA. Obligations to public resources must be met first, under the law, by public agencies before meeting the needs of private farmers to make a profit using publicly subsidized water.

In summary, it is unfortunate that in serious drought years like this one that limited water supplies may create hardships for some farming families. We should seek to do all we can to: (1) avoid such conflicts in the future by increasing the overall water supply and making the most efficient use of the water we do have through conservation and sustainable land use practices, and; (2) where cutbacks on irrigation water do cause hardships, take all reasonable and necessary steps to see that farmers are reasonably compensated for the hardships they must endure through no fault of their own.

Federal financial assistance and support will be needed in resolving the numerous issues and conflicts over

water in the basin. This is totally appropriate, in our view, as it was after all the federal government who largely created these problems through gross over-appropriation of limited water as well as years of negligence in dealing with the fundamental biological limits imposed by a limited (and variable) water supply.

We need to do what we can to reduce the economic hardships this year's drought has brought on Klamath Basin farmers without sacrificing the incredible resources of Klamath Lake, the Klamath River, the Klamath Basin Refuges and a large part of the west coast salmon runs. We hope you will give the above suggestions for long-term solutions your careful consideration.

Attached: Table 1

For more information see: <http://www.pcffa.org/klamath.htm>

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Table 1

Contribution of Coded Wire Tagged Klamath Fall Chinook by Port in the 1979-1982
Ocean Fisheries



Source: US Dept. of Interior (1985), "Klamath River Basin Fisheries Resources Plan," prepared by CH2M Hill (February, 1985).

1. Salmon are cold-water fish and need cold water or their eggs will not hatch. Mortality of incubating salmonid eggs greatly increases as water temperatures rise from 56 F. (13.3 C.) to 60 F. (15.6 C.), which is usually considered the lethal limit. Water temperatures downstream from just below Iron Gate Dam downstream rountinely exceed this lethal limit through mid-October. Spring-run chinook spawn from mid-August to mid-October, and fall-run chinook spawn from mid-September through early-December. High water temperatures at Iron Gate have thus greatly narrowed the spawning windows for both these subspecies and also greatly reduced the range of ESA-listed coho salmon by blocking access to cold water tributaries.

2. Nitrate laden runoff from agricultural fertilizers creates algae blooms which steal dissolved oxygen from the water that fish need to breath. The fish die of suffocation.

3. See for instance, *Diminishing Returns: Salmon Decline and Pesticides*, a publication co-sponsored by the Institute for Fisheries Resources, available on the Internet at: <http://www.pond.net/~fishlifr/salpest.htm>.

4. Figures from *Initial Assessment of Pre- and Post-Klamath Project Hydrology on the Klamath River and Impacts of the Project on Instream Flows and Fishery Habitat*, Balance Hydrologics, Inc. (4 March, 1996) prepared for the Yurok Tribe. There is a fiction being espoused by upper river irrigation interests that the original flows above Iron Gate dam were only 2% of total Klamath river flows at its mouth, but this number is patently incorrect. The actual percentage varied seasonally, but peaked at about 35% in a typical August according to 1911-1913 pre-Project flow records and was generally above 25% from July - October when those flows were most important.

5. These are estimates done by the Institute for Fisheries Resources (IFR) for an as yet unpublished report, *The Cost of Doing Nothing: The Economic Burden of Salmon Declines in the Klamath Basin*, based on reconstructions of historic salmon runs and using standard, well accepted economic analysis.

6. From *Economic Profile of Klamath County, Oregon*, an economic study by The Wilderness Society (2000), available from The Wilderness Society, 1615 M. Street, Washington, DC 20036 (202)833-2300.

7. Wetlands is nature's best water storage system. One acre of wetlands holding one acre-foot of water, for instance, has stored 325,851 gallons of water which would otherwise be lost to evaporation or waste or floods. Wetlands naturally release this water into the system to buffer the effect of droughts and seasonal rainfall. (1 acre-foot = 43,560 cu. ft. x 1,728 cu. in. per cu. ft. = 75,271,680 cu in. of water. One gallon = 231 cu. in. Divide one by the other = 325,851 gallons/acre-ft. of wetlands storage).

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