Committee on Resources,

Subcommittee on Water & Power

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Witness Statement

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Mr. Chairman, Members of the Committee, thank you for inviting me here today. I was asked to testify about innovative ways to accommodate environmental needs in western water resources. The problems with western water are legion. Sometimes it seems that one cannot set foot on a Bureau of Reclamation or western Corps project without endangering another species. Yet many of the problems are solvable and there ***are*** success stories when dealing with western water environmental issues.

I am counsel for the Trout Unlimited, Inc, (TU), where I focus on western water issues. TU is America's coldwater fishery conservation organization. Our mission is to conserve, protect and restore North America's trout and salmon fisheries and their watersheds. We are a private, non-profit organization with 130,000 members in 500 chapters nationwide. TU members are not stereotypical environmentalists – we are usually middle-aged, educated, Teddy Roosevelt-style conservationists, engaged in solving real problems, rather than posturing. Our members put substantial amounts of their personal resources and time into restoring and enhancing their home rivers.

The fundamental problem we face is that the water allocation system established in the mining camps of the mid-1800's was not designed to balance competing socially beneficial uses – it was designed to award rights and defer gunfights. Billions of federal, state and private dollars were then invested in projects built upon that poorly engineered foundation. Today, in the 21st century, the gunfights avoided a hundred years ago are breaking out. Just as diverting water for irrigation, mining and municipal use is valuable and important, so is water flowing in rivers for ecological, recreational and aesthetic uses. Species conservation, human health, recreation, sustainable economic development and quality of life all demand that rivers and streams be treated as more than mere suppliers of commodity water.

There are positive signs that water in the West is being used in more balanced ways and there are examples of how water policy is changing as well. In this testimony, I will touch on some of the problems, but focus on opportunities for protecting and restoring the environment as well as meeting agricultural and municipal needs. There are three main parts to my testimony – a summary of some of the innovative water resources work in the West; highlights of some of the ecological and system problems; followed by suggestions for change that is needed.

Positive Forces Around the West

Teddy Roosevelt's pragmatic style of addressing environmental and conservation problems is making progress around the West. I want to highlight three enormously positive forces in that style at work in the West.

Watershed Initiatives The first is that irrigators, urban water interests, conservationists and others are finding that they often have much in common – if they manage to talk ***with*** each other rather than ***at*** each other when faced with a serious problem. We also find that we would prefer to negotiate our own solutions rather than relying on the courts or regulatory agencies to make the decisions. The rise of hundreds of collaborative watershed initiatives is a tremendously positive force, in large part because it forces all parties to face real problems and wrestle with real solutions. Here are a few of the many examples:

· In some cases, such as on Idaho's Henry's Fork, the conversation led to significantly improved operations that benefit rivers below Bureau of Reclamation dams. For the Henry's Fork, perhaps the premier destination trout stream in the country, flushing sediment from the reservoir devastated the fishery; the reservoir operators now know the problems flushing causes, both to the fishery and the recreation-dependent local economy, and manage the project to avoid the problem. Solving that issue led to a host of other collaborative efforts in the watershed, some successfully completed, some still in discussion, such as transferring ownership of the Reclamation project to the irrigation district.

· Watershed groups are also wrestling with tough problems such as responses to drought and integrating flow with quality problems – situations where the existing legal system typically fails to maintain the ecosystem values of rivers. In Montana, watershed collaborations have addressed instream use of water in serious and useful ways. For example, during last summer's drought, Trout Unlimited, water users and other water interests entered into voluntary agreements based on the principles of shared sacrifice that led to innovative drought response plans for the Big Hole, Jefferson and Blackfoot Rivers in Montana. The collaborative drought plan avoided an environmental, recreational and conservation catastrophe.

· The Forest Service is effectively using a form of a watershed initiative in joining collaborative negotiations over often-contentious bypass flow provisions in Forest Plan revisions. Using authority Congress granted several years ago, the federal land management agencies are finding that many of critical issues can be most effectively addressed through collaborative processes.

Healthy River Flows A second enormously positive force is the effort to maintain fisheries and aquatic ecosystems faced with water shortages. Fish cannot breath air – maintaining wet streams and rivers is a huge problem in the West. In a number of places, efforts are yielding significant steps towards solutions. For instance:

· In several states, notably Montana, Oregon and Washington, private parties are obtaining water rights through willing seller, willing buyer purchase or lease, and putting them to work keeping fish wet. To the astonishment of those who oppose private parties holding flow rights for conservation, the local economies are not collapsing. Private land trusts provide a model for these water trusts, which are a growing and promising partial solution to the flow problem.

· The Bureau of Reclamation is beginning to recognize that it can shape river flows for purposes in addition to irrigation, flood control and power. In a number of projects, adjustments are being made in operations that improve river flows for fish and wildlife.

Public Awareness The third force is public interest and awareness – water quantity issues are gaining an increasing amount of attention. This link between healthy rivers, water quality, and the growing demand for water for urban needs as well as irrigation and other commercial uses is gain attention around the country. In the Southeast it is the Apalachicola/ Chattahoochee/Flint system that looks just like a western interstate problem; in the Northeast it is the increasing conflict between agricultural uses and flows needed for Atlantic salmon restoration; while urban water districts vie with anglers and local communities for the upper Delaware's water; and around the country it is in relicensing of non-federal, FERC licensed, hydropower plants where river flow is often contested. The issues we face in the West are spreading to other regions, and national public awareness of the problems is growing.

There are countless success stories around the West, solutions shaped to fit the local conditions and accepted by the affected stakeholders. Many are coming out of California, where despite bloody and protracted water wars, and unresolved issues, many positive steps have been taken.

Highlights of the Ecosystem Problems

The purpose of this hearing is not to explore the seemingly endless list of problems in western water. However, the most acute of those problems are what push us towards making progress on the other, less urgent, problems. In discussing innovative solutions, it is important to mention some of the most pressing issues for which those innovative solutions are needed.

Decline of Aquatic Ecosystems It is becoming difficult to work on any Bureau of Reclamation project without stumbling over the Endangered Species Act. Members of this committee will be familiar with the litany of wrenching ESA problems the Bureau has faced in the last few years: Columbia-Snake salmon and steelhead; Upper Colorado fish; Rio Grande silvery minnow; Sacramento-San Joaquin salmon and other fish; Missouri sturgeon; Trinity salmon and steelhead; the Platte whooping cranes and more. In the news this month, Klamath Project irrigators request invoking the "God Squad" to allow them access to water despite the risk of extinction for salmon and suckers.

Of course the problem does not lie in the ESA – the ESA simply tells us that we have systematically degraded western aquatic resources through the enormous investment in western water projects by Congress and others over the last century. In fact, the ESA often provides the impetus to address festering problems, and provides the tough problem that finally brings all sides together in a settlement process.

In some cases the ecosystem problems are fundamental and can only be solved by drastic solutions. The Lower Snake River is an example of a problem caused by dams for which there is simply no good technological or operational fix. An extreme solution – removal – is the only alternative to extinction for a number of salmon runs there.

However, in many cases, projects constructed before the rise of environmental consideration and regulation are simply unintentionally destructive – they were built using diversions that fish cannot pass and intakes that pull fish into deadly irrigation ditches. A recent study of fish entrainment at a Bureau project on the lower Yellowstone River found over 800,000 fish sucked into the irrigation system at one dam alone over the four-month irrigation season. This destruction of fish is not intentional; it is a result of fish entrainment simply not being a design issue when the project was built.

The overall damage to western fish species has been extreme. We have already lost 20 species of western fishes to extinction in the last century. One hundred more fish species are considered threatened, endangered

or of special concern – in total 70%, of all native fish species west of the Rocky Mountain are at risk. In addition to extinction of full species, hundreds of subspecies or "ecologically significant units" have been extirpated or endangered. The American Fisheries Society surveyed Pacific salmon and steelhead stocks several years ago: of over 400 stocks identified, 100 are already extinct, 214 were considered to be at "moderate or high risk of extinction" or "of special concern," and only about 120 were considered secure.

Growth in Demand for Water Demand for new, assured, water supplies is growing at a time when essentially no unused water is available. In addition to relatively stable irrigation water uses, demand for explicitly recognized instream uses such as fish and wildlife, recreation, and aesthetics is greatly increasing, and demand for withdrawal and consumption for the rapidly growing western cities is climbing. Add to that demand the reality that groundwater mining – withdrawal in excess of recharge – is both common and ultimately unsustainable, and the problem is stark. In many western basins, more water is claimed than is typically available.

The problem is shown graphically in the attached figure showing the proportion of runoff already withdrawn from the water system. In much of the central-west and southwest, over 85% of the annual runoff is used. This level of water development leaves nothing for instream use or for growth in urban use.

Energy The West now faces energy woes that pose a whole series of problems for the western and federal water system. Demand for electricity in a time of electricity shortage and drought has caused operations to shift to maximum power production despite resource damage. The short-term problem in the West is also leading to calls for permanently relaxing natural resource and water quality protection in federal and non-federal power production.

Power costs affect the western water system because so much power is used in moving water around. Conservationists have urged use of more efficient diversion technology for years. A diversion dam may block fish passage and entrain fish into irrigation canals – pumps are more efficient and less damaging. In much of the West, fish screens and fish passage on existing dams and diversions would be difficult to install and costly; these fixes are best designed as part of the system rather than being added later. In other cases, the screens and passage simply do not achieve the goal. Shifting to pumps often makes the most sense. But running pumps takes electricity and energy costs are skyrocketing. In the years of cheap electricity, many irrigators were willing to incur the cost of pumps and shifted to more modern, less damaging forms of diversion. But now they are paying the price through higher electricity costs.

Solutions

In your invitation, you asked for creative and innovative solutions. There is no shortage of creativity and innovation in the western water system. There is sometimes a failure to communicate and understand perspectives, there is fear of the future, and there is a need for investment. Congress has a role in all of these. Given rising public attention to the problems, some of the solutions will have wide acceptance –we should work through those as quickly as possible. Other solutions will require more careful crafting and conscious development of support; the alternative to those difficult and painful steps is continued degradation of aquatic ecosystems and ultimately extinction for many species and stocks.

It should be understood, however, that western water issues are fundamentally the problems of the states; states issue water rights, are responsible for managing fish and wildlife, and are charged with environmental protection. Even federal water rights are typically adjudicated in state forums and processes. In many cases the federal role will be to encourage, cajole, and support the states in taking bold steps to solve the

problems.

Invest in Facility Improvements The first level of solution is very basic – bring 19th century water technology into at least the mid-20th Century, if not the 21st. Much of the irrigation system we use in the West, and much of the Reclamation system, is century-old technology. It was fine for its day, but it was not designed to deal with endangered fishes, shortages of water and competing demands on the system. We need significant upgrades in the system – many of those upgrades need not be divisive. Money is going to be the answer for many of the problems facing us; however the money should not be going into new water projects. Instead federal funds should be directed at enhancing the existing projects so that they are more efficient and provide benefits to greater numbers of people, while restoring affected ecosystems.

Fish Passage and Entrainment We should stop needlessly killing fish when fish screens would help. The last Congress enacted a law to support installing fish screens in the Northwest. There is an appropriate federal role in technology development and advice, as well as funding, for installing fish screens throughout the federal and non-federal water system. We can avoid the wrenching ESA problems by ceasing to kill fish and other aquatic organisms unintentionally through entrainment in irrigation ditches.

Technology improvements are also needed for many diversions. Across the West, diversion dams cut off access to habitat because there is simply no way for fish to get around the dams. In some cases, fish passage can be retrofit for existing dams. In others, the diversion should be shifted to surface or groundwater pumping. Again, there is a compelling federal role for improving Reclamation dams and those on federal lands. There is also a role for aid to non-federal projects.

I must note that fish screens and improved diversion structures are not a total answer to all problems of fish entrainment and passage. In some cases, the existing structures cannot be effectively modified, and should be removed. Those situations, foremost among them the lower Snake River hydropower dams, should not prevent application of technological fixes where they are appropriate and effective.

Conveyance Efficiency There is a huge need for increasing the conveyance efficiency of existing projects and on-farm water use. The best general information that gives an indication of how inefficiently water is used in the West is from the USGS's five-year assessments of national water use. In the Pacific Northwest, where flows are an enormous problem because of salmon, the conveyance loss of irrigation water withdrawn from rivers and the ground is 31% - almost a third of the water is simply lost, usually through leaky ditches. In the Missouri region, the figure is about the same – 32%. Other regions are more efficient, ranging from 28% loss in the Rio Grande to 6% in California. From a hydrologist's perspective, much, but not all, of that water finds its way back into the system, through runoff or groundwater recharge. However, water returning to streams is changed in quality, temperature and timing – and simply removing water from rivers has important ecological consequences.

Individual projects and basins may be significantly less efficient. For instance in Montana on the Sun River, irrigation conveyance losses amounted to 58.5% of freshwater withdrawals – over half of the water withdrawn from the Sun River was lost to leaky ditches. The Sun River is a good example of the need for conveyance efficiency investment because the 1920's era Reclamation project there sends over 1500 cubic feet per second (cfs) into the irrigation ditches and leaves barely 100 cfs for the river. Yet more than half of that diversion never reaches its goal. The result is that a population of arctic grayling that the Fish & Wildlife Service has determined to warrant listing under the ESA now lives in the irrigation canal because there is little water in the river. Investment in conveyance efficiency, coupled with mechanisms for leaving

the water in the river, would go a long way towards preventing listing of the grayling and improving the wild fishery in the Sun River.

In addition to distribution system efficiency, on-farm conservation is needed. While this is traditionally not within the Bureau of Reclamation's realm, it is an important piece of the overall solution to western water problems, quantity and quality. Appropriate ways to provide incentives for on-farm efficiency must be developed.

Efficiency improvements are a much cheaper way of obtaining additional water than either reuse and recycling efforts or building new water projects. In most places in the West there is simply no unused water available; additional traditional projects, even for necessary goals such as settling Indian water rights claims or forestalling ESA problems compound the problems.

Investments in fish passage and entrainment measures, efficiency improvements, and recycling and reuse projects, are a terrific start on many of the West's problems. TU does not advocate heavy-handed federal action in making facility improvements; we recognize valid property rights in water and community concerns. Nor are we advocating simply giving more money away to farmers already heavily subsidized through the Reclamation and federal farm programs. The quid pro quo for efficiency improvements should be solving real problems.

Encourage market solutions That markets for water must develop in the West is part of the current conventional wisdom in water policy. Markets are growing through water banks, drought action plans and outright sales. Congress does, however, need to encourage western states, federal agencies and water users to use these approaches.

The growth of private water transactions to solve river and fishery problems is one of the most promising developments in the West. While the water trust movement is far from the scale of the land trust movement that has swept the nation over the last decade, it is growing. Three states are leaders – Oregon, Montana, and Washington. In Oregon, last year there were over 50 separate water rights transactions for conservation purposes. In Montana 220 cfs were leased for fishery and river conservation. The Montana program has been so successful that a bill extending the 10-year lease program to 30 years to encourage capital investments needed to improve efficiency swept through the legislature without significant opposition -- a sign that despite significant differences between environmental and agricultural interests, there has been enough progress to be willing to sit down and find out what we can agree on, and act on that agreement.

We recognize the reluctance of many in the West to grant water rights for healthy river flow to state or federal government. A solution to that problem is to use third party intermediaries such as the state water trusts, the Nature Conservancy and Trout Unlimited to broker willing seller deals, and where appropriate, hold the water rights, or allow the landowners to convert their consumptive use rights to river flow right. But in many states this cannot be done. If the federal government wants to create incentives for voluntary flow restoration, Congress should reward the states that allow and encourage such conversions.

Reclamation and the other federal agencies are increasingly working on habitat and flow protection and enhancement, both in response to the ESA and in anticipation of ESA problems. We strongly urge Congress to support these efforts, and suggest that wherever possible federal funds be channeled to states and third parties to efficiently complete transactions that would be made more difficult by direct federal participation.

Promote Watershed Initiatives Federal agencies are notoriously fickle actors in collaborative efforts.

Movement towards effective and successful collaborative watershed initiatives is often impeded by federal agencies unsure of their authority to engage in the initiatives and unwilling to commit to actions outside of standard procedures. Congressional support, direction, and funding for active agency engagement in collaborative watershed initiatives, and increased latitude in federal agency actions based upon these initiatives, would be helpful.

Although it is outside this Committee's jurisdiction, TU strongly supports efforts to use incentives to address water quantity and quality issues. A leading example of this approach is found in the Fishable Waters Act of 2001, H.R.325. An amendment to the Clean Water Act, the FWA would provide watershed councils the funding and scientific and technical resources needed to design and implement watershed measures for protecting and restoring fish habitat to meet the "fishable waters" goal of the CWA. The state-established watershed councils would include the major fisheries conservation and private landowner stakeholders in the watershed, who will work together cooperatively to prepare customized plans to meet local fisheries habitat needs. Typical fish habitat conservation measures that the FWA would yield, all done cooperatively with landowners and local communities, would include controlling soil erosion and other forms of non-point pollution, removing obstacles to fish migration, such as obsolete dams, and providing additional flows.

Base Decisions on Good Science All the money and all the collaborative effort in the world are worth next to nothing if the facts that decisions are based upon are wrong. Without reliable factual information upon which to base decisions, the choices we face are risky gambles. The stakes are too high – the future of western growth, development, recreation and biological heritage – to base upon wishes, suppositions and inference when facts could be had. We will face risks in any event, so we should try to minimize them by using the best factual basis and best science to make decisions.

Unfortunately the fundamental facts for water problems are at risk. The US Geological Survey has long provided the fundamental information about stream flows everyone uses for water management, flood control, power generation, recreation and aquatic biological resource management. But the streamgaging budget for the USGS has not kept pace with the cost of the system and many gaging stations have been closed. Unfortunately, hundreds of the most valuable stations – the ones with long records, most useful for scientific research and hydrological analysis – are gone. The streamgage system needs to be modernized and expanded.

In addition to streamgage information, TU strongly supports enhanced basic and applied science needed to manage the federal lands and the western aquatic ecosystems.

Review the Operations, Facilities and Uses of Federal Water Projects One of the most striking recommendations of the recent World Bank-sponsored World Commission on Dams was that facilities and operations of large water projects should be periodically reviewed. However, there is no mechanism short of an Act of Congress to review the purposes, operations and facilities of federal water projects. In light of the growing need for water in the West, the time has come to create an efficient mechanism to review federal projects and to make changes needed to bring the benefits in line with society's current needs, while respecting existing property and contract rights. A collaborative process, where all affected parties work together to achieve consensus on changes needed is the best starting model for such an effort.

In addition to the suggestions above, there are issues that need to be addressed that will be more controversial, and will take larger leaps to accomplish. For instance, Congress has a history of encouraging states to modernize state water laws in order to make Reclamation projects more efficient or legally

possible; it is time for Congress to consider encouraging states to allow private rights for healthy river flows, to develop water markets and to use water efficiently, as a quid pro quo for needed investment in federal projects. The whole realm of federally reserved rights, for Native Americans as well as federal land reservations, is politically charged, but absolutely needs solutions; over 200 unresolved Indian claims remain outstanding. Congress should work with states, tribes and affected persons to establish clarity in federal water rights and to meet the federal goals.

Thank you for your attention.

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