

How the Trinity River Lost Its Water

By Dane J. Durham, J.D.

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FORWARD

Attorney Dane Durham spent countless hours, weeks and months documenting with incredible precision the history of the Trinity Division of the Central Valley Project. His work is not fully up to date since much has transpired since he last researched and wrote. Mr. Durham ultimately hopes to complete this work, and to make it more enticing reading. He has said, "I'm no Marc Reisner" author of *Cadillac Desert*. That may be, but the work is a great knowledge base for those of us who care about restoration of the Trinity River, its ecosystem, tributaries, and the economy dependent upon this once vital river system.

His work is a factual story about how the Trinity River lost its water. Few people know this history of intrigue, politics, the drive for higher elected office, and federal taxpayer beneficence for a few wealthy "farmers" in the far off Westlands Water District, pre-Trinity River water mostly a desert wasteland. These irrigated lands now pollute the San Joaquin River and San Francisco Bay because of high levels of selenium and other contaminants that leach from its irrigated soils.

The price for the Trinity Division was destruction of a critical economic resource of Trinity County, as well as a major economic blow to the entire North Coast of California from San Francisco north to Southern Oregon, and the demise of a once thriving commercial fishery. It was, simply, a behind-the-scenes massive wealth transfer.

Mr. Durham has given us permission to place his work on our website so that those who are interested in this untold story have access to his valuable research. However, any use of the material must credit Mr. Durham.

*Byron Leydecker
Chair, Friends of Trinity River
September, 2005*

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Chapter 1: The Gift of Salmon Has Been Lost.

The Trinity River began with the uplifting of the Klamath Mountains millions of years ago.¹ Over time, the river carved a drainage moving clay, silt, sand, gravel and larger rocks in its path.² It descends from snowpacks nearly 9000 feet high in the coastal mountains,³ draining nearly 2,950 square miles.⁴ Through most of its course, the Trinity flows between steep mountain ridges in narrow valleys with numerous riffles and small waterfalls. Before 1963, the Trinity moved within its floodplain forming an S-shaped pattern with bars on alternating sides of the river and deep pools connected by riffles.⁵ It gathers tributaries along roughly 172 miles enroute to Weitchpec falls where it joins the Klamath about 43 miles from the ocean.⁶

Fossil records indicate that ancestors of Pacific salmon moved from lakes and slower, lower-gradient streams into the rivers of the Klamath drainage as they formed.⁷ Millions of years of evolution in this harsh landscape of emerging mountains encoded the ability to colonize new habitats after old ones had been cut-off by geologic changes.⁸ Genetic analysis indicates that the modern species of Pacific salmon evolved from three ancestral lines about 2 million years ago.⁹ The principal species in the Klamath drainage were the chinook salmon, coho salmon and steelhead.¹⁰ Over time, the river provided diverse conditions for each stage of life of each of its native salmon species.¹¹

The most recent ice age peaked about 18,000 years ago.¹² About 14,000 years ago, a period of rapid warming began which lasted for almost 10,000 years.¹³ During the rapid melt, smaller glaciers in the coastal range unleashed high flows. However, the retreat of the glaciers was followed by a period of intense warming of the northcoast streams.¹⁴ Between 5,000 and 4,000 years ago, the northcoast began to cool, and as it did, old-growth forests emerged promoting optimal habitats for Pacific salmon which recolonized as far south as the Mexican border.¹⁵

Historic flows of the Trinity have been highly variable. Annual flows measured between 1912 and 1995 at the USGS gages at Lewiston, about 110 miles upstream from Weitchpec, ranged from 234,000 acre-feet in 1977 to 2,983,000 acre feet in 1983.¹⁶ The average annual flow at Lewiston has been 1,249,000 acre feet.¹⁷ The average daily winter discharge in normal water years was less than 5000 cfs.¹⁸ Peak flows in excess of 70,000 cfs have occurred at least 3 times since 1912 during major winter storms in 1955, 1964 and 1974.¹⁹ Over the last 4,000 to 5,000 years, major and moderate winter floods have provided the driving forces that reshaped the river channel and maintained habitat for diverse life stages of salmon.²⁰

With retreat of the glaciers, humans moved into the northcoast watersheds.²¹ Early inhabitants did not depend on salmon, but by about 1,500 years ago, harvesting the annual runs of salmon had become their way of life.²² Development of drying and

smoking techniques made salmon a reliable, year-round source of food and allowed stable communities to grow.²³ These communities believed salmon were a gift, a value which was transmitted through myth and ceremony long before whites arrived.²⁴ Respect for the gift of salmon meant that every harvest had to be limited.²⁵ It has been estimated that up to nearly 10,000 inhabitants of the Klamath and Trinity watersheds consumed more than 2 million pounds of salmon annually from runs exceeding 500,000 fish before whites arrived.²⁶

The first settlers along the Trinity were the Hupa named for the Hoopa Valley.²⁷ No one knows how long they have lived in their valley.²⁸ Hoopa Valley is flat, about 300 feet above sea level and about 12 miles upstream from the confluence of the Trinity and Klamath. It is about six miles long and one to two miles wide and is bordered by an upstream canyon, a gorge below and high steep slopes. Within the valley, the river is fed by several creeks and has deep pools bordered by large rocks and gravel bars. Pools are connected by long, swift, smooth slicks or shallow rapids.

Each year before the fall salmon run, the Hupa built a dam of wooden poles and planks, wild grapevine, woven matting, boughs, and stones.²⁹ The dams were sometimes divided into a series of bays by platforms on the downstream side of a weir made of rock and wooden poles and posts spaced about 16 feet apart.³⁰ The Hupa started construction when the river reached a depth of about 4 feet at traditional sites at the main village of Takimilding (“place of acorn feast”) near Hostler Creek or the village of Medilding (“boat-place”) about 2-3 miles upstream.³¹ Most fishing was done at night by men with dip nets standing on the downstream end of the platforms.³² Hupa also fished with gill nets, drift nets, smaller weirs with folding gates, hook and line and bare hands.³³ The dams were swept away with the first high water each year.³⁴

The Hupa had almost no contact with whites until after the discovery of gold on the upper Trinity in 1850.³⁵ They were unaware that one year earlier, members of the California constitutional convention had voted to deny them civil rights (including the right to vote) and had requested that they be removed from the state.³⁶ The gold rush brought a flood of fortune hunters and settlers who took Indian lands and resources, introduced disease and provoked violent confrontations.³⁷ In 1850, President Fillmore and the Senate appointed three treaty Commissioners to secure Indian land title to California.³⁸ In 1851, at Camp Klamath at the confluence of the Klamath and Trinity, the Yurok, Karok and Hupa entered into a peace treaty with an Indian agent empowered to make treaties to reserve a tract for the tribes.³⁹ In executive session on July 8, 1852, the Senate refused to ratify the treaty because of opposition by California politicians who believed the land was too valuable to be wasted as reservations.⁴⁰ And so, slaughter and enslavement of the natives of the Trinity and Klamath valleys continued.⁴¹

In 1855, the Klamath River Reservation was established by executive order along a 20 mile strip extending upstream a width of 1 mile on each side of the river from the mouth at Requa.⁴² About 2,000-2,500 Yurok lived on the Klamath at that time, but the Hupa refused to leave their valley on the Trinity to move onto the Klamath reservation.⁴³

According to General Beale, assigned to the Klamath reservation, the Hupa paid a price for their refusal:

“This river [Trinity] ... is rated as the best in the country for salmon fish, which constitutes almost the whole subsistence of the Indians. The whites took the whole river and crowded the Indians into the sterile mountains, and when they came back for fish they were usually shot.”⁴⁴

By 1857, mining had destroyed fishing for about 500 Indians who lived on the Trinity and its tributaries above the Hoopa Valley.⁴⁵

In lieu of the treaty of 1851, the federal government established a military post in the Hoopa Valley at Fort Gaston in 1858.⁴⁶ Between 1858 and 1860, the federal government attempted to relocate about 2000 Klamath, Trinity and Redwood Indians to other reservations in Northern California.⁴⁷ In 1864, the federal government sought an end to the state of war that had existed with the Trinity and Klamath Indians for five years.⁴⁸ On April 26, 1864, the Acting Commissioner of Indian Affairs wrote the newly appointed Superintendent of Indian Affairs for California, advising him that Congress had passed an act to reorganize Indian affairs in California which proposed not more than four reservations “from which all whites except government employees [were] to be excluded.”⁴⁹ In the summer of 1864, the new Superintendent advised the Acting Commissioner that about 500 Indians were being held prisoner at Humboldt Bay and should be relocated south of San Francisco.⁵⁰

On August 10, 1864, the Superintendent traveled to the Hoopa Valley.⁵¹ The Hupa told him they would prefer death or starvation in the mountains to removal.⁵² On August 12, 1864, at Fort Gaston, the Superintendent negotiated a peace treaty with the Hupa, setting aside the Hoopa Valley for their sole benefit.⁵³ Nine days later, he issued a proclamation establishing the Hoopa Valley Reservation which (was later defined by executive order in 1876) to include a 12 mile square extending 6 miles on either side of the Trinity for a distance of 12 miles starting at the confluence with the Klamath.⁵⁴ By the summer of 1864, the Hupa population had dropped to about 600 – it had been about 2,000 before the whites arrived.⁵⁵ By 1865, the Hupa had been killed, captured, starved and beaten into subjection.⁵⁶

Congress intended the Klamath and Hoopa Valley reservations to be as far from white settlements as practicable, primarily to ensure that the Indians had access and the right to fish for ceremonial, subsistence and commercial purposes without interference from others.⁵⁷ In 1887, the Commissioner of Indian Affairs wrote that the purpose of the Klamath reservation was “to exclude white people from fishing in the river, from its mouth to the upper extremity of the reservation.”⁵⁸ When the federal government created the reservations, it became the trustee of tribal rights to fish and to the water needed to sustain the salmon runs.⁵⁹ As trustee, the federal government had a duty to conserve and manage trust assets (i.e. the fish and the water in the river) solely in the interests of the tribes.⁶⁰ The federal government had a legal obligation not to compromise tribal assets held in trust even if the benefit to the public at large would be greater than the loss to the Indians.⁶¹

But, between 1860 and 1892, whites continued to move onto the Klamath reservation, lured by the resources of the lower river.⁶² In 1874, at the request of Congressman Luttrell, the Commissioner of Indian Affairs in Washington, wrote that the Klamath Reservation had been abandoned after the flood of 1861.⁶³ Between 1879 and 1892, proponents of white settlement tried seven times to convince Congress to terminate the Klamath reservation.⁶⁴ We know now, however, that neither the Yurok nor the Department of Indian Affairs ever abandoned the Klamath Reservation, and that the small number of Yurok removed after the 1861 flood upon the recommendation of the local Indian agent returned within a few years.⁶⁵ Indeed, in 1883 the Secretary of Interior directed that allotments of land be made to the Indians on the reservation.⁶⁶ However, the resources of the lower Klamath were too valuable to permit significant “gifts” of reservation lands to non-whites.⁶⁷ And, given the Hoopa Valley’s relatively small area, remoteness and lack of extractable resources, the Bureau of Indian Affairs delayed allotments to the Hupa until 1922-23.⁶⁸

In 1892, however, Congress opened the way for non-Indians to own land and resources on the Klamath Reservation under homestead laws.⁶⁹ In practical effect, the 1892 Act “disposed” of reservation lands by converting claims of white squatters who had trespassed onto the reservation since 1855 into land titles under the homestead laws.⁷⁰ Most of the remaining Indian lands within the reservation passed into non-Indian ownership.⁷¹ By 1893, all land suitable for homes had been allotted to or settled by whites and only 161 allotments had been made to Indians.⁷² Lumber companies were significant beneficiaries of this disposition of Indian lands.⁷³ Historical analysis of the allotment policy shows that it was a political compromise which established a legal method of opening “surplus” Indian lands and reservations to economic development.⁷⁴

In 1876, the first non-Indian commercial fishery was established unlawfully on the Klamath reservation.⁷⁵ In 1879, in order to protect the Indian fishery from outside interference, the federal government sent a military force to the Klamath reservation with orders “ ‘ [t]o suppress all fishing by whites and require all citizens residing on the Reservation to leave without delay.’ ”⁷⁶ A small military outpost was established at Requa to protect the Yuroks’ fishing rights.⁷⁷ Non-Indian canneries were located off the reservation or on the reservation with consent of the Yurok⁷⁸

In 1883, R.D. Hume applied to the Department of Interior to lease a right to fish on the Klamath reservation.⁷⁹ Hume’s family had developed the salmon canning industry on the west coast.⁸⁰ After the Secretary of the Interior denied his request, Hume, in spring 1887, entered the Klamath on a steamer to establish a floating fishery.⁸¹ Hume threatened the military detachment which had orders not to permit any operations by whites on the reservation and began fishing.⁸² After the first season was over, Hume was charged with trading on the reservation without a license. Hume, however, convinced two federal courts in San Francisco that the Klamath reservation had been abandoned,⁸³ and went on to establish a cannery at the mouth.⁸⁴

Eventually, additional canneries were established in the area. Indians did most of the fishing with gill nets at night, traded and sold their catch and performed most of the work

in the canneries during the day.⁸⁵ Cannery records from 1888 indicate a commercial catch of about 20,000 fish.⁸⁶ By 1912, three plants processed about 141,000 salmon.⁸⁷ During one night at the height of that season, the gill net fishery harvested about 17,000 salmon.⁸⁸ Between 1915 and 1928, the annual harvest averaged about 51,800 salmon.⁸⁹

But between 1850 and 1900, mining and overfishing resulted in a noticeable decline in salmon populations.⁹⁰ Before 1850, the largest run of chinook arrived in the spring.⁹¹ By about 1892, the spring-run was practically extinct.⁹² Hume eventually sold out because the chinook runs were so depleted that he could not make a profit.⁹³ In 1890, the U.S. Commission on Fisheries established a fish hatchery at Fort Gaston on Minor Creek, a tributary of the Trinity.⁹⁴ Between, 1890-1898, the majority of two million fry produced from eggs collected from the Trinity and Sacramento and Redwood Creek were released into the Trinity and Redwood Creek.⁹⁵ In 1890-1891, R.D. Hume operated a small hatchery and introduced fry hatched from eggs supplied from the Rogue in Oregon.⁹⁶ In 1896, over 1 million chinook fry were introduced into the Klamath from the Sacramento.⁹⁷

By 1931, the State of California recognized that Klamath salmon were in a decline which artificial propagation could not alleviate.⁹⁸ In 1933, the State of California banned all commercial fishing in the Klamath.⁹⁹ In 1951, the State banned all gill net fishing by Yuroks on the lower 20 miles of the Klamath.¹⁰⁰ On September 24, 1969, a California game warden seized five gill nets stored on private land owned by a lumber company near Brooks Riffle, a traditional Yurok family fishing site on the Klamath Reservation.¹⁰¹ The nets belonged to Ray Mattz, a Yurok, who fed his family from them.¹⁰² Ray's mother testified that her family had fished for their food with gill nets without State interference until the 1940s.¹⁰³ She also testified that most Yurok had earned their living as commercial fisherman before the 1933 ban.¹⁰⁴ The State argued that the gill net ban was justified by the need to preserve declining salmon runs.¹⁰⁵ The court found no substantial evidence that the Yuroks' use of gill nets for subsistence fishing for over a century had depleted the fishery.¹⁰⁶ In 1975, a state court concluded that the State lacked jurisdiction to restrict Indian fishing rights that were created by statutes which authorized the reservation of Indian lands on the Klamath and Trinity rivers.¹⁰⁷

After a severe drought in 1976-1977, the Bureau of Indian Affairs ("BIA") adopted regulations in 1977 and 1978 restricting Indian gill net fishing.¹⁰⁸ In the preamble to the 1978 regulations, the BIA recognized that the Indians' fishing rights included gill netting for commercial purposes.¹⁰⁹ However, in the face of declining numbers of returning salmon, later that year the BIA imposed a moratorium on commercial fishing on the reservations and on the sale of fish caught on the reservations.¹¹⁰ The BIA acknowledged that the vast majority of salmon were taken from the ocean.¹¹¹ However, the BIA claimed that the ban was an exercise of its trust responsibility to manage and conserve Indian fishing resources.¹¹² And, although the State of California had continued unlawfully to proscribe Indian gill net fishing on the reservations through seizures and criminal prosecutions,¹¹³ commercial fishing had been a substantial source of income on the reservations before the moratorium.¹¹⁴ Nonetheless, moratoria remained in effect,¹¹⁵ spawning runs continued to decline and spawning escapement goals were reduced.¹¹⁶

During the in-river, commercial moratorium from 1977 to 1986, about 87 % of the Klamath chinook harvest was taken from the ocean.¹¹⁷ A 1980 management report prepared for the USBR indicated that the ocean harvest of Trinity chinook exceeded their ability to sustain themselves and that the Indian subsistence fishery had not seriously impacted the spawning population.¹¹⁸ In 1986, one federal judge finally spoke out. Circuit Judge Beezer in San Francisco stated that “over-harvesting by the ocean fisheries, resulting in too few anadromous fish returning to the Klamath River to meet spawning escapement goals, has been the primary cause for depletion of this natural resource. The ocean fisheries have not been required to bear their full share of the conservation burden. ... Until both the Department of the Interior and the Department of Commerce coordinate fishery management, the Indians will be denied their fair share, or any commercial share...”¹¹⁹ The federal government, however, continued to allow ocean fisherman to overharvest Klamath chinook,¹²⁰ despite Judge Beezer’s admonition that “the trust duty to reservation Indians is owed ... by the entire federal government.”¹²¹

In 1991, the Endangered Species Committee of the American Fisheries Society identified native stocks of Pacific salmon facing extinction.¹²² The Committee stated that “artificial production [could] not sustain them and [might] contribute to [their] decline ...”¹²³ The Committee listed the following Klamath (including Trinity) populations: spring chinook at high risk of extinction (having undergone a 95% reduction from historical population levels);¹²⁴ fall chinook (in the lower Klamath only) at moderate risk of extinction;¹²⁵ coho of special concern (primarily due to large scale hatchery programs),¹²⁶ and summer steelhead at moderate risk of extinction.¹²⁷ The Committee urged immediate protection, noting that other opportunities to save endangered species had been squandered by waiting for conclusive scientific evidence.¹²⁸

In a study published in 1992, local scientists of the American Fisheries Society supplemented the findings of the national Committee with respect to northwestern California.¹²⁹ They classed Trinity spring chinook of special concern; South Fork Trinity spring chinook at high risk of extinction; South Fork Trinity fall chinook of special concern; Upper and South Fork Trinity summer steelhead at high risk of extinction and North Fork Trinity and New River (Trinity tributary) summer steelhead at moderate risk of extinction.¹³⁰ The local scientists stressed that hatchery practices, including wide distribution of non-native stocks, had played a major role in the decline of salmon in northwestern California.¹³¹

By 1992, the number of Klamath fall chinook returning to spawn had fallen to 11,100, the lowest then on record.¹³² In 1993, the Secretary of Commerce finally adopted an emergency regulation lowering the Klamath chinook ocean harvest rate.¹³³ The regulation was part of a political compromise between the Secretaries of Interior and Commerce.¹³⁴ Secretary Babbitt had written that as trustee of the Hupa and Yurok fishing rights, he “must ensure” that at least 50 % of the annual harvest be allocated to them.¹³⁵ A federal judge found no valid scientific support for the compromise.¹³⁶ Later, in October 1993, the Solicitor of the Department of Interior released an opinion that the

Hupa and Yuroks' fishing rights entitled them to the lesser of an amount necessary to support a moderate standard of living or 50 % of the annual harvest.¹³⁷

Legal recognition of the endangered status of Klamath salmon has been slow and incomplete, hallmarks of the politics of Pacific salmon. In May and October 1993 and September 1994, the National Marine Fisheries Service ("NMFS") started coastwide status reviews of steelhead and coho and chinook salmon.¹³⁸ Status reviews for the Klamath and Trinity watersheds were completed in December 1994 (steelhead)¹³⁹; May 1997 (coho)¹⁴⁰; December 1997 (chinook and steelhead)¹⁴¹ and January 1998 (hatchery steelhead).¹⁴² Paying lip service to warnings of fishery scientists that the decade of the nineties was a crossroads for the survival of Pacific salmon, the NMFS has sought to avoid formal listings under federal law protecting endangered species.¹⁴³ The NMFS has claimed that existing conservation and restoration programs might avoid the need to invoke federal statutory protection.¹⁴⁴ The NMFS has also frequently postponed legal protection, claiming that the actual risk of extinction was unknown.¹⁴⁵

As of February 2000, the only salmon in the Trinity legally protected as a threatened species were natural coho – i.e. progeny of naturally-spawning fish.¹⁴⁶ However, when the NMFS finally listed them as threatened in 1997, NMFS stated that there appeared "to be essentially no natural production [of coho] in the [Trinity] basin."¹⁴⁷ Moreover, the NMFS stated that "virtually all naturally spawning [coho] in the Trinity River [were] first generation hatchery fish" and that the Trinity River hatchery had produced 400,000 to 500,000 juveniles annually in recent years.¹⁴⁸ Reading between the lines, by the time they received legal protection as a threatened species, native Trinity coho had been supplanted by non-native hatchery stocks.¹⁴⁹ Two years later, in May 1999, the NMFS designated the Trinity below Lewiston as critical habitat essential to the conservation of naturally spawning coho which had come to mean hatchery fish that spawned in the river.¹⁵⁰

In 1995, the NMFS proposed listing natural steelhead in the Klamath Mountains Province ("KMP") (which included the Trinity) as a threatened species.¹⁵¹ The NMFS Biological Review Team (BRT) had concluded that there were no steelhead populations that were naturally self-sustaining in this region.¹⁵² In 1996, the NMFS backed off due to "unresolved issues and practical considerations" (neither of which did it bother to describe) and decided to postpone a final determination until decisions were made on all West Coast steelhead.¹⁵³ In 1997, the BRT again concluded that KMP steelhead were likely to become endangered in the foreseeable future if present trends continued.¹⁵⁴

But three months later in 1998, the NMFS announced that KMP steelhead did not warrant listing due primarily to last minute promises by the states of Oregon and California to undertake conservation measures.¹⁵⁵ The truth is that the NMFS entered into a political compromise with California and Oregon to forestall legal protection for Trinity steelhead. The 1998 compromise resulted in the classification of KMP steelhead as a "candidate species" whose listing status would be reevaluated within four years.¹⁵⁶ In February 2000, the NMFS announced that the State of California had not fulfilled its conservation promises.¹⁵⁷ But, in June 2000, the NMFS refused to reconsider KMP

steelhead for listing because there were sufficient Federal and state conservation measures in place (as distinguished from the Northern California ESU) to reduce the threats to this evolutionarily significant unit.¹⁵⁸

On October 25, 2000, Judge Illston, a federal judge in San Francisco, tried to end political dodging by the NMFS. She ruled that the NMFS acted unreasonably in refusing to list KMP steelhead.¹⁵⁹ The court carefully pointed out that the NMFS's proposal to list was based on the recognition that numerous efforts to halt the decline of the steelhead population had been inadequate.¹⁶⁰ She also noted that the NMFS entered into the California MOA in March 1998 because the State's habitat protection measures were inadequate in the long-term.¹⁶¹ She concluded that NMFS's reliance on California's 1998 "promises" to conserve in the future was arbitrary and capricious.¹⁶² She ordered NMFS to reconsider its decision by March 31, 2001.¹⁶³

In 1998, the NMFS determined that chinook salmon in the Upper Klamath and Trinity were not at risk of extinction.¹⁵⁹ The NMFS acknowledged that most spring-run spawning and rearing habitat was blocked, spring-run populations were at less than 10 percent of historic levels and at least 7 spring-run populations were extinct.¹⁶⁰ Moreover, the NMFS noted that interbreeding during hatchery spawning operations may have masked genetic differences observed between fall and spring runs.¹⁶¹ Notwithstanding these danger signs, the NMFS withheld legal protection because of the relative health of the fall-run populations.¹⁶²

In the Trinity, native salmon have lost their nursery. Hupa no longer celebrate the first spring salmon in the Sugar Bowl. Wild salmon have become an entrée with "a story."¹⁶³ In law, they are accorded a symbolic status as a social palliative administered through an unending process of political compromise. They are studied and protected like Ishi who spent his final days in San Francisco dressed in a suit.¹⁶⁴ But, compromises dictated by dominant economic interests have barely slowed the destruction of the Trinity. Wild salmon cannot compete with subsidies handed out by their trustee. The only salmon that can survive are those that have their own niche in the new market economy-- i.e. those that provide economic value without inefficient and unmanageable rivers for habitat.¹⁶⁵ And so, in fewer than 150 years, the gift of salmon has become an artifact of history and fiction.

Chapter 2: The Trinity Had Value Because It Could Be Taken, 1911-1953

In northwest California, the value of water has depended on the ability of public officials to take it to areas which had used up their water first.¹ As far as politicians have been concerned, the best thing about the Trinity was that there never were enough people to complain very loudly when it came time to take their water.² Early on, the river was used to wash away the earth in search of gold, but that only lasted as long as the ore deposits and the groundwater in the San Joaquin Valley.³ Once both were depleted, the water of the Trinity had to be moved to the Central Valley to serve a higher purpose. But, the diversion of the Trinity always had a compelling logic. It could subsidize growth without inciting political outrage. It was a logical subsidy for agribusiness, the largest industry in the state.

What is most surprising about the Trinity's secret is how long it has been known. By Executive Order issued November 25, 1911, 30-35 miles of the upper Trinity above and below Lewiston was reserved for power sites.⁴ The following year, the Bureau of Reclamation ("USBR") inspected for power sites and reclamation projects and the Geological Survey ("USGS") placed flow gauges at Lewiston.⁵

In 1920, a group of businessmen, known as the California State Irrigation Association, employed the Chief Geographer of the USGS, Col. Robert Bradford Marshall, to map the future of the state. Col. Marshall proclaimed that the water of the Sacramento River must be moved to irrigate the San Joaquin Valley.⁶ A key element of the plan was to divert the Klamath River into the Sacramento River adding over 2 million acre feet to compensate for diversion of the Kern River to Los Angeles.⁷ The Irrigation Association's major selling point was that more than 36 million acre feet of water from the Sacramento and San Joaquin Rivers flowed unused to the sea each year – enough to irrigate the Central Valley to a depth of three feet.⁸ Marshall exhorted the state legislature to appoint a "Big business" man chairman of a state commission to report on the practicability of his scheme.⁹ The legislature complied in 1921 by creating a commission with ? at the head.¹⁰ But Marshall's plan could not gain approval due to its cost (\$800 million), agricultural surpluses and the opposition of private power firms.¹¹

However, on March 9, 1923, a former Tehama County Supervisor and farmer, W. H. Samson, and his partner C. D. Hill, a banker, both from Corning, issued a press release to attract support for a power and irrigation project on the Trinity.¹² The project had already won the blessing of the Federal Power Commission ("FPC") which had scheduled a public hearing in the Board of Supervisors' room in Redding later that month.¹³ The project was touted as the greatest irrigation and power development project ever contemplated in the Sacramento Valley providing irrigation for the west side of the valley from Tehama to Yolo counties. Samson and Hill cited 10 years of stream flow measurements at Lewiston, presumably supplied by the Bureau of Reclamation, showing in excess of 1.25 million acre-feet per year.¹⁴ The plan was to build a dam above Lewiston and a tunnel to divert water to Clear Creek, a tributary of the Sacramento. The water would pass through a series of power plants before being released into the Sacramento for summer irrigation. According to Samson and Hill, "the waters of the

Trinity river run through a mountainous country where no land can be irrigated and no use can otherwise be made of it, hence its diversion ... can cause no hardship”¹⁵ When asked, however, Samson and Hill declined to reveal their backers.¹⁶

In 1924, the Board of Engineers of the FPC reported that although the volume of the Sacramento River was adequate to irrigate the Sacramento Valley, the Sacramento and San Joaquin Rivers could not irrigate both valleys.¹⁷ The report indicated that diversion of Trinity water would allow irrigation of an additional 160,000 acres on the west side of the Sacramento Valley thereby permitting later Sacramento storage development to supply the lower San Joaquin Valley.¹⁸ The report recommended a flow of at least 20 cfs below the point of diversion.¹⁹ The report concluded that the advantages of diversion greatly outweighed its disadvantages.²⁰

The problem with Samson and Hill’s proposal was that it sought to finance the eight million dollar project by forming local irrigation districts.²¹ Sacramento Valley farmers of the 1920’s were not ready for such grandiose spending.²² And, as if it mattered, Trinity County, all [?] protested through its Board of Supervisors.²³ Notwithstanding, these obstacles, however, the FPC issued a permit to Samson and Hill in January 1925 to survey government lands.²⁴ But, by 1926, the Samson-Hill project failed to obtain financial backing and the State division of water rights cancelled the project’s 17 water appropriation applications.²⁵

The Samson-Hill proposal re-surfaced one year later in a different form. In January 1927, State Engineer Edward Hyatt Jr. proposed a statewide water project which included a \$ 46 million hydro-electric and diversion project on the Trinity with a dam near the Fairview mine.²⁶ In July 1927, the State department of finance filed applications to divert water from the Trinity for irrigation in the Sacramento and San Joaquin Valleys.²⁷ In October 1927, Hyatt and a state legislative committee passed through Weaverville enroute to Redding without talking to a soul.²⁸ George C. Mansfield, publicity man for the Department of Public Works, however, assured locals that the project would only divert surplus water after all present and future needs of the Trinity valley were met, “allowing the river its normal flow.”²⁹ And, according to State Senator Nelson from Eureka, a member of the committee, the Sacramento watershed had ample water to meet the needs of the Sacramento and San Joaquin valleys by raising the height of the dams to be built on the Sacramento.³⁰ Notwithstanding, in 1928, the FPC announced that diversion was in the general public interest.³¹

In 1931, Hyatt named his project the State Water Plan.³² In that year, he reported to the legislature that the Trinity contained surplus water in excess of the future requirements of the watershed and that diversion of those waters was the most feasible way to supply the needs of the western side of the upper Sacramento Valley.³³ He proposed diverting 440,000 acre feet annually to irrigate 171,000 acres.³⁴ Noting the hydro-electric potential, Hyatt claimed that 800,000 acre-feet could be diverted annually.³⁵ It took two more years for agriculture to convince the state legislature to pass the Central Valley Project (“CVP”) Act of 1933.³⁶ Bonds for the project, however, could

not be sold in the middle of the Depression. So, the waters of the Trinity continued to flow to the sea, while the state's control of the CVP flowed to the federal government.³⁷

When the federal government began construction of Shasta Dam in 1938, it was also promoting the economic potential of cheap hydropower on the Trinity.³⁸ By 1941, the Trinity Board of Supervisors and the State asked the Commissioner of Reclamation to construct the dam at Fairview so that the industrial potential of Trinity County could be realized.³⁹ The following month, the USBR initiated studies of water supply, geology and the fishery.⁴⁰ In 1942, the City of Redding and the Redding Chamber of Commerce appropriated \$150,000 for the USBR to investigate diversion of the Trinity.⁴¹

In January 1945, the California legislature created a committee to investigate the proposed Klamath and Trinity diversions.⁴² After the committee was formed, the California legislature removed the Trinity project from the State water plan.⁴³ In May 1945, the committee issued a report.⁴⁴ The committee concluded that no investigation of the Corps of Engineers or the USBR showed that the water resources of the Central Valley had been so exhaustively developed that there was even a potential need for either diversion.⁴⁵ The committee found that the amount of water available for diversion from the Trinity was substantially less than was shown in early reports by the State Engineer's Office if the requirements of the Trinity watershed were to be given priority of use.⁴⁶ The committee recommended that the USBR should make no recommendations for the construction of projects on the Trinity River.⁴⁷

By November 1945, the USBR issued a comprehensive plan for the CVP, including a firm yield of about 700,000 acre-feet per year from the Trinity and in-river releases as required for fish propagation.⁴⁸ In a meeting before the Planning Commission in Weaverville in March 1945, a USBR engineer explained that water users in the Sacramento Valley would pay for the project.⁴⁹ He also assured the Commission that there would be no attempt to force the project on the County.⁵⁰ In April 1946, the Division of Water Resources for the State responded that construction should be deferred until provision had been made to supply the needs of the Trinity watershed and there was a need for a new water supply outside the watershed.⁵¹ In 1948, the same USBR engineer addressed another local gathering in Weaverville and described a project which had grown to a yield of 908,000 acre feet for 750,000 acres of irrigable land.⁵²

In 1948, Representative Clair Engle, James K. Carr, who had opened the USBR office in Chico in 1946, and others formed the Sacramento Valley Irrigation Committee to ensure that 300,000 acre-feet of CVP water in Shasta Lake set aside for dry land farms in the upper Sacramento Valley was not sent south.⁵³ In 1949, Engle introduced legislation to authorize irrigation canals in the Sacramento Valley under the CVP.⁵⁴ But, by then, it was already clear that the CVP did not have enough water in Shasta Lake for the farmers of the Sacramento Valley.⁵⁵ So, in 1950, when the Sacramento Canals were authorized, Engle and Carr turned their attention to fomenting support to divert the Trinity.⁵⁶ The USBR needed the power (even more than the water) from the Trinity to support extensive pumping required by the San Luis project and other proposed developments in the San Joaquin Valley.⁵⁷

The “sale of the Trinity” was a political campaign with little regard for the truth. In June 1950, for example, Richard L. Boke, Regional Director of the USBR in Sacramento, announced that the USBR, in cooperation with the USFWS, had developed a method to control low summer and high winter flows which were “highly detrimental” to anadromous fish.⁵⁸ Boke added that the annual diversion would average about 750,000 acre feet.⁵⁹

But, USBR representatives lacked Engle’s political guile.⁶⁰ Engle knew that it was most important for local interests to be perceived as promoting the taking of their water.⁶¹ For the time would come when Trinity county would have to answer accusations that Engle and others were stealing water from their watershed.⁶² In July 1950, Engle angrily scolded Jim Carr, the USBR representative in Chico, for calling public meetings on the Trinity project:

I can’t understand why the Bureau of Reclamation should be calling a meeting anywhere. The Bureau of Reclamation has no business promoting the Trinity Project...I thought I made it clear when I was out in California last fall, and for that matter this spring as well ... that my idea was to ... **sell** the project in Trinity and Shasta first, then move down the Valley and finally end up with a citizen’s committee of all of the areas involved as sponsor of the project.... [After the local people supported the project] I intended to contact community leaders on the west side of the mountains and arrange for meetings with them for the purpose of trying to work out a basis of agreement in order to kill off the opposition to the project before it got started.

...

Most emphatically, I wish that you would stop the promoters in the Bureau of Reclamation and tell them that they can do their best job of promoting by keeping in the background and giving some of us who are interested in this project a chance to take hold of it and get it **sold** among the local people.⁶³

On October 11, 1950, Engle spoke in a meeting sponsored by the Weaverville Chamber of Commerce. He announced that he wasn’t interested in what the USBR wanted from the Trinity. Instead, “it’s whether the people of Trinity County want it or not and what they want in the bill.”⁶⁴ Engle then urged those in attendance to form a committee with representatives from Shasta County, a prime beneficiary of industrial development which could be fueled with cheap Trinity hydropower, to make recommendations to him regarding legislation to authorize the diversion of their river.⁶⁵ He encouraged this local group to reason with the people on the coast.⁶⁶ Paul Denny, a member of the State Fish & Game Commission, indicated his personal support based on USBR estimates of minimum releases greater than the natural flow and Engle’s assurance that minimum flows would be made part of the authorizing statute.⁶⁷ Engle emphasized that that the local people would tell the USBR how much water will be diverted, not the

other way around.⁶⁸ The consensus at that meeting was that the Chambers of Commerce of Trinity and Shasta Counties would appoint members to the research committee

The following month, Engle told a group at the Eureka Inn that although he thought appropriation of surplus Trinity water was “inevitable, he would not be a party to the diversion unless the local people (including Del Norte and Humboldt counties) were united behind the project.”⁶⁹ However, since many in the Eureka audience opposed diversion of the Trinity until all Sacramento tributaries had been exhausted, Engle did not invite their legislative input. Engle instead urged a Eureka supporter to hold local discussions on the premise that the Trinity watershed would have first claim on the water for present and future uses.⁷⁰ And, he denied any link between the Sacramento Valley Canals and diversion of the Trinity, insisting that sufficient water already existed in the valley for the canal service area.⁷¹ Engle believed that tying the Trinity project to the canals would not help to divert the Trinity and might entangle the canals in a controversy for years.⁷² After listening to Engle, Carr and State Senator Regan, a long-time supporter of diversion, Engle’s “advisory” committee asked for a minimum flow of 150 cfs in the Trinity River, a 2% tax on assessed valuation of the project and first reservation for Trinity County for hydro-power followed by Shasta and the other member counties having next priority.⁷³

In August 1951, Engle identified a critical source of water shortage in a speech in Red Bluff.⁷⁴ He announced that the State had “peddled” the same water from the Sacramento twice. He claimed that 3,000 acre-feet of water assigned to the CVP for diversion to the San Joaquin valley was being diverted above Sacramento.⁷⁵ Engle announced that he had scheduled hearings in Sacramento in October at which time he would ask the federal and state governments to put their cards on the table.

On September 10, 1951, the Shasta-Trinity Research Committee met again in Redding. This time, Engle argued that the committee should measure the feasibility of the project by the availability of cheap power for the development of local resources.⁷⁶ He stressed that the local counties had the right to have their demands guaranteed.⁷⁷ As to Del Norte and Humboldt in counties, Engle urged the crowd to keep stalling for time so that opposition in those counties did not “bolt completely.”⁷⁸ The committee agreed on two demands: (1) a guaranteed minimum flow of 175 cfs at Lewiston during low summer months, progressing to 300 cfs as conditions demanded and (2) improvement of stream beds and tributaries and construction of fish hatcheries.⁷⁹

On October 29-31, 1951, Engle’s subcommittee held hearings in Sacramento [...]. According to Engle, those hearings demonstrated an indisputable need for additional water in the Central Valley.⁸⁰

In October 1951, the USBR’s project report on the Trinity was sent to Commissioner Straus. Engle hailed it as the answer to “the critical shortage in power reserves” in northern California.⁸¹

On December 28, 1951, Engle sent Heffington a confidential, initial draft of legislation to authorize the project.⁸² The initial draft reserved a flow of not less than 175 cfs to assure Trinity County that the river would be “stabilized.”⁸³ It gave Trinity County first preference to not less than 25% of the energy produced at Trinity and Lewiston power plants.⁸⁴

On January 5, 1952, Engle met privately in Redding with Trinity and Shasta County supporters, urging that no coastal opponent or USBR official be invited.⁸⁵ Engle outlined the Trinity bill he intended to introduce in the House. He proposed diverting 600,000 acre feet annually and guaranteeing Trinity County 25 % of the new power.⁸⁶ Those in the meeting agreed to request 50 % of the new power for Trinity County.⁸⁷ Engle pledged to kill the bill if the proposed provisions were not included.⁸⁸

In a letter to Engle dated six days after the meeting in Redding, Lorene Melquist of the Trinity committee listed several local concerns which had been brought up at the meeting. She noted that the draft legislation was silent on hatcheries.⁸⁹ Melquist also noted that the reservation of a minimum flow of 175 cfs did not provide for increased spawning flows as recommended in the USFWS’s report.⁹⁰ She implored Engle to revise that section of the draft bill “or the outraged howls of militant fisherman may follow us to and beyond our graves!”⁹¹ Engle, however, refused to “straight-jacket” the Interior Secretary with legislation prescribing spawning flows up to 300 cfs called for by the USFWS.⁹² Instead, he added language requiring the Secretary to take all necessary steps, including streamflows and hatcheries, to maintain fish and wildlife.⁹³

On January 31, 1952, the Trinity research committee, Board of Supervisors and Planning Commission attended a special meeting to discuss Engle’s proposed legislation.⁹⁴ State Senator Edwin Regan expressed the resignation that had been implicit from the beginning: federal approval of the project was inevitable.⁹⁵ With that said, all else fell into place: the best that Trinity county could hope for would be to go along with the politician who was pulling the strings.⁹⁶ And, this was true even though the USBR conceded that the proposed diversion would not permit a minimum flow of 175 cfs.⁹⁷

When the Humboldt and Del Norte supervisors opposed the Trinity project, Engle dismissed them, claiming that Trinity County should have the major voice because 85 % of the watershed was in that county.⁹⁸ Engle also dismissed their arguments that a study of the northcoast’s future water needs should be completed before the project was approved.⁹⁹ Engle reasoned “the Trinity Project has been under study for more than 30 years and has been endorsed by every Government agency that ever studied it. I want to get something done before all our grandchildren are grandparents, and if we wait around to satisfy everybody who wants to make studies, we will never get anything done.”¹⁰⁰

On February 7, 1952, the USBR hosted a hearing in Weaverville at the request of the Board of Supervisors. The presiding officer from the USBR gave preference to speakers who had traveled the greatest distances, so the hearing was dominated by large

water users from the Central Valley.¹⁰¹ But a few local opponents spoke out. Most cautioned that the effects of diversion had not been adequately studied.¹⁰² Judge John Jess Morgan of Junction City questioned how Engle could believe that a majority of the county favored diversion when it had not been widely discussed or placed on the ballot.¹⁰³ Charles Bohrmann, chairman of the Associated Sportsmen of California, emphasized that the recommendations in the USFWS's Trinity study were inadequate to save the fishery.¹⁰⁴ He noted that few streams left in California had salmon and steelhead spawning potential as great as the Trinity.¹⁰⁵ Bohrmann argued that the spawning bed losses above Lewiston would be "irreparable and irreplaceable" because the spawning gravels below the dam would become compacted by erosion silt from every gulch below Lewiston without winter flood flows.¹⁰⁶ He urged additional releases to flush out such deposits before they had time to bond to sand between the gravels.¹⁰⁷ He asked for delay for further study.¹⁰⁸ Twenty-seven years later, the USBR would admit that Bohrmann was correct.¹⁰⁹

The USBR hearing naturally also drew a sizeable number of supporters, including Armon Heffington, a local juke box distributor who was active on the Weaverville Chamber of Commerce and had been enlisted by Engle.¹¹⁰ Heffington had been appointed Chairman of a committee conceived of by Engle to study the project and make recommendations to the Chamber of Commerce.¹¹¹ In a rambling and disjointed presentation, Heffington candidly remarked that Trinity water was needed to develop the Sacramento Valley so that California's population could someday surpass New York's.¹¹² In response to Judge Morgan's comment, he volunteered from memory that no one had voiced opposition when Engle solicited views a year earlier at a public meeting in Weaverville.¹¹³ Later in the evening, Heffington urged people to speak because the "main reason for this meeting was to try and get what the people feel all over the county."¹¹⁴ But when one person suggested a standing vote, the presiding officer from the USBR refused. He asserted that a vote would be inappropriate because the purpose of the hearing was to get the feelings of the people of the area.¹¹⁵ The matter never was submitted to a county-wide referendum, since Engle believed that the majority view was "best reflected in [the] civic organizations and especially through [the] Board of Supervisors."¹¹⁶

Arnold Zimmerman, a USBR engineer, stated that the annual runoff at Lewiston was about 900,000 acre-feet above all possible future requirements of the Trinity-Klamath basins and that about 660,000 acre-feet would be diverted annually.¹¹⁷ Virgil O'Sullivan, of the SVIC, stated that the SVC service area would ultimately use 700,000 acre-feet and that although the USBR had reserved 300,000 acre-feet in Shasta Reservoir, water to be used in the service area must come from storage other than Shasta.¹¹⁸ Joe Lewis, a farmer from Buttonwillow in Kern County and Chairman of the California Farm Research and Legislative Committee, spoke on behalf of the small farmers in the south who urged that every drop of water in California not used was wasted.¹¹⁹ State Senator Edwin Regan assured the audience that the fish biologists had indicated that the salmon will be protected.¹²⁰

On February 22, 1952, Engle returned to Weaverville. He reiterated that he would withdraw his bill at any time that he learned that the Board of Supervisors did not endorse it.¹²¹ As of that meeting, the third draft of the bill called for a minimum flow of 175 cfs unless the Fish and Game Commission approved a minimum of 150 cfs and reservation of 25 % of hydroelectricity generated by the project for preference customers in Trinity County.¹²² He clarified that Trinity county could not sell unused blocks of its reserved power and that the USBR would sell it to amortize the whole CVP.¹²³ More importantly, in response to criticism, he stated that the project “does not contemplate diversion of one bucketful of water which is necessary in this watershed.”¹²⁴ He dismissed the argument that it will ruin fishing as “absolute nonsense.”¹²⁵ After all, Engle knew that the USFWS’s report indicated that the fishery resources could be maintained with a minimum flow of 100 cfs.¹²⁶ Moreover, Engle had long maintained that the project would improve the fishing by stabilizing streamflow.¹²⁷ Engle recommended that his supporters reorganize to form a Trinity River Development Committee to be financed by the Weaverville and Redding Chambers of Commerce to defend the bill against opposition.¹²⁸ About a week later, Engle asked Melquist to expand her financing requests to business people and Boards of Supervisors and to send a group of merchants to Yreka to have a heart to heart talk with those boys.¹²⁹

On March 3, 1952, the Trinity County Board of Supervisors endorsed construction, maintenance and operation of the project in accordance with the USBR report dated January 31, 1952.¹³⁰ The endorsement recited Engle’s assurance that he would introduce at the earliest possible moment a bill that would guarantee to the county certain safe-guards and privileges outlined in his draft bill.¹³¹ Those assurances included the following requirements:

- a minimum flow of 175 cfs (unless the CDFG found that 150 cfs would be beneficial for the fishery);
- the Secretary should take all necessary steps including maintenance of the most beneficial stream flow and establishment of hatcheries where necessary to insure the maintenance and propagation of fish life;
- the Secretary should allocate to the preservation and propagation of fish an appropriate share of the costs of constructing, operating and maintaining the project;
- reservation of 25% of the energy produced at the project’s four power plants for public agency customers in Trinity County;
- payments to Trinity County for additional public services needed during construction.¹³²

Interestingly, once Engle had the endorsement of the Trinity Board, he did not return to Trinity County to determine how the citizens felt about his project until the groundbreaking. And, of course, Engle made good on none of his assurances.

In March 1952, a rift between agricultural and industrial interests in Shasta county broke out over the spoils of diversion.¹³³ Agriculture wanted additional irrigation for an area in southwestern Shasta county and businessmen sought enough cheap power to attract a magnesium plant.¹³⁴ In Engle’s words, “this project is such a good gravy train, that I am afraid before we are through, we are going to have so many people trying to

climb aboard for some of the benefits that the train will not be able to pull the load.”¹³⁵ Notwithstanding, as soon as Engle had secured Interior Secretary Chapman’s assurance that enough cheap power would be available, he contacted several aluminum companies and offered a list of influential USBR officials and local leaders in Redding.¹³⁶ And, Engle offered an alternative irrigation project which did not remove water before it passed through the last two powerhouses in the Trinity project.¹³⁷

In a meeting in Redding on March 31, 1952, Engle tried to squelch the feeding frenzy in Shasta county. He announced that it had been obvious for a long time that the Sacramento valley was short about 800,000 acre-feet of water because the CVP was “over-committed and over-subscribed.”¹³⁸ Also, conceding that there was no logic in all the irrigation subsidy going to the San Joaquin valley, he pleaded that “that was no reason to block a good project.”¹³⁹ He reassured the audience that the Trinity would supply enough water to alleviate the shortage.¹⁴⁰ The next day, April 1, 1952, Engle introduced HR 7343 authorizing the Secretary of Interior to construct and operate a CVP project to divert 660,000 acre-feet annually from the Trinity leaving a minimum flow of 175 cfs.¹⁴¹ The night before, the California Assembly, by a vote of 41 to 19, had asked Congress not to authorize the project until further studies had been made.¹⁴²

In April-June 1952, Engle concentrated on acquiring state and congressional approval. He wrote the editor of the *Sacramento Bee*, that “because of certain selfish opposition in the Humboldt area, the Project will be in serious trouble unless the Governor and his state agencies support it.”¹⁴³ In June 1952, in Weaverville, forty representatives from Trinity County, the counties served by the SVIC and Kern County, from the south, elected Heffington chairman of a committee to promote state and congressional approval of the Trinity project.¹⁴⁴ In May 1952, Secretary Chapman approved USBR reports on the Trinity and Sacramento Valley Canals which showed that the two projects were interrelated in terms of economic and repayment analyses and of the need for Trinity water in the canals service area.¹⁴⁵ In June 1952, Engle drafted a letter to Congress from the Weaverville Chamber of Commerce supporting the project which would “irrigate the Central Valley of California; ... generate electric power to repay most of the project costs ... and improve fishing resources.”¹⁴⁶ The SVIC paid for preparing and mailing the letters.¹⁴⁷ By late July, Fresno, Tulare, Kings and Merced counties in the San Joaquin valley were providing significant support.¹⁴⁸

In September 1952, Engle spoke in Red Bluff to an audience of irrigation proponents from the Sacramento and San Joaquin valleys.¹⁴⁹ A committee was formed with Heffington at the lead to meet with Governor Warren.¹⁵⁰ Engle orchestrated invitations from public officials from the valleys to Heffington to round up further popular support in their counties.¹⁵¹ Engle arranged for the SVIC to finance Heffington’s effort to secure state-wide support.¹⁵² However, Engle was ever cautious to avoid the appearance that grassroots support was being manufactured by politicians like him who had “an axe to grind.”¹⁵³

In October 1952, the Trinity Board of Supervisors received a petition signed by 129 in opposition to diversion and 4 in favor.¹⁵⁴ The petition read:

We, the undersigned residents of the county of Trinity, state of California, and of supervisorial district number four, and through which a good portion of the Trinity River flows, feel that the board of supervisors' recent unanimous approval of the draft of the Engle bill for the diversion of the water of the Trinity River was not representative of the feeling of the people of this supervisorial district. We therefore respectfully request you reconsider the action taken by you in this matter and advise Congressman Engle of the views of the residents of said district as manifested by this petition showing the number against and for the diversion of the water of the Trinity River in the above named district.¹⁵⁵

The petition came a little late for ordinary people of Trinity county to play a role in deciding the fate of the river.

By mid-October, Engle had already met with Governor Warren.¹⁵⁶ And, as the Truman administration neared an end, Engle turned up the pressure on Secretary Chapman to report a finding of feasibility under the Reclamation Act of 1939.¹⁵⁷ On November 5, 1952, the day after Eisenhower's victory, Engle spelled out a list of tasks for Chapman to complete before the end of Truman's term:

In the first place, the SMUD [Sacramento Municipal Utility District] contract should be put through immediately without any Argument about technical policy matters that have no real practical bearing. ... I can't urge too emphatically the importance of tying this public consumer to public power at this critical point. If we aren't careful, we will end up with no customers and the public power located permanently in the grasp of the private utility. I urge you to give this immediate attention.

Secondly: We have some plans well along and they should be matured and made Democratic accomplishments. The Trinity report should be cleared through Budget with a finding of feasibility and sent to the Congress before we go out of office. Then, when Trinity is built, as it surely will be, it will be another Democratic accomplishment. ... May I urge that Trinity be wrapped up immediately and when I get back we can talk to the President about it as well as perhaps some others you will want to treat similarly.¹⁵⁸

On November 14, 1952, USBR Commissioner Straus issued a finding that the Sacramento Canals project was feasible if the Trinity project was authorized and constructed to provide a firm water supply.¹⁵⁹ Secretary Chapman adopted Straus' finding on December 9, 1952.¹⁶⁰

On January 2, 1953, days before Eisenhower took office, Secretary Chapman adopted the finding that the Trinity project was feasible.¹⁶¹ The next day, Engle

introduced legislation to obtain Congressional authorization and appropriations for immediate construction.¹⁶² On January 5, 1953, Engle sent Governor Earl Warren a telegram soliciting his support:

We will need the support of the State for those provisions of the pending bill regulating downstream flows ...for the protection of fish This project uses less than seventeen percent of the flow of the Trinity River, eighty-five percent of which originates on Trinity County watersheds. It cannot possibly imperil future water uses downstream, where thirteen million acre feet of water is now flowing unused and wasted into the sea.¹⁶³

Engle's figures were seriously misleading. "17 %" referred to the volume of the Trinity at its confluence with the Klamath, more than 110 miles below Lewiston, the area where the fish needed help.¹⁶⁴ The proposed diversion of 660,000 acre-feet actually constituted more than 60% of the total annual flow at Lewiston.¹⁶⁵ And, the flow of "13 million acre feet" referred to the mouth of the Klamath at the ocean, not the Trinity.¹⁶⁶

When Republicans took over the House in January 1953, Engle gloated: "[w]hile you ... were out in the living room, leading cheers and slapping each other's backs, I was luggin' the bacon out the back door."¹⁶⁷

Chapter 3: How Did They Know a Dam Would Improve the Fishery? 1951-1954

In April 1952, USBR Commissioner Straus sent the Secretary of the Interior the USBR's report on the Trinity River Division ("TRD") of the CVP dated January 1952.¹ It included the report of the United States Fish and Wildlife Service ("USFWS") dated November 1951.² In his cover letter, Straus stated that the USBR report presented a plan to use "surplus flows of the Trinity" for irrigation, hydroelectric energy and to "improve the fishery."³ According to Straus, "the plan of operation is such that there will be no detrimental effect to the fishery resources or to the present and estimated future water requirements of the Trinity River Basin."⁴ According to the USBR, it outlined a plan to convert "waste water to hydroelectric energy and useful irrigation supplies."⁵ The principal demand for water below Lewiston ranged from 100 to 300 cfs totaling about 120.5 TAF (thousand acre-feet) per year for maintenance of salmon and steelhead.⁶ Requirements for the Hoopa reservation and those along the mainstem – both present and future – would be met by accretions from tributaries below Lewiston.⁷ According to the USBR, therefore, the Trinity had a surplus of 660 TAF which could be diverted without detrimental effect on the fishery.⁸

The USBR relied on releases recommended by the USFWS to protect and improve the fishery based on what it described as a "comprehensive biological study".⁹ Results of the study were published in 1950 by the USFWS in Special Scientific Report: Fisheries No. 12.¹⁰ The USBR claimed that recommendations and results of later studies were published by the USFWS in the preliminary evaluation report dated November 1951 and attached to the USBR report.¹¹ Careful review of the USFWS's November 1951 preliminary report, however, reflects no studies other than those reported in Fisheries Report No. 12.¹² Indeed, the USFWS stated that its preliminary report "was based almost entirely on data presented in Fisheries Report No. 12."¹³

The USBR claimed that the USFWS plan would improve fishery conditions by supplying releases adapted to the life history of salmon and steelhead.¹⁴ The USBR stated that colder water, better regulated flows and less flood damage to redds (spawning nests) would increase spawning below Lewiston.¹⁵ The USBR represented that the USFWS recommended a strategy that would more than compensate for loss of spawning areas above the dams.¹⁶

The USFWS, however, stated that it was not certain that fish blocked by Lewiston Dam would drop back downstream to spawn or distribute themselves proportionately over the 36 miles of stream in which spawning areas would be available.¹⁷ Indeed, the strongest statement by the USFWS was that "it appears safe to assume that the entire run of about 12,000 king [chinook] salmon which pass above Lewiston Dam site without the project can be accommodated in the 36-mile reach downstream from the dam."¹⁸ The USFWS acknowledged that steelhead usually spawned in the headwaters above Lewiston.¹⁹ It described the recommended flows as "the most practical method of maintaining the runs of anadromous fish."²⁰ The USFWS did not predict the efficacy of the release schedule; it only stated that the USBR "estimates that ... 120,500 acre-feet annually together with accretions from tributary streams below Lewiston will provide

adequate downstream flows for fish”²¹ And, the USFWS recommended that provision be made for study of fishery problems that may arise with the project so that additional requirements could be discovered and provided without delay.²²

Fisheries Report No. 12 was prepared by fishery research biologists James W. Moffett and Stanford H. Smith from data gathered between 1942 and 1946.²³ According to its authors, after years of study, diversion of the Trinity “seemed certain by 1941.”²⁴ They believed “that diversion ... would seriously affect [chinook salmon and steelhead] that [were] dependent on the upper river.”²⁵ Indeed, in 1969, the California Resources Agency agreed that it was apparent by 1941 that diversion would have a serious impact on fish in the upper river.²⁶ Moffitt and Smith’s study, therefore, had limited purposes. It was initiated to determine “possible means of controlling the fishery and its environmental factors” and “to design management plans and procedures for their protection.”²⁷ It was funded by the USBR until 1946 when the USBR terminated the project.²⁸ Due to “wartime impediments”, spawning-bed studies covered only two years.²⁹ As a result, the authors felt they could offer no positive or final conclusions and that the report was preliminary and subject to revision pending further investigation.³⁰

Moffett and Smith stated that the dam at Lewiston would cut off 35 miles of the main stem and all of the Stuart Fork, the most important spawning tributary for salmon.³¹ The Stuart Fork, including its East Fork, totalled about 38 miles.³² Moffett and Smith estimated that Lewiston dam would cut off about 50 percent of salmon and more than 50 percent of steelhead spawning grounds in the upper Trinity above the North Fork.³³

Moffett and Smith concluded that surveys of spawning beds in July and September 1945 showed that spawning capacity varied directly with river flow.³⁴ Accordingly, they thought they might be able to increase spawning areas in the mainstem by increasing the river flow above normal.³⁵ They assumed a “normal flow” based on a median average daily minimum flow of 150 cfs at Lewiston during peak fall chinook spawning between November 1-15 from 1927 to 1944.³⁶ They estimated the available salmon nesting sites between the proposed Lewiston dam site and the North Fork at flows ranging between 100 and 350 cfs.³⁷ From these observations, Moffett and Smith proposed three flow schedules by which available spawning capacity below Lewiston could be increased.³⁸ Out of the three, the USBR chose the least expensive, fixed flow schedule (totaling 120,500 acre-feet annually) over the plan with the “greatest biological possibilities” (minimum flow of 300 cfs or 217.2 TAF per year).³⁹ Moffitt and Smith predicted that the proposal with the best chance of preserving salmon would “probably be the least desirable to the constructing agency” because it called for the greatest streamflow each year.⁴⁰

Moffett and Smith pointed out important limitations on the redd estimates in their study. Certain riffles with suitable gravel, current and water depth were compacted, cemented and unusable.⁴¹ The authors did not indicate whether or how those riffles were identified and eliminated. However, they did note that the accuracy of the estimates “depended on the experience and judgment of personnel conducting the spawning site surveys.”⁴² They also cautioned that the proposed “regulated flows [were] far below

those normally encountered following salmon spawning under natural conditions; thus silt could settle out rapidly, impact the gravel, and suffocate eggs and young fish; therefore, stringent measures must be taken so that no mining silt will be introduced into the river during” spawning periods.⁴³ In addition, Moffett and Smith also recommended constructing fish counting and separation barriers on the mainstem below Lewiston and increasing spawning areas on certain tributaries by building storage dams and removing natural and artificial barriers.⁴⁴ The USBR ignored those additional recommendations.

The fixed flow proposal selected by the USBR was based on a methodology that was obviously open to question. For example, Moffett and Smith assumed that the “normal” flow during peak fall spawning (i.e. November 1-15) was 150 cfs.⁴⁵ They arrived at this “norm” by discounting temporary fluctuations due to common rains of short duration and variable intensity.⁴⁶ So, they only counted the minimum average daily flows from November 1-15 during an 18 year period which included 12 dry or critically dry water years.⁴⁷ The fixed flows recommended for the fall run (i.e. September through November below Lewiston)⁴⁸ were substantially lower than the average daily flows for 82 of 91 calendar days for the period 1928-1942 and the average monthly flows for water years 1932 to 1939.⁴⁹ In sum, it was certainly debatable whether the fixed flows proposed by Moffett and Smith really were increases over historical norms. Further, Moffitt and Smith expected the river below Lewiston to produce twice as many fish, but they did not consider how the river could provide habitat for them before they migrated to the ocean if summer flows were kept at a minimum.⁵⁰

In August 1952, Seth Gordon, the first Director of the CDFG submitted a candid critique of the USBR’s “overoptimistic” report.⁵¹ He described the proposed flows as a “bare minimum” which was dangerously close to a level which could result in serious damage to the fisheries.⁵² The 100 cfs recommended for July through October was far below the monthly average of 221 cfs for this period from water years 1912 to 1948.⁵³ He felt that 150 cfs recommended for April through June could impair the migration of smolts in late spring.⁵⁴ Even the 300 cfs during fall spawning “seem[ed] low.”⁵⁵ He described the USBR’s claim that the regulated flows would maintain and improve the fishery as “deceiving.”⁵⁶ He predicted the future pretty accurately:

We believe that the fact that the dams will cut off 38 percent of the present spawning area of the Klamath drainage king salmon and an estimated 75 percent on the Trinity River king salmon spawning area is going to have a harmful effect upon this species. Also, the fact that the dams will cut off a very large but unknown fraction of the steelhead spawning area indicates the probability of great harm to that species.⁵⁷

....

We think that there is a good possibility that the normal floods have tended to agitate the gravel between Lewiston and the North Fork and that without such agitation the gravel may become compacted and lose some of its value for spawning. This compaction may be increased by the Trinity Reservoir in which phytoplankton will develop. The growth of diatoms on the gravel below Lewiston may be greatly increased

through the action of the Trinity Reservoir and this will not be neutralized by occasional floods but will be permitted to develop year after year and further compact the gravel until it is less suitable than at present.⁵⁸

....

It does not seem clear that the steelhead will scatter out in the river below the dam or enter the tributaries below Lewiston unless they are of the races which normally spawn there. We believe that the steelhead which now spawn in tributaries above the dam will try to do so after the dam is built and that plans must be made for their salvage.⁵⁹

Of three possible alternatives proposed, Moffett and Smith stated that increasing spawning capacity by “increasing” mainstem flow was the “least likely to prove unsatisfactory.”⁶⁰ Most prudent trustees charged with the highest legal duty to protect fishery assets would not promote this as a plan to “improve the fishery.” There were fundamental reasons why Moffett and Smith did not address the natural processes by which the unregulated river maintained various habitats needed by all life stages of multiple populations of native salmon and steelhead.⁶¹ They knew that depletion of Klamath salmon was progressing at an alarming rate, that artificial propagation could not alleviate the decline and that the dams would hasten the decline.⁶² They were asked to assume that the USBR would divert “as much [water] as possible.”⁶³ No one asked them whether it was a good idea to build the dam. They were just asked to “study ... the fish problem and recommend the proper procedure for its solution.”⁶⁴ The proposition that the dam would “improve the fishery” was nothing more than deception on the part of the USBR.⁶⁵ And, the USBR was warned in 1952 that reduced flows could have detrimental effects on salmonids.⁶⁶

But, the USBR’s deceit went even further. In a preliminary draft prepared by the Arcata Planning Office of the USBR in 1953, the staff evaluated maximum future water requirements for development of the principal natural resources of the North Coast.⁶⁷ The staff concluded that the “large water supply required in connection with processing the timber resources would be available for improvement of the fish resource. Therefore, no water supply development was contemplated for the fishery resource alone.”⁶⁸ By 1951, Trinity County produced 172,887,000 board feet of lumber from 32 mills.⁶⁹ The BOR staff assumed that future production of pulp and paper would require large quantities of water.⁷⁰ Operation of pulp and paper plants would have required more than “1,000 cubic feet per second in the river at all times at Hoopa” for dilution of pulp mill effluent.⁷¹ The staff felt that the increased flow would be of considerable benefit to the fishery.⁷² However, the staff concluded that releases proposed by the USFWS were insufficient to meet the 1000 cfs at Hoopa needed for the maximum future water requirements of the region.⁷³ And, Moffitt and Smith’s calculations indicated that their fixed flows would have fallen short of potential water needs at Hoopa from July through October.⁷⁴

On January 2, 1953, Secretary Chapman sent his authorization for the Trinity project to Congress.⁷⁵ The State of California failed to submit its comments, including those of

its Fish and Game Director, to the Secretary until April 1953, about nine months late.⁷⁶ Apparently, the Secretary approved the project in January 1953 without seeing the comments of California's Director of Fish and Game. Delivery of California's comments were delayed while the division of water resources sat on the Secretary's proposed report for about one year.⁷⁷

[The future needs of coastal counties ultimately never were considered]

Chapter 4: Hurry, It's Too Late to Turn Back Now. 1953-1955

On Sunday, January 11, 1953, nine days after the Secretary of the Interior approved the project, Heffington presided over a public meeting at the courthouse in Weaverville. Two days before, Heffington had proudly reported to Engle that he was meeting with local businessmen on Friday night to prepare to “stymie the opposition” at the Sunday meeting.¹

At the Sunday meeting, Mrs. Gertrude Hoskinson of Junction City suggested a test vote to measure public opinion in the county.² Heffington said there was “no time [for that] now,” adding that the county had “committed itself some time ago to go along with the diversion.”³ He clarified that by the county he meant the board of supervisors.⁴ Mrs. Hoskinson then asked, “why ask for protests if the project is already approved?” Heffington replied that the meeting was to “find the sentiment” about authorization of the project and ... Engle’s bill.⁵ Moon Lee, a Chamber of Commerce official, suggested that since it was too late to oppose the project, they should ask for more than what they might expect because it would be cut back.⁶ A show of hands at the close of the meeting was 46 for Engle’s bill and 6 opposed.⁷

Later that month, Engle was advised that the new Board of Supervisors refused to endorse the project.⁸ Forgetting his promise from a year earlier, Engle’s only response was that the Board “by all means must be kept in line.”⁹ Later, Engle answered charges that newcomers on the make were trying to push the project down the throats of old-time Trinity residents.¹⁰ He explained that diversion was inevitable because the costs of fully developing Central Valley water resources were not economically feasible.¹¹ So, he advised that Trinitarians “should take the bull by the horns and make the best possible arrangement for themselves.... Too often the mountain areas which I represent have dilly dallied around until they lost control of the legislation affecting their own water because of the tremendous pressures from the heavily populated areas.”¹² Engle had the alarming ability (and perhaps a sense of irony) to take the best for those whom he represented from those whom he represented.

On February 4 and 5, 1953, Governor Earl Warren held a formal conference with the opponents and proponents of the Trinity diversion.¹³ Marshall Jones of the BOR assured the Governor that the impact on salmon and steelhead would be negligible.¹⁴ He explained that it would be cheaper to divert the Trinity than to build a series of tributary dams along the Sacramento Valley.¹⁵ Heffington claimed there was near unanimity of public support for the project in Trinity County.¹⁶ Charles Dicker of Redding, indicated the project would develop timber and agricultural and industrial resources in his area.¹⁷ Others emphasized the need for additional irrigation supplies in the mid-Sacramento valley and additional water and power in Santa Clara and Alameda counties.¹⁸ Governor Warren announced his support in April 1953.¹⁹

In the early months of 1953, Heffington formed the California Committee for Trinity River Development (“CCTRD”) and toured the San Joaquin Valley to coordinate

support.²⁰ Engle urged Heffington to press boards of supervisors for tax dollars to finance the committee .²¹

Surprisingly enough, Engle's team faced an uphill fight for support among farmers in the Sacramento Canals service area. In March 1953, Donald Smith, Secretary of the Sacramento Valley Irrigation Committee, advised Engle that it would take substantial time to convince farmers to form water districts to contract for CVP water.²² Smith felt it would be a lengthy educational process to make the farmers "realize that we must do something concrete as to putting water to use on our land if we are going to keep it even though it may be ten years before we are able to do so."²³

And so, Engle tried to frighten them into compliance:

There are two or three things I think we ought to get settled in the beginning. The first is [the] statement that the Sacramento Valley water rights are sufficient to protect us and that therefore there is no urgency in doing anything about them. As stated to you before, this is purely academic. After the water is gone there will be no way to get it back. We might get in a big lawsuit which would drag on for ten years, but that wouldn't put any water on the land. It is hard to take water away from people once they have put it to use and developed their farms and homes on the basis of that use. In fact, for all practical purposes it is impossible. In addition, the Bureau of Reclamation takes the position that we now have to have more water for the ultimate development of the Sacramento Valley Canals—that we are already short. ... [W]e are in desperate straits as far as out water is concerned, and every year's delay makes the matter worse. The only way to protect ourselves is to build the facilities and tie down the water by actual use, or by plans for use pursued with reasonable diligence. Those steps will save it for us, and nothing else. That is why I said that time is of the essence.

Furthermore, if they ever stop the construction of the Valley Canals because insufficient interest locally is shown, the Lord only knows when we will overcome the inertia and get them started again. Getting on these projects built is like driving a car on ice—if you ever lose forward motion you are sunk. It is imperative, therefore, that we get a major construction contract let on the Valley Canals, and that has to be done in the immediate future because the money is there now. If they put us on the shelf appropriation-wise in the upcoming session of Congress because we haven't shown enough local interest to organize districts, we may not get started again for another ten years or more.

...

The log jam on any future progress is the organization of districts. We can't go ahead with construction without these districts.... I talked to Dexheimer [USBR Commissioner] this week and he positively is not going to issue a major construction contract until some

districts are organized, thus evidencing the local interest in the availability of this water.²⁴

At the heart of Engle's scare tactic was the threat that "Northern California's water rights may be lost."²⁵

In May 1953, Seth Gordon, Director of the CDFG, wrote Engle to express his approval of the draft Trinity bill (H.R. 123).²⁶ Gordon warned, however:

[o]ur feeling has always been that the report of the Bureau of Reclamation has been somewhat overly optimistic about the general picture of the effects of the project on the fisheries resources on the Trinity River. With proper planning and adequate consideration for these resources, however, we believe that this damage can be offset to a very large degree.²⁷

Gordon recommended that the bill set aside a yearly total amount of water for fisheries preservation, instead of specifying a minimum flow (then 175 cfs) coupled with a general directive that the Secretary maintain "the most beneficial stream flow ... to insure the maintenance of fish life and the propagation thereof ..."²⁸ Engle responded with a letter that stated that an annual set aside made sense and provided greater flexibility.²⁹ But, he did not revise the bill.

By June 1953, Engle had concluded that the timing was not right to push for a vote on the Trinity bill. He feared that the water policies of the new administration were unsettled. He thought that the new members of his committee tended to shoot from the hip and were a little unpredictable.³⁰ He did not want the Trinity project to be a guinea pig for resolving policy questions in the new administration.³¹ However, he did plan to move rapidly once the situation in Washington improved.³²

Engle's interest in promotional activities, however, had not waned. He felt that the Trinity project needed "people coming in here screaming for water."³³ And, he had an idea who might scream the loudest:

The people who have the most logical interest are those on the west side of the San Joaquin Valley. There is a group down there represented by Gil Jertberg of Fresno. This group has organized the biggest water district in the State, representing I believe something like 400,000 acres. They are absolutely out of luck for water unless they get more water into the Central Valley system.³⁴

And so, Engle suggested that Richard Boke, former Regional Director of the USBR in Sacramento who had become a water resource development consultant advising clients on land investments,

could do a real job for the Valley by indicating some interest on the part of your financial group in investment in land in that area, provided they get

water--- and the first place for them to get water is from the Trinity. If they will come into Congress with a real program for the development of that area, and state that the development of the Trinity is absolutely necessary for their going ahead, it might be the impetus that will put the Trinity over the goal line.³⁵

By December 1953, Engle had arranged for Jim Carr, who, after leaving the USBR, had become a consulting engineer for the Sacramento Municipal Utility District, and Jack Rodner, manager of the Westlands Water District (“WWD”), to coordinate support for the Trinity with Heffington.³⁶ During World War II, the organizers of the WWD had paid the USBR \$40,000 to study a project to deliver water to the westside of the San Joaquin valley.³⁷ In 1952, the WWD was formed by large, corporate landholders along the eastern slope of the Coast Range from Merced to Kern counties.³⁸ Rodner, Westland’s manager, was a former USBR Regional Director in Fresno, who had urged Carr to use his influence in Sacramento and Washington to get Trinity water to his members and to add representatives from the district to the CCTRD.³⁹

On January 29, 1954, Jertberg, WWD’s attorney, visited Engle and proposed that they promote the Trinity and San Luis projects as a package deal.⁴⁰ Engle encouraged him to tout the Trinity as “absolutely necessary” for the west side of the San Joaquin valley.⁴¹ They agreed that Rodner, who would continue to be paid by the WWD, would be ideal to perform the field work and full-time promotion of the Trinity-San Luis project.⁴² Jertberg promised to help raise promotional money.⁴³ Ever sensitive to political appearances, Engle urged Rodner “to keep Trinity people well out in front so far as publicity is concerned” to avoid the charge that they were fronting for another water grab by the San Joaquin Valley.⁴⁴

In nearly the same breadth, Engle directed Jim Carr to urge members of the Sacramento Canals committee “to get behind the scenes and to keep the farmers out in front.”⁴⁵

In March 1954, Rodner told the Redding Chamber of Commerce that the WWD did not want to take a drop of water from the Trinity until all the water that can be beneficially used in the Trinity and Sacramento area is definitely reserved for them.⁴⁶ Rodner claimed that studies showed that Trinity diversions could provide a “sufficient supply to Trinity, Shasta, Tehama, firm up supply to the Sacramento River area and take care of the initial development of the San Luis Project ... with a surplus still running into the ocean.”⁴⁷ He added that sale of Trinity water to the San Luis Project would make the Trinity project economically sound and practical.⁴⁸ Heffington, of course, endorsed united support from northern and central California.⁴⁹ By March, the WWD had already raised \$125,000 for the project.⁵⁰

Ironically, the emergence of the WWD as a powerful promoter of the Trinity project triggered fear among members of the Sacramento canals committee. Although most of the water sought by the WWD would come from winter runoff from the Delta, Rodner had indicated that at least 300,000 additional acre feet would be needed during the

irrigation season.⁵¹ Members of the canals committee knew they would eventually have to rely on the Trinity. And, Rodner had advised them that WWD would need about half of the Trinity diversion.⁵² Engle, of course, saw this conflict as a healthy stimulus of greater demand for development.⁵³ By the March meeting of the newly organized state-wide committee for the Trinity in Fresno, both groups believed that the Trinity project depended on their mutual support.⁵⁴

In March 1954, Engle scheduled a hearing on the Trinity by his Subcommittee on Irrigation and Reclamation in Redding.⁵⁵ Engle arranged with the Colorado River Association to pay for subcommittee members also to visit Fresno and Los Angeles.⁵⁶ WWD President, Jack O'Neill, obtained a DC-3 from Standard Oil, a founding member of WWD, to fly subcommittee members from Redding to Fresno and Los Angeles.⁵⁷ O'Neill was a wealthy west-side rancher and meat packer who was a personal friend of Interior Secretary McKay and a strong backer of Senator Kuchel.⁵⁸ On the morning of April 16, 1954 in Redding, Congressman Sam Yorty, future mayor of Los Angeles, put the proceedings in perspective :

[T]hose of us from southern California are especially grateful to Congressman Engle for the work he has done to help us with our projects... [and we] value your Congressman just as much as you do up here. He has done a wonderful job on this project, on pushing it through....⁵⁹

Like a bride whose virtues are compared to those of a courtesan, Engle hopefully felt damned by such indiscrete praise. But, history, unfortunately, has not yet revealed whether the future mayor lost or simply forgot to read his playbook before the hearing.

No matter, as Heffington, then Chairman of Californians for the Trinity, Sacramento and San Luis projects, rose next as a counter to Yorty, offering Trinity's surplus water to the Sacramento Canals and San Joaquin Valley for the sake of California's burgeoning population.⁶⁰ Heffington was followed by Charles Dicker, a director of Heffington's organization from Redding, who testified confidently that fish would be benefited greatly by regulated flows.⁶¹ Dicker's comments inspired one of Engle's more sublime comments: "[t]hose fish get sunburned going over the riffles, and we need to put more water in there for them."⁶²

The hearing presented some other surprises for Engle as well. In response to questions posed by Congressman Yorty, State Engineer Edmonston testified that the west lands of the San Joaquin Valley did not need water from the Trinity, indicating that adequate supplies were available from the Delta and the State's planned Feather River project⁶³ Then, a representative of the Klamath Chamber of Commerce pointed out another uncomfortable point: as co-author of the Sacramento canal units bill, Engle had flatly denied that full operation of the canals would require Trinity water.⁶⁴ The SVIC representative, however, had carefully indicated that Trinity water was needed to ensure satisfaction of the potential needs of the Sacramento Canals area.⁶⁵ A month earlier, Engle had directed the Secretary of the canals committee to take the position "that although you have an assured water supply sufficient for 25 years (from Shasta

reservoir), that you want to stake out your first claim on the Trinity water for the ultimate development of the Valley canals.⁶⁶

Then, in a heated exchange driven by Engle's cross-examination, no doubt triggered by the witness's audacity in bringing up an old and unseemly quote, the representative from the coast made an equitable appeal the merits of which Engle deftly dodged:

[w]e have the right in all fairness and justice to know what our water requirements are. I don't believe Mr. Durkee [State Director of Public Works] or Mr. Edmonston know what the ultimate water requirements of the Klamath Basin are going to be.... We want a resource study made.... We want to know the facts before we make up our minds, and those studies have not been made. Unless those studies are in, I decry any agency interfering.

...

Congressman Engle: ... whatever the merits of your arguments, you are addressing them to the wrong forum. They don't belong here. This committee is not going to decide what the State of California should do with its water resource. The people of the State of California through their elected officials, and through the executive branch ... will make that decision and once they have made it, as far as we are concerned, that is the end of it. They may be wrong, but nevertheless in our opinion they have the right to make that decision. It is my considered judgment that your argument should be made at Sacramento and not at Washington.⁶⁷

Engle was clearly put off, particularly since weeks earlier he had tried to intimidate the opposition from the coast:

Board of Supervisors, City of Arcata, other public officials of Humboldt County will be given opportunity requested to be heard by Interior Subcommittee in Redding on April 16. I [ersonally want to cooperate with you and the people of Humboldt County, but cooperation is a two-way street. I suggest that Humboldt interests drop their blind opposition to Trinity project and try to do something constructive for themselves.⁶⁸

Congressman Yorty, however, could not resist entering the fray to defend his distinguished colleague from the north. Yorty quoted statistics cited in the State's response to the project that only 25 % of the flow of the Trinity at Hoopa (about 98 miles downstream from Lewiston) or 7 % of the flow at the mouth of the Klamath (another 55 miles further downstream) would be diverted.⁶⁹ Yorty concluded with a piercing question: "[I]s it your position that this project is not important enough to justify diverting 7 percent of the total flow of the Klamath River?"⁷⁰ This rhetorical flourish obviously had very little to do with the actual water needs of the entire watershed below

the dam, especially the fish that once inhabited it. But, for that matter, neither did the hearing.

Fortunately for Engle, these pesky surprises ended when Jack Rodner took the podium. Rodner introduced himself as executive secretary of Heffington's organization and manager of WWD, speaking for half a million acres of farmland then served by deep wells.⁷¹ Rodner spoke bluntly; the Trinity was the only water available quickly enough to prevent his "agricultural empire" from reverting to desert.⁷² A statement from WWD President J.E. O'Neill submitted by Rodner, claimed that westland farmers were pumping more than four times the annual underground recharge from progressively deeper and more expensive wells.⁷³ According to O'Neill, the westland farms would revert to desert in a few short years without water from the north.⁷⁴

Actually, the most significant development at the 1954 hearing has not been discussed. The speaker who elicited the biggest reaction by subcommittee members represented the Pacific Gas and Electric Company ("PG&E"), the largest private utility in the nation which monopolized power production and distribution throughout most of the state. PG&E offered to participate in the generation and marketing of power developed on the Trinity.⁷⁵ Then, in May 1954, PG&E extended its offer to include the purchase of all CVP power facilities.⁷⁶ PG&E's interest led the USBR to announce in August that it would restudy the Trinity authorization.⁷⁷

Two final points should not be forgotten. No witness ever mentioned the federal government's trust obligations to protect Indian fishing and water rights. Former State Senator Irvin Quinn of Humboldt asked whether the water rights of the Indians would be taken, noting that they were "the only real thing they have of value to make their lands worth while."⁷⁸ And, Yurok Princess Lowana Brantner succinctly stated that the Trinity dam, and the Copco Dam already on the upper Klamath, would leave insufficient water for logging and salmon spawning.⁷⁹ But, subcommittee members could not even think of one comment or question when it came to Indian rights. The federal obligation to protect Indian trust assets quite simply was not a matter of concern.

Second, representatives from the "county of origin" were noticeably absent from hearing -- which was just over the hill. The Trinity Board stated that it could not testify due to the large number of witnesses and limited time.⁸⁰ A week after the hearing, the Board wrote the Chairman of Engle's committee advising him that the County had hired a civil engineer to study the county's ultimate needs for water from the river.⁸¹ The Board noted that it was in general agreement with the plans for the project proposed by the USBR. However, the Board requested the opportunity to present the results of its study at any future hearings on authorizing legislation.⁸² A year later, after Engle had risen to the position of Chairman, the Board's request was not honored at the final hearings on the Trinity bill. [double-check 4/13-15/55 hearing] It is safe to say, therefore, that the Trinity Board had spent all its political power by endorsing Engle's project too early.

On the federal level, the Trinity project remained on course. In July 1954, the Sacramento office of the USBR sent a supplemental report on engineering and economic feasibility to the USBR Commissioner.⁸³ It called for diversions ranging from 480 TAF (thousand acre-feet) to about 1 MAF (million acre-feet) annually with an average of 704 TAF.⁸⁴ By coordinating the Trinity diversions with other features of the CVP, the Sacramento canals unit would receive an additional 665 TAF for 205,400 acres and 142,800 acres in the Delta-Mendota area would receive an additional 525 TAF.⁸⁵ In the 1952 plan authorized by the Interior Secretary, the USBR had only estimated an average annual diversion of about 660 TAF.⁸⁶ However, Clyde H. Spencer, Regional USBR Director, subsumed this under the category of “important modifications ... in matters of detail.”⁸⁷ Ignoring the 1952 comments by the CDFG and the USBR staff in Arcata, Spencer, concluded that surplus water could be diverted “without detrimental effect to the fishery resources or to the present and future water requirements of the Trinity River Basin.”⁸⁸

In November 1954, Democrats won control of the Congress. As ranking member, Engle became the next Chairman of the House Interior Committee. But, weeks after the election, State Engineer Edmonston announced that he opposed the Trinity-San Luis project because it conflicted with his own Feather River Project.⁸⁹ Infuriated, Engle insisted that WWD president O’Neill should convince Governor Goodwin Knight to stop Edmonston.⁹⁰ At Engle’s instigation, O’Neill led a group of powerful landholders and State Senator Burns from Fresno to El Centro to meet with State Senators J. Howard Williams, chairman of the Interim Water Committee, and Ben Hulse.⁹¹ O’Neill stressed that the westlands needed water sooner than the proposed Feather River Project.⁹²

On December 29, 1954, Sidney McFarland, engineering consultant to Engle’s committee, sent Heffington draft bills for authorization of the Trinity and San Luis projects and one for the Trinity alone.⁹³ He alerted Heffington that Engle planned to introduce legislation on the first day of the new Congress, January 5th. The drafts deleted any reference to minimum flows because “it [was] not practical to specify minimum continuous releases as the needs will vary at different times of the year and sometimes even from day to day. The release of 175 second-feet continuously would result in a waste of water which would adversely affect the project feasibility without any appreciable benefits to fish and wildlife.”⁹⁴ According to McFarland, specifying that releases must be such as “to insure the preservation and propagation of fish and wildlife” was “adequate to give assurance to Trinity County that fish and wildlife must not only be maintained by the project operation but must also be benefited.”⁹⁵

On January 5, 1955, Engle and Senator Kuchel introduced identical Trinity-San Luis legislation which provided \$225 million for construction.⁹⁶ In his first draft, Engle left the Trinity flow to the discretion to the Interior Secretary; however, to appease coastal and Trinity opposition, Engle added a provision for a minimum flow of 150 cfs during the four summer months.⁹⁷ A “radical” faction of 26 Weaverville residents called for a minimum flow of 221 cfs in the dry months based on the average from 1911 to 1948; but Heffington’s “bare minimum” prevailed, relying on statistics from the drought

years of 1928-1942 which Moffitt and Smith had cited as a “norm”.⁹⁸ Engle defended 150 cfs on the ground that it was 160% more than the September average from 1928-1934—the period of the worst drought then on record.⁹⁹ Engle justified his choice of the drought period for reference because “projects in California are planned on the basis of the 7-year critical period from 1928 through 1934.”¹⁰⁰ Never afraid of gilding the lily, Engel added:

Water isn’t needed in the winter months when it can’t be used and when it actually inflicts damage. The Trinity suffers during the low flows and it is during this period of time that the percentages are really important. As indicated above, this legislation guarantees flows two, three and four times greater than those during the low months, and therefore stabilizes the river for the benefit of fish life and recreation.¹⁰¹

However, in February 1955, CDFG Director Seth Gordon and State Senator Regan attempted to set Engle straight. By copy of a letter to Senator Regan, Director Gordon advised Engle that the 150 cfs minimum “should be changed as soon as possible.”¹⁰² Gordon stated that flows should be between 100 and 300 cfs with a total of 120,500 acre-feet reserved annually for fisheries below Lewiston.¹⁰³ Gordon also stated his understanding that Engle had agreed to amend his bill to include a yearly total minimum.¹⁰⁴

Two years earlier, Engle had received Gordon’s comments on the USFWS’s 1951 report in which he stated that the flow at Lewiston averaged 221 cfs over the four lowest months annually for the 37-year period from 1911 to 1948.¹⁰⁵ Engle’s statistical gamesmanship was even criticized in the *Trinity Journal*.¹⁰⁶ Engle’s response, however, wasn’t very responsive:

With reference to the flow releases on the Trinity... I will embody the language in the bill which is best calculated to protect and guarantee the preservation of fish life in the River. However, in view of the uncertainties as to what is going to be best, it is a little hard to do that at this time. I think that we should do the very best we can, and include a very clear policy statement that the fish life in the River is to be protected in all events.¹⁰⁷

Engle’s whimper sounded like the little boy who, unable to proclaim his innocence, proclaimed instead his good intentions. Engle’s chief strategy, at this point, was to go limp and avoid controversy.¹⁰⁸

About this same time, Senator Regan asked Engle:

Some comment has been made that although the minimum flow, for example, 150 cubic feet per second, may be sufficient, that some of the greater flow is needed to flush the river of impurities, etc., which flushing comes about each year during the high water.

Is there anything to this one?¹⁰⁹

A week later, Regan asked Engle to address Gordon's comments.¹¹⁰

Engle's answer came in a letter to Gordon, which was not very satisfying:

I have always believed that the provisions of the Trinity Bill should be more flexible with reference to the protection of fish and wildlife. at one time I suggested that the Secretary be required to maintain a minimum flow found to be the best suited for the river by the California Fish and Game Commission. Nobody seemed to like that suggestion: the people in Trinity County thought it was too vague and the Interior people thought their own Fish and Wildlife could come up with a pretty fair answer. We finally arrived at the figure of 150 cubic feet per second as the most reasonable one under all the circumstances. Nevertheless it may work out to be too much water at some times and not enough at others.

The problem boils down to making something certain that is incapable of being made certain at this time. My answer is to do the best we can, and if necessary amend the law after we see how it operates. It should be made clear at all stages of the proceeding that the fish life in the Trinity River is to be maintained and improved.¹¹¹

In February 1955, Interior Secretary McKay recommended immediate construction of the Trinity-San Luis project on the basis of the USBR's restudy report.¹¹²

In early 1955, internecine struggles continued on the state level. In January, the Oroville Chamber of Commerce adopted a resolution in opposition to Engle's bill which it viewed as conflicting with the state's Feather River Project.¹¹³ State Senator Paul Byrne from Chico then introduced a resolution in the state legislature to block construction of the San Luis unit of the Trinity project.¹¹⁴ Viewing the Feather River squabble as another threat to delay the Trinity project, Engle called for integration of the two projects.¹¹⁵ The Trinity would supply about 350 TAF or about one-tenth of the needs of the San Luis unit – the balance to be supplied by the Feather River project.¹¹⁶ Engle stressed that low-cost Trinity power was critical to the economic feasibility of the San Luis unit which needed inexpensive power to lift water to the San Luis Reservoir.¹¹⁷ Engle proposed federal construction and operation of the San Luis unit until the state completed the Feather River project and could then lease the San Luis unit.¹¹⁸ Engle traveled to Oroville in February to advise local politicians that he would drop the San Luis project from his Trinity bill.¹¹⁹ Engle then telegraphed Rodner to reassure westland farmers that his address had been misinterpreted.¹²⁰ When the telegram ended up in the offices of the Sacramento and Fresno Bees, Engle disavowed the telegram and reiterated his intention to introduce separate Trinity legislation.¹²¹

On March 7, 1955, Engle introduced HR 4663 which excluded the San Luis unit from the Trinity project.¹²² Hearings were held in Washington from April 13-15, 1955. USBR witnesses explained that the project would divert an average of 704 TAF acre-feet to irrigate 205,000 acres in the Sacramento canals area and 141,000 acres along the Delta-Mendota canal.¹²³ However, in response to questions concerning protection of the fishery, posed by USBR foe John Saylor of Pennsylvania, R.N. Murray, a USBR engineer from Sacramento, seriously misled the subcommittee. Murray testified that the State fish and game commission had approved the original USFWS flow recommendations with minor adjustments which were adopted as operational criteria for the project.¹²⁴

Murray, however, failed to mention the 1952 opinion (reaffirmed in 1955) of the Director of the CDFG that the minimal flows proposed by the USBR could not maintain or improve the fishery.¹²⁵ In fact, in March 1995, the Director of the CDFG stated: “[w]e are ... extremely concerned at the present time regarding the reservation of enough water to maintain adequate flows to maintain the fishery resources in ... the Trinity River....”¹²⁶ Murray (and the USBR) ignored significant measures which the CDFG had recommended in 1952 (and 1955) in addition to regulated flows.¹²⁷

But, in the end, Engle did not really seem to care. He noted, for example, that H.R. 4663 looked toward “long-range protection and improvement, if possible, of the fish life of the river” and “[a]s a matter of fact, the project operation [would] stabilize the flow of water so that during the summertime the steelheads do not get their backs sunburned going up the river.”¹²⁸ Engle, however, was seriously concerned that the Trinity Board of Supervisor “authorize” Heffington to attend the hearings in Washington to protecting and supporting provisions in the bill beneficial to Trinity county.¹²⁹

The Director of the CDFG was not the only person to express concern over the Trinity project. In 1954, witnesses had asked Engle’s subcommittee to defer the project until the USBR completed a study of water needs within the Klamath basin.¹³⁰ In April 1955, the USBR assured Congress that it would complete a study of the long-range water needs of the Klamath basin by 1957.¹³¹ In response to an urgent request from Engle, Assistant Interior Secretary Aandahl sent Engle a message dated the day before the start of the April hearings on Engle’s bill. Aandahl explained that Interior could not prepare final reports on the Trinity and San Luis projects until after it had received comments from the State of California and various federal agencies on interim reports on both projects.¹³² In response to Aandahl’s letter, the Bureau of the Budget asked Congress to defer action until Interior’s final reports on the Trinity or San Luis projects were available.¹³³ Engle, however, made sure that his bill was not delayed. And, the fate of the USBR’s assessments of the water needs of the Trinity and Klamath basins remain unclear except that they were never disclosed to Congress [?]

On May 19, 1955, the House Interior Committee reported Engle’s HR 4663. Between April and May, opponents within California withdrew in favor of a sure thing – federal construction of the Trinity project.¹³⁴ At the conclusion of debate on June 21, the

House approved the Trinity project by 230-153.¹³⁵ Engle finessed PG&E's offer to lease falling water from the Trinity which appealed to many congressmen (and many in Trinity county) by inserting a provision authorizing the Interior Department to study the proposal and report back to the House Interior Committee within eighteen months.¹³⁶ In the meantime, construction could begin and the Trinity would get "less talk and more cement and steel."¹³⁷ Unanimous approval was reached by the Senate on Saturday July 30, 1955. On August 12, 1955, President Eisenhower signed the Trinity bill authorizing \$1 million for the USBR to prepare detailed plans and specifications.

Engle's Committee Report on H.R. 4663 embodies the legislative history of his project. An average of 704,000 acre-feet would be diverted annually for use in the Sacramento canals area and in the west side of the San Joaquin Valley.¹³⁸ Engle stated, albeit erroneously:

both the State and the Bureau of Reclamation conclude that there is available for importation from the Trinity River, water that is surplus to the present and future water requirements of the Trinity and Klamath River Basins, and that surplus water, in the amount proposed in the Trinity division plan, can be diverted from the Trinity River to the Central Valley without detrimental effect to the fishery resources. The committee believes it unnecessary to await the final results of studies presently underway to determine precisely the future water requirements in the Klamath River Basin before going ahead with this relatively small diversion compared to the average amount wasting to the Pacific Ocean from the basin each year.¹³⁹

Even more significantly, Engle attached the April 12, 1955 letter from the Assistant Secretary Aandahl which implied that the CDFG had concurred with the release schedule recommended by the USFWS as a method to maintain and improve fishery conditions.¹⁴⁰ The facts were that on March 21, 1955, the Director of the CDFG repeated his "extreme" concern that the flows recommended by the USFWS would not maintain or improve the fisheries.¹⁴¹ The views of California's Director of Fish and Game were not forwarded by the Interior Secretary to Congress until almost three months after the President had signed the Trinity bill.¹⁴² Furthermore, the Assistant Interior Secretary's report specifically recommended that the monthly flow schedule prescribed by USFWS be adopted as opposed to the flat minimum flow for the months of July through November contained in H.R. 4663.¹⁴³ And, as late as June 7, 1955, CDFG Director Gordon again strongly recommended to Engle that a minimum of 120,500 acre-feet released annually below Lewiston to maintain the fishery.¹⁴⁴

Engle, however, ignored the specific recommendation of the Interior Department. H.R. 4663 was enacted with a minimum flow of 150 cfs for July through November subject only to the CDFG agreeing to a lesser flow.¹⁴⁵ This insured a minimum flow of about 45,518 acre-feet per year.¹⁴⁶ No federal or state agency involved in the protection of the Trinity fishery ever even considered the minimum flow contained in H.R. 4663. The minimum peak spawning flow (for October and November) in H.R. 4663 was one-

half or less than the releases recommended by the USFWS and California.¹⁴⁷ H.R. 4663 relied solely on the Secretary's discretion to choose the appropriate method of fishery protection. H.R. 4663 required him to operate the project as integral part of the Central Valley project "pursuant to the Federal reclamation laws" to "effectuate the fullest, most beneficial, and most economic utilization of the water resources ... made available [by the project]."¹⁴⁸ But, his duty to coordinate the operation of the TRD with the entire CVP, however, was subject to the requirement that he "adopt appropriate measures to insure the preservation and propagation of fish [in the Trinity]"¹⁴⁹

Engle's realpolitik was both tragic and ironic. H.R. 4663 directed the Interior Secretary to exercise his discretion to protect Trinity salmon while at the same time trumping his Assistant's initial exercise of that discretion. In place of the Assistant Secretary's specific release schedule, Engle substituted a minimum flow of 150 cfs which Moffitt and Smith had described as a median minimum flow between November 1-15 from 1927 to 1944 which included 12 dry or critically dry water years.¹⁵⁰ The crux of Moffitt and Smith's recommendation was that this flow had to be increased in order to accommodate increased spawning below Lewiston to compensate for the loss of spawning area above the dams.¹⁵¹ That was the sole basis for the claim that the fishery could be maintained with the dams. In the end, Engle deleted Moffitt and Smith's woefully inadequate plan of protection for salmon (120,500 acre-feet per year) on which the Secretary of Interior had relied to authorize the project. He refused to "waste" even ten-percent of the river for "frivolous" purposes unrelated to economic growth. His cynicism sealed the fate of the Trinity and its salmon.

Chapter 5: Everything Changed, Including Most Project Estimates. 1955-1963

On the morning of October 19, 1955, Engle detonated the first dynamite charge on the red-slashed hillside at the Trinity dam site at Papoose Creek.¹ Over 200 local citizens and visitors gathered under the pines near the river with the cloud-scudded sky threatening rain to hear Clyde Spencer and Engle kick off the project.² Spencer explained that construction would start with a diversion tunnel around the dam site in spring 1956.³ Later in the day, ceremonies to launch construction of “the world’s largest earth-filled dam” moved to the Lowden Park grandstand before a crowd of over 500.⁴ Armon Heffington was master of ceremonies. The project and its proponents were acclaimed.

Between 1951 and 1954, the California Department of Fish and Game (“CDFG”) surveyed spawning beds in the upper Trinity.⁵ Those surveys indicated that the runs were larger than the USFWS had estimated.⁶ Beginning on October 17, 1955, the USBR, USFWS and CDFG held a series of conferences in which more elaborate spawning studies were planned.⁷ In fall 1955 and 1956, the CDFG captured and tagged samples of the spawning population and conducted ground and aerial surveys.⁸ Dead spawned-out salmon, both tagged and untagged, were recovered on the spawning beds. The salmon population was estimated by assuming that the ratio between the number of tagged fish recovered to the total number tagged was the same as the ratio between the total number of dead fish recovered and the total population.⁹ These studies produced a consensus that the fall runs were too large for the spawning capacity of the river below Lewiston and that Moffitt and Smith’s critical hypothesis was wrong.¹⁰

The winter of 1955 began with an unprecedented snow storm in November.¹¹ But, drilling on the dam foundation continued uninterrupted with core samples going to Weaverville and then Denver for analysis.¹² By early December, however, preliminary engineering studies began to slow as storms persisted.¹³ Then, during the severe storm of December 16 – 27, the Trinity reached its highest flood flow at Lewiston (71,600 cfs) up to that point in history.¹⁴ The river finally stopped the USBR, but for only a short time.¹⁵ Drilling resumed in January and by April, a contractor had been hired to drive a 33 foot-wide tunnel 2200 feet around the dam site to divert and contain the river during construction of the dam.¹⁶

[On July ?, 1956, USFWS wrote USBR]

By 1956, both the USFWS and CDFG had openly rejected Moffett and Smith’s recommendations:

Although certain basic conclusions of Moffett and Smith (1950), particularly those relating to the selection of the best plan for maintenance of the anadromous fish runs, cannot be supported now, and the estimates of numbers of anadromous fishes ascending the river to the affected reaches are now considered too low, the report contains a body of substantiating data that is unavailable elsewhere.¹⁷

The surveys and studies conducted between 1951 and 1955 indicated far larger runs of fall chinook above Lewiston than the 9,000 to 15,000 conservatively estimated by Moffett and Smith for 1944-1946.¹⁸ Moffitt and Smith assumed that 300 cfs during the peak of the fall run would accommodate 11,200 spawning salmon, less than one-half of the 1956 CDFG estimate.¹⁹ The tag recovery survey by the CDFG in 1955 indicated a fall run of 24,000 above Lewiston.²⁰

With respect to releases needed for adequate habitat below Lewiston, the USFWS and CDFG concluded that “considerable experimentation and study [would] be required with the project in operation...” and that “it [was] not possible to fully foresee the schedule of releases required until the project [was] in full operation ...”²¹ Preliminarily, they proposed releases of 150 cfs from January through September, 200 cfs in October, 250 cfs in November and 200 cfs in December, totaling 120,500 acre-feet annually, the same as Moffitt and Smith.²² These releases were substantially below historic norms even during the fall spawning season.²³ Ultimately, in March 1959, USBR and CDFG signed an operating agreement incorporating this schedule.²⁴

Although the USFWS and CDFG thought favorable stream conditions might result in somewhat greater use of spawning area below Lewiston, they resolved that “most of the runs which now ascend the river above Lewiston [would] have to be spawned artificially” at a complete fish hatchery at Lewiston²⁵ They also recommended ongoing monitoring so that additional requirements could be discovered and implemented without delay.²⁶

One reason the flow schedule had to remain flexible was that the volume of water to be diverted continued to grow after the project was authorized. Between, 1952 and 1954, the estimated average annual diversion grew from 660,000 to 704,000 acre-feet, the average volume authorized by Congress.²⁷ By November 1956, the USFWS and CDFG expected the USBR to divert about 820,000 acre-feet annually.²⁸ By June 1957, the USBR estimated diversion of 865,000 acre-feet per year and that the future needs of the Trinity basin could be met from a release of 120,500 acre-feet annually, USFWS’s 1952 estimate of the fishery needs which it had repudiated a year earlier.²⁹ Then, in May 1960, the USBR claimed that less than 1 million acre-feet would be diverted annually with no detrimental effect.³⁰

More than one year before salmon and steelhead were blocked by Trinity dam in the fall of 1957, the USBR, USFWS and CDFG knew that the plan to increase the spawning capacity of the river below Lewiston which had been relied upon by Congress to authorize the project could not succeed. The USBR also knew that releases were not sufficient to meet the potential economic needs of the Trinity region.³¹ These agencies hoped to cover up the actual risks of the project by building a hatchery even though past experience and the only major studies indicated that artificial propagation probably would not work.³² Finally, they knew that quick responses to problems as they arose would be essential to preserve the runs of salmon which the project would endanger. But, there is no evidence that these agencies informed Congress, the Interior Secretary or

the California Department of Water Resources of the true risks to the fish and future water needs of the region before actual diversion began.

On the evening of July 8, 1957, the Trinity was first diverted through a 3100 foot tunnel under the right abutment of the dam to permit excavation to bedrock of the old, narrow, zig-zag river channel.³³ Since that night, native salmon have been cut off from about 24 % of the Trinity basin.³⁴ In September, the Department of Water Resources assigned to the USBR applications to appropriate water from the Trinity which had been filed by the State in 1927.³⁵ The assignment allowed the USBR to take up to 2,500 cfs and 1.540 million acre-feet per year for power, irrigation, domestic, navigation and saline and flood control.³⁶

With the river diverted, it was necessary to construct an interim fish trapping facility.³⁷ In August, a concrete fish weir was poured about one mile below the Lewiston dam site.³⁸ Trapping and transporting fish above the dam site was scheduled to begin October 1.³⁹ However, the CDFG reported that migrating salmon and steelhead were not captured until September 1958.⁴⁰ It is unclear what if anything was done to protect the runs from fall 1957 to summer 1958. From 1958 until May 1963, when the permanent hatchery opened, salmon and steelhead were captured at the Lewiston Fish Trapping Facility a short distance downstream from the Lewiston Dam site. It consisted of a weir, fish ladder, holding tanks and trucks to transport fish. Captured fish were either trucked and released above the dams or artificially spawned at the facility or hatched and reared at Mt. Shasta Hatchery with the fry released back into the river.⁴¹ Downstream migrants above the dams were left to pass through the diversion tunnels until the dam was closed in November 1960.⁴² Spawning fish were trucked above Trinity Dam until fall 1960.⁴³ Beginning that fall, “unripe” salmon were trucked downstream and released and “unripe” steelhead were hauled above the dam and released in 1961 and 1962.⁴⁴

On June 11, 1958, the final diversion of the Trinity began under the left abutment of the dam.⁴⁵ Later that week, crews finished damming the river by dumping old car bodies and huge rocks into the narrows of the coffer dam.⁴⁶ Since then, the river has followed a man-made course. Two weeks later, construction of the Trinity Dam started.⁴⁷ Within a month, crews were working 18-hour days covering the floor of the river with earthen material delivered from Pettyjohn Mountain by a two-mile long conveyor belt.⁴⁸ The conveyor carried 2000 cubic yards of earth an hour to DW-20's that hauled 32 yard lifts to the dam site where bulldozers and sheepfoot tampers spread and tamped the material.⁴⁹ By January 1959, the Trinity Dam backed up water 74 feet deep at the crest of its first flood with a flow of 38,000 cfs.⁵⁰

In August 1959, the House subcommittee on reclamation and irrigation rejected the partnership proposal for PG&E to build the power facilities and agreed to an appropriation of \$2.415 million for construction by the federal government.⁵¹ In January 1960, it was announced that the budget for completion of the project included \$321,286 for construction of a permanent fish hatchery.⁵² That number increased to \$1.2 million in September 1961.⁵³

On July 28, 1960, the “hole-through” of the Clear Creek tunnel was completed, ending the first phase of the 10 mile tunnel through which the Trinity would be diverted to the Sacramento drainage.⁵⁴ On September 22, 1960, Elmer H. Schnaible placed the last load of earth on top of the 465 foot tall earth core of the dam -- Schnaible had also placed the first load over two years earlier.⁵⁵ On November 22, 1960, water was stopped in the diversion tunnel which had redirected the river during construction.⁵⁶ On November 25, 1960, the lower water gates of the dam were closed and the dam was a reality.⁵⁷ By February 6, 1961, the lake was filling at 3500 cfs and the discharge to the river was 220 cfs.⁵⁸ The lake took until April 1963 to fill.⁵⁹ And, by April, construction of Lewiston Dam was underway.⁶⁰

On October 14, 1961, Interior Secretary Stewart Udall delivered the principal address at the dedication of Trinity Dam.⁶¹ He predicted that the dam would make its mark on California in the years ahead and that it would pay for itself through new wealth and jobs.⁶² Time would prove only one of his predictions to be correct.

In 1961 and 1962, the interim hatchery lost significant numbers of eggs and small fish due primarily to high water temperatures.⁶³ In 1956, the USFWS and CDFG had predicted that the lack of an adequate water supply after impoundment would make artificial propagation at the temporary hatchery hazardous.⁶⁴ According to the USFWS and CDFG, high water temperatures from July to September, siltation from construction and pollution and deoxygenation from decaying vegetation in the reservoirs could continue to create problems even after 1963.⁶⁵ In May 1963, just before the permanent hatchery opened, fry from over 90 % of the total 1962-63 steelhead egg take died from “white spot” disease.⁶⁶ Analyses of samples taken shortly after they occurred revealed heavy metals (iron, copper, zinc and lead) in the water.⁶⁷

Chapter 6: Almost Everything Went Wrong, But the USBR Held on to Almost Every Drop It Had Taken. 1963 – 1977

Water was first diverted out of the Trinity in April 1963.¹ The USBR finished building the Trinity River Salmon and Steelhead Hatchery at the base of Lewiston Dam on May 15, 1963.² In a news release on June 8, 1963, the CDFG claimed that protection of one of the state's major salmon and steelhead runs had been guaranteed by construction of the \$2.6 million hatchery.³ The USBR turned the hatchery over to the CDFG on June 15, 1963.⁴ Regulation of the river below Lewiston Dam was complete by July 1963.⁵

The Trinity River Division of the CVP was completed in fall 1963. The major feature of the project is Trinity Dam, a 537-foot high earthfill structure that controls runoff of the upper 728 square miles of the basin. Releases from Trinity Lake behind Trinity Dam are used by a 105,000-kilowatt powerplant and regulated in Lewiston Reservoir, about 7 miles downstream. Lewiston Dam (91 feet high), with a 350-kilowatt powerplant, regulates flows to the Trinity River Fish Hatchery and the downstream fishery. Water originating in the Trinity River Basin is diverted by Lewiston Dam through the 10.8-mile-long Clear Creek Tunnel to a 141,000-kilowatt powerhouse, then into Whiskeytown Lake behind Whiskeytown Dam on Clear Creek, a tributary to the Sacramento River. From Whiskeytown Lake, water from the Trinity flows through the 2.4-mile Spring Creek Tunnel to a 150,000-kilowatt powerplant and then into Keswick Reservoir on the Sacramento River. Transmission lines from the Trinity powerplants to the pumps at Tracy were placed in service in 1963.⁶ Full operation began in 1964.⁷

From the first fall in 1963, excessive crowding was apparent in the spawning riffles at Lewiston and Grass Valley Creek.⁸ And, to make matters worse, the number of fish killed at the hatchery has probably exceeded the number saved from the start. High rates of mortality were reported since CDFG operations began.⁹ Heavy early losses occurred from an outbreak of "white spot" disease which started at the trapping facility.¹⁰ Severe losses also occurred from gill bacteria and "gas bubble" disease (i.e. supersaturation of nitrogen) caused by poor water quality due to high carbon dioxide and low pH.¹¹ The hatchery had additional problems with fish diet, predation from birds and mammals, another outbreak of "white spot" disease in winter 1971-72 and poor growth rates of yearling steelhead due to cold water temperatures.¹² From the beginning, the hatchery depleted native stocks by hatching, rearing and releasing steelhead and coho from other rivers.¹³ Early on, steelhead returns to the hatchery declined significantly.¹⁴

Between 1964 and June 1971, the hatchery marked and released 2.6 million chinook, coho, steelhead and brown trout. All returns, except spring chinook, were very poor, with only one small group of steelhead returning at a rate approaching 1 %. Because of poor results from releases of exotic strains of coho (from the Eel, Cascade and Noyo Rivers), the hatchery stopped importing coho in 1971. In years of low coho production, hatchery space was reallocated to raise additional chinook yearlings. Beginning in 1967, the hatchery raised to maturity enough steelhead from each brood

year to produce about 1 million eggs annually that were spawned at the hatchery.¹⁵ From 1967 to 1973, the hatchery released an average of 600,000 yearling steelhead with average returns of 249 as contrasted with returns of 5,000 to 10,000 at other Pacific Coast hatcheries with comparable releases.¹⁶

Between 1961 and 1965, the U.S. Geological Survey documented changes in the river and tributaries in the 40-mile stretch below Lewiston.¹⁷ The USGS reported that banks had eroded laterally as much as 140 feet and that as much as 11 feet of sediment had been deposited in some areas.¹⁸ The USGS concluded that the December 1964 flood caused most of the changes by depositing vast quantities of sediment into stream channels and that the regulated flow was a secondary cause.¹⁹

Between 1963 and 1967, a CDFG biologist recorded how the river was changing.²⁰ Dense thickets of willows and alders spread from the border of the river and began to encroach on spawning riffles.²¹ Lower spring flows followed by stable flows promoted plant seeding and germination.²² Willows were detrimental to anadromous fish habitat because they bound spawning gravels and altered desirable water velocities.²³ Cattails which were colonizing slack water in 1963, had become abundant.²⁴ Ten months of muddy dam releases after the December 1964 storms had left a silt deposit on rooted aquatic plants.²⁵ Most tributaries had deposited gravel and sand in the river.²⁶ The most noticeable changes were downstream from the mouth of Grass Valley Creek, eight miles below Lewiston. Since 1963, coarse sand and fine gravel from the creek had covered about 75 % of the spawning riffle at the mouth. Downriver for about eight miles other riffles and pools were filled, resulting in a loss of 80 % of spawning habitat in the first two miles below Grass Valley Creek and 50 % in the next six miles. Overcrowding in those spawning beds had become common, particularly in the first two miles below the dam.²⁷

In April 1967, Trinity County requested increased releases to stir up compacted spawning gravels and aid fish emigration.²⁸ The USBR, with assistance from the USFWS, investigated the problem. Not surprisingly, the USBR concluded that sustained high flows were not feasible and there was a siltation problem at the mouth of Grass Valley Creek caused by logging.²⁹ The USBR claimed that the dams may be beneficial to spawning beds by keeping flood flows to a minimum and allowing coarse sand to settle out quickly instead of washing downstream and damaging a greater reach of spawning gravels.³⁰ This marked the beginning of decades of facile denial which the USBR used as a shield to deflect responsibility and delay remediation. This tactic has proved extremely costly, both in terms of dollars and salmon survival. Unfortunately, it will probably continue until it is no longer politically relevant.

In fall of 1967, the Senate Standing Committee on Natural Resources, during a field review of forest management and stream conditions in northern California, visited a section of the Trinity about 8 miles below Lewiston.³¹ They found the river blanketed with coarse granitic sand. The Committee requested the Resources Agency to pinpoint the causes and sources of sediment, magnitude of damage to the fishery and suggest remedial measures. The first of many study groups was formed. The Grass Valley Creek

Task Force, comprised of state specialists from various fields, concluded in a 1969 report that the diversion project was the strongest single influence on the natural function of the river and had caused a major reduction in the river's sediment carrying capacity.³² The river's ability to clean itself had been critical because high rainfall in the granitic and highly erodable canyons of the watershed naturally deposited a high sediment load which had been increased by logging and road building. The Task Force estimated that the project had reduced the sediment transport capacity of the river to one-twentieth of its pre-dam level and one-fourth of what Grass Valley Creek could deliver.³³

The Task Force estimated loss of 28 % of spawning habitat in the important 19-mile stretch below Lewiston and serious loss of habitat for juvenile salmon and steelhead.³⁴ The Task Force described the general habitat loss succinctly:

The average annual runoff at the Lewiston Dam site prior to construction was 1.2 million acre feet. Current average annual flow is 146 thousand acre feet. In terms of maintaining available fish habitat, the impoundment of the river has done more than reduce the flow 88 percent; it has terminated cleansing surges and converted a highly fluctuating river to a small stable stream. The resultant effect of the change in character on fish habitat has been two-fold.

- 1) Tributaries are still flooding and depositing large quantities of sand and gravel in the river. The river has lost its ability to flush these sediments, and as a consequence, sand and gravel from the tributaries are filling the river pools and covering spawning grounds.
- 2) Riparian vegetation now borders much of the river and is starting to encroach on spawning riffles. Cattails are abundant in slack water areas. Rooted aquatic plants are already abundant in some areas and encroaching on spawning riffles. Each clump of aquatic plants has created a condition for the deposition of silt, and deposits up to one foot in depth are evident in some pool areas.³⁵

The Grass Valley Creek Task Force stressed that improvement of fish habitat depended ultimately on cooperation by the USBR in increasing releases from Lewiston Dam to improve sediment transport.³⁶ Logging companies and landowners were also urged to stabilize sediment sources and minimize erosion.

In a report submitted in November 1967, Millard Coots, a biologist with the CDFG, observed that coarse granite sand from Grass Valley Creek filled pools and covered salmon spawning riffles eight miles downstream to Indian Creek.³⁷ From 1963 to 1967, the number of salmon spawning at the mouth of Grass Valley Creek had dropped by 75 %. The Task Force (in 1969) stated that major spawning riffles two miles below Grass Valley Creek had degraded 50 to 80 percent since 1963.³⁸ One cause was the 1964 flood which carried vast quantities of sediment into stream channels.³⁹ Following the 1964 flood, the pool above the Poker Bar riffle (two miles below Grass Valley Creek)

filled with sand and the depth was a few inches. At one time the pool was 1,000 yards long, 100 to 150 feet wide and four to ten feet deep.⁴⁰

In 1968, the USBR modified the release agreement with the CDFG supposedly to better accommodate spawning chinook.⁴¹ The USBR agreed to minor changes in the volume and timing of releases resulting in 120,300 acre-feet annually, a net loss of 200 acre-feet.⁴² And, in 1969, the Task Force reported that it found no evidence to indicate that the USFWS, CDFG or USBR had considered increasing releases to remove sediment.⁴³

On December 12, 1969, the Grand Jury of Trinity County approved the following resolutions. First, it declared absolute opposition to any further dams or water projects on the Trinity.⁴⁴ Second, it resolved that action should be taken immediately to correct ecological damage to the river due to the altered flow from the dam projects. Third, it resolved that a committee be appointed by the Board of Supervisors to study with the CDFG rehabilitation of spawning areas, fish plantings to raise survival rates above 1% and establishment of periodic, increased water releases by the USBR to flush the river.⁴⁵

In 1969-1970, Coats did another spawning survey. He estimated a 44 % loss of suitable spawning gravel between the dam and the North Fork.⁴⁶ In early 1970, Trinity County repeated its request for increased flows.⁴⁷ Then, in February, 1970, another task force with representatives from the USBR, CDFG and other agencies, was formed to explore remedial measures. The group recommended a pilot project of rehabilitating Jackson Riffle, 16 miles below Lewiston Dam.⁴⁸ Based on a small sampling and analysis program by the USGS, the task force concluded that “flushing” flows (structured releases of 7,000 cfs or less) would have no appreciable benefits on sediment deposits in spawning riffles and would probably cause damage to bridges and private property.⁴⁹ “Catastrophic flows” would be needed to remove aquatic vegetation.⁵⁰ The task force described the encroachment of vegetation on the river channel and flood plain as “astonishing”.

In May 1970, the Director of the CDFG, Ray Arnett, wrote the Regional Director of the USBR, requesting a meeting to discuss environmental problems related to the TRD.⁵¹ As a result of the meeting, a small work group was formed to identify problems and make recommendations for possible solutions. In August 1970, that small group wrote a memo to the Regional Directors of the USBR and the Bureau of Sport Fisheries and Wildlife (the predecessor of the NMFS) and the Director of the CDFG recommending that they establish the Trinity River Basin Fish and Wildlife Task Force (“TRBF&WTF”) to review and evaluate fishery and wildlife problems through work groups on sedimentation (subsequently renamed Engineering), fisheries, wildlife and coordination.⁵²

In a report dated July 1970, the CDFG stated that spawning riffles and nursery areas for salmon and steelhead were being destroyed or seriously impaired by reduced flows, particularly in the eight miles below the mouth of Grass Valley Creek.⁵³ The CDFG estimated that since 1963, 28 % of total Chinook spawning habitat in the 16-miles

below Lewiston was rendered “useless.”⁵⁴ According to the CDFG, reluctance or inability of juvenile fish to migrate downstream and the severity of the sedimentation problem indicated a probable need for increased downstream releases.⁵⁵ The CDFG thought larger spring flows might stimulate or force downstream migration and help flush sediment. Larger summer flows would lower water temperatures for downstream migrants.⁵⁶

The CDFG also pointed out that the water supply for the hatchery had not met basic needs for salmon and steelhead culture. Water temperatures were too low for incubation and growth; consequently, only about 15 percent of juvenile steelhead attained desirable growth within one year.⁵⁷ In 1965, persistent turbidity of the water supply impeded feeding by juvenile hatchery fish. Finally, the CDFG noted that serious population losses were believed to have occurred between fall 1958 and 1962 when fish were trapped and transported around the dam construction site.⁵⁸

The CDFG’s ultimate conclusions in July 1970 were that the pre-project investigation had been inadequate⁵⁹ and that it was doubtful whether a hatchery could maintain large runs of anadromous fish.⁶⁰

In July 1970, the California Assembly adopted concurrent resolution No. 64 announcing that salmon and steelhead were an irreplaceable and threatened state resource.⁶¹ The Assembly directed the Director of the CDFG to appoint an Advisory Committee on Salmon and Steelhead Trout to study their preservation. The Advisory Committee’s initial progress report released in March 1971, stated :

“Immediate priority should be given to an evaluation of the [USBR’s] Trinity River Project and correction of the tremendous damage done to the steelhead runs in this river in the last ten years. Steelhead runs since 1961 under project controlled downstream spring flows have declined 82 percent.

The Department of Fish and Game must recognize the failure of fish protection measures at the Trinity River Project and must actively oppose any future project on any salmon or steelhead stream until the deficiency in technology demonstrated on the Trinity River has been overcome.”⁶²

Later, in fall 1970, the CDFG’s spawning surveys showed that spawning chinook were over-concentrated in the two miles below Lewiston Dam and that the gravels were not adequate to accommodate the fish.⁶³ Gravel had washed out of the upper riffles and had not been replaced because of the proximity to the dam.⁶⁴ Only a few steelhead spawned in the two miles below the dam whereas in 1964, 964 spawning steelhead were counted in the sixteen miles below the dam.⁶⁵ Compaction of gravels and encroachment of vegetation was occurring on nearly all formerly highly-used downstream riffles.⁶⁶

In 1971, a new cooperative agreement between state and federal agencies created the Trinity River Basin Fish and Wildlife Task Force. The small task force formed in

1970 was incorporated into the TRBF&WTF as the Engineering Work Group. In April 1971, the Fisheries Resources Work Group of the TRBF&WTF proposed four major areas of investigation to further define the problems. These included emigration studies, flow evaluation, marking hatchery releases to evaluate hatchery returns and determining the size of hatchery and wild runs in the drainage.⁶⁷ The program of proposed studies spanned eight years and had projected costs in excess of \$1.5 million.

In 1972, a CDFG biologist estimated that the dams reduced total habitat (in stream miles) by 14 % for chinook and 31 % for steelhead as contrasted with pre-dam estimates. However, some portion of the apparent decline was due to increased knowledge of steelhead distribution in the basin.⁶⁸

In 1972, the Trinity Board of Supervisors requested immediate government action “before the final extinction of the steelhead run...”⁶⁹ Trinity High School’s conservation class sponsored a two day conference with the USBR and other government agencies to discuss river problems including low flows and sedimentation.⁷⁰ Local residents made frequent requests for increased flows.⁷¹ These requests were repeated following the dry winter of 1972-1973.⁷² At that point, the Weaverville Chamber of Commerce asked the BOR to resolve the fishery, flood and sedimentation problems.⁷³

From August 1972 to summer 1973, the Engineering Work Group of the TRBF&WTF constructed a new riffle next to the hatchery and rehabilitated the Lewiston Riffle, formerly the most heavily used in the river by chinook.⁷⁴

In an August 1973 report to the TRBF&WTF, Paul Hubbell of the CDFG and the Fisheries Resources Workgroup, listed the principal factors responsible for habitat losses in the Trinity:

“(1) erosion of gravels and associated lack of recruitment of new materials in the area just downstream from Lewiston Dam; (2) formation of deltas at the mouths of tributaries, resulting in direct burial of some spawning areas and inundation of others beneath slack water created by the deltas; (3) tributary sediment deposition and cementing of gravels; (4) riparian plant development on and adjacent to spawning areas, resulting in direct losses of areas covered by vegetation plus indirect losses of additional areas as a result of sediment buildup and gravel erosion resulting from vegetation-induced alterations in river flows and velocities.”⁷⁵

Hubbell’s report proposed detailed studies over eight years to determine specific causes of and remedies for declining fall chinook and steelhead runs.⁷⁶ Projected costs rose over \$1.8 million.⁷⁷

In an October 24, 1973 letter to the Acting Regional Director of the USBR, from the Director of the CDFG, Ray Arnett, the state finally stood up to the USBR. Arnett stated that the drastic steelhead decline and lesser decline in chinook indicated “that the minimum flows to which we agreed in 1959 are inadequate to preserve anadromous fish

resources at pre-project levels and to maintain the character of the river habitat.”⁷⁸ Arnett candidly pointed out:

“These results were not entirely unforeseen as indicated by the Department’s August 15, 1952 comments to the Department of Public Works which stated, ‘... the flows proposed below Lewiston Dam are dangerously close to a level which could result in serious damage to the fisheries.’”⁷⁹

Acknowledging that both the CDFG and USBR lacked funding needed to mount a major program to identify causes which had been their mutual intent, Arnett proposed a schedule of increased flows totaling a minimum of 315,000 acre-feet which state biologists believed were a necessary first step to increase survival and emigration of juvenile steelhead and fall chinook.⁸⁰ Arnett asked the USBR to increase the flows for a minimum of three years starting March 1, 1974.⁸¹ Arnett explained that the increased flows would primarily simulate natural snowmelt, increase spawning area, provide an incubation flow with short-term peaks during storms to attract adult steelhead and increase mainstem habitat for two-year old steelhead prior to their emigration.⁸² Arnett stressed, however, that the increased flows would not resolve the sedimentation problems and habitat losses caused by the USBR.⁸³

In March 1974, the TRBF&WTF met and apparently developed a \$6 million proposal for a three year action program.⁸⁴ Congressman Harold T. (Bizz) Johnson presented the program to the House and Senate Appropriations Committees in spring 1974.⁸⁵ Johnson’s funding request was denied.⁸⁶

At a meeting of the TRBF&WTF in June 1974, however, the USBR agreed to extend increased flows to 245,000 acre-feet per year on an experimental basis in 1975 and 1976 unless those years were forecasted to be critical water years.⁸⁷ The agreement followed the highest runoff on record in 1973-1974 and two special releases in February-March (10,000 acre-feet) to attract steelhead to the hatchery and May to June (115,000 acre-feet) to assist 400,000 steelhead yearlings released from the hatchery emigrate to sea.⁸⁸ The heavy winter of 1973-1974, however, had brought mixed blessings. Spills from the dams removed large quantities of gravel from spawning riffles which became unusable because the dams also blocked supply of new gravel.⁸⁹

In September 1974, the CDFG issued a report in response to California Senate Concurrent Resolution No. 64, passed in 1971. The resolution had directed the CDFG to report on federal water projects that had caused environmental damage to salmon and steelhead.⁹⁰ The CDFG stated that since 1963, a period of high runoff, “an average of 1.2 million acre-feet of water had been diverted annually ... to the Sacramento Valley.”⁹¹ It is important to keep in mind that this was nearly the entire mean annual flow (i.e. 1.249 million acre-feet) at Lewiston over an 84 year period of record spanning water years 1912 to 1995.⁹² Steelhead returns to the hatchery from 1970 to 1974, averaged 197 fish.⁹³ Chinook returns from 1958 to 1973 averaged 6,021, a significant drop from pre-dam runs.⁹⁴ Prolonged periods of turbidity resulted from delayed releases of silt-laden winter runoff.⁹⁵ The CDFG suspected that reduced flows leading to earlier and more rapid

warming interfered with the emigration of smolts in the spring .⁹⁶ Finally, the CDFG estimated that 44 percent of chinook spawning habitat between the North Fork and the dam had been lost.⁹⁷

The CDFG's 1974 report indicated that USBR declined the CDFG's request for increased flow on the grounds that the request would cost the CVP about \$2.5 million per year in potential power revenues, \$0.9 to \$2.2 million annually for reductions in firm irrigation supplies when the water was needed in the future, and over \$200 million in capital to replace the water.⁹⁸ The CDFG candidly acknowledged that without significant changes in TRD operations, rehabilitation would have only short-term benefit.⁹⁹ The CDFG reiterated that the costs of identifying causes of declining populations and corrective measures would be about \$1.8 million, and it cautioned that the costs of rehabilitating salmon and steelhead habitat were unknown.¹⁰⁰ The CDFG stressed that the causes of declining runs "must be clearly and rapidly defined if perpetuation of these resources ... [was] to be insured."¹⁰¹

In December 1975, Congress provided special funding for the first \$500,000.¹⁰² During 1974-1975, the Task Force did little more than add members and reorganize itself.¹⁰³ Then, when the first \$300,000 became available during the first nine months of 1976, the focus shifted to decisions about which projects would be funded first.¹⁰⁴ Over the ensuing years, Task Force members studied fish migration, removed the "temporary" collecting weir which had impeded fish migration since 1958 and restored several damaged spawning riffles and resting pools in a river that was losing 86 percent of its flow each year.¹⁰⁵ Migration studies in 1974 and 1975 showed, respectively, that 75% and 96% of steelhead released from the hatchery were too small to migrate (due to water too cold for proper fish growth) and that most of those died.¹⁰⁶ In September 1975, a temperature control device was constructed at the entrance of the hatchery to allow warmer water to be drawn from the surface of the reservoir.¹⁰⁷ But, Paul Hubbell, CDFG fishery biologist, cautioned that "[w]e have to remember that we don't have a Trinity River anymore, ... we have Trinity Creek."¹⁰⁸

In 1976, Congress appropriated \$1.5 million for 1976-1977.¹⁰⁹ In October 1976, the Task Force adopted an interim action program with 14 work items.¹¹⁰ In 1976-1977, drought resulted in postponement of the third year of experimental increased releases.¹¹¹ In response, Trinity County filed an action in federal court in Sacramento in June 1977, alleging that operation of the TRD by the USBR during the drought violated federal law.¹¹² Judge Charles B. Renfrew concluded that the reduction in flows during the drought was within the Secretary's discretion under the Trinity Act.¹¹³

In June 1977, the Management Group of the Task Force requested the Action Group to submit a release schedule based on the best available knowledge.¹¹⁴ In August, the USFWS proposed a release schedule, noting that "[p]rotection of the fish resources on the Trinity River is a responsibility of the project which has not been met, while irrigation and power production have been maximized."¹¹⁵ On August 25, 1977, the Action Group approved a four page rationale for a proposed 350,000 acre-foot interim flow schedule.¹¹⁶ The proposal called for a year-round base flow of 300 cfs with the

balance to managed by the CDFG and FWS as an experimental volume for fisheries in consultation with the Task Force.¹¹⁷ The rationale for the proposal was:

“The most practical way to approach reassessment of the amount of water required to protect and restore the fisheries ... and to evaluate other instream needs is through experimentation. In order to yield a measurable increase in the fish runs, significant increases in the amounts of water released ... will be required.

The schedule proposed here is much like that proposed in 1973 by the [CDFG]. It has as a major objective experimental augmentation of spring outflows to enhance the survival and out-migration of juvenile steelhead and fall-run king salmon. It differs principally in providing a 132,000-acre-foot block of water which would be utilized for out-migration purposes and other purposes such as experimental adult attraction flows and sediment transport studies.”¹¹⁸

On November 22, 1977, the Task Force met in Sacramento to consider the interim flow schedule and rationale submitted by the Management Group.¹¹⁹ In the meeting, the USBR “was pressed to immediately make available the 350,000 acre-feet.”¹²⁰ The USBR refused. Instead, the USBR agreed to examine a schedule of water year types under which 350,000 acre-feet might be provided.¹²¹ Six months later the USBR agreed to increase water releases from May 1, 1978 to March 31, 1979 to a total of 245 TAF (thousand acre-feet) to complete the third of the three-year experiment started in 1974.¹²²

And, in the meantime, by 1977, the annual average return of steelhead to the hatchery had fallen to 186 fish (i.e. from 1971 to 1977).¹²³ The 18-year average for chinook hatchery returns had fallen to about 6,200 fish or about 50 percent of the pre-dam estimate of spawning above Lewiston.¹²⁴ Estimates of in-river chinook spawning dropped about 80 percent from average estimates from 1955-1970.¹²⁵ And, in contrast to the resources it was created to protect, the Task Force had grown from three to eleven agencies.¹²⁶

Finally, during the first fourteen years of operation, the USBR diverted an average of 1.249 million acre-feet of water per year to the Central Valley.¹²⁷ This represented about 92 percent of the average annual inflow into Clair Engle reservoir during this period and 100 percent of the annual average flow at Lewiston since 1912.¹²⁸ And, even more important from a legal perspective, it nearly doubled the annual diversion approved by Congress.¹²⁹ Rather perplexing, since the author of the Trinity bill stated that it made it “mandatory that the Department of the Interior make sufficient releases down stream to maintain fish life.”¹³⁰

Chapter 7: Streamflow Was Replaced by Dollars. 1978-1984

Congress appropriated \$1.95 million for the Task Force for fiscal year 1978.¹ In May 1978, a technical evaluation team recommended a \$2 million modernization of the fifteen year-old hatchery.² As projected spending began to grow significantly, the USBR reminded the other agencies that it was responsible for administering Task Force funding.³ In other words, the USBR sought to control the river of money that was beginning to flow in lieu of water. In June 1978, the USBR began to flex its muscle by withholding funding for sediment trapping which had been approved by the Task Force.⁴ In September 1978, the Task Force budgeted \$2.33 million for fiscal year 1979.⁵ In November 1978, the USBR warned that the 1979 budget would bring total Task Force spending to about \$6.2 million, leaving only about \$1.4 million of the original \$7.62 million authorized by Congress for the Trinity River Basin Action Program.⁶ According to the USBR, the remaining authorization was committed for continuing fishery investigations and monitoring. In other words, the USBR claimed that the Task Force's programs would exhaust funding by September 30, 1979.⁷

In March 1979, the USFWS issued a draft report on an increased flow study which it had recently completed. The USFWS recommended minimum releases of 400 cfs for adult and juvenile steelhead (January through May and September 16 through December) with seasonal flows increased to 500 cfs for adult chinook (June through September 15).⁸ In addition to these base flows, the USFWS recommended dedication of 32 TAF (thousand acre-feet) for fish management, including freshet simulation to stimulate and assist migration and for flushing sediments from spawning gravels.⁹ The USFWS stated that dedication of 340 TAF annually would, in conjunction with sediment control and stream restoration, provide habitat necessary for increased production, not full restoration, of salmon and steelhead.¹⁰ In order to ensure conservation of the fisheries, the USFWS recommended immediate adoption of the proposed flow schedule pending issuance of a decision by the Secretary of Interior.¹¹

On April 25, 1979, the USBR announced that it had made a water supply forecast and that it could release only 220 TAF of water between April 1, 1979 and March 31, 1980.¹² This was about 25 TAF less than the 300 cfs per month which it had been releasing for about one year and which the Task Force had agreed to maintain after April 1, 1979 until final flow recommendations were sent to the Secretary of the Interior.¹³ Three weeks later, the USBR changed its mind and agreed to release an additional 25 TAF as needed for experimental tests from April 1, 1979 and March 31, 1980.¹⁴

On June 4, 1979, E.C. Fullerton, CDFG Director and Chairman of the Task Force, wrote the Interior Secretary, strongly recommending, on behalf of the Task Force, reservation of 340 TAF annually in all but critical water years to restore and maintain salmon and steelhead populations.¹⁵ 53 TAF would be used for experimental fishery management pending completion of stream restoration when all of the 340 TAF would be needed for restoration and maintenance of the fisheries.¹⁶ Fullerton stressed that 12 of 13 member-agencies, all but the USBR, endorsed the proposal.¹⁷

[Between ? and ?, 1979, the Associate Solicitor, Indian Affairs, submitted three memoranda extensively outlining Hupa fishing and streamflow rights. He concluded that the Hupa had a right to instream flows sufficient to restore the fishery and that the Interior Secretary had a legal obligation to increase streamflows as trustee of tribal assets and under the legislation authorizing the TRD. The 1981 Decision signed by the Interior Secretary adopted this legal analysis]

In September 1979, the Assistant Secretary – Fish, Wildlife and Parks sent a memorandum to the Secretary of Interior concerning restoration and conservation of anadromous fish.¹⁸ The Assistant Secretary pointed out that Congress had authorized the project in reliance on the Commissioner of Reclamation’s 1955 estimate that the TRD would divert about 704,000 acre-feet annually.¹⁹ The Assistant Secretary argued that if the TRD had been operated in compliance with that estimate, an average flow of 400,000 to 500,000 acre-feet annually would have helped prevent the rapid declines which occurred with average flows of about 120,300 acre-feet.²⁰ The Assistant Secretary quoted at length from a March 14, 1979 memorandum from the Associate Solicitor, Division of Indian Affairs, concerning the rights of the Hupa to fish for religious, subsistence and commercial purposes, in which he concluded that the Secretary was bound by his trust duties to approve the increased flow recommendations of the USFWS, and not seek an accommodation with which everyone could live.²¹ In delicately worded “department-talk”, the Assistant Secretary concluded that increased flows would be “more reasonably consistent with the intent of the Trinity River Act.”²² Finally, the Assistant Secretary emphasized that streamflow restoration would mitigate the impacts of the TRD and would, therefore, not need to be justified in monetary terms under the Fish and Wildlife Coordination Act.²³

The Assistant Secretary identified five options. Maintain flows at 120,000 acre-feet annually “greatly below what Congress had anticipated for the project.”²⁴ Increase flows to 245,000 acre-feet annually which, together with mechanical habitat improvement, would not be sufficient to restore populations to pre-project levels.²⁵ Increase releases to 340,000 acre-feet annually in all years which, together with a debris dam on Grass Valley Creek and mechanical instream restoration, could restore stocks to pre-project levels.²⁶ Increase flows to 340,000 acre-feet in all but critical years which would allow substantial restoration.²⁷ Increase flows to 390,000 acre-feet in all years to maximize flexibility for fisheries management by incorporating a safety margin of 50,000 acre-feet.²⁸

In January 1980, the Board of Supervisors of Trinity County released a Position Paper based on public meetings held throughout 1979.²⁹ The Board claimed that Trinity County residents had been deceived by the USBR in 1952 concerning the size and operation of the TRD.³⁰ The Board noted that the generator originally planned for Lewiston was designed to utilize larger downstream releases.³¹ The Board claimed that the project had been operated in an unauthorized manner and that the destruction of the fishery was the result of the Interior Secretary’s 17 years of inaction.³² The Board presented a list of 33 demands, including adoption of the flow release schedule proposed

by the Task Force and removal of Clair Engle from the name of the reservoir behind Trinity Dam.³³

In a memorandum dated April 18, 1980, Interior Secretary Cecil Andrus indicated that 287 TAF could be released between May 1980 and April 1981.³⁴ He stated that 254 TAF could be released on a specified schedule and that an additional 33 TAF would be available for special needs or studies.³⁵ Finally, he announced his intent to define a permanent operating regime to protect the fishery after the USFWS had completed an environmental impact statement.³⁶

On September 4, 1980, Congress authorized sand dredging on the Trinity and construction of the Buckhorn Dam sediment debris control facility on Grass Valley Creek.³⁷ Congress authorized \$3.5 million.³⁸ Federal funding, however, was conditioned on matching state funds for sand dredging.

In December 1980, the USFWS, US Bureau of Indian Affairs and USBR (renamed US Water and Power Resources Service) released an environmental impact statement (“1980 EIS”) on the management of flows to mitigate the loss of the anadromous fishery on the Trinity.³⁹ The 1980 EIS announced that Trinity salmon and steelhead faced extinction absent significant mitigation.⁴⁰ It estimated an overall loss of 80-90 percent of habitat in the 40 miles between Lewiston and North Fork.⁴¹ It cited three fundamental causes of the decline in the fishery: excessive streambed sedimentation, inadequately regulated harvest and the most critical, insufficient streamflow.⁴²

The 1980 EIS, stated that restoration of Trinity salmon and steelhead to pre-project levels was legally required by the language of the Congressional authorization for the TRD and by the responsibility of the federal government to protect Indian fishing rights inherent in the establishment of the Hoopa Valley Indian Reservation.⁴³ The latter necessarily included reservation of the use of such water as may be necessary for tribal fishing.⁴⁴ Accordingly, the three federal agencies stated:

“[A]pplication of the traditional benefit/cost analysis ... for the purpose of judging the economic merit of the proposed course of action is not appropriate. Providing greater flows to the Trinity river below Lewiston Dam would be a loss-compensation measure, which is a feature of the [TRD], not subject to a separate benefit/cost analysis. Moreover, as observed at the outset, there are reasons based in statutes enacted by Congress that compel restoration of the river’s salmon and steelhead resources to pre-project levels.⁴⁵

...

According to [BIA memoranda] the Secretary’s obligation as trustee of ... tribal assets is to administer them ‘solely in the interests of the Indian beneficiaries’, regardless of the economic or other benefits that diversions to the Sacramento watershed might produce.⁴⁶

Those words should have been very important. If they had been heeded, operation of the project might have been forced to conform to legal requirements of Congressional intent and tribal trust duties owed by the federal government. Indeed, the Trinity County Board of Supervisors opposed any discussion of economics in the EIS, arguing that the Interior Secretary had the responsibility to mitigate severe losses to fish regardless of the economic costs in the Central Valley.⁴⁷ But, these abstract legal principles were articulated in the waning days of the Carter Administration. They were disconnected from the economic and political forces that would dictate the fate of the river. In time, they would be forgotten again.

The 1980 EIS presented eight flow release alternatives, including 215 TAF annually recommended by a consultant retained by the USBR.⁴⁸ The USFWS recommended 340 TAF in normal years with reductions to 220 TAF in dry years and 140 TAF in critically dry years based on instream flow studies.⁴⁹ Admitting that its recommended schedule was a compromise within the constraints of existing development within the floodplain, the USFWS described “[r]estoration of streamflow [as] a necessary first step in rejuvenation of the fishery.”⁵⁰ The USFWS believed that streamflow restoration coupled with comprehensive streambed and watershed management programs could restore the pre-project fishery without artificial propagation.⁵¹ Unfortunately, the USFWS also presented a minimum alternative of 287 TAF to maintain and prevent further habitat degradation.⁵²

In December 1980, the USFWS and the USBR (renamed Water and Power Resources Service) entered into another “reasonable compromise between water export and instream releases – especially in water-short years.”⁵³ Criteria for determining dry and critically dry years were keyed to the USBR’s forecasts of inflows into Shasta Lake - - the centerpiece of the CVP.⁵⁴ Releases, moreover, would not exceed 287,000 acre-feet until the USFWS completed a detailed study plan to assess the results of habitat and restoration efforts and was “in a position to implement the study.”⁵⁵ Then, “[a]s instream and watershed management measures [were] put in place, flows [would] be incrementally increased up to a maximum of 340 TAF, both to sustain those measures and to facilitate the evaluation.”⁵⁶ The USFWS agreed that at the end of twelve years, after consultation with the USBR and CDFG, it would submit a report to the Interior Secretary summarizing the effectiveness of restoration of streamflows and stream and watershed management in rebuilding salmon and steelhead stocks.⁵⁷

On January 14, 1981, Interior Secretary Andrus, in one of his final acts in office, signed a Secretarial Decision implementing the compromise agreement. The decision, of course, was touted as a positive step. But, viewed in perspective, it was a small step, indeed. The maximum proposed release equaled the third driest year between 1912 and 1994.⁵⁸ Actual releases between 1981 and 1991 would fall below the USFWS’s minimum to prevent further degradation (i.e. 287 TAF) in 5 of 11 water years.⁵⁹ And so, habitat degradation and fine sedimentation would continue.⁶⁰ And, another significant element of the compromise was that the needs of the Trinity fishery and the rights of the

Hupa would continue to be subordinate to runoff available in the Central Valley, not in the Trinity watershed.⁶¹

On January 23, 1981, James G. Watt took office as Secretary of the Interior. It took about four months for his regime to initiate a review of the decision to increase Trinity releases “to insure that [it was] beneficial to as many interests as possible.”⁶² By June 1981, the USBR (renamed again) refused to endorse the increased flow schedule it had agreed to six months earlier⁶³ and Secretary Watt was considering a USBR recommendation to substantially reduce instream flows.⁶⁴ Watt was concerned about loss of power -- which was used primarily to pump water south for irrigation.⁶⁵ Coincidentally, in December, the USBR also announced that due to the Administration’s “goal of a balanced budget” and “severe budgetary reductions and higher priorities,” it had to delay its 1978 commitment to fund modernization of the hatchery.⁶⁶

On June 31, 1981, the Task Force approved the Trinity River Basin Fish and Wildlife Management Program (“TRBF&WMP”), directed the USFWS to prepare an environmental impact statement and directed the California Department of Water Resources to draft federal legislation to implement the program.⁶⁷ The Program specified five goals: (1) use artificial production to compensate for lost spawning and rearing areas; (2) restore full natural production below Lewiston Dam; (3) make fishery harvest management recommendations; (4) provide compensation for wildlife losses; (5) recommend land management practices to restore and maintain watersheds in the Trinity basin.⁶⁸ Total program costs based on May 1981 price levels were estimated to be about \$33 million over six years.⁶⁹

In March 1982, Secretary Watt announced his decision to maintain flows at 287,000 acre-feet in accordance with the 1981 Secretarial decision.⁷⁰ Later that month, representatives from the California Department of Water Resources lobbied in Washington for legislation to fund the management program.⁷¹ During the summer of 1982, congressmen from California first introduced the Trinity River Basin Fish and Wildlife Management Act to authorize and fund the management plan.⁷² Apparently forgetting its promise to work with the Task Force to “[complete] the [Fish and Wildlife Management Plan] and [assure] its successful implementation”⁷³, the USBR opposed the bill on several public spirited grounds:

We are concerned about the cost of the measure which is estimated to be \$33 million at May 1982 prices for construction of facilities plus an estimated \$2.2 million annually for operation, maintenance and monitoring of the facilities. We are also concerned that the bill requires those costs to be nonreimbursable and nonrefundable. During these difficult economic times, we must be cautious about taking actions which would permit further increase in the public debt. Since the damage to the Trinity River fishery is a result of many Federal, State, Indian, and local actions, we do not believe that it should require 100 percent of the cost of restoration to be borne by the United States taxpayers. We recommend that 50 percent of the cost of construction of the necessary facilities, and 50 percent of the cost of annual operation, maintenance and monitoring costs be paid by the State

of California and that the United States contribution be treated and as a project cost, reimbursable to the United States by project generated revenues.⁷⁴

The USBR also proposed a list of preconditions to federal funding, including an Indian fishery plan “that would not degrade or diminish the results of the management plan.”⁷⁵ Unfortunately, even at this late hour, the USBR could not accept its own responsibility for 18 years of deceit and unlawful operation of the project.

Next, the USBR announced that no further funding would be available as of September 1982 unless Congress provided additional appropriations.⁷⁶ And, as 1982 wound to a close, the USFWS announced that it lacked funding needed to complete the study plan and implement the study which had been designated as a prerequisite to increased flows.⁷⁷

In September 1982, the DWR, CDFG and USBR reached an agreement on funding for sand dredging.⁷⁸ Then the storms of 1982-1983, the worst then on record, brought about 100 times as much sediment down Grass Valley Creek as in prior years.⁷⁹ In spring 1983, Governor Deukmejian responded by cutting funding for sand dredging on the Trinity from the DWR’s 1983-1984 budget.⁸⁰ Then, in April 1983, the Task Force approved a work plan to repair spawning riffles damaged in the 1982-1983 floods which washed away gravel between Lewiston and Grass Valley Creek.⁸¹ In September 1983, actual construction began on sand dredging using funds contributed by the CDFG.⁸²

In August 1983, the USFWS completed a plan of study for the flow evaluation required by Secretary Andrus, and in October, it completed a final EIS for the management plan.⁸³ The projected cost of the 12-year flow study was \$2.38 million.⁸⁴ In December 1983, the Director of the USFWS approved the study plan.⁸⁵ But, under the terms of the 1980 compromise, flows could not be increased until the USFWS was “in a position to implement the study....”⁸⁶ And, therein lay the problem, because the USFWS still lacked the funds to initiate the study.⁸⁷

In April 1984, Task Force Chairman and CDFG Director, Jack Parnell wrote Interior Secretary Clark requesting funding to initiate the flow evaluation study.⁸⁸ Parnell politely asked whether the TRD enabling legislation required the Secretary use operation and maintenance funds to perform the study.⁸⁹ After, all the statute did state that the “Secretary shall also allocate to the preservation and propagation of fish ... an appropriate share of the costs of ... operating and maintaining the [TRD], such costs to be non-reimbursable.”⁹⁰ The next month, Congressman Bosco asked the House Appropriations Subcommittee for \$187,000 to initiate the flow study.⁹¹ He testified that the enabling legislation authorized the study.⁹²

But, the Interior Secretary did not agree. According to his office, since the fishery restoration problem could not be solved by flow measures alone, funding for the flow study “should not be entirely a Federal responsibility.”⁹³ Interestingly, in the same breadth, the Secretary acknowledged that “the need for adequate management of

riverflows ... stems from ... [his] responsibility to protect the [fishery] resources by reason of [the enabling legislation and his] fiduciary obligation ... to ensure preservation of Indian tribal fishery rights.”⁹⁴ Then, in June 1984, an Under Secretary of the DOI testified before Congress that DOI favored a 50 percent federal – 50 percent non-federal split on spending for Trinity restoration.⁹⁵ The USBR, of course, supported the Secretary’s position.⁹⁶

On June 6, 1984, three members of the Task Force Action Group testified before Congress in support of restoration legislation which had been under consideration for two years.⁹⁷ They reported that it was apparent from testimony by federal representatives that the Reagan Administration wanted the state to share costs as a condition of support for the restoration program.⁹⁸ Ultimately, the Task Force members were correct, and the administration agreed to support enactment of the legislation only if it was amended to include cost sharing provisions.⁹⁹

In October 1984, the Trinity River Basin Fish and Wildlife Restoration Act was passed by Congress and signed by President Reagan.¹⁰⁰ Congress found that the TRD “had substantially reduced streamflow ... thereby contributing to damage to pools, spawning gravels, and rearing areas and to a drastic reduction in the anadromous fish populations....”¹⁰¹ The Act directed the Secretary to formulate and implement a management program “to restore fish ... populations ... to the levels approximating those which existed immediately before the start of construction [of the TRD] and to maintain such levels.”¹⁰² Congress authorized \$57 million for ten years beginning in fiscal year 1986.¹⁰³ The State was required to pay 15 % of non-operational costs (about \$5 million) and direct purchasers of TRD water and power were required to pay 50 % of non-operational costs (about \$16.5 million).¹⁰⁴

For those of you who are fiscally minded, this might be a good point to estimate the sums spent to mitigate the fishery damage caused by the dams on the Trinity. Pre-project studies spanning about twenty years surely cost more than \$250,000 in 1955 dollars. The hatchery cost about \$1.2 million to build in 1961 dollars and another \$8 million to improve.¹⁰⁵ Operational costs of the hatchery since 1963 have probably exceeded \$30 million. Between 1974 and 1984, the Task Force spent about \$11 million.¹⁰⁶ In 1980, Congress authorized \$3.5 for Grass Valley Creek improvements. And, in 1984, Congress authorized expenditures for restoration of about \$66 million through 1995.¹⁰⁷ In 1996, Congress extended funding for the restoration program into 1998.¹⁰⁸ The budget of the restoration Task Force has run in excess of \$3 million per year since 1996.¹⁰⁹ Costs of the flow evaluation study, Hupa flow maintenance study and EIS/EIR are unknown, but a conservative estimate is that total costs of these studies which spanned nearly fifteen years have exceeded \$10 million. So, the cost of the “improved fishery”, promised by the promoters of the TRD, including state and federal spending and excluding the cost of the irrigation and hydropower subsidies, certainly has exceeded \$150 million during the first 36 years of the project.¹¹⁰

By contrast, a USBR inhouse review dated April 21, 1978, summarized the costs of an annual streamflow of 350 TAF.¹¹¹ Market value of irrigation and revenue from hydropower losses totaled slightly over \$6 million per year.¹¹²

Chapter 8: Let the Studies Begin. 1985-2000

In January 1985, the 12-year flow evaluation study finally began with field work on baseline conditions of fish habitat.¹ Initial goals were to identify available habitat for spawning, incubation, rearing, holding and migration.² Initial data were limited, however, because the water year ending in 1985 was dry and releases were the lowest since 1979 -- i.e. about 10 % of the historic flow.³ More dry years followed in 1987-1988, 1990-1992 and 1994.⁴ And, so the conditions for increasing flows defined in 1980 were realized in only six of the eleven years between 1981 and 1991.⁵ After peaking in 1986 due primarily to drastic reductions in harvest, fish populations steadily declined to pre-1981 levels.⁶

In 1986, Congress found that the federal and state governments had not fulfilled “their responsibilities to protect the [Klamath and Trinity Rivers’] anadromous fishery values.”⁷ Accordingly, it passed the Klamath River Basin Conservation Restoration Area Act to grant additional authority to the Interior Secretary to implement a restoration program in cooperation with State and local governments “to restore anadromous fish populations to optimum levels in both the Klamath and Trinity River Basins.”⁸

In July 1988, the California Advisory Committee on Salmon and Steelhead Trout, created by the legislature in 1983, released a report on the restoration of salmon and steelhead resources throughout California.⁹ The Committee report found that the USBR violated the 1981 compromise by continuing to offer to its agricultural customers 219,500 acre-feet of water which it had committed to restore the Trinity.¹⁰ The Committee’s finding led the California Senate to request the President and the Congress to restrain the USBR from marketing CVP water until after the streamflow needs of salmon and steelhead were met.¹¹ The Committee also concluded that Lewiston hatchery could not mitigate salmon and steelhead losses caused by diversions from the Trinity.¹²

In 1988, the Hupa filed an administrative appeal requesting the Secretary to intervene to resolve issues concerning dry year flow reductions.¹³ The Hupa argued that a minimum of 340,000 acre feet per year was required for fishery restoration and to meet the Interior Secretary’s trust responsibility.¹⁴ Irrigation districts and CVP power users opposed any increased flows without an environmental impact statement.¹⁵ Ironically, this was the first time that the beneficiaries of the Trinity subsidy claimed that the diversion (which exceeded the Congressional authorization) had become entitled to protection as a part of the “environment.” In July 1990, Secretary Lujan directed the USFWS to review Trinity streamflows.¹⁶

In January 1991, the USFWS concluded that the flows for sub-normal water years prescribed in the 1981 compromise would not allow for the restoration and evaluation of the fishery resources.¹⁷ Even with completion of the restoration program, the maximum allowed flow of 340,000 acre-feet per year would provide only 80 % of needed habitat.¹⁸ Further, the dry year flows permitted under the 1981 compromise performed accordingly – they compromised survival of migrating fish, restoration of stream morphology and progress of the flow evaluation study and of the restoration program.¹⁹

In March 1991, the House Committee on Interior and Insular Affairs released a report on amendments to the reclamation states drought assistance act.²⁰ The report charged that the USBR persistently had adversely affected the fishery resources of the Hupa and had frustrated the restoration and maintenance of natural fish populations mandated by the 1984 Trinity Restoration Act.²¹ The report criticized the USBR's management and operation of the TRD before and during the drought of the late 1980's.²² Specifically, the report noted that the USBR made full deliveries of water supplies during four consecutive drought years depleting water stored in the reservoirs.²³ The Committee concluded that the Interior Secretary should release at least 340,000 acre-feet annually, particularly in drought years, to achieve the restoration mandated by Congress and the federal government's trust responsibilities to the Hupa.²⁴

In the spring of 1991, a review team comprised of representatives from the USFWS, BIA and USBR arrived at a last minute consensus – aka “the 1991 compromise.”²⁵ 1991 was forecast as a critically dry water year subject to sharply reduced flows scheduled for early May under CVP “hardship” legislation.²⁶ The compromise called for between 240,000 and 340,000 acre-feet in 1991 depending on the projected inflow to Shasta Reservoir and at least 340,000 acre-feet between 1992-1996 except in critically dry years when such minimum flow would be released “if at all possible.”²⁷ Secretary Lujan approved the 1991 compromise on May 8, 1991.²⁸

Also, in spring 1991, construction of another dam (Buckhorn Dam on Grass Valley Creek) to offset the effects of the Trinity and Lewiston dams was finally completed. In the late 1970's, the Task Force had concluded that Grass Valley Creek which joins the Trinity about 8 miles below Lewiston was contributing most of the sediment to the mainstem below Lewiston.²⁹ In 1977, the CDFG described the inflow of granitic sand from Grass Valley Creek as a biologic disaster.³⁰ In 1980, Congress authorized construction of sediment control facilities on Grass Valley Creek.³¹ Between 1979 and 1981, the USBR performed sediment transport studies that showed that 90% of fine sand could be removed by increasing flows to a level below that which Congress had expected when it first authorized the project.³² By 1998, total costs of controlling the inflow of sediment from Grass Valley Creek had grown to more than \$38 million.³³ Before construction of the dams on the mainstem, the river had sufficient flow to cleanse itself of sediment for free.³⁴

In addition, modernization of the hatchery was completed in 1991 at a total cost of about \$8 million.³⁵ As of 1993, the Task Force projected that ongoing hatchery evaluation would cost another \$.7 million.³⁶ In 1996, the CDFG revised operation of the hatchery to reduce adverse effects on naturally produced fish.[DEIS App. B-10 & current hatchery status]

In October 1992, Congress amended the authorization for the CVP, ostensibly to protect, restore and enhance fish and wildlife habitat in the Central Valley and Trinity basins and to achieve a reasonable balance among competing demands for use of CVP water.³⁷ The legislation, known as the Central Valley Project Improvement Act

(“CVPIA”), directed the Secretary immediately to operate the CVP to meet all obligations to restore fish and wildlife under state and federal law.³⁸ Specifically, it required instream releases in the Trinity of at least 340,000 acre-feet per year for water years 1992-1996 in order to meet federal trust duties to the Hupa and the restoration goals of the 1984 Act.³⁹ It required the Secretary to complete the flow evaluation study by September 30, 1996 and to submit those recommendations to Congress by December 31, 1996.⁴⁰ And, it provided that the flow requirements and operating procedures recommended in the study would be implemented if the Hupa agreed.⁴¹ Otherwise, minimum annual releases of 340,000 acre-feet would remain in effect unless increased by Congress, the courts or agreement between the Secretary and the Hupa.⁴²

Passage of the CVPIA triggered panic among CVP contractors. According to Jason Peltier, manager of the Central Valley Project Water Association, the water contractors would “do anything and everything to keep from being harmed. If that means obstructing implementation [of the CVPIA] so be it.”⁴³ CVP contractors embarked on a broad-scale effort to delay implementation of the CVPIA through the process of preparing environmental impact statements (“EISs”) which they knew would be “massive, expensive, controversial and time consuming.”⁴⁴

In the ensuing years, progress of the flow study and restoration program also began to meet with local opposition. Local businesses located inside the floodplain opposed increased spring flows which were scheduled as part of the flow evaluation study to determine the effects on emigrating fry.⁴⁵ Local critics also began to question the prudence of continuing to spend millions to restore a river that faced a perpetual drought.⁴⁶ But, bureaucratic inertia, nearly twenty years in the making, weathered local frustrations.

However, in July 1994, the Interior Secretary ordered preparation of an environmental impact statement before any new channel rehabilitation projects were constructed.⁴⁷ In addition, the Secretary determined that the EIS must evaluate the permanent commitment of water to be recommended in the flow study.⁴⁸ The purpose of the draft EIS/EIR would be to assist the Secretary in developing recommendations for permanent instream fishery flow requirements and TRD operating criteria and procedures for the restoration and maintenance of the fishery.⁴⁹ This was a significant departure from the 1980 EIS, because it meant that any increased releases in the Trinity would be assessed against the economic consequences of reducing diversions to the Central Valley. In the 1980 EIS, the USFWS concluded that the unqualified legal obligations of the Interior Secretary to restore fish populations to a pre-dam level and to protect the Hupa’s trust assets required compliance regardless of the effects in the Central Valley.⁵⁰

In 1994, the USFWS received additional comments from the irrigators.
[summarize]

Then, in 1995, the Department of Interior invited public comment on implementation of the CVPIA. CVP contractors requested and received a special invitation from Deputy Secretary Garamendi specifically soliciting their input to establish

flows needed to restore the Trinity.⁵¹ Responding to the concerns of the irrigators, the Department of Interior promised them that the Secretary would not increase instream flows until the final EIS/EIR was completed.⁵² DOI, also assured CVP contractors that the Trinity EIS/EIR and the Secretary's final flow decision would give due consideration to impacts of increased streamflows on the Central Valley.⁵³

In 1995, unhappy with its lack of success in obstructing implementation of the CVPIA, the WWD, the largest water district in the nation, led an unsuccessful effort to repeal the CVPIA.⁵⁴

In 1996, the CDFG issued a statewide steelhead restoration and management plan.⁵⁵ In it, the CDFG foreshadowed the conclusions of the long-delayed flow evaluation study:

The Trinity River cannot be restored to pristine pre-project conditions, therefore some type of mechanical reactivation of gravel bars and removal of riparian vegetation will be necessary. However, implementing this type of river management without establishing the necessary flow regime that will allow the channel to be self-regulating can lead to a highly intensive project that must be repeated and maintained every year, and may be of limited value.⁵⁶

The CDFG flatly admitted that “[p]revious measures to restore the anadromous fish populations of the Trinity River have not been successful.”⁵⁷ And, the CDFG was equally clear about what was needed:

- Greater releases to the Trinity River below Lewiston Dam are necessary to restore anadromous fish populations and habitat.
- A release schedule that provides flushing flows and mimics the natural hydrograph is necessary to restore juvenile habitat of naturally-produced steelhead.⁵⁸

In 1996, Congress extended authorization for the management program through October 1, 1998.⁵⁹ However, the Congressional authorization for minimum releases of 340,000 acre-feet per year expired in September 1996.⁶⁰ In fall 1996 through winter 1997, greater than average runs of fall chinook and winter steelhead returned to spawn in the Trinity.⁶¹ The Hupa requested a 1997 interim flow of 427,000 acre-feet based on their study of fishery needs.⁶² In order to delay increased river temperatures and to provide fish transport flows to promote survival of the progeny of these, the USBR, in consultation with the USFWS and USGS, proposed increased flows during May and June of 1997.⁶³ The interim streamflow schedule called for a maximum increase of about 87,000 acre-feet.⁶⁴ The USBR concluded that the proposed interim flow increases were necessary to protect the Hupa fishery and would have no significant impact in the Central Valley.⁶⁵ Moreover, the NMFS agreed that the increased flows would benefit coho salmon which were listed as threatened effective June 5, 1997 as well as steelhead which were proposed for listing.⁶⁶

The Delta Mendota San Luis Water Authority challenged the interim flow proposal based on procedural technicalities.⁶⁷ District Judge Oliver Wanger in Fresno granted a temporary restraining order blocking the USBR from releasing more than 340,000 acre-feet annually.⁶⁸

Deadlines for the completion of the flow study and submission of its recommendations to Congress passed by the end of 1996.⁶⁹ No public explanations were given for the delay.⁷⁰ In November 1997, the Hupa Fisheries completed a Flow Maintenance Study.⁷¹ [discuss when CD arrives]

In January 1998, a draft of the flow evaluation study was finally released for scientific peer review. In July 1998, inconsistencies in the computer model used to calculate water impacts on the Central Valley for the EIS/EIR were discovered.⁷² Co-leads on the EIS/EIR decided to delay completion of the EIS/EIR until an upgraded version of the computer model was available to correct the impact analysis.⁷³

Between July and November 1998, Trinity County testified before the State Water Resources Control Board in the Bay-Delta Water Rights Hearing.⁷⁴ The County demonstrated that water was diverted from the Trinity for use in soils high in salinity, selenium and other harmful trace elements in the Westlands Water District in the San Joaquin Valley.⁷⁵ The County offered proof that the diversions had resulted in environmental catastrophes in both river basins.⁷⁶ Trinity argued that delivery of water to the contaminated soils in the WWD, therefore, constituted a wasteful and unreasonable use of water in violation of state and federal law.⁷⁷

In May 1999, Secretary Babbitt announced that in June the flow evaluation report finally would be released – nearly three years overdue.⁷⁸ He added that the DOI was required by Congress and by trust responsibilities to the Hupa and Yurok “to act to restore the fishery resources of the Trinity River.”⁷⁹ He predicted that he would make a final streamflow decision in spring 2000 after the EIS/EIR was finalized.⁸⁰

In June 1999, the Trinity River Flow Evaluation Final Report (“TRFER”) was released. It summarized 15 years of studies and evaluations of habitat preferences of salmon and steelhead, availability of preferred habitat at various dam releases, habitat change and fish use at channel rehabilitation projects, water and sediment interactions and river channel shape, water temperature needs and requisite dam releases and habitat limitations on juvenile salmon production.⁸¹ The results of those studies were evaluated by natural resource scientists and managers and interested parties, including the attorney for the WWD, from the USFWS, USBR, NMFS, CDFG, Hoopa Valley Tribe, USGS and DOI from 1996 to 1999.⁸² That group developed the final recommendations contained in the TRFER, including variable dam release schedules, a channel rehabilitation program (initiated by mechanical means and maintained by flow), gravel supplementation and an adaptive at three management program.⁸³

The public draft of the EIS/EIR was released in October 1999. After about fifteen years of study, the lead agencies set a forty-seven day comment period which was extended once for forty-three days. Public hearings were held in November 1999. In total, the lead agencies received written comments from 6445 people and organizations (1009 letters and 5436 preprinted postcards).⁸⁴ [comments, responses]

The final EIS/EIR was released in October 2000 with the “preferred alternative” (i.e. the recommendations of the flow evaluation) substantially unmodified.⁸⁵ The Department of Interior described the “preferred alternative” as “a rough split -- 48 percent of the water to be kept up north, and 52 percent allowed to flow south.”⁸⁶ Westlands Water District’s immediate reaction was to threaten suit.⁸⁷

With release of the final EIS/EIR, the NMFS issued two biological opinions on the effects of the “preferred alternative.”⁸⁸ Not surprisingly, the NMFS, which had helped formulate the “preferred alternative,”⁸⁹ concluded that it was not likely to “jeopardize the continued existence of” or “destroy or adversely modify designated critical habitat for” Trinity coho.⁹⁰ One might ask how restricting a river to less than one half its historic flow (after 75% of historic spawning ground has been closed and the river had suffered the functional equivalent of a thirty-five year drought) would not reasonably be expected to “reduce appreciably the likelihood of both the survival and recovery” of Trinity coho.⁹¹ The answer is relatively simple. That question was ignored.

Instead, the NMFS only asked whether any proposed changes from the current “environmental baseline” would be likely to “degrade” or “decrease” coho habitat.⁹² In other words, after thirty-five years of unlawfully restricted flow, the degraded habitat in the Trinity was accepted. And, the “current” condition was equivalent to the third driest year on record which would ensure the demise of coho.⁹³ So long as the “preferred alternative” would not make matters worse, the NMFS endorsed it. However, since coho were listed, the Secretary of Commerce was required “not merely [to] avoid elimination of the species, but [was] required to bring the species back from the brink sufficiently to obviate the need for protected status.”⁹⁴

The more important question, at least from the point of view of the coho, was whether implementation of the “preferred alternative” would continue to jeopardize coho survival and recovery with only 48% of the historic flow.⁹⁵ After all, the NMFS was required to “insure” that the “preferred alternative” was not likely to “reduce appreciably the likelihood of both the survival and recovery” of coho.⁹⁶ However, that question was not addressed. And, it is important to remember that the EIS/EIR had already pretty well answered it: full restoration of historic flows would only achieve 81% of escapement goals set in 1983 after habitat had undergone twenty years of the worst degradation.⁹⁷

The Secretary released his decision in ?⁹⁸

Chapter 9: Bad News: The River and the Fishery Cannot be Restored Unless the Dams are Removed, But That Was Not Evaluated. 1999- ?

The flow evaluation report and the EIS/EIR were candid, up to a point. According to the flow evaluation, restoration was not possible so long as the dams remain intact on the Trinity:

The most effective strategy for rehabilitating habitat and fully realizing the potential productivity of an anadromous salmonid fishery is ...the restoration of river system integrity. ... If naturally producing salmonid populations are to be restored, habitats on which these populations historically depended must be provided to the greatest extent possible, by rejuvenating the necessary geomorphic and ecological processes Restoring the Trinity River to pre-TRD conditions cannot occur barring significant reconfiguring or removal of the TRD. Likewise, continuing existing management will not significantly improve habitat and salmonid productivity. ... Total restoration of the pre-TRD channel morphology [cannot] be the goal ... as long as the TRD operates ... because not all physical processes can be restored to pre-TRD levels. The former huge winter floods will never happen again, and the dams will continue to trap all coarse bedload.¹

....

This ... Report concludes that the river channel has degraded to such an extent that simply managing flow releases from the existing reservoirs cannot achieve the salmonid restoration goals mandated by Congress.²

The report admitted that restoration of the pre-project mainstem could not be achieved “because physical constraints imposed by the TRD cannot be entirely overcome: the primary constraints being the elimination of coarse sediment recruitment from the Basin above Lewiston Dam and the elimination of winter floods.”³

Likewise, the draft EIS/EIR conceded that the only alternative to produce “very substantial improvements to habitat for native anadromous salmonids” is to partially remove the dams and to stop diverting water to the Central Valley.⁴ This alternative, referred to as the Maximum Flow Alternative, was projected to achieve in 2020 only 81 percent of natural production goals set in 1983.⁵ Maintenance of current conditions, including the minimum streamflow of 340 TAF (thousand acre-feet) annually, would result in 8 percent of natural production goals in 2020.⁶ Since 1982, average numbers of naturally produced fish returning to spawn have fallen far short of the goals adopted by the restoration project: fall chinook 20 percent; spring chinook 40 percent; coho 14 percent and steelhead 5 percent.⁷

Recognizing that the Secretary’s duty to restore the Trinity fishery was inconsistent with continued operation of the project, one would presume that the EIS/EIR would assess the costs and effects of dam removal, including restoration of the habitat above the dams. This is particularly true insofar restoration of the pre-project streamflow with partial removal of the dams would achieve only 81 percent of spawner escapement

goals in 2020.⁸ But, despite requests from the public, including the Yurok and Karok tribes, the agencies chose not to analyze dam removal in detail because environmental impacts, forgone benefits and costs were excessive.⁹ The decision rested on a one-sided evaluation of environmental and economic costs and lost economic benefits over 60 years, the estimated remaining useful life of Trinity Dam.¹⁰ The Yurok and Karok disagreed with the decision because benefits of dam removal were not considered.¹¹ For example, it is plausible that re-opening of habitat above the dams would allow full restoration of 1955 population levels.¹² But, with no analysis, the Secretary had no way of knowing whether the benefits of dam removal might have outweighed the costs.

Further, the agencies did not discuss the real costs of maintaining the project. What are the costs of replacing or removing Trinity dam when its useful life runs out? What will the USBR do with the reservoir behind Trinity dam when it fills with sediment?¹³ In 1952, the USBR estimated the average annual costs of operating, maintaining and replacing the project over 100 years at about \$3 million.¹⁴ Assuming a Cadillac cost about \$5,000 in 1952, the USBR's estimate should be multiplied at least ten-fold to approach today's costs. Over the next sixty years, the USBR's adjusted estimate would exceed \$1.8 billion, excluding the ongoing costs of stream rehabilitation and irrigation and hydropower subsidies. The USBR has estimated that Trinity dam could fail with floods that recur every 124 years.¹⁵ Did the agencies think that this environmental disaster will be upgraded sixty years from now? Given the risks of dam failure, it is hard to believe that the federal government would simply walk away from millions of cubic yards of sediment behind Trinity dam in the year 2060.¹⁶ But, the authors of the DEIS/EIR chose not to address, much less resolve, these issues.

All we do know is that the draft EIS/EIR estimated that the direct cost of removing the Trinity dams was \$192 million.¹⁷ By 2060, that number will be considerably larger; however, that will be one of our legacies for our grandchildren. Hopefully, we will not be required to explain why we did not clean up after this party. But, that is probably the best news. Even money will not be able to remediate other legacies of the Trinity. At least our parents could say they did not know what the dams on the Trinity would do. But, since the authors of the EIS/EIR decided that dam removal was too costly seriously to consider, what did they do to help the Secretary select the appropriate streamflow to restore the Trinity fishery? The answer is not very pretty.

First, it was necessary to get around the Secretary's legal duty to implement a program "designed to restore the fish populations ... to levels approximating those which existed immediately before the start of construction" of the Trinity project.¹⁸ So, in a footnote, the draft EIS/EIR defined "restore" as "reviving the well-being, vitality, and use thereof, but not necessarily to an original or other pre-established condition."¹⁹ Congress' mandate to "restore" fish populations to approximately 1955 levels was averted by redefining "restore" to mean "revive." After all, "restoration" would probably require removal of the dams, and that would be too expensive. So, through adaptive language management, the draft EIS/EIR re-cast the purpose of the Secretary's long-delayed decision as simply to "revive" natural production below the dams.²⁰ And, that was easy -- all it took was one footnote.

The draft EIS/EIR, offered the explanation that it did not set salmon population targets:

“due to complexity, uncertainty, and confounding factors in identifying and monitoring such targets. Instead, the DEIS/EIR is premised on a ‘healthy river’ concept. The DEIS/EIR assumes that restoration of pre-dam attributes—such as alternate bar sequences, effective sediment transport, and dynamic riparian communities—will result in the restoration of anadromous fish production.”²¹

The Secretary, however, is not relieved of his legal duty to design a program to restore fish populations to 1955 levels simply because it would be difficult. And, it is clearly inappropriate for the Secretary to adopt a program whose designers only “assume” will achieve a goal far short of Congress’ directives. Since 1955, the Secretary has been required to operate the Trinity project to “insure the preservation and propagation of fish....”²² Indeed, both the draft EIS/EIR and Final Flow Evaluation acknowledge that the 1955 Act only authorized diversion of “surplus water”—i.e. Congress relied on advice from Engle’s committee that an average annual diversion of 704 TAF would have no “detrimental effect [on] the fishery resources.”²³

So, what did the flow evaluation and draft EIS/EIR actually recommend? They proposed an open-ended experiment in stream management. Their hypothesis was that a combination of increased reservoir releases in the spring, removal of vegetation and the addition of gravel could mimic natural river processes so that diverse, pre-project salmon habitats could evolve in a smaller river.²⁴ The theory is admittedly speculative: “[w]hat is not known is the rate of change or time frame needed to achieve this new channel equilibrium.”²⁵ The experiment would be monitored and adjusted over a long period of time sufficient to measure changes in fish populations.²⁶ The flow evaluation recommended streamflows, operating criteria and procedures for each of five water-year classes.²⁷ The average recommended streamflow (weighted by water-year probability) was 595 TAF per year.²⁸ The draft EIS/EIR compared the effects of the flow evaluation proposal against five alternatives, including a maximum flow achieved by modifying the dams.²⁹

On the one hand, the agencies recommended a streamflow equal to about 48 percent of the pre-project average.³⁰ But, what did they recommend for diversions? Under the flow evaluation proposal, diversions would range from 727 TAF in wet years, 626 TAF in average years, and 382 TAF in dry years.³¹ In wet and extremely wet years (roughly 40 out of 100 years), proposed diversions would continue each year to exceed the annual average authorized by Congress.³² Since 1964, an annual average in excess of 1.3 MAF were exported.³³ Assuming only average water years, it will take the flow evaluation alternative more than 125 years to bring cumulative annual average exports into compliance with the annual average authorized by Congress. Apparently, the authors of the draft EIS/EIR felt it was unnecessary to compensate for 36 years of unauthorized diversions or to bring the project into compliance with its authorizing legislation any time soon.

Did the scientists really think that less than one-half of the Trinity's average streamflow (at Lewiston) could "restore" salmon populations below Lewiston? Good question. In 1981, the Secretary directed the flow evaluation study "to determine how to restore the fishery resources" of the Trinity.³⁴ In 1992, Congress directed the Secretary to complete the flow evaluation (by September 30, 1996):

"in a manner which insures the development of recommendations, based on the best available scientific data, regarding permanent instream fishery flow requirements and Trinity River Division operating criteria and procedures for the restoration and maintenance of the Trinity River fishery [in order to meet Federal trust responsibilities to protect the fishery resources of the Hoopa Valley Tribe, and to meet the fishery restoration goals of the [1984 Act].]"³⁵

The authors of the flow evaluation admitted that the best way to restore the fishery was to restore the instream habitat as it existed before the project.³⁶ But, the final flow evaluation contained no scientific data that showed that one-half of the natural streamflow of the upper Trinity could "meet the fishery restoration goals of the [1984 Act]." In fact, the flow evaluation was predicated on the unexamined premise that "[s]everal sediment and flow constraints imposed by the TRD [could not] be overcome or completely mitigated."³⁷ In sum, the final flow evaluation offered no scientific explanation why its flow recommendations would be as likely to restore fish populations to 1955 levels as 1955 streamflows. Indeed, the authors of the flow evaluation admitted that "percent change ... from historical flow and water-temperature conditions is a more appropriate index for relative value comparisons of potential production given alternative water-year class flow regimes."³⁸ Sounds very much like halving the streamflow would halve the fish population.³⁹

Did the draft EIS/EIR offer scientific reasons why less than half of the historic streamflow would "revive" natural production by 2020? Unfortunately, again, the answer is no. The draft EIS/EIR explicitly "assumed" a direct relationship between aggregate measures of a healthy river and inriver spawner escapement goals by 2020.⁴⁰ The 1979 escapement goals were based on a "fully restored Trinity River System."⁴¹ Will each salmon population "revive" over the next 20 years with less than half the historic streamflow and incomplete stream restoration? Probably not, particularly since restoration of pre-project flows is projected to achieve only 81% of spawner escapement goals by 2020.⁴²

So, why did the draft EIS/EIR adopt the flow recommendations of the flow evaluation study as the "preferred alternative"?⁴³ According to the computer analysis described in the draft EIS/EIR, the preferred alternative is expected to achieve only two-thirds of escapement goals by 2020.⁴⁴ Selection of the preferred alternative was based on criteria jointly developed by the USFWS, USBR, Hoopa Valley Tribe and Trinity County.⁴⁵ The criteria provide the perfect compromise. According to these four agencies, the preferred alternative would substantially increase fish production and

fishing opportunities in the Trinity; substantially increase ocean fishing opportunities; improve tribal access to trust resources; balance environmental and social beneficial and adverse impacts across the Trinity and Klamath basins, Coastal area and Central Valley; allow continued operation of the Trinity River Division of the CVP, including water exports; and limit flooding on the Trinity.⁴⁶ Sounds eminently reasonable to all concerned. But, was the preferred alternative a lawful option for the Secretary ? And, why did the Hupa and Trinity County agree to restore less than “half the river”? No surprise -- the answer to the first question is clearly “no”. But, the second question is more interesting, so I shall offer an answer to that first.

The CVPIA provided that if the Hupa and the Secretary did not concur with the recommendations of the flow evaluation study, minimum releases of 340 TAF would continue unless increased by Congress, the courts or agreement between the Secretary and the Hupa.⁴⁷ The flow evaluation and the draft EIS/EIR, made it very clear what that would do. The flow evaluation stated:

“the 340 TAF volume, when compared with the 84-year period of record, is equivalent to the third driest year on record in the Trinity River.

....

At best, implementation of release schedules based on 340 TAF provides only enough flow to mimic the natural spring conditions that existed pre-TRD in critically dry water years.

....

Instream annual flows equal to or less than 340 TAF would result in the continued degradation of the fisheries resources of the Trinity River.”⁴⁸

The draft EIS/EIR is equally clear. Assuming present flows continue for next 20 years, fish populations would continue to decline.⁴⁹

The Hupa and Trinity County have never had much bargaining power -- and the CVPIA effectively undermined whatever they might have had left. If the Hupa or Trinity County refused to be politically correct, streamflow would remain unchanged until Congress or the courts came to their rescue. Facing limitless resources of the irrigators and the federal government, a County with a population under 15,000 and a tribe with fewer than 5,000 members had an easy choice.

Now, why was the Secretary’s decision to adopt the “preferred alternative” unlawful ? It conflicted with several laws, the first of which is the 1955 Act authorizing the Trinity project. Since at least 1979, lawyers for the Department of Interior have advised the Secretary that his duty to provide Trinity streamflows to preserve the fishery “t[ook] precedence over needs to be served by out-of-basin diversion.”⁵⁰ The wording of the 1955 Act made it clear that in the case of the Trinity project, Congress’ usual direction that a new division be integrated into the overall CVP, was expressly qualified by specific directions to the Secretary to maintain the streamflow “to insure the preservation and propagation of fish...”⁵¹ And, the legislative history confirmed that the Act required the Secretary to maintain streamflow to insure preservation and propagation of fish by

exporting only surplus water in excess of the fishery needs of the Trinity.⁵² The USBR and Engle had assured Congress that the project would divert “only water which is clearly surplus to all present and future needs of the basin.”⁵³ As far as Congress understood, average exports of less than 70% of the historic flow at Lewiston would have no detrimental effect on the fishery.⁵⁴

Secondly, under state law, the USBR’s right to appropriate water from the Trinity has always been subordinate to the needs of the county and the watershed. The Reclamation Act required the Secretary to comply with state law governing appropriation and use of water.⁵⁵ In 1955, the USBR assured Congress that it would never deprive the basin of water needed for preservation of fish and that the needs of the basin took priority over all other purposes of the project.⁵⁶ In 1959, when the USBR took an assignment from the state to take water from the Trinity, it took subject to Trinity County’s right to use such water as may be necessary for development of the county and to the Watershed Protection Act.⁵⁷ That Act prohibited any diversion which deprived a watershed of “all of the water reasonably required to adequately supply the beneficial needs of the watershed....”⁵⁸ In 1977, the federal court in Sacramento held that the Secretary is required under that law to release water “reasonably required” to preserve fish in the Trinity.⁵⁹ The court also noted that the requirement of the Watershed Protection Act was reinforced by the state constitutional prohibition against waste and unreasonable use of water.⁶⁰

Similarly, lawyers have advised the Secretary since 1979 that his trust obligations to the Hupa and Yurok took priority over benefits from exports to the Central Valley.⁶¹ In March 1979, an Associate Solicitor advised the Secretary that he had an obligation as trustee to manage streamflow “solely” in the interests of the tribes to conserve their fishing rights:

“[t]he Secretary may not abrogate these rights even if the benefit to a portion of the public from such an abrogation would be greater than the loss to the Indians.”⁶²

In 1992, Congress affirmed that the federal government had trust responsibilities to maintain the streamflow of the Trinity to protect the fishery resources of the Hupa.⁶³ Another government attorney noted in 1993 that the federal government was not meeting its obligations to the tribes.⁶⁴ In 1995 a USBR attorney advised the Regional Director that the Yurok and Hupa had rights to instream flow sufficient to support all life stages of fish.⁶⁵ The priority dates of the Yurok and Hupa water rights are at least 1891.⁶⁶ According to two USBR attorneys, the Bureau has a duty to ensure that project operations do not interfere with the tribes’ senior water rights.⁶⁷ And, in 1999, Secretary Babbitt testified that his Department’s trust responsibility required it “to act to restore the fishery resources of the Trinity River.”⁶⁸

Since 1997, coho salmon in the Trinity have been listed as threatened under the Endangered Species Act (“ESA”).⁶⁹ In May 1999, the Trinity below Lewiston was designated as critical habitat essential to the conservation of coho.⁷⁰ Under the ESA, therefore, the Secretary may no longer permit water exports “which appreciably

[diminish] the value of the [Trinity River] for both the survival and recovery of [coho salmon].”⁷¹ Restoration of less than one-half of the pre-project flow at Lewiston would certainly perpetuate appreciable degradation of the coho habitat below Lewiston.⁷² The draft EIS/EIR estimates that the “preferred alternative” will result by 2020 in a loss of 15% of inriver spawner escapement which could be achieved with the restoration of pre-project streamflow.⁷³ A streamflow, less than one-half of the historic average, which results in the loss of 15% of the spawning run of a threatened population is clearly an appreciable degradation of habitat critical for survival and recovery of coho salmon.

The common thread running through the law is that the needs of the Trinity fishery were supposed to come first. It was not a radical notion. The Trinity project was the first major experiment in exporting water from one basin to another. It was authorized because its promoters convinced Congress that the Trinity had a surplus of a million acre-feet.⁷⁴ But, since 1964, the Secretary put the needs of the Central Valley first. The draft EIS/EIR recommended a streamflow less than one-half of the historic average because it would allow exports to the Central Valley to continue. But, the Secretary was bound to consider the needs of the Trinity fishery and of the tribes independent from the benefits from continued exports to the Central Valley. The Secretary had no authority to balance away the fishery and tribal needs entrusted to his care -- that was a job for Congress.

In choosing the preferred alternative, the Secretary sought substantially to increase natural fish production and to minimize adverse impacts in the Central Valley.⁷⁵ He choose a stream management experiment even though the best chance to achieve restoration was to remove the dams.⁷⁶ He ignored his duty to restore fish populations to 1955 levels. He balanced the interests of the Trinity fishery and tribes against those in the Central Valley. Sounds benign, but his decision probably exacted the final compromise for the Trinity.

Chapter 10: What Happened to All That Water? 1964-2000

More than 45 million acre-feet (“MAF”) of water has been taken from the Trinity since 1964¹ under the authority of the federal reclamation laws.² In 1955, the promoters of the Trinity advised Congress that an annual average of .7 MAF would be diverted to make an additional 1.2 MAF available for irrigation each year in the Central Valley.³ Of the additional water, 44 percent was to go to the west side of the San Joaquin Valley and 56 percent to the Sacramento canals service area.⁴ Well, we already know that the volume of water actually exported to the Central Valley about doubled the amount authorized by Congress. But, in order to understand what ultimately happened to that water, it is necessary to look at the broader history of the Central Valley Project (“CVP”).

The CVP is made up of integrated units authorized by Congress over a period of 50 years. From 1935 to 1937, the initial elements were authorized.⁵ They included Shasta Dam on the Sacramento River; Friant Dam on the San Joaquin; pumps on the southern edge of the delta at Tracy which lift Sacramento River water into the Delta-Mendota Canal, which carries water south along the west side of the San Joaquin Valley and serves areas which had relied on San Joaquin River water before it was diverted to irrigate the east-side below Friant Dam.⁶ In 1950, Congress authorized the Sacramento Canals Unit elements of which were completed as follows: Red Bluff Diversion Dam (1964), Corning Canal (1959) and Tehama-Colusa Canals (1980).⁷

In 1960, Congress authorized the San Luis Unit which consists of two major storage reservoirs, O’Neill Forebay and San Luis Dam, San Luis Canal and San Luis Drain. The unit stores water from the Delta-Mendota Canal and the state California Aqueduct and carries both state and federal water south, serving federal irrigation customers in its first 100 miles, principally the Westlands Water District (“WWD”), starting in April 1967.⁸ Most of the unit was constructed jointly by the state and federal governments between 1963 and late 1968.⁹ The San Luis Drain was intended to carry agricultural waste-water back to the Delta.¹⁰ Construction of the drain was stopped in 1975, and the drain now ends at Kesterson Reservoir and Wildlife Refuge.¹¹

CVP deliveries in the San Joaquin Valley never complied with the reclamation laws. The problem was that more than a decade before CVP water arrived, most irrigable land (about 66 percent) was privately held in blocks larger than the 160 acre limit.¹² Fewer than 6 percent of the owners held 53 percent of the excess acreage.¹³ Much of the land belonged to absentee owners in violation of the legal residency requirement.¹⁴ According to 1926 amendments to the Reclamation Act, irrigated acreage in excess of the limit had to be sold within ten years at a price that reflected the value of the land before the arrival of project water.¹⁵ These requirements were intended to encourage family farmers to homestead on arid land and to prevent speculators and large landowners from profiting from huge public investments.¹⁶ Irrigators were not charged interest on the water delivery systems built by the government and their operating costs were reduced by revenue from the sale of hydroelectricity generated at government plants.¹⁷

From 1946 on, the USBR paid lip service to the reform policies of the reclamation laws. The USBR defended the law while at the same time advising growers how to get around it through several forms of “technical compliance.”¹⁸ Stockholders of corporate farms each could obtain water for 160 acres. Growers could deed land to relatives and children or to employees who would lease it back. And, wealthy landowners could pay off all construction charges for their irrigations systems before the ten years had passed and gain exemption from the requirement of selling excess acreage and continue to receive cheap water.¹⁹ Non-enforcement of the prohibition against selling land at prices inflated by the availability of inexpensive federal water made it increasingly difficult for all but the wealthy to purchase farmland.²⁰

By 1955, the chief promoter of the Trinity-San Luis project, Representative Clair Engle, well understood the USBR’s policy of non-enforcement:

I call your attention to the fact that in 26 years since the recordable contract provisions have been in the reclamation law, not in one single instance has the Secretary of the Interior ever set a price on land and sold the land under a recordable contract They find ways to get around it. They set up corporations and partnerships and every adult or child has 160 acres and if there are not enough of those they bring in the uncles and aunts and, as a consequence, they spread it around so that the pro forma title at least is within the limitation.²¹

In 1942, landowners in the western San Joaquin Valley formed the Westside Landowners Association. According to a 1945 Department of Agriculture report, a select few each owned over a thousand acres in the San Joaquin Valley. They were located on dry, flat and desolate land southwest of Fresno on which farming had been impossible until the advent of groundwater irrigation.²² These irrigators wanted the USBR to rescue them because they were rapidly depleting the groundwater.²³ The USBR began investigating the San Luis project in 1943 at the request of the Association which put up \$40,000 to finance exploratory studies.²⁴ Westside landowners did not fear the acreage limitation because they could make enough money in ten years irrigating excess land with cheap water that they could afford to sell at “any old price.”²⁵ In 1949, 12 percent of the landowners (130 owners) owned more than 75 percent (more than 360,000 acres) of the acreage under consideration.²⁶ And, by 1978, a special task force confirmed that the USBR had failed to enforce reclamation policies in the WWD much as it had in the past.²⁷

By 1952, the underground aquifer was being overdrawn by about .8 MAF per year and studies showed high sodium levels.²⁸ In that year, the same group of landowners formed the WWD to convince the federal government to build a project to transport water 200 hundred miles from the delta to the westlands. Since its formation, the WWD has been controlled by an elected board of governors. However, voting has been restricted to property owners with one vote for each dollar of assessed land value.²⁹ And, elections have been infrequent because board members typically resigned before the completion of their term creating vacancies that have been filled by incumbent board

members.³⁰ Thus, four or five landowners have historically controlled enough votes to determine the membership of the board and generally to control the district.³¹ Boston Ranch Company, owned by J.G. Boswell, the largest farm operator in the state, and Southern Pacific Land Co, the largest landowner in the district, have exerted considerable control over the district.³² By 1978, for example, a relatively small number of large farms (81 farms with mean acreage of 5,734 out of a total of 227 farms) contained about 82 percent (464,486 acres) of the total irrigated acreage.³³ In 1985, J.G. Boswell and Southern Pacific owned more than 105,000 acres eligible for project water.³⁴

Between 1952 and 1960, a controversy erupted over state or federal control of the project.³⁵ Representatives of the WWD lobbied tirelessly for federal operation of the project, believing that the USBR would offer a better price and more rapid construction.³⁶ WWD formed a strategic alliance with Congressman Engle which ultimately proved the key to their success.³⁷ For Engle knew that the westlands would be the ultimate beneficiary of the Trinity project.³⁸

The Trinity was linked to the San Luis project in two important aspects. First, it was the next source of “new” water to become available which could justify expansion of service even to excess acreage. Second, it would add 1,067 MKH (million kilowatt hours) to CVP energy per year, 740 MKH of which would be needed annually to pump another million plus acre-feet out of the delta for transport to the westlands.³⁹ As Engle put it, “[w]hat the San Luis really need[ed] from the Trinity [was] the low-cost power for pumping. The water [was] only incidental.”⁴⁰ Or, as another California Congressman put it, Trinity power was the key to the economic feasibility of the San Luis project.⁴¹ When the time came to approve the San Luis unit, huge federal revenues projected from the generation of hydroelectricity on the Trinity were used to offset the costs of the San Luis project.⁴²

The San Luis Unit was a system for storing surplus winter and spring flows from the Delta and transporting them to the westside of the valley for summer irrigation.⁴³ In 1955, the USBR predicted that in typical years, about 1.38 MAF would be pumped out of the Delta of which about 1.126 MAF would be delivered in the westlands.⁴⁴ [hearings; S. Rept. 2202 1959; H. Rept. 399 1959; San Luis Act 1960]

In 1956, Engle, then Chairman of the House Subcommittee on Irrigation and Reclamation, introduced Jack E. O’Neill, the President of WWD, at his hearings on the San Luis project as “one of the outstanding citizens of California and one of the best-known men in our State.”⁴⁵ In a surprising outpouring of partial candor, O’Neill stated:

[m]uch has been said about the large-type farms on the west side of the San Joaquin Valley. The very nature of the present water supply in this area can never permit the development of small farms. The capital required to maintain the present water supply is beyond the reach of most people. The multi-million-dollar investments that have been made in our west side lands are the results of courage and fortitude seldom found in any area faced with the water problems comparable to this one. [The federal project] will permit the small landowners on

the west side, who presently lease their properties to these large farm operations, to farm that property themselves should they so desire.⁴⁶

Having acknowledged that the westlands was not a place for small farmers, it is difficult to understand how it took much courage for wealthy landowners to ask Chairman Engle for a handout -- particularly since they knew that he was more than happy to comply.

Returning to more characteristic hyperbole, O'Neill drew the attention of Engle's subcommittee to a number of resolutions "that represent the true wishes of the people of ... our State as a whole."⁴⁷ In fact, the only resolution from outside the San Joaquin Valley was unsigned and it came from Californians for Trinity-Sacramento-San Luis who asked for approval of the project as soon as possible.⁴⁸ And, as if it were perfectly choreographed, the next witness, fresh from Weaverville, happened to be the President of Californians for Trinity-Sacramento-San Luis, Armon Heffington.⁴⁹ Returning to one of the subjects about which he apparently had become expert, he advised the subcommittee that California's population was growing by 2,000 per day and that cheap irrigation in the westlands had something to do with providing clothes and homes for the newcomers, stabilizing industry and developing municipalities.⁵⁰ Heffington apparently was an early exponent of "trickle-up economics." Perhaps revealing more than he should have, Heffington announced that the "Trinity [project] alone will contribute nearly 1 million acre-feet of water for use in the Sacramento and San Joaquin Valleys."⁵¹ In an uncharacteristically astute fashion, Heffington pointed out that the San Luis project would store a million acre-feet of winter flows into the delta during peak production of hydroelectric power.⁵²

Negotiations with the WWD of contracts for water supply and construction of a distribution system started in the late 1950s.⁵³ [WWD hx or ??]

On June 3, 1960, Congress authorized the San Luis Unit to deliver irrigation water to the westlands.⁵⁴ On June 5, 1963, the USBR and WWD executed a contract for about 1 MAF per year at \$7.50 per acre foot through 1979.⁵⁵ Deliveries to the WWD began on a small scale in 1964.⁵⁶ In April 1965, the USBR and WWD executed a contract for the construction and repayment of a distribution and drainage system covering 400,000 acres of irrigated cropland.⁵⁷ In June 1965, WWD merged with Westplains Water Storage District, adding about 200,000 irrigable acres.⁵⁸ From 1968 to 1972, USBR agreed to provide 1.4 MAF per year at \$2 per acre-foot under a short-term contract.⁵⁹ From 1972 on, WWD received [an average of 1.2 MAF of CVP water except in drought years] additional water in most years under annual temporary contracts: about 1.1 MAF in 1974 and 1.3 MAF in 1975⁶⁰ and 1.3 MAF in 1976.⁶¹ In 1978, the Special Task Force created by Congress to investigate the westlands project, estimated that the present value of the irrigation subsidy for the San Luis Unit was \$770 million or \$1,540 per acre.⁶² In 1980, the Department of Interior estimated that WWD's 1978 requirements ranged between 1.3 and 1.5 MAF and that its total supply was about 1.5 MAF.⁶³ In 1980, the DOI also calculated that WWD's subsidized price was \$15.50 per acre-foot while the full cost of water delivered to WWD was \$67.56 per acre-foot.⁶⁴

While it is not possible to trace every acre-foot of the Trinity from Lewiston to the San Joaquin Valley, it is more than a coincidence that the average historic flow of the Trinity just happened to be the average delivery in the westlands since 1972 in all but drought years.⁶⁵ And, it is important to keep in mind that the other acreage intended to receive the bulk of Trinity exports, the Sacramento Canals Unit, did not even receive the volume Congress expected until 1972.⁶⁶ So, between 1964 and 1972, while the construction of the distribution system to the WWD was underway, deliveries to the irrigators who had previously relied on the San Joaquin (before it was dewatered below Friant dam) received the bulk of the 1.4 MAF annual average exported from the Trinity.⁶⁷ But, from 1972 on, WWD took a volume equal to at least every drop exported from the Trinity.

In the 1890s and early 1900s, sizable areas of the San Joaquin Valley were forced out of production due to buildup of salt from inadequate drainage.⁶⁸ When plans for importation of more than 1 MAF of salt-water from the delta were finalized in the 1950s, growers in surrounding areas requested an assurance from Congress that the Secretary would not construct the San Luis unit without a drainage outlet.⁶⁹ The 1955 San Luis Feasibility Report clearly warned that the proposed irrigation project could destroy the westlands without drainage:

{s}oils of the area which will be served by the San Luis Unit contain salts which will be dissolved and carried by the percolating water into the soils in the lower parts of the service area. If left undrained evaporation and transpiration of the percolating waters could concentrate the salts and make these soils unsuitable for irrigation use.⁷⁰

Accordingly, the Feasibility Report proposed a system of tile (subsurface) drains that would empty into an interceptor (surface) drain that would transport about 127 TAF annually about 200 miles to the Contra Costa Delta for disposal.⁷¹

In the 1960 authorization, Congress stated that the Secretary could not begin construction of the San Luis project until he had made provision for construction of the surface drain to the delta.⁷² In addition, since 1965, Congress has prohibited selection of a final discharge point for the drain until state and federal governments agreed on a plan to minimize environmental harm from release of the drainage waters.⁷³ In March 1968, construction of the surface drain was initiated, and by 1975, the middle 40 percent of the drain (about 82 miles) was built.⁷⁴ In 1975, the Secretary suspended construction of the surface drain pending litigation challenging the adequacy of the environmental impact statement ("EIS") concerning effects on the delta.⁷⁵ In 1977, the USBR agreed to prepare a supplemental EIS on the project, including the ultimate terminus of the surface drain.⁷⁶

Notwithstanding uncertainty surrounding the ultimate disposition of drainage flows from the San Joaquin, the USBR built a subsurface drainage collector system for the WWD which began in 1978 to discharge about 7,300 acre-feet annually of agricultural drainage into the surface drain which terminated in a series of ponds completed in 1971 at a cost of \$10 million.⁷⁷ Those ponds came to be known as the

Kesterson Reservoir and were managed by the USBR to store and evaporate drainage water and by the USFWS as a wildlife refuge.⁷⁸ Kesterson consisted of 12 diked, evaporation ponds covering about 100 acres each located (by the USBR) in the middle of wintering grounds for millions of ducks after Fresno farmers had resisted initial plans to build the facility near them.⁷⁹ As early as 1962, the predecessor of the USFWS was warned that the drainage could be toxic to fish and wildlife.⁸⁰ By 1981, all ponds were filled with undiluted drainwater.⁸¹

By 1982, all but one fish species in Kesterson had died.⁸² Large numbers of birds died in 1983 and 1984.⁸³ In three years, drainage runoff had poisoned the food chain in the marsh, moving from the plants, to the insects, to the birds.⁸⁴ Grisly photos of deformed bird embryos appeared on the front pages of newspapers and on national television.⁸⁵ Six days after “60 Minutes” aired a segment on Kesterson in March 1985, Interior Secretary Hodel ordered Kesterson closed.⁸⁶ By June 1986, the drains at WWD were plugged and the surface drain was closed.⁸⁷ Unfortunately, however, the USBR continued to deliver water to the WWD without drainage.⁸⁸ And, the federal government went on to spend more than \$100 million to clean up agricultural drainage.⁸⁹ In 1998, federal scientists found one-third of the rodents trapped in its annual biological survey at Kesterson were hermaphrodites.⁹⁰ And, no one, of course, ever pointed out that contaminated water had been imported from the Trinity unlawfully in the first place.

In 1991, landowners sued claiming that their lands had been made barren from excess salt and that their crops had been killed by water which had inundated their root zones.⁹¹ The federal court in Fresno held that the WWD was a governmental entity entitled to discretionary immunity and could not be held legally responsible for damages suffered as a result of the failure to provide adequate drainage for its effluent.⁹² But, in 1995, the same court held that the federal government could not be excused from its promise to provide drainage.⁹³ The court ordered the federal government promptly to submit an application for a discharge permit with the California Water Resources Control Board where concerns about concentrations of pollutants in the drainage water could be resolved.⁹⁴ Over the next five years, the federal government delivered more than .5 MAF per year to WWD without drainage while it appealed the federal judge’s ruling.⁹⁵

In February 2000, the Court of Appeals concluded that the Secretary of Interior, through the USBR, had unlawfully withheld drainage since 1986.⁹⁶ However, the court also found that Congress had decided that the Secretary could provide drainage through means other than a surface drain, pointing out that Congress had authorized 50 million dollars to study “in valley” drainage solutions over the past two decades.⁹⁷ The court ruled that the government must act promptly to provide some form of drainage – but that was as far as the court was willing to go to resolve the issue.⁹⁸

While it was arguing in court that it was no longer required to provide drainage in the San Joaquin Valley, the federal government was also studying the alternative of retiring acreage that was being destroyed by its continued delivery of water for undrained irrigation.⁹⁹ In 1998, the USBR entered into a cooperative agreement with WWD for the sale to the Department of Interior of up to 7,000 acres of land within the WWD.¹⁰⁰ CVP

water rights related to retired acreage were to revert to the WWD and the USBR would renew WWD's water supply contract for 1.150 MAF for at least 25 more years -- without drainage.¹⁰¹ By August 1999, WWD was selling \$35 million in bonds to buy retired land and retain the related water rights.¹⁰² In May 2000, government and WWD officials refused to disclose details of ongoing negotiations, except that the WWD was considering purchasing acreage to retain rights to cheap CVP water.¹⁰³ In June 2000, the DOI announced that it had abandoned plans to construct a drain to the delta.¹⁰⁴

In the meantime, WWD and its landowners have been hard at work trying to sell the water which they lobbied so hard for all these years. In 1998, Edwin R. O'Neill, son of the first WWD president and an owner of O'Neill Farming Enterprises with more than 6,000 acres eligible for CVP water,¹⁰⁵ offered to sell water to the San Diego County Water Authority.¹⁰⁶ In summer 2000, the WWD offered to sell to the Metropolitan Water District, in Los Angeles, up to 100 TAF of CVP water in dry years.¹⁰⁷ Yet, at the same time that WWD's members were marketing subsidized water, the DOI agreed to provide \$10 million for the WWD to buy more water to replace shortfalls in CVP deliveries.¹⁰⁸

In May 1998, David Orth, the former General Manager of WWD, had advised Congress of the woes suffered as a result of the CVPIA:

The federal Reclamation Law program, initiated in 1902 and amended by Congress in 1982, was designed to break-up large land-holdings in federal water contractor districts. Farmers would receive their water allocation at a certain rate if they agreed to limit the acreage they farm -- 160-acres before the reform; 960-acres after the 1982 reform.

In Westlands we have seen the successes of this program. Since 1968, the total number of landowners has nearly tripled. The farming patterns has changed also, with the average farm size in Westlands at just over 900 acres. These numbers are audited each year by the Bureau, and the District is in compliance with the Reclamation program.

On the other hand, the CVPIA, also passed by Congress, has undone some of the progress made by the Reclamation Law and has the potential to do much more. Chronic water shortages and ever-increasing water costs will hit hardest those smaller family farms in Westlands. When they can no longer afford to farm, their property will undoubtedly be sold. Only the larger farming entities can afford to purchase the property. These larger, more vertically integrated farming operations can spread out the increased costs of doing business because of their size, diversity and financial lenders. This year, with our water rate increasing at least \$10 per AF solely because of the CVPIA, we can expect to see even more of a shake-out, especially with other increases in farming costs like the minimum wage, record-low cotton prices and continued crop delays from El-Nino influenced weather patterns.¹⁰⁹

And, that brings us to the story of Kenneth Seibert who in 1999 owed banks more than \$2 million on hundreds of acres he purchased in the lowlands near Mendota in 1973.¹¹⁰ The poisoned water table reached the root zone below his orchards years earlier. While Seibert, and other small farmers like him, waited for a fair offer from the federal government, the WWD, which would not allow him to sell his water rights, offered him less than fair market value for his land and water.¹¹¹ Mr. Orth's cautiously worded justification was that "[t]he cold reality is lands in drainage-impacted areas are not fetching high prices."¹¹² But, as Mr. Orth well knew, the value of Seibert's water rights were not depressed; however, the corporations that control the WWD did not intend to allow those rights to slip out of their control.¹¹³

Chapter 11: Was This A Reasonable Use of Water ?

The California Constitution prohibits unreasonable diversion of water and requires conservation of water resources for the public welfare.¹ The permit issued to allow the USBR to divert water from the Trinity has always been subject to the State's authority to limit the quantity of water diverted in the interest of the public welfare to prevent waste and unreasonable use.² In 1955, it was claimed that diversion was justified as a method of avoiding waste of water that flowed past Lewiston to the sea.³ After, nearly fifty years, it appears that the free flow of water past Lewiston served the public welfare far better than its diversion to the Central Valley.

The final construction costs of the Trinity project exceeded \$225 million (in 1963 dollars), including more than \$180 million for dams and tunnels⁴, \$ 38 million for hydroelectric plants⁵ and about \$7 M for the hatchery.⁶ To date the costs of mitigating the damage to the fishery caused by the Trinity division have exceeded \$150 million.⁷ With his decision to continue diversion of most of the historic flow of the river, Secretary Babbitt committed us to perpetual management (including a state run hatchery) which should cost more than \$10 million per year over the next fifty years.⁸ In 1955, the State of California estimated that the Trinity division would cost the federal government nearly \$9 million a year for interest, operation, maintenance and replacement over fifty years.⁹ In another fifty years, the dams probably will be removed at a cost in excess of \$200 million.¹⁰ Or, they will require substantial repairs.

The Trinity brought irrigation supplies to the Sacramento valley and the westside of the San Joaquin valley. The Red Bluff diversion dam was constructed on the Sacramento at a cost of about \$9 million¹¹ to divert the irrigation supplies to the Sacramento canals. Construction of Sacramento Canals cost more than \$70 million.¹² The Red Bluff diversion dam blocked spawning runs on the Sacramento and the Tehama-Colusa canal has caused significant salmon losses.¹³ The costs of mitigating the decline of the anadromous fishery on the Sacramento have exceeded \$? M.¹⁴

Inexpensive hydropower generated by the diversion of the Trinity ran the pumps that transported irrigation supplies to the San Joaquin valley.¹⁵ Construction of transmission lines to Tracy cost more than \$20 million.¹⁶ Construction of the San Luis Unit, including dams, pumping plant and canal, cost in excess of \$298 million.¹⁷ Large scale irrigation on the west San Joaquin valley destroyed wildlife and agricultural land.¹⁸ Costs of mitigating the effects of massive irrigation on the Westside of the San Joaquin valley, including studies, have exceeded \$54 million. Costs of retiring land over the next 50 years will run into the hundreds of millions.

Irrigators within the CVP have received federally subsidized water for up to 40 years under fixed-rate water service contracts. However, the fixed rates did not function as intended. They have not covered the Bureau's operation and maintenance costs and have not been sufficient to repay virtually any of the \$1 billion in construction costs owed.¹⁹ The WWD has repaid only \$54 million of the \$179 million spent by the USBR to construct its distribution system.²⁰

Footnotes

Chapter 1: The Gift of Salmon Has Been Lost.

¹ J. Lichatowich, *Salmon Without Rivers* (Island Press 1999) p.14; H. Doc. No. 53, 83d Cong., 1st Sess. (1953) at 15.

² Id. and USFWS, USBR, Hoopa Valley Tribe and Trinity County, Draft Trinity River Environmental Impact Statement/Report (October 1999) at 3-12 to 3-19 and A-1 (“DEIS/EIR”).

³ USFWS and Hoopa Valley Tribe, Trinity River Flow Evaluation Draft Final Report (January 1998) at 2.1 (hereinafter “Draft Flow Evaluation”).

⁴ Id.

⁵ USFWS and Hoopa Valley Tribe, Trinity River Flow Evaluation Final Report (June 1999) at Executive Summary at xxvi (“Final Flow Evaluation”).

⁶ Id.

⁷ Lichatowich supra at 13.

⁸ Lichatowich, supra, pp. 14-15.

⁹ Lichatowich, supra, at 15.

¹⁰ Final Flow Evaluation, supra at 13-27.

¹¹ Id.

¹² Lichatowich supra, at 16.

¹³ Lichatowich supra at 19.

¹⁴ Lichatowich supra at 18-19.

¹⁵ Lichatowich, supra, at 18-20.

¹⁶ Draft Flow Evaluation, supra, at 2.3 – 2.4. An acre foot of water is the volume required to cover 1 acre to a depth of 1 foot equal to about 326,000 gallons or about what an urban family uses in one year. DEIS/EIR, supra at A-1 and Hundley, Jr., Norris, *The Great Thirst Californians and Water 1770s-1990s* (University of California Press 1992) at 8

¹⁷ Final Flow Evaluation, supra at 62 and DEIS/EIR, supra at 3-12. The drainage area above Lewiston before the TRD covered about 719 square miles. Draft Flow Evaluation, supra at Table 2.3. U.S. Bureau of Reclamation, “Reconnaissance of Water Requirements for Resource Development Trinity River Basin,” Preliminary Draft, Arcata Planning Office (November 1953) at page 11 reported average annual run-off near Trinity Dam site at about 1,273,000 acre-feet from 1895 to 1947.

¹⁸ Draft Flow Evaluation, supra at 2.8 and Appendix D.

¹⁹ Draft Flow Evaluation, supra at 2.10 and Final Flow Evaluation, supra at 50, 64, F-14 and F-16.

²⁰ Draft Flow Evaluation, supra at 2.10 and Final Flow Evaluation, supra at 50-52.

²¹ Lichatowich, supra at 25-26. [Keniwick man]

²² Lichatowich, supra at 28-33.

²³ Lichatowich, supra at 33.

²⁴ Lichatowich, supra at 33-37.

²⁵ Lichatowich, *supra* at 37-41; McEvoy, Arthur F., *The Fisherman's Problem Ecology and Law in the California Fisheries, 1850-1980*, Cambridge University Press 1986 at 30-40; Hundley, *supra* at 15.

²⁶ D. R. Hoptowit, Klamath-Trinity Salmon Restoration Project, California Resources Agency (Sept. 1980) at 12-13 and n.26. This estimate includes 3,100 Yuroks, 2,000 Hupa and 2,700 Karoks. S.F. Cook, "The Aboriginal Population of the North Coast of California," *University of California Anthropological Records*, 16 No. 3 (1955: rpt. New York: Kraus Reprint Co., 1976) 84, 98, 100. Another source estimated the Yurok population in excess of 2,500 and perhaps greater than 5,000. S. Powers, *Tribes of California*, cc 4 and 5, published as 3 Contributions to North America Ethnology at 59 (1877). U.S. Dept. on Interior, *Environmental Impact Statement—Indian Fishing Regulations 2* (Hoopa Valley Reservation, California (July 1987)).

²⁷ Partitioning Certain Reservation Lands Between the Hoopa Valley Tribe and the Yurok Indians ..., Senate Report 100-564, 100th Congress, 2d Session, at 3 (1988).

²⁸ Heizer, Robert F. ed., Vol. 8 *California*, "Handbook of North American Indians", Smithsonian Institution (1978) at 164.

²⁹ A. L. Kroeber and S. A. Barrett, "Fishing Among the Indians of Northwestern California", XXI *University of California Publications Anthropological Records* (1962) at 18-20 and 29-30; Goddard, "Life and Culture of the Hupa", 1 *University of California Publications American Archaeology and Ethnology*, Kraus Reprint Corp. (1964) at 23-25.

³⁰ Kroeber and Barrett, *supra* at 19.

³¹ Kroeber and Barrett, *supra* at 18 and 29-30.

³² Kroeber and Barrett, *supra* at 19.

³³ Kroeber and Barrett, *supra* at 40-41, 50, 67, 83-84 and 87-88.

³⁴ Goddard, "Life and Culture of the Hupa", 1 *UC-PAAE* at 24.

³⁵ S. Report 100-564, *supra* at 3; Goddard, "Life and Culture of the Hupa", 1 *UC-PAAE* at 8-9.

³⁶ Heizer, "Handbook of North American Indians" at 705.

³⁷ S. Report 100-564, *supra* at 3-4.

³⁸ Robert F. Heizer, "The Eighteen Unratified Treaties of 1851-1852 Between The California Indians And The United States Government", Archaeological Research Facility, University of California (1972) at 1 and 5.

³⁹ 33 Decisions of Department of Interior 219 (1905).

⁴⁰ The Klamath treaty was one of 18 signed by California Indians in 1851-52 to end their genocide. Congress refused to ratify the treaties because of the objections of the California legislature and senators to the creation of 19 reservations covering more than 8.6 million acres. Heizer, "Handbook of North American Indians" at 703-705. The Senate ordered the treaties to be deposited in secret files, and they were not released until 1905. Heizer, "Handbook ..." at 705; Heizer, "The Eighteen Unratified Treaties ..." at 1.

⁴¹ S. Report 100-564, *supra* at 3-4; Cook, Sherburne F., "The Conflict Between The California Indian and White Civilization", University of California Press (1976).

⁴² S. Report 100-564, *supra* at 4.

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- ⁴³ *Id.*; *United States v. Forty-eight Pounds of Rising Star Tea* (N.D. Cal. 1888) 35 Fed.Rep. 403, 404.
- ⁴⁴ General G.F. Beale’s letter to the governor, dated July 12, 1855, quoted in Cook, Sherburne F., “The Conflict Between The California Indian and White Civilization”, University of California Press (1976) at 281 n. 29.
- ⁴⁵ 1857 Annual Report of the Commissioner of Indian Affairs at 391. Accord Opinion of the Solicitor of the DOI re: Fishing Rights of the Yurok and Hoopa Valley Tribes (M-36979) (October 4, 1993) at B-5 to B-6 (“DOI Solicitor’s 1993 Opinion”).
- ⁴⁶ Heizer, “Handbook of North American Indians” at 175. Fort Gaston was not abandoned until 1892. *Id.*
- ⁴⁷ 1864 Annual Report, *supra* at 127.
- ⁴⁸ 1864 Annual Report, *supra* at 127 and 134.
- ⁴⁹ 1864 Annual Report, *supra* at 123. The Commissioner stressed that the reservations should include the fewest white settlements to lower the cost of purchasing white improvements under the Act. *Id.*
- ⁵⁰ 1864 Annual Report *supra* at 130.
- ⁵¹ 1864 Annual Report *supra* at 134.
- ⁵² *Id.*
- ⁵³ S. Report 100-564 *supra* at 5. The agreement included the South Fork, Redwood and Grouse Creek Indians.
- ⁵⁴ *Id.*
- ⁵⁵ 1864 Annual Report, *supra* at 135 and note 26 above.
- ⁵⁶ Cook, *supra* at 284. By 1876, the Hupa population dropped to 511. S. Report 100-564, *supra* at 6.
- ⁵⁷ Act of April 8, 1864, sec. 2, 13 Stat. 39, 40 (“1864 Act”); *Parravano v. Babbitt* (N.D. Cal. 1994) 861 F.Supp. 914, 920; 33 Decisions of Department of Interior 217 (1905).
- ⁵⁸ Senate Ex. Doc. 140, 50th Congress, 2d Session, (March 1, 1889) at 16.
- ⁵⁹ Final Flow Evaluation, *supra* at A-5.
- ⁶⁰ *Id.*
- ⁶¹ Final Flow Evaluation, *supra* at A-6.
- ⁶² H. Rep. No. 1354, 46th Cong., 2d Sess. (May 7, 1980) at 2-3.
- ⁶³ H. Rep. No. 1354, *supra* at 1-2.
- ⁶⁴ Klamath-Trinity Salmon Restoration Project, *supra* at 4; *Mattz v. Arnett* (1973) 412 U.S. 481, 500 – 502.
- ⁶⁵ *Mattz*, *supra* at 487- 490 and 499. The United States Supreme Court characterized the claim of abandonment as “a gross misconception on the part of those who sought termination” (412 U.S. 499.) See also S. Exec. Doc.140, *supra* at 19.
- ⁶⁶ *Mattz*, *supra* at 490.
- ⁶⁷ See *Mattz*, *supra* at 490-491. In 1889, the Commissioner of Indian Affairs wrote to the Secretary of Interior that allotments of Klamath reservation land to Indians were suspended due to the discovery in 1884 of fraudulent public surveys. S. Exec.Doc. 140, *supra* at 2-4. As of February 1889, no allotments had been made to Indians. *Id.* See also H.R. Report No. 1176, 51st Congress, 1st Session, April 1, 1890 at 1-2; H.R. Report No. 161, 52d Congress, 1st Session, February 5, 1892 at 1-2.

⁶⁸ Roschmann, Joachim, “No ‘Red Atlantis’ on the Trinity”, MA Thesis in History, U.C. Davis (1991) at 54 n.16

⁶⁹ Act of June 17, 1892, 27 Stat. 52, entitled “An act to provide for the disposition and sale of lands known as the Klamath River Indian Reservation.”

⁷⁰ Klamath-Trinity Salmon Restoration Project, supra at 5.

⁷¹ Id.

⁷² 33 Decisions of Department of Interior 205 and 220 (1905); Roschmann, Joachim, “No ‘Red Atlantis’ on the Trinity”, MA Thesis in History, U.C. Davis (1991) at 54 n.16. 399 additional Indian allotments were not made until 1898. Roschmann, supra at 53-54 and n. 16.

⁷³ See Blake v. Arnett (9 Cir. 1981) 663 F.2d 906 ; D.S. Otis, “History of the Allotment Policy,” Readjustment of Indian Affairs, Hearings on HR 7902 Before the House Committee on Indian Affairs, 73d Cong., 2d Sess., 428, 435-436 (1934) and DEIS/EIR, supra at 3-207.

⁷⁴ D.S. Otis, supra at 434-440. In 1835, fifteen years before the white invasion on the Trinity, Alexis de Tocqueville, a student of American civilization, wrote:
The conduct of the Americans ... towards the aborigines is characterized ... by a singular attachment to the formalities of law. Provided that the Indians retain their barbarous condition, the Americans take no part in their affairs; they treat them as independent nations, and do not possess themselves of their hunting-grounds without a treaty of purchase: and if an Indian nation happens to be so encroached upon as to be unable to subsist upon its territory, they afford it brotherly assistance in transporting it to a grave sufficiently remote from the land of its fathers. The Spaniards were unable to exterminate the Indian race by those unparalleled atrocities which brand them with indelible shame, nor did they even succeed in wholly depriving it of its rights; but the Americans ... have accomplished this twofold purpose with singular felicity; tranquilly, legally, philanthropically, without shedding blood, and without violating a single great principle of morality in the eyes of the world. It is impossible to destroy men with more respect for the laws of humanity. Alexis de Tocqueville, 1 Democracy in America, Shoken Books, New York (1967) at 422-423.

⁷⁵ DOI Solicitor’s 1993 Opinion, supra at 11.

⁷⁶ Id.

⁷⁷ DOI Solicitor’s 1993 Opinion, supra at 11-12.

⁷⁸ DOI Solicitor’s 1993 Opinion, supra at 12.

⁷⁹ S. Ex. Doc. No. 140, supra at 13; DOI Solicitor’s 1993 Opinion, supra at 13.

⁸⁰ Lichatowich, supra at 84-87.

⁸¹ G.B. Dodds, The Salmon King of Oregon (1959) U. of N. Carolina Press, 175-176; R.D. Hume, A Pygmy Monopolist (1961) Book Craftsmen Ass., Inc. at 62-63; S. Exec. Doc. 140, supra at 12; Lichatowich supra at 100.

⁸² Id.

⁸³ United States v. Forty-eight Pounds of Rising Star Tea (N.D. Cal. 1888) 35 Fed.Rep. 403 and (Cir. N.D. Cal. 1889) 38 Fed.Rep. 400. For some reason, the U.S. Attorney, John T.Carey, did not appear when the case was heard before Judge Hoffman on May 19, 1888 in San Francisco. S. Exec. Doc. 140, supra at 23. Later, Hume boasted that

although the suit cost him \$8000 and he had never made a profit, he had succeeded in opening the lower Klamath to settlement. Hume, supra at 63-64.

⁸⁴ Frances Turner McBeth, Lower Klamath Country (Anchor Press, Berkeley 1950) , pp. 48-50.

⁸⁵ Id.; DOI Solicitor's 1993 Opinion, supra at 12. See Statement of Geneva Mattz at Klamath on May 22, 1985 at C37 in Bureau of Indian Affairs, EIS for a Proposal to Modify the Indian Fishing Regulations to Authorize Commercial Harvesting of Anadromous Fish (July 1987).

⁸⁶ Klamath-Trinity Salmon Restoration Project, supra at 52.

⁸⁷ Id.

⁸⁸ Id.

⁸⁹ Id.

⁹⁰ Moffett, supra at 2; Snyder, John O. "Salmon of the Klamath River California," California Division of Fish and Game Fish Bulletin No. 34 (1931) at 19 n. 1. [Hume untitled paper at Stanford]

⁹¹ Moffett, supra at 21; Snyder, supra at 19 n. 1. The Hupa First Salmon Ceremony was held each spring in the Sugar Bowl. Kroeber and Gifford, "World Renewal A Cult System of Native Northwest California", 13 *UCP-AR* (1952) at 59-60; Goddard, "Life and Culture of the Hupa", 1 *UCP-AAE* (Kraus Reprint Corp. New York 1964) at 78-81.

⁹² Id.

⁹³ See Lichatowich, supra at 100; Snyder, supra at 19 n. 1.

⁹⁴ [NMFS 35 at AP p. 1]

⁹⁵ [id]

⁹⁶ Snyder, supra at 117; Dodds, supra at 178.

⁹⁷ [id]

⁹⁸ Snyder, supra at 2, 89-91 and 121.

⁹⁹ Klamath-Trinity Salmon Restoration Project, supra at 54; Cal. Fish and Game Code sec. 8434 (West 1958).

¹⁰⁰ Cal. Fish and Game Code sec. 7155.

¹⁰¹ Arnett v. Five Gill Nets (1975) 48 Cal.App.3d 454, 458.

¹⁰² Id.

¹⁰³ Id.

¹⁰⁴ Id.

¹⁰⁵ 48 Cal.App.3d 463.

¹⁰⁶ Cal.App.3d 464.

¹⁰⁷ Cal.App.3d 459-462. The court specifically held that the State's ban on Yurok gill net fishing was never lawful. 48 Cal.App.3d 461-462. By Executive Order in 1891, the Hoopa Valley Reservation was extended to include a strip one mile wide on both sides of the Klamath to the Pacific Ocean, incorporating the Klamath River Reservation. Mattz v. Arnett (1973) 412 U.S. 481, 492-494.

¹⁰⁸ 42 Fed.Reg. 40904 (August 12, 1977); 43 Fed.Reg. 30048 (July 13, 1978.)

¹⁰⁹ 43 Fed.Reg. 30048 at Preamble.

¹¹⁰ 44 Fed.Reg. 17144 (March 20, 1979.)

¹¹¹ Id. Between 1976 and 1986, annual Indian gill net harvest of adult Klamath chinook averaged 18,590 and annual total ocean harvest averaged 142,005. See Bureau of Indian Affairs, Final EIS for a Proposal to Modify the Indian Fishing Regulations to Authorize Commercial Harvesting of Anadromous Fish (July 1987) at A3-A4. Between, 1976 and 1984, 67 percent of fish taken were harvested by commercial fisheries and only 8 percent by Indian gill net fishers. United States v. Eberhardt (9 Cir. 1986) 789 F.2d 1354, 1363 n. 1 (Circuit Judge Beezer concurring opinion).

¹¹² United States v. Eberhardt (9 Cir. 1986) 789 F.2d 1354, 1359-1361.

¹¹³ See Mattz v. Superior Court (1988) 46 Cal.3d 355; People v. McCovey (1984) 36 Cal.3d 517.

¹¹⁴ Bureau of Indian Affairs, An Environmental Assessment of Proposed Regulations (Jan. 1979) at 18-19 and 21.

¹¹⁵ [25 CFR sec. 250(d)(e).] Commercial fishing was permitted in 1987-1989 and 1996. DEIS/EIR at 3-223.

¹¹⁶ Bureau of Indian Affairs, Final EIS for a Proposal To Modify the Indian Fishing Regulations to Authorize Commercial Harvesting of Anadromous Fish (July 1987) at 13-14 (“BIA 1987 EIS”).

¹¹⁷ BIA 1987 EIS, supra at A3-A4; United States v. Eberhardt (9 Cir. 1986) 789 F.2d 1354, 1363 n. 1 (Circuit Judge Beezer concurring).

¹¹⁸ Fredericksen, Kamine and Associates, “Proposed Trinity River Basin Fish and Wildlife Management Program Summary Report Final” (October 1980) at 43-44.

¹¹⁹ United States v. Eberhardt (9 Cir. 1986) 789 F.2d 1354, 1363 (Circuit Judge Beezer concurring).

¹²⁰ Parravano v. Babbitt (9 Cir. 1995) 70 F.3d 539, 547.

¹²¹ Circuit Judge Beezer’s concurring opinion, supra at 1363.

¹²² Nehlsen, W., J.E. Williams, and J.A. Lichatowich, “Pacific Salmon at the Crossroads ...” (1991) 16(2) *Fisheries* 4-21.

¹²³ Nehlsen, supra at 4.

¹²⁴ Nehlsen, supra at 8 and 12.

¹²⁵ Nehlsen, supra at 9.

¹²⁶ Nehlsen, supra at 9 and 14.

¹²⁷ Nehlsen, supra at 10.

¹²⁸ Nehlsen, supra at 19.

¹²⁹ Higgins, Patrick, S. Dobush, D. Fuller (1992) Factors in Northern California Threatening Stocks with Extinction. Humboldt Chapter of the American Fisheries Society, Arcata, CA, 27 pp.

¹³⁰ Higgins, supra at 3-4.

¹³¹ Higgins, supra at 8-11; Rankel, Gary L., “Depleted Chinook Salmon Runs in the Klamath River Basin: Causes, Consequences and Constraints on Management” (USFWS 1980) at 18-22.

¹³² Parravano v. Babbitt (N.D. Cal. 1993) 837 F.Supp.1034, 1042.

¹³³ Parravano, supra at 1041.

¹³⁴ Parravano, supra at 1047.

¹³⁵ Parravano, supra at 1042.

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- ¹³⁶ Parravano, *supra* at 1047.
- ¹³⁷ DOI Solicitor's 1993 Opinion, *supra* ; DEIS/EIR at 3-208.
- ¹³⁸ 58 Fed.Reg. 29390 (May 20, 1993); 58 Fed.Reg. 57770 (October 27, 1993); 59 Fed.Reg. 46808 (September 12, 1994).
- ¹³⁹ Busby, Peggy J. December 1994. Status Review for Klamath Mountains Province Steelhead. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-19.
- ¹⁴⁰ 62 Fed.Reg. 24588 (May 6, 1997).
- ¹⁴¹ Busby, Peggy J. December 17, 1997. Status Review for Deferred and Candidate ESUs of West Coast Steelhead. NMFS West Coast Steelhead Biological Review Team; Myers, J.M. December 18, 1997. Coastwide Status Review for Chinook Salmon. NMFS West Coast Chinook Biological Review Team.
- ¹⁴² Busby, Peggy J. January 13, 1998. Status Review Update for Deferred ESUs of West Coast Steelhead: Hatchery Populations. NMFS West Coast Steelhead Biological Review Team.
- ¹⁴³ Since 1995, environmental groups have filed repeated actions to compel the NMFS to list coho salmon and steelhead and to secure protection under the Endangered Species Act, 16 USC sec. 1531 et seq. Oregon Natural Resources Council v. Brown, N.D. Cal. C95-1844; Oregon Natural Resources Council v. Brown, N.D. Cal. 95-3117; Earthjustice Legal Defense Fund v. [Ruben; NMFS] D. Wa. C ??? (1996-97)
- ¹⁴⁴ 63 Fed.Reg. 13363-13364 and 13366 (March 19, 1998).
- ¹⁴⁵ 63 Fed. Reg. 13366 (March 19, 1998); 63 Fed.Reg. 11487-11488, 11493 (March 9, 1998).
- ¹⁴⁶ 62 Fed.Reg. 24588, 24608 (May 6, 1997).
- ¹⁴⁷ 62 Fed.Reg. 24608.
- ¹⁴⁸ 62 Fed.Reg. 24590 and 24601.
- ¹⁴⁹ 62 Fed.Reg. 24600-24601 and 24608.
- ¹⁵⁰ 64 Fed.Reg. 24049 (May 5, 1999).
- ¹⁵¹ 60 Fed.Reg. 14253 (March 16, 1995).
- ¹⁵² 60 Fed.Reg. 14257-14258.
- ¹⁵³ 61 Fed.Reg. 41541, 41577 (August 9, 1996).
- ¹⁵⁴ West Coast Steelhead Biological Review Team, "Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead" at 29 (December 19, 1997).
- ¹⁵⁵ 63 Fed.Reg. 13347, 13366 (March 19, 1998). See Memorandum of Agreement between State of California and NMFS signed on March 11, 1998.
- ¹⁵⁶ 63 Fed.Reg. 13347 (March 19, 1998).
- ¹⁵⁷ 65 Fed.Reg. 6960 (February 11, 2000).
- ¹⁵⁸ 65 Fed. Reg. 36074, 36078 (June 7, 2000).
- ¹⁵⁹ Federation of Fly Fishers v. Daley (N.D. Cal. 10-25-00) Order Granting Plaintiffs' Motion for Summary Judgment ..., at 18.
- ¹⁶⁰ Federation of Fly Fishers, *supra* at 3.
- ¹⁶¹ Federation of Fly Fishers, *supra* at 15.
- ¹⁶² Federation of Fly Fishers, *supra* at 13-15 and 17.
- ¹⁶³ Federation of Fly Fishers, *supra* at 19.
- 63 Fed.Reg. 11482 (March 19, 1998).

¹⁶⁰ 63 Fed.Reg. 11493.

¹⁶¹ 63 Fed.Reg. 11488.

¹⁶² 63 Fed.Reg. 11493.

¹⁶³ Associated Press article entitled “Special Salmon From Alaska Has Diners Salivating,” from May 14, 2000 Los Angeles Times.

¹⁶⁴ Theodora Kroeber, “Ishi in Two Worlds”, (1960)?? In 1911, an Indian was found in Butte county and taken to the University of California where he worked as a janitor in the anthropology museum. He was studied and displayed as the last wild man. He was given the name “Ishi,” an Indian word for man. When he died in 1916, his cremated body was sent to a cemetery in South San Francisco and his brain was sent to the Smithsonian. On August 8, 2000, his brain was returned to Indians from California. Locke, Michelle (AP) *Missoulian* (August 8, 2000) at 4.

¹⁶⁵ Carol Kaesuk Yoon, “Redesigning Nature: A special report; Altered Salmon Leading Way to Dinner Plates, but Rules lag” (May 1, 2000) *The New York Times*.

Chapter 2: The Trinity Had Value Because It Could Be Taken, 1911-1953

¹ December 10, 1954 Editorial “*Redding Record-Searchlight*” and December 20, 1954 letter from Engle to Paul Bodenhamer in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”).

² Between 1930 and 1960, the population of Trinity County grew from 2,800 to 9,700. Trinity River Division Features, p. 1. In 1950, the population was 5,087 and the federal government controlled 72 percent of the land base. Hearing before Subcommittee on Irrigation and Reclamation on Committee on Interior and Insular Affairs, U.S. Senate (84th Cong., 1st Sess.) on H.R. 4663 (July 14, 1955) at 11. The population of Humboldt county which joined in opposing diversion of northcoast rivers ranged from about 45,000 in 1940 to about 85,000 in 1954. Hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs House of Representatives (83d Cong., 2d Sess.) on H.R. 123 (April 16, 1954) (Serial No. 20) at 50.

³ The LaGrange mine near Weaverville was the reputedly the largest hydraulic gold mine in the world. Eight-inch nozzles shot streams of water under 600 pounds per square foot pressure against hillsides 500 feet high eroding 9,000 cubic yards every twenty-four hours. “Trinity County California” (Sunset publication for Supervisors of Trinity County) (1915) at pp.17 and 19. It was abandoned in 1917. April 8, 1922 excerpt from *Trinity Journal* compiled and maintained by Trinity County Library at 4.

⁴ January 6, 1912 excerpt from *Trinity Journal* supra at 3.

⁵ October 18, 1913 excerpt from *Trinity Journal*, supra at 3.

⁶ H. Doc. No. 416, 84th Cong., 2d Sess. (1956) at 142.

⁷ H. Doc. No. 416, supra at 143 and 146.

⁸ H. Doc. No. 416, supra at 141.

⁹ H. Doc. No. 416, supra at 149.

¹⁰ Stats. 1921, Ch. 889.

¹¹ Hundley, Jr., Norris, *The Great Thirst Californians and Water 1770s-1990s* (University of California Press 1992) at 239-240.

¹² March 17, 1923 excerpt from *Trinity Journal*, supra at 7-10.

¹³ March 3, 1923 excerpt from *Trinity Journal*, supra at 7.

¹⁴ March 17, 1923 excerpt from *Trinity Journal*, supra at 8.

¹⁵ March 17, 1923 excerpt from *Trinity Journal*, supra at 9.

¹⁶ January 17, 1925 excerpt from *Trinity Journal*, supra at 12.

¹⁷ Henny, D.C. et al, Report to FPC on the Uses of the Trinity River (1924) [?]

¹⁸ Henny, supra at [?]

¹⁹ Henny, supra at [?]

²⁰ Henny, supra at [?]

²¹ March 17, 1923 excerpt from *Trinity Journal*, supra at 9-10.

²² March 31, 1923 excerpt from *Trinity Journal*, supra at 10.

²³ May 19, 1923 excerpt from *Trinity Journal*, supra at 11.

²⁴ January 17 and February 28, 1925 excerpts from *Trinity Journal*, supra at 11-13.

²⁵ June 26, 1926 excerpt from *Trinity Journal*, supra at 17.

²⁶ February 5, 1927 excerpt from *Trinity Journal*, supra at 18-19. Hyatt reported to the legislature on the first State Water Plan in 1931. [?]

²⁷ Application Nos. 5,627 and 5,628 filed on July 30, 1927.

²⁸ October 22, 1927 excerpt from *Trinity Journal*, supra at 22.

²⁹ October 22, 1927 excerpt from *Trinity Journal*, supra at 23.

³⁰ November 5, 1927 excerpt from *Trinity Journal*, supra at 23-24.

³¹ Bonner, Frank E., Report to FPC on Water Powers of California (1928) at 49.

³² Bulletin No. 25 “Report to Legislature of 1931 on State Water Plan”, Division of Water Resources, State Department of Public Works (1930) and Bulletin No. 26 “Sacramento River Basin”, Division of Water Resources, State Department of Public Works (1931).

³³ Bulletin No. 26 at 214

³⁴ Id.

³⁵ Bulletin No. 26 at 335.

³⁶ Stats.1933, ch. 1042.

³⁷ The CVP was authorized as a BOR project in the Rivers and Harbors Act of 1937.

³⁸ December 22, 1938 excerpt from *Trinity Journal*, supra at 24-25.

³⁹ November 6, 1941 excerpt from *Trinity Journal*, supra at 27; Joint Committee on Rivers and Flood Control, “Report to Legislature (Fifty-Sixth Session) on the Proposed Klamath and Trinity River Diversions and Other Projects in the Central Valley of California by Joint Legislative Committee in Rivers and Flood Control,” (May 1945) at 53-54 (“Collier 1945 Report”).

³⁸ December 18, 1941 and January 8, March 19 and July 23, 1942 excerpts from *Trinity Journal*, supra at 28-30.

³⁹ Collier 1945 Report, supra at 53-54.

⁴⁰ Report of the Secretary of the Interior, Comprehensive Plan for Water Resources Development, Central Valley Basin, Calif. (November 1945) at 122.

⁴² Collier 1945 Report, supra at 9.

⁴³ Stats.1945, ch. 329. Collier 1945 Report, supra at 10.

⁴⁴ Collier 1945 Report, supra at 6-7.

⁴⁵ Collier 1945 Report, supra at 10.

⁴⁶ Id.

⁴⁷ Collier 1945 Report, supra at 11.

⁴⁹ March 22, 1945 excerpt from *Trinity Journal*, supra at 34.

⁵⁰ March 22, 1945 excerpt from *Trinity Journal*, supra at 35.

⁵¹ Views and recommendations of State of California on proposed report of Secretary of the Interior entitled “Comprehensive Plan for Water Resources Development, Central Valley Basin, Calif.” (April 1946). A report of the Division of Water Resources of the Department of Public Works of the State of California.

⁵² August 26, 1948 excerpt from *Trinity Journal*, supra at 35-36.

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- ⁵³ Sayles, Stephen Paul, “Clair Engle and the Politics of California Reclamation, 1943-1960”, Ph.D. dissertation, U. of New Mexico (1978) at 103-106; Bain, Joe S. et al., *Northern California’s Water Industry*, The John Hopkins Press (1966) at 406-408.
- ⁵⁴ Hr 163.
- ⁵⁵ Sayles, supra at 111-112, 119-120 and 124.
- ⁵⁶ Public Law 839, 81st Cong., 2d Sess. (Sept. 26, 1950); Sayles, supra at 139; Bain, supra at 406-408.
- ⁵⁷ Bain, supra at 409.
- ⁵⁸ June 29, 1950 excerpt from *Trinity Journal*, supra at 38.
- ⁵⁹ June 29, 1950 excerpt, supra at 38-39.
- ⁶⁰ Sayles, supra at 140-141.
- ⁶¹ Id.
- ⁶² Letters dated March 7, 1952 from Engle to Donald M. Smith, September 23, 1952 from Engle to Grace McDonald and September 24, 1952 from Engle to Heffington at 2 in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”).
- ⁶³ July 25, 1950 letter from Engle to James Carr at 1-2 in Engle Collection CSUC (emphases added).
- ⁶⁴ October 19, 1950 excerpt from *Trinity Journal*, supra at 40.
- ⁶⁵ October 19, 1950 excerpt from *Trinity Journal*, supra at 40-41.
- ⁶⁶ Sayles, supra at 144.
- ⁶⁷ Minutes of October 11, 1950 meeting on file at Engle Collection CSUC, supra at 2.
- ⁶⁸ Id.
- ⁶⁹ November 23, 1950 excerpt from *Trinity Journal*, supra at 41; Sayles, supra at 152; January 7, 1951 letter from Trinity River Diversion Committee to Engle on file at Engle Collection CSUC, supra at 1. Engle disputed this account in a letter dated January 15, 1952 to Irwin T. Quinn, Chairman of Trinity River Diversion Committee of Humboldt county in Engle Collection CSUC, supra at 1-2. Engle denied that he agreed to drop the project unless Humboldt county supported it.
- ⁷⁰ Sayles, supra at 141.
- ⁷¹ Id. See also excerpt from Engle’s 1945 letter to State Senator Collier asserting that there was no shortage in Lake Shasta. Collier 1945 Report, supra at 55.
- ⁷² Sayles, supra at 142. Engle persisted in this public strategy even after the USBR had linked feasibility of the canals to water from the Trinity [cite to Canals authorization] and initial funds were appropriated for the canals April 28, 1953 letter from Engle to Heffington in Engle Collection CSUC.
- ⁷³ January 18, 1951 and May 24, 1951 excerpts from *Trinity Journal*, supra at 42-43.
- ⁷⁴ Minutes of September 10, 1951 meeting in Engle Collection CSUC, supra at 2.
- ⁷⁵ Id.
- ⁷⁶ Id.
- ⁷⁷ Id.
- ⁷⁸ Id.

⁷⁹ Minutes of September 10, 1951 meeting in Engle Collection CSUC, supra at 3-4.
Cubic feet per second multiplied by 1.9835 equals acre-feet per day.

⁸⁰ Suggested letter from Weaverville Chamber of Commerce to Chambers of Commerce in the United States attached to June 10, 1952 letter from Engle to Heffington at 2 in Engle Collection CSUC.

⁸¹ Sayles, supra at 146.

⁸² December 28, 1951 letter from Engle to Heffington at 1 in Engle Collection CSUC.

⁸³ Id.

⁸⁴ Id. Engle estimated the preference to be about twice the power then consumed by the City of Redding. December 28, 1951 letter, supra at 2.

⁸⁵ Sayles, supra at 148; January 3, 1952 excerpt from *Trinity Journal*, supra at 45; January 8, 1952 excerpt from *The Humboldt Times* in Engle Collection CSUC.

⁸⁶ Sayles, supra at 149.

⁸⁷ Sayles, supra at 150.

⁸⁸ Id.

⁸⁹ January 11, 1952 letter from Lorene Melquist to Engle in Engle Collection CSUC, supra at 1.

⁹⁰ Id.

⁹¹ Id.

⁹² January 24, 1952 letter from Engle to Heffington at 1 in Engle Collection CSUC.

⁹³ Id. and January 25, 1952 letter from Engle to Melquist at 2 in Engle Collection CSUC.

⁹⁴ January 31, 1952 minutes of Trinity River Research Committee in Engle Collection CSUC.

⁹⁵ January 31, 1952 minutes, supra at 5-6.

⁹⁶ Id.

⁹⁷ January 31, 1952 minutes, supra at 1.

⁹⁸ Sayles, supra at 150; April 14, 1952 letter from Board of Supervisors of Del Norte County to Engle in Engle Collection CSUC.

⁹⁹ See Del Norte Resolution No. 401 dated November 13, 1951 at 2-3.

¹⁰⁰ April 17, 1952 letter from Engle to The Eureka Independent in Engle Collection CSUC.

¹⁰¹ February 7, 1952 USBR Hearing Transcript at 23.

¹⁰² February 7, 1952 USBR Hearing Transcript at 23-30, 40-44, 151-152; February 14, 1952 excerpt from *Trinity Journal*, supra at 50-51.

¹⁰³ February 7, 1952 USBR Hearing Transcript at 85-87.

¹⁰⁴ February 7, 1952 USBR Hearing Transcript at 68 and 80.

¹⁰⁵ February 7, 1952 USBR Hearing Transcript at 70.

¹⁰⁶ February 7, 1952 USBR Hearing Transcript at 75.

¹⁰⁷ Id.

¹⁰⁸ February 7, 1952 USBR Hearing Transcript at 79-80.

¹⁰⁹ USBR "Fish and Wildlife Management Options" (October 1979) at II-14 – II-15.

¹¹⁰ Sayles, supra at 143.

¹¹¹ February 7, 1952 USBR Hearing Transcript at 97-98.

¹¹² February 7, 1952 USBR Hearing Transcript at 99-100.

¹¹³ February 7, 1952 USBR Hearing Transcript at 98.

¹¹⁴ February 7, 1952 USBR Hearing Transcript at 119-120.

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- ¹¹⁵ February 7, 1952 USBR Hearing Transcript at 120.
- ¹¹⁶ Letter dated January 15, 1952 from Engle to J.W. Bergin in Engle Collection CSUC.
- ¹¹⁷ February 7, 1952 USBR Hearing Transcript at 12-13.
- ¹¹⁸ February 7, 1952 USBR Hearing Transcript at 48.
- ¹¹⁹ February 7, 1952 USBR Hearing Transcript at 59A and 59G.
- ¹²⁰ February 7, 1952 USBR Hearing Transcript at 130-131.
- ¹²¹ Sayles, supra at 158; February 28, 1952 excerpt from *Trinity Journal*, supra at 53; February 28, 1952 article “Engle Says Dam Bill to Be Under Trinity County Thumb,” in *Trinity Journal*.
- ¹²² Id.
- ¹²³ February 28, 1952 excerpt from *Trinity Journal*, supra at 54.
- ¹²⁴ Id.
- ¹²⁵ Id.
- ¹²⁶ Letter dated April 23, 1952 from Engle to Wendell Snow in Engle Collection CSUC.
- ¹²⁷ Letters dated December 27, 1951 from Engle to Donald Smith and September 2, 1952 letter from Engle to Norman Stymus in Engle Collection CSUC.
- ¹²⁸ Sayles, supra at 159.
- ¹²⁹ Letter dated February 29, 1952 from Engle to Melquist in Engle Collection CSUC, supra at 1-2.
- ¹³⁰ Resolution 9-52 of the Trinity County Board of Supervisors dated March 3, 1955 at 1 in Engle Collection CSUC.
- ¹³¹ Id.
- ¹³² Preliminary Draft No. 4 of Engle’s bill at 1-2 in Engle Collection CSUC.
- ¹³³ Sayles, supra at 166-168; April 3, 1952 excerpt from *Trinity Journal*, supra at 55-57.
- ¹³⁴ Sayles, supra at 166-171; April 3, 1952 excerpt from *Trinity Journal*, supra at 55-58.
- ¹³⁵ Sayles, supra at 172.
- ¹³⁶ Sayles, supra at 170-171.
- ¹³⁷ Sayles, supra at 171-172.
- ¹³⁸ April 3, 1952 excerpt from *Trinity Journal*, supra at 55-57.
- ¹³⁹ April 3, 1952 excerpt from *Trinity Journal*, supra at 57.
- ¹⁴⁰ Id.
- ¹⁴¹ Sayles, supra at 169; April 3, 1952 excerpt from *Trinity Journal*, supra at 55.
- ¹⁴² April 3, 1952 excerpt from *Trinity Journal*, supra at 56.
- ¹⁴³ Sayles, supra at 174.
- ¹⁴⁴ Sayles, supra at 174-175; June 12, 1952 excerpt from *Trinity Journal*, supra at 58-59.
- ¹⁴⁵ Id.
- ¹⁴⁶ Id.
- ¹⁴⁷ Sayles, supra at 176-177.
- ¹⁴⁸ Sayles, supra at 175.
- ¹⁴⁹ Sayles, supra at 180-181.
- ¹⁵⁰ Sayles, supra at 181.
- ¹⁵¹ Id.
- ¹⁵² Id.
- ¹⁵³ Id.
- ¹⁵⁴ October 23, 1952 excerpt from *Trinity Journal*, supra at 60.
- ¹⁵⁵ Id.

¹⁵⁶ Sayles, supra at 182-183.

¹⁵⁷ Sayles, supra at 183.

¹⁵⁸ November 5, 1952 letter from Engle to Secretary of Interior Oscar L. Chapman in Engle Collection CSUC at 1-2.

¹⁵⁹

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¹⁶¹ H. Doc. No. 53, 83d Cong., 1st Sess. (1953) at iii-iv.

¹⁶² Cong. Rec., 83d Cong., 1st Sess. (January 2, 1953), p. 55.

¹⁶³ January 5, 1953 telegram from Engle to Honorable Earl Warren in Engle Collection CSUC.

¹⁶⁴ December 6, 1951 letter from USBR Acting Commissioner Lineweaver to Engle in Engle Collection CSUC.

¹⁶⁵ Id.

¹⁶⁶ See Id.

¹⁶⁷ Sayles, supra at 183.

Chapter 3: How Did They Know a Dam Would Improve the Fishery? 1951-1954

¹ H. Doc. No. 53, 83d Cong. 1st Sess. (1953) at x-xii.

² H. Doc. No. 53, supra at 147-186.

³ H. Doc. No. 53, supra at x.

⁴ H. Doc. No. 53, supra at xi.

⁵ H. Doc. No. 53, supra at 1.

⁶ H. Doc. No. 53, supra at 3 and 20-21.

⁷ Id.

⁸ H. Doc. No. 53, supra at 4 and 11.

⁹ H. Doc. No. 53, supra at 8, 36 and 76.

¹⁰ H. Doc. No. 53, supra at 76 and n. 1.

¹¹ H. Doc. No. 53, supra at 76 and n. 2.

¹² H. Doc. No. 53, supra at 147-186.

¹³ H. Doc. No. 53, supra at 151.

¹⁴ H. Doc. No. 53, supra at 77.

¹⁵ Id.

¹⁶ Id.

¹⁷ H. Doc. No. 53, supra at 179.

¹⁸ H. Doc. No. 53, supra at 171.

¹⁹ Id.

²⁰ H. Doc. No. 53, supra at 170.

²¹ H. Doc. No. 53, supra at 155.

²² H. Doc. No. 53, supra at 183.

²³ H. Doc. No. 53, supra at 161; Moffett, James W., Stanford H. Smith, “Biological Investigations of the Fishery Resources of Trinity River, California,” Special Scientific Report: Fisheries No. 12, U.S. Fish and Wildlife Service (February 1950) at 1-4.

²⁴ Moffett, supra at 1.

²⁵ Id.

²⁶ California Resources Agency, “Task Force Report on Sediment Problems in the Trinity River Near Lewiston” (June 1969) at 13 (“1969 Task Force Report”).

²⁷ Id.

²⁸ Id.

²⁹ Moffett, supra at 1 and 49.

³⁰ Id. In 1969, the California Resources Agency Task Force described it as an “interim report.” 1969 Task Force Report, supra at 13.

³¹ Moffett, supra at 4.

³² H. Doc. No. 53, supra at 159.

³³ Moffett, supra at 4 and 57.

³⁴ Moffett, supra at 57.

³⁵ Id.

³⁶ Moffett, supra at 51-56. This 17 year span included a drought from 1928 to 1937 with ten consecutive dry or critically dry water years. Trinity River Flow Evaluation Final Report, USFWS and Hoopa Valley Tribe (June 1999) 63 and 143 (“1999 Flow Evaluation”). A water-year runs from October 1 to September 30 and is designated by the calendar year in which it ends. USFWS, USBR, Hoopa Valley Tribe and Trinity

County, “Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report” (October 1999) at A-14 (“DEIS/EIR”).

³⁷ Moffett, supra at 49 and 51.

³⁸ Moffett, supra at 58.

³⁹ Moffitt, supra at 58-66; H. Doc. No. 53, supra at 169.

⁴⁰ Moffitt, supra at 58-62.

⁴¹ Moffitt, supra at 51.

⁴² Moffett, supra at 51.

⁴³ Moffitt, supra at 66.

⁴⁴ Moffitt, supra at 67.

⁴⁵ Moffitt, supra at 54 and 56.

⁴⁶ Moffitt, supra at 54.

⁴⁷ Flow Evaluation at 63 and 143. The USBR described 1929 to 1934 as a “critical drought cycle.” Arcata Planning Office, USBR, “Reconnaissance of Water Requirements for Resource Development Trinity River Basin,” Preliminary Draft (November 1953) at 37. (“ USBR Reconnaissance”).

⁴⁸ Moffitt, supra at 26.

⁴⁹ Moffitt, supra at 6 and 60.

⁵⁰ February 7, 1952 USBR Hearing Transcript at 74.

⁵¹ H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 38.

⁵² Id.

⁵³ Id.

⁵⁴ Id.

⁵⁵ Id.

⁵⁶ H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 39.

⁵⁷ Id.

⁵⁸ H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 40.

⁵⁹ H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 41.

⁶⁰ Moffitt, supra at 57.

⁶¹ See Flow Evaluation at 1.

⁶² Moffitt, supra at 1, 21, 69 and 71; Snyder, John O., “Salmon of the Klamath River of California” (Division of Fish and Game of California, Fish Bulletin No. 34) (1931) at 121.

⁶³ Moffitt, supra at 57.

⁶⁴ See Joint Committee on Rivers and Flood Control, “Report to Legislature (56th Session) on the Proposed Klamath and Trinity River Diversions and Other Projects in the Central Valley of California by Joint Legislative Committee in Rivers and Flood Control,” (May 1945) at 47 (“Collier 1945 Report”).

⁶⁵ See Collier 1945 Report, supra at 18-20.

⁶⁶ USBR, “Fish and Wildlife Management Options” (October 1979) at II-14 – II-15 on file at Trinity River Basin Resource Library.

⁶⁷ USBR Reconnaissance, supra. In April 1953, the State of California recommended a survey of the amounts of water needed for the possible development of timber resources in the Trinity Basin. H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 44.

⁶⁸ USBR Reconnaissance, supra at 3-4.

⁶⁹ USBR Reconnaissance, supra at 13.

⁷⁰ USBR Reconnaissance, supra at 13-18. Accord State of California Department of Public Works, “Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California (April 1953) in H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 17-18; Resolution No. 401 passed by Del Norte County Board of Supervisors (November 13, 1951) at 2-3 on file in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”).

⁷¹ USBR Reconnaissance, supra at 5 and 20.

⁷² USBR Reconnaissance, supra at 20.

⁷³ USBR Reconnaissance, supra at 48.

⁷⁴ Moffitt, supra at Table 20 at p. 60.

⁷⁵ H. Doc. 53, supra at iii-iv.

⁷⁶ Compare H. Doc. 53, supra at iii and vii-viii with H. Doc. No. 147, supra at vii.

⁷⁷ H. Doc. No. 147, supra at vii.

Chapter 4: Hurry, It's Too Late to Turn Back Now. 1953-1955

¹ January 9, 1953 letter from Heffington to Engle in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”).

² January 15, 1953 excerpt from *Trinity Journal* compiled and maintained at Trinity County Library at 61-62.

³ Id.

⁴ Id.

⁵ Id.

⁶ January 15, 1953 excerpt from *Trinity Journal*, supra at 63.

⁷ Id.

⁸ January 19, 1953 letter from Melquist to Engle at 2 in Engle Collection CSUC.

⁹ January 24, 1953 letter from Engle to Melquist in Engle Collection CSUC.

¹⁰ Sayles, Stephen Paul, “Clair Engle and the Politics of California Reclamation, 1943-1960”, Ph.D. dissertation, U. of New Mexico (1978) at 192-193.

¹¹ Sayles, supra at 193.

¹² Id.

¹³ Sayles, supra at 195.

¹⁴ Id.

¹⁵ Sayles, supra at 195-196.

¹⁶ Id.

¹⁷ Id.

¹⁸ Id.

¹⁹ Sayles, supra at 200.

²⁰ Sayles, supra at 199.

²¹ Sayles, supra at 201.

²² March 19, 1953 letter from Donald Smith to Engle at 2 in Engle Collection CSUC.

²³ Id.

²⁴ Letters dated December 4, 1953 from Engle to Grant Merrill at 1-2 and December 12, 1953 from Engle to George Wilson in Engle Collection CSUC.

²⁵ December 4, 1953 letter, supra at 2 and letters dated December 12, 1953 from Engle to Donald Smith and Grant Merrill in Engle Collection CSUC.

²⁶ May 28, 1953 letter from Gordon to Engle in Engle Collection CSUC.

²⁷ May 28, 1953 letter, supra at 2.

²⁸ Id.; Preliminary Draft No. 4 of Trinity bill in Engle Collection CSUC. H.R. 123 had elicited a comparable response from Charles Bohrmann of the Associated Sportsmen of California. See letters of April 24, 1953 from Bohrmann to Evans and July 3, 1953 from Bohrmann to Engle in Engle Collection CSUC. Bohrmann thought that 175 cfs was an adequate summer minimum as distinguished from 100 cfs proposed by Moffitt and Smith.

²⁹ June 8, 1953 letter from Engle to Gordon in Engle Collection CSUC.

³⁰ June 4, 1953 letter from Engle to Grace McDonald in Engle Collection CSUC.

³¹ June 12, 1953 letter from Engle to Mackinnon’s Folly in Engle Collection CSUC.

³² Id.

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- ³³ July 27, 1953 letter from Engle to Richard Boke in Engle Collection CSUC.
- ³⁴ Id.
- ³⁵ July 27, 1953 letter from Engle to Boke in Engle Collection CSUC. See Sayles, supra at 202.
- ³⁶ Letters dated December 8, 1953 letter from Engle to Heffington and December 15, 1953 from Carr to Heffington in Engle Collection CSUC.
- ³⁷ Sayles, supra at 198.
- ³⁸ Sayles, supra at 198.
- ³⁹ Sayles, supra at 203.
- ⁴⁰ Sayles, supra at 206; January 29, 1954 letter from Engle to Carr in Engle Collection CSUC.
- ⁴¹ Sayles, supra at 198 and 202-203.
- ⁴² Sayles, supra at 206.
- ⁴³ Id.
- ⁴⁴ Sayles, supra at 207.
- ⁴⁵ February 5, 1954 letter from Engle to Carr in Engle Collection CSUC.
- ⁴⁶ March 25, 1954 excerpt from *Trinity Journal*, supra at 64; Sayles, supra at 208.
- ⁴⁷ March 25, 1954 excerpt from *Trinity Journal*, supra at 65.
- ⁴⁸ Id.
- ⁴⁹ Id.
- ⁵⁰ March 5, 1954 letter from J.E. O'Neill to Hon. Thomas Kuchel in Engle Collection CSUC.
- ⁵¹ March 11, 1954 letter from William Carah to Max Vann in Engle Collection CSUC.
- ⁵² Id.
- ⁵³ March 16, 1954 letter from Engle to William Carah in Engle Collection CSUC.
- ⁵⁴ March 29, 1954 letter from William Carah to Max Vann at 1-2 in Engle Collection CSUC.
- ⁵⁵ Sayles, supra at 206 and 209.
- ⁵⁶ Sayles, supra at 209.
- ⁵⁷ Id.; April 8, 1954 letter from Engle to Carr and Itinerary in Engle Collection CSUC;["The Paper Farmers"]
- ⁵⁸ March 29, 1954 letter, supra at 1.
- ⁵⁹ Hearing before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs House of Representatives (83d Cong., 2d Sess.) on H.R. 123, April 16, 1954, Redding, California (Serial No. 20) at 8 ("April 16, 1954 Hearing").
- ⁶⁰ Id.
- ⁶¹ April 16, 1954 Hearing, supra at 18-19.
- ⁶² April 16, 1954 Hearing, supra at 25.
- ⁶³ April 16, 1954 Hearing, supra at 32.
- ⁶⁴ April 16, 1954 Hearing, supra at 45-46.
- ⁶⁵ April 16, 1954 Hearing, supra at 37-39.
- ⁶⁶ March 25, 1954 letter from Engle to Donald Smith in Engle Collection CSUC.
- ⁶⁷ April 16, 1954 Hearing, supra at 50.
- ⁶⁸ April 2, 1954 telegram from Engle to Les Browne in Engle Collection CSUC.
- ⁶⁹ April 16, 1954 Hearing, supra at 55.

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- ⁷⁰ Id.
- ⁷¹ April 16, 1954 Hearing, supra at 40.
- ⁷² Id.
- ⁷³ April 16, 1954 Hearing, supra at 42.
- ⁷⁴ Id.
- ⁷⁵ April 16, 1954 Hearing, supra at 62-70.
- ⁷⁶ Sayles, supra at 211.
- ⁷⁷ Id.
- ⁷⁸ April 16, 1954 Hearing, supra at 60.
- ⁷⁹ April 16, 1954 Hearing, supra at 72.
- ⁸⁰ April 23, 1954 letter from Hal Goodyear, County Clerk, to William Harrison, Chairman Subcommittee on Irrigation and Reclamation in Engle Collection CSUC.
- ⁸¹ Id.
- ⁸² Id.
- ⁸³ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 1-10.
- ⁸⁴ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 7.
- ⁸⁵ Id.
- ⁸⁶ H. Doc. No. 53 (83d Cong., 1st Sess.) (1953) at 4. The 44,000 acre-foot increase in average annual diversion was made possible by increasing the capacity of Trinity reservoir from 1.8 million to 2.5 million acre-feet. H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 36-37.
- ⁸⁷ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 5.
- ⁸⁸ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 10.
- ⁸⁹ Sayles, supra at 214.
- ⁹⁰ Sayles, supra at 214.
- ⁹¹ Sayles, supra at 215.
- ⁹² Id.
- ⁹³ December 29, 1954 letter from McFarland to Heffington in Engle Collection CSUC.
- ⁹⁴ Id.
- ⁹⁵ Id.
- ⁹⁶ Sayles, supra at 254.
- ⁹⁷ Sayles, supra at 255; January 6, 1955 excerpt from *Trinity Journal*, supra at 70-71; December 31, 1954 letter from Carr to Engle in Engle Collection CSUC.
- ⁹⁸ January 6, 1955 excerpt from *Trinity Journal*, supra at 72-74.
- ⁹⁹ February 12, 1955 letter from Engle to John Steppling, Publisher of Trinity Journal in Engle Collection CSUC. See Appendix F to USFWS and Hoopa Valley Tribe, Trinity River Flow Evaluation Final Report (June 1999).
- ¹⁰⁰ February 12, 1955 letter, supra at 1.
- ¹⁰¹ February 12, 1955 letter, supra at 2.
- ¹⁰² February 25, 1955 letters from Gordon to Engle and Regan and February 21, 1955 letter from Gordon to Regan in Engle Collection CSUC.
- ¹⁰³ February 21, 1955 letter from Gordon to Regan in Engle Collection CSUC.
- ¹⁰⁴ Id.

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- ¹⁰⁵ April 14, 1953 letter from State Engineer A.D. Edmonston to Engle in Engle Collection CSUC. See H. Doc. No. 147, 83d Cong., 1st Sess. (1953) at 38 (emphasis added).
- ¹⁰⁶ March 10, 1955 *Trinity Journal* at 2 in Engle Collection CSUC.
- ¹⁰⁷ March 21, 1955 letter from Engle to Stepling in Engle Collection CSUC.
- ¹⁰⁸ March 8, 1955 letter from Engle to Heffington in Engle Collection CSUC.
- ¹⁰⁹ February 25, 1955 letter from Regan to Engle in Engle Collection CSUC.
- ¹¹⁰ March 2, 1955 letter from Regan to Engle in Engle Collection CSUC.
- ¹¹¹ March 5, 1955 letter from Engle to Gordon in Engle Collection CSUC (emphasis added).
- ¹¹² Sayles, supra at 255.
- ¹¹³ Sayles, supra at 258.
- ¹¹⁴ Id.
- ¹¹⁵ February 17 and March 3, 1955 excerpts from *Trinity Journal*, supra at 76-79.
- ¹¹⁶ March 3, 1955 excerpt from *Trinity Journal*, supra at 78; March 31, 1955 letter from Engle to Dorsey in Engle Collection CSUC.
- ¹¹⁷ February 17, 1955 excerpt from *Trinity Journal*, supra at 77.
- ¹¹⁸ Sayles, supra at 259.
- ¹¹⁹ Sayles, supra at 260.
- ¹²⁰ Id.
- ¹²¹ Sayles, supra at 261.
- ¹²² Id.
- ¹²³ Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13-16, 1955), Serial No. 7 at 38-39 and 44 (“April 1955 Trinity Hearings”).
- ¹²⁴ April 1955 Trinity Hearings, supra at 41.
- ¹²⁵ [see ch. 3 above] ; H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at xv-xx and 55-56.
- ¹²⁶ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 56.
- ¹²⁷ H. Doc. No. 147 (83d Cong., 1st Sess.) (1953) at 38-41.
- ¹²⁸ April 1955 Trinity Hearings, supra at 25 and 27.
- ¹²⁹ April 9, 1955 telegram from Engle to Trinity Board of Supervisors in Engle Collection CSUC.
- ¹³⁰ Hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs House of Representatives (83d Cong., 2d Sess.) on H.R. 123 (April 16, 1954) (Serial No.20) at 52.
- ¹³¹ Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13-16, 1955), Serial No. 7 at 67(“April 1955 Trinity Hearings”).
- ¹³² April 1955 Trinity Hearings, supra at 3.
- ¹³³ Hearing before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs U.S. Senate (84th Cong., 1st Sess.) on H.R. 4663 (July 14, 1955) at 7.
- ¹³⁴ May 5 and 26, 1955 excerpts from *Trinity Journal*, supra at 89-90.
- ¹³⁵ Saylor, supra at 268.

¹³⁶ Saylor, supra at 267-268; April 7 and 14, 1955 excerpts from *Trinity Journal*, supra at 82-84.

¹³⁷ See Saylor, supra at 254; June 16, 1955 excerpt from *Trinity Journal*, supra at 91-92.

¹³⁸ H.R. Report No. 602 (84th Cong., 1st Sess.) (May 19, 1955) at 4. DOI had reported to Congress that the annual average runoff (between 1921 and 1941) was 1.1 million acre-feet. H. Doc. 53, supra at 32.

¹³⁹ H.R. Report No. 602, supra at 5.

¹⁴⁰ H.R. Report No. 602, supra at 9.

¹⁴¹ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 55-56.

¹⁴² H. Doc. No. 281, supra at iii.

¹⁴³ H.R. Report No. 602, supra at 9 and 7.

¹⁴⁴ June 7, 1955 letter from Gordon to W.E. Stewart, Director Natural Resources Department with copy to Engle in Engle Collection CSUC.

¹⁴⁵ Public Law 386 (84th Cong., 1st Sess.) (August 12, 1955) (69 Stat. 719) at Sec. 2.

¹⁴⁶ Moffett, James W. and Stanford H. Smith, "Biological Investigations of the Fishery Resources of Trinity River, California" (USFWS Special Scientific Report: Fisheries No. 12) (February 1950) at Table No. 19 at 60 ("Moffett and Smith"). A discharge rate of 1 cfs per day equals 1.98 acre-feet. Mount, Jeffrey F., "California Rivers and Streams The Conflict Between Fluvial Process and Land Use." University of California Press (1995) at 351.

¹⁴⁷ See H. Doc. No. 53, supra at 77; H. Doc. No. 281, supra at 55-56.

¹⁴⁸ Public Law 386, supra at secs. 1 and 2.

¹⁴⁹ Id. Also, annual minimum releases of 50,000 acre-feet were required for Humboldt County and downstream water users. Id.

¹⁵⁰ See [ch. 3 above]; Moffett and Smith, supra at 57-66.

¹⁰⁰ Id.

Chapter 5: Everything Changed, Including Most Project Estimates. 1955-1963

¹ October 20, 1955 excerpt from *Trinity Journal* compiled and maintained by the Trinity County Library at 100.

² Id.

³ October 20, 1955 excerpt from *Trinity Journal*, supra at 101.

⁴ Id.

⁵ USFWS and CDFG, “A Plan for the Protection and Maintenance of Fish and Wildlife Resources Affected By the Trinity River Division, Central Valley Project,” (November 1956) at 12 (“1956 Plan”).

⁶ Id.

⁷ 1956 Plan, supra at iv.

⁸ 1956 Plan, supra at 12; Gibbs, Earl D., “A Report on the King Salmon, Oncorhynchus Tshawytscha, in the Upper Trinity River, 1955 (CDFG Inland Fisheries Administrative Report No. 56-10) (June 4, 1956); Weber, George, “North Coast King Salmon Spawning Stock Survey, 1955-56 and 1956-57 Seasons” (CDFG Marine Resources Administrative Report Nos. 64-1 and 65-1) (February and June 1964).

⁹ Id.

¹⁰ 1956 Plan, supra at iv; Moffitt, supra at 56 (authors assumed the salmon population estimated in 1944-46 was at maximum density.)

¹¹ November 24, 1955 excerpt from *Trinity Journal*, supra at 105.

¹² November 24, 1955 and January 12, 1956 excerpts from *Trinity Journal*, supra at 105 and 109.

¹³ December 8, 1955 excerpt from *Trinity Journal*, supra at 106.

¹⁴ USFWS and Hoopa Valley Tribe, “Trinity River Flow Evaluation Final Report” (June 1999) at 64.

¹⁵ December 29, 1955 and January 5 and 12, 1956 excerpts from *Trinity Journal*, supra at 108-109.

¹⁶ January 12 and April 5, 1956 excerpts from *Trinity Journal*, supra at 109 and 111.

¹⁷ 1956 Plan, supra at iii-iv.

¹⁸ 1956 Plan, supra at 11-14; Moffitt, supra at 66.

¹⁹ Moffitt, supra at 58.

²⁰ 1956 Plan, supra at 13-14.

²¹ 1956 Plan, supra at 52.

²² 1956 Plan, supra at 50 and 75.

²³ 1956 Plan, supra at 50.

²⁴ Coots, Millard, “Some Notes on the Trinity River Downstream from Lewiston Dam, An Example of River Metamorphosis” (CDFG September 28, 1972) at 14 (on file at Trinity River Basin Resource Library).

²⁵ 1956 Plan, supra at 41, 65 and 74.

²⁶ 1956 Plan, supra at 76.

²⁷ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 31 and H. Report No. 602 (84th Cong., 1st Sess.) (1955) at 4.

²⁸ 1956 Plan, supra at vi.

²⁹ Memorandum from William R. Gianelli, Chief Water Rights Section, to Harvey O. Banks, Director Department of Water Resources and Clair A. Hill, Chairman State Water Board re “Disposition of State Filings 5627 & 5628 on Trinity River” dated July 1, 1957 (Trinity River Basin Resource Library at Trinity County Library) at 4-5 (“Gianelli 1957 Memo”) and H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 31.

³⁰ Richard J. Shukle, “Key to the Trinity” in *The Reclamation Era* (May 1960) at 44-45.

³¹ As early as 1945, the USBR assured the State of California that no water necessary for existing or potential needs in the Trinity and Klamath Valleys would be diverted. Collier 1945 Report, supra at 48 and 51.

³² Moffitt, supra at 69; Snyder, supra at 111-121.

³³ July 11, 1957 and August 15, 1957 excerpts from *Trinity Journal*, supra at 130 and 132.

³⁴ 62 Fed.Reg. 62741, 64745 (November 25, 1997).

³⁵ September 19, 1957 excerpt from *Trinity Journal*, supra at 136 and Gianelli 1957 Memo, supra at 1-2.

³⁶ Id.

³⁷ July 18, 1957 excerpt from *Trinity Journal*, supra at 130.

³⁸ August 15, 1957 excerpt from *Trinity Journal*, supra at 132.

³⁹ August 15, 1957 excerpt from *Trinity Journal*, supra at 132.

⁴⁰ Hubbell, Paul M., “Program to Identify and Correct Salmon and Steelhead Problems in the Trinity River Basin” (CDFG August 1973) at 20 (“1973 CDFG Program”). Millard Coats of the CDFG reported that the trapping facility first operated in 1959. Coats, Millard, “The Trinity River Fisheries” (CDFG) at 1 (on file at Trinity River Basin Resource Library “TRBRL”). Accord Murray, Robert, “The Lewiston Fish Trapping Facilities: First Year of Operation, 1958-1959” (CDFG) (on file at TRBRL).

⁴¹ Id.

⁴² 1956 Plan, supra at 32.

⁴³ 1973 CDFG Program, supra at 21.

⁴⁴ Id. The 1956 USFWS and CDFG plan stated that no steelhead should be carried above the dam after the season of 1959-60 because impoundment was scheduled for late 1961.

1956 Plan, supra at 35.

⁴⁵ June 12, 1958 excerpt from *Trinity Journal*, supra at 150.

⁴⁶ June 19, 1958 excerpt from *Trinity Journal*, supra at 150.

⁴⁷ June 26, 1958 excerpt form *Trinity Journal*, supra at 150-151.

⁴⁸ Id.

⁴⁹ Id.

⁵⁰ November 20, 1958 excerpt from *Trinity Journal*, supra at 157.

⁵¹ August 13, 1959 excerpt from *Trinity Journal*, supra at 166.

⁵² January 21, 1960 excerpt from *Trinity Journal*, supra at 174.

⁵³ September 7, 1961 excerpt from *Trinity Journal*, supra at 187.

⁵⁴ August 4, 1960 excerpt from *Trinity Journal*, supra at 179.

⁵⁵ October 6, 1960 excerpt from *Trinity Journal*, supra at 181.

⁵⁶ December 1, 1960 excerpt from *Trinity Journal*, supra at 183.

⁵⁷ Id.

⁵⁸ February 9, 1961 excerpt from *Trinity Journal*, supra at 185.

⁵⁹ April 4, 1963 excerpt from *Trinity Journal*, supra at 194.

⁶⁰ April 13, 1961 excerpt from *Trinity Journal*, supra at 186.

⁶¹ October 19, 1961 excerpt from *Trinity Journal*, supra at 191.

⁶² Id.

⁶³ 1973 CDFG Program, supra at 21.

⁶⁴ 1956 Plan, supra at 35-36.

⁶⁵ 1956 Plan, supra at 36.

⁶⁶ 1973 CDFG Program, supra at 21.

⁶⁷ Id.

Chapter 6: Almost Everything Went Wrong, But the USBR Held on to Almost Every Drop It Had Taken. 1963 – 1977

¹ TRBF&WTF, “Framework Guide for Trinity River Basin Fish and Wildlife Management Program” (June 1977) at 6 on file at Trinity River Basin Resource Library (“TRBRL”) (“June 1977 Guide”).

² Coots, Millard, “The Trinity River Fisheries” (CDFG) at 1 on file at TRBRL.

³ CDFG News Release, “Trinity Hatchery Will Protect A Major Resource” (June 8, 1963) at 1 on file at TRBRL (“June 1963 Release”).

⁴ Id.

⁵ Coots, Millard, “Some Notes on the Trinity River Downstream from Lewiston Dam, An Example of River Metamorphosis” (CDFG September 28, 1972) at 19 on file at TRBRL.

⁶ USBR, “Central Valley Project 1963 Annual Report” at 19.

⁷ June 1977 Guide, supra at 6.

⁸ Coots, “The Trinity River Fisheries”, supra at 7.

⁹ Coots, “The Trinity River Fisheries”, supra at 2.

¹⁰ Id. and ch. 5 nn. 64-65 above.

¹¹ Coots, “The Trinity River Fisheries”, supra at 2; Hubbell, Paul M., “Program to Identify and Correct Salmon and Steelhead Problems in the Trinity River Basin” (CDFG Report to the Trinity River Basin Fish and Wildlife Task Force August 1973) at 21-22.

¹² Hubbell, supra at 21; Anonymous, “Trinity River Study Summary” (undated) at 5 on file at Trinity River Basin Resource Library; Barnes, Edwin J., “Rehabilitation of the Trinity River Fishery” (Draft dated February 28, 1977) at 5 on file at Trinity River Basin Resource Library (“Barnes February 1977 draft”).

¹³ Id.

¹⁴ Coots, “The Trinity River Fisheries”, supra at 2-4.

¹⁵ Hubbell, supra at 25.

¹⁶ Hubbell, supra at 58.

¹⁷ Coots, “The Trinity River Fisheries”, supra at 16.

¹⁸ Id.

¹⁹ Id.

²⁰ Coots, “The Trinity River Fisheries”, supra at 7.

²¹ Coots, “The Trinity River Fisheries”, supra at 7-8.

²² Hubbell, supra at 40.

²³ Hubbell, supra at 39.

²⁴ Id.

²⁵ Coots, “The Trinity River Fisheries”, supra at 8.

²⁶ Id.

²⁷ Coots, “The Trinity River Fisheries”, supra at 8-10.

²⁸ June 1977 Guide, supra at 20.

²⁹ Id.; Coots, “The Trinity River Fisheries”, supra at 16.

³⁰ Id.

³¹ Coots, “The Trinity River Fisheries”, supra at 11.

³² Coots, “The Trinity River Fisheries”, supra at 11-12; Resources Agency, “Task Force Report on Sediment Problems in the Trinity River Near Lewiston” (June 1969) at 5 (“1969 Task Force Report”) on file at TRBRL.

³³ Coots, “The Trinity River Fisheries”, supra at 13-15; 1969 Task Force Report, supra at 9-10.

³⁴ Coots, “The Trinity River Fisheries”, supra at 13; Meacham, C.P., “Water Impoundment and Diversion Structures and Their Effect on Salmon and Steelhead in California” (1973 M.S. thesis), Humboldt State University, Arcata, CA.

³⁵ 1969 Task Force Report, supra at 6.

³⁶ Coots, “The Trinity River Fisheries”, supra at 17.

³⁷ Coots, Millard, “The Effects of Erosion and Sedimentation on the Fishery of Grass Valley Creek and the Trinity River, Trinity County, California” (CDFG November 27, 1967) at 5 on file at TRBRL.

³⁸ 1969 Task Force Report, supra at 6.

³⁹ Hubbell, supra at 39.

⁴⁰ Id. and 1969 Task Force Report, supra at 6-7.

⁴¹ Hubbell, supra at 30-31.

⁴² Hubbell, supra at 31-31; U.S. Fish and Wildlife Service and California Department of Fish and Game, “A Plan for the Protection and Maintenance of Fish and Wildlife Resources Affected By the Trinity River Division, Central Valley Project,” (November 1956) at 50 and 75 (“1956 Plan”).

⁴³ 1969 Task Force Report, supra at 9.

⁴⁴ Trinity Journal, “Complete Text of Grand Jury Report” (January 14, 1969).

⁴⁵ Id.

⁴⁶ Hubbell, supra at 40.

⁴⁷ June 1977 Guide, supra at 20.

⁴⁸ Coots, “The Trinity River Fisheries”, supra at 18.

⁴⁹ Id. and Hubbell, supra at 38.

⁵⁰ Coots, “The Trinity River Fisheries”, supra at 19.

⁵¹ Anonymous, “Background Summary on Trinity River Basin Task Force Formation and Operation,” at 1 on file at TRBRL (“TRBF&WTF Background Summary”).

⁵² TRBF&WTF Background Summary, supra at 2.

⁵³ Arnett, G. Ray, “Preliminary Report on Impact of Trinity River Water Development on Fish and Wildlife Resources” (CDFG Environmental Services Administrative Report 70-2, July 1970) at 23 (“1970 CDFG Preliminary Report”).

⁵⁴ Id.

⁵⁵ See July 2, 1971 CDFG Memorandum from David W. Rogers to Don La Faunce re 1971 Creel Census and Healey Jr., Terrance P., “Studies of Steelhead and Salmon Emigration in the Trinity River” (CDFG Anadromous Fisheries Branch Administrative Report No. 73-1 May 1970) at 3 (“CDFG 1970 Emigration Study”) on file TRBRL.

⁵⁶ 1970 CDFG Preliminary Report, supra at 23.

⁵⁷ 1970 CDFG Preliminary Report, supra at 23-25.

⁵⁸ 1970 CDFG Preliminary Report, supra at 25.

⁵⁹ 1970 CDFG Preliminary Report, supra at 28.

⁶⁰ 1970 CDFG Preliminary Report, supra at 44.

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- ⁶¹ Assembly Concurrent Resolution No. 64 (Resolution Chapter 124) filed with Secretary of State July 9, 1970.
- ⁶² Advisory Committee on Salmon and Steelhead Trout, “Report on California Salmon and Steelhead Trout An Environmental Tragedy” (March 15, 1971) at 32.
- ⁶³ Rogers, David W., “King Salmon ... and Silver Salmon ... Spawning Escapement and Spawning Habitat in the Upper Trinity River, 1970” (CDFG July 1972) at 7 on file at TRBRL (“1970 CDFG Spawning Survey”).
- ⁶⁴ Id.
- ⁶⁵ Coots, “The Trinity River Fisheries”, supra at 5-6.
- ⁶⁶ 1970 CDFG Spawning Survey, supra at 9.
- ⁶⁷ Fisheries Resources Work Group of TRBF&WTF, “Report on the Anadromous Fishery Problems in the Trinity River Drainage and Recommendations for Studies to Further Define the Problems” (April 1971 (preliminary draft) and August 1971 (final draft)) at 31-45 on file at TRBRL.
- ⁶⁸ Hubbell, supra at 30-31.
- ⁶⁹ June 1977 Guide, supra at 20.
- ⁷⁰ Id.
- ⁷¹ Id.
- ⁷² Id.
- ⁷³ June 1977 Guide, supra at 21.
- ⁷⁴ Hubbell, supra at 37.
- ⁷⁵ Hubbell, supra at 40-41.
- ⁷⁶ Hubbell, supra at 47-66.
- ⁷⁷ Hubbell, supra at 63.
- ⁷⁸ October 24, 1973 letter from CDFG Director Arnett to USBR Acting Regional Director Horton at 1 on file at TRBRL (“October 24, 1973 CDFG letter”).
- ⁷⁹ Id.
- ⁸⁰ October 24, 1973 CDFG letter, supra at 2-3.
- ⁸¹ October 24, 1973 CDFG letter, supra at 3 and 6.
- ⁸² October 24, 1973 CDFG letter, supra at 2 and 4.
- ⁸³ Id.
- ⁸⁴ TRBF&WTF Background Summary, supra at 5.
- ⁸⁵ Congressman Harold T. (Bizz) Johnson’s December 29, 1975 newsletter on file at TRBRL (“Johnson’s December 29, 1975 newsletter”).
- ⁸⁶ Id.
- ⁸⁷ Memorandum from Regional Director of USBR to Regional Director USFWS dated September 25, 1974 at 1 on file in the TRBRL.
- ⁸⁸ Memorandum from Regional Directors of USBR and USFWS to USBR Commissioner and Director of USFWS (undated) attached to September 25, 1974 memo supra at 3.
- ⁸⁹ Barnes February 1977 draft, supra at 4.
- ⁹⁰ CDFG, “An Assessment of Federal Water Projects Adversely Affecting California’s Salmon and Steelhead Resources 3. Trinity River Division, Central Valley Project” (September 1974) at 1 (“1974 CDFG Assessment”) on file at TRBRL.
- ⁹¹ 1974 CDFG Assessment, supra at 1-2.

⁹² USFWS & Hoopa Valley Tribe, “Trinity River Flow Evaluation Final Report” (June 1999) at 62.

⁹³ 1974 CDFG Assessment, supra at 3.

⁹⁴ 1974 CDFG Assessment, supra at 4.

⁹⁵ 1974 CDFG Assessment, supra at 5.

⁹⁶ Id.

⁹⁷ 1974 CDFG Assessment, supra at 6.

⁹⁸ Id.

⁹⁹ 1974 CDFG Assessment, supra at 9-10.

¹⁰⁰ Id.

¹⁰¹ 1974 CDFG Assessment, supra at 10.

¹⁰² Johnson’s December 29, 1975 newsletter, supra ; June 1977 Guide, supra at 25.

¹⁰³ TRBF&WTF Background Summary, supra at 5-6.

¹⁰⁴ TRBF&WTF Background Summary, supra at 7.

¹⁰⁵ See TRBF&WTF Background Summary, supra at 6-9; Barnes February 1977 draft, supra at 7 and 10; June 1977 Guide, supra at 6.

¹⁰⁶ Barnes February 1977 draft, supra at 8.

¹⁰⁷ Id.

¹⁰⁸ March-April 1977, *Outdoor California* at 17 at Trinity River Basin Resource Library.

¹⁰⁹ Barnes February 1977 draft, supra at 3.

¹¹⁰ Barnes February 1977 draft, supra at 13-15; June 1977 Guide, supra at 6.

¹¹¹ June 1977 Guide, supra at 24; June 5, 1978 Memorandum from Assistant Regional Director of USBR to Area Manager USFWS at 1 on file at TRBRL (“June 1978 USBR Memo”).

¹¹² Memorandum of Opinion, County of Trinity v. Cecil D. Andrus (U.S. Dist. Ct. E. D. CA No. S-77-343-PCW) (October 12, 1977) at 1 on file at TRBRL (“1977 Opinion”).

¹¹³ 1977 Opinion, supra at 8-25.

¹¹⁴ Notes from Management Group Meeting of September 28, 1977 dated October 7, 1977 at 5 on file at TRBRL.

¹¹⁵ Letter from USFWS Field Supervisor to Task Force Action Group dated August 4, 1977 on file at TRBRL.

¹¹⁶ September 19, 1977 letter from Action Group Chairman Barnes to Action and Management Group Members on file at TRBRL (“1977 Flow Rationale”).

¹¹⁷ Minutes of November 22, 1977 Task Force meeting dated December 5, 1977 at 2 on file at TRBRL (“November 22, 1977 Task Force Minutes”).

¹¹⁸ 1977 Flow Rationale, supra at 1-2.

¹¹⁹ November 22, 1977 Task Force Minutes, supra at 2.

¹²⁰ Id.

¹²¹ Id.

¹²² June 1978 USBR Memo, supra at 1.

¹²³ June 1977 Guide, supra at 8.

¹²⁴ Id.

¹²⁵ Id.

¹²⁶ June 1977 Guide, supra at 26. They were the USBR, Soil Conservation Service, USFWS, U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, California Department of Water Resources, CDFG, Hoopa Indian Council, Trinity County and Humboldt County.

¹²⁷ Testimony of County of Trinity, California to the State Water Resources Control Board for the Bay-Delta Water Rights Hearing (July 13, 1998) Revised Exh. 2; Memo (undated) from Assistant Secretary USFWS to Secretary entitled “Decision Document ...” prepared for 1981 Secretarial Decision at 6 on file at TRBRL.

¹²⁸ Id.

¹²⁹ H. Doc. No. 281 (84th Cong., 2d Sess.) (1956) at 31 and H. Report No. 602 (84th Cong., 1st Sess.) (1955) at 4.

¹³⁰ April 10, 1952 letter from Engle to Wendell Snow in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”).

Chapter 7: Streamflow Was Replaced by Dollars. 1978-1984

¹ TRBF&WTF, “Action Program for Fiscal Year 1978” (Revised August 25, 1977) on file at Trinity River Basin Resource Library (“TRBRL”).

² May 17, 1978 letter from Kimsey (USBR) to Action Group Chairman Barnes on file at TRBRL.

³ July 11, 1978 letter from USBR Regional Director Martin to Task Force Chairman Fullerton on file at TRBRL.

⁴ July 28, 1978 letter from Task Force Chairman Fullerton to Task Force Members on file at TRBRL.

⁵ September 8, 1978 memo from Acting Regional Director USBR to Task Force Members on file at TRBRL.

⁶ November 1, 1978 letter from USBR Regional Planning Officer to Task Force Action Group Chairman on file at TRBRL.

⁷ Id.

⁸ March 15, 1979 Memorandum from USFWS Area Manager to Task Force Members on file at TRBRL.

⁹ Id.

¹⁰ Id.

¹¹ Id.

¹² Minutes of April 25, 1979 Action Group Meeting at 2 on file at TRBRL.

¹³ Minutes of Joint Task Force and Trinity County Board of Supervisors Meeting on April 25, 1978 on file at TRBRL.

¹⁴ Minutes of Action Group’s May 22, 1979 meeting dated June 11, 1979 at 3 on file at TRBRL.

¹⁵ June 4, 1979 letter from Task Force Chairman Fullerton to Interior Secretary Andrus at 1-2 on file at TRBRL (“June 4, 1979 Task Force letter”). The recommendation was derived from Option 4 in a draft of the 1979 USFWS Decision Document cited below.

¹⁶ Id.

¹⁷ June 4, 1979 Task Force letter, supra at 2.

¹⁸ Memorandum (undated) from Assistant Secretary – Fish, Wildlife and Parks to Secretary of Interior re 1981 Secretarial Decision on file at TRBRL (“1979 Memo”).

¹⁹ 1979 Memo, supra at 4.

²⁰ 1979 Memo, supra at 7 and 10.

²¹ 1979 Memo, supra at 15 –19.

²² 1979 Memo, supra at 20

²³ Id. See Fish and Wildlife Coordination Act, ch. 55, 48 Stat. 401 (March 10, 1934) codified at 16 USC secs. 661 et seq.

²⁴ 1979 Memo, supra at 21.

²⁵ Id.

²⁶ 1979 Memo, supra at 22.

²⁷ 1979 Memo, supra at 23.

²⁸ 1979 Memo, supra at 23-24.

²⁹ Trinity County Position Paper (January 14, 1980) at ii-iii on file at TRBRL (“Trinity Position Paper”).

³⁰ Trinity Position Paper, supra at 5. The Board pointed out that the final project included a larger dam and reservoir with larger electrical capacity utilizing a diversion of water almost twice that proposed to the citizens in 1952. Trinity Position Paper, supra at 4-5.

³¹ Trinity Position Paper, supra at 6.

³² Trinity Position Paper, supra at 5-6 and 9.

³³ Trinity Position Paper, supra at 11-16.

³⁴ Department of Interior Secretary Memorandum to Assistant Secretary USFWS, Acting Assistant Secretary, Indian Affairs and Assistant Secretary, Land and Water Resources dated April 18, 1980 on file at TRBRL.

³⁵ Id.

³⁶ Id.

³⁷ Public Law 96-335, 94 Stat. 1062 (September 4, 1980).

³⁸ Public Law 96-335 at Sec. 3.

³⁹ USFWS, USBIA and USBR, “Environmental Impact Statement on the Management of River Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California” (December 3, 1980) on file at the TRBRL (“1980 EIS”).

⁴⁰ 1980 EIS, supra at i.

⁴¹ 1980 EIS, supra at iii.

⁴² 1980 EIS, supra at i-ii.

⁴³ 1980 EIS, supra at ii.

⁴⁴ 1980 EIS, supra at iv.

⁴⁵ 1980 EIS, supra at xi.

⁴⁶ 1980 EIS, supra at A-7.

⁴⁷ 1980 EIS, supra at Comment C-33.

⁴⁸ 1980 EIS, supra at vi; Fredericksen, Kamine and Associates, Inc., “Draft, Proposed Trinity River Basin Fish & Wildlife Management Program” (December 1979) on file at TRBRL.

⁴⁹ 1980 EIS, supra at vi.

⁵⁰ 1980 EIS, supra at ii and Response O-47.

⁵¹ 1980 EIS, supra at Responses O-47 and O-48.

⁵² Id.

⁵³ Agreement Between USFWS and WPRS (USBR) for Implementing and Evaluating Increased Stream Flows for TRD, CVP, California (December 1980) on file at TRBRL (“USFWS/USBR 1980 Agreement”).

⁵³ Id.

⁵⁵ USFWS/USBR 1980 Agreement, supra at 3.

⁵⁶ Id.

⁵⁷ USFWS/USBR 1980 Agreement, supra at 2.

⁵⁸ USFWS and Hoopa Valley Tribe, “Trinity River Flow Evaluation Final Report” (June 1999) at xxix (“Flow Evaluation”).

⁵⁹ Flow Evaluation, supra at 63.

⁶⁰ Flow Evaluation, supra at xxix.

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- ⁶¹ In 1978, the California Department of Water Resources concluded that dry year streamflow reductions should be tied to the natural runoff in the Trinity basin, not what happens outside the watershed. Memorandum from Maurice Roos, Statewide Planning Branch, CA DWR, to Jerry D. Vayder et al. (May 26, 1978) at 4 on file at TRBRL.
- ⁶² Letter from Trinity Supervisor Irvin “Jim” Smith to Honorable James Watt dated June 8, 1981 at 1 (“Smith’s June 8, 1981 letter”) and Letter from Secretary James G. Watt to Honorable Don Clausen dated March 30, 1982 (“Watt’s March 30, 1982 letter”); Letter from Humboldt County Environmental Services Manager Donald C. Tuttle to Department of Water Resources Director Ronald B. Robie dated August 4, 1981. Each is on file at Trinity River Basin Resource Library.
- ⁶³ Letter from Task Force Chairman Fullerton to Honorable James Watt dated July 7, 1981 on file at TRBRL.
- ⁶⁴ Letter from Task Force Member L.L. Mitchell to Task Force Chairman Fullerton dated October 23, 1981; Letter from Trinity Supervisor Irvin “Jim” Smith to Congressman Eugene Chappie dated January 11, 1982 and California Department of Water Resources Memorandum from Gerald H. Meral to Ronald B. Robie dated April 16, 1982 at 1 all on file at TRBRL.
- ⁶⁵ Watt’s March 30, 1982 letter, supra.; Smith’s June 8, 1981 letter, supra at 2; Letter from Acting Secretary Donald Paul Hodel to Honorable James B. Edwards dated September 15, 1981 on file at TRBRL.
- ⁶⁶ Letter from USBR Regional Director Catino to Task Force Chairman Fullerton dated December 2, 1981 on file at TRBRL.
- ⁶⁷ Letter from Task Force Chairman Fullerton to Task Force Members dated August 4, 1981 on file at TRBRL.
- ⁶⁸ Trinity River Basin Fish and Wildlife Task Force, “Trinity River Basin Fish and Wildlife Management Program” (March 1982) at 1-2 on file at TRBRL (“TRBF&WMP”).
- ⁶⁹ TRBF&WMP, supra at 2.
- ⁷⁰ Letter from California Department of Water Resources Robie to Honorable James G. Watt dated June 24, 1982 on file at TRBRL.
- ⁷¹ California DWR Memo from Gerald H. Meral to Ronald B. Robie dated April 16, 1982 on file at TRBRL.
- ⁷² H.R. 6535, 97th Cong., 2d Sess., June 7, 1982; S. 2808, 97th Cong., 2d Sess., July 13, 1982.
- ⁷³ USFWS/USBR 1980 Agreement, supra at section (1) (b) (4).
- ⁷⁴ Memorandum from USBR Commissioner to Legislative Counsel dated September 3, 1982 on file at TRBRL (“1982 USBR Memo”).
- ⁷⁵ 1982 USBR Memo, supra at 2.
- ⁷⁶ July 30, 1982 Memorandum to Task Force Action Group at 5; Letter from USBR Regional Director Catino to Task Force Chairman Fullerton dated August 16, 1982 and Letter to USBR Regional Director Catino letter to Task Force Chairman Fullerton dated December 22, 1982 on file at TRBRL.
- ⁷⁷ USFWS Memorandum to Task Force dated December 15, 1982 on file at TRBRL.

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- ⁷⁸ Letter from State Senator Jim Nielsen to Governor Deukmejian dated March 2, 1983 on file at TRBRL.
- ⁷⁹ April 19-20, 1983 Minutes of Klamath-Trinity Salmon Restoration Advisory Committee at 5 on file at TRBRL.
- ⁸⁰ Letter from Secretary for Resources Van Vleck to Honorable Jim Nielsen dated March 28, 1983 on file at TRBRL.
- ⁸¹ Letter from Action Group Chairman Barnes to USBR representative Macias dated May 2, 1983 on file at TRBRL.
- ⁸² Letter from Action Group Chairman Barnes to USBR representative Macias dated November 10, 1983 on file at TRBRL.
- ⁸³ USFWS, “Plan of Study for Trinity River Fishery Flow Evaluations” (August 4, 1983) (“1983 Study Plan”) and USFWS, “Final Environmental Impact Statement Trinity River Basin Fish and Wildlife Management Program” (October 1983) on file at TRBRL;
- ⁸⁴ 1983 Study Plan, supra.
- ⁸⁵ May 3, 1984 Testimony of Congressman Douglas H. Bosco before House Appropriations Subcommittee on Interior at 2 on file at TRBRL.
- ⁸⁶ USFWS/USBR 1980 Agreement, supra at 3.
- ⁸⁷ Letter from Task Force Chairman Parnell to Secretary Clark dated April 27, 1984 on file at TRBRL.
- ⁸⁸ Id.
- ⁸⁹ Id.
- ⁹⁰ Public Law 84-386 at Sec. 2.
- ⁹¹ Testimony of Congressman Bosco on May 3, 1984 before House Appropriations Subcommittee on Interior on file at TRBRL.
- ⁹² Id.
- ⁹³ Letter from Assistant Secretary Furman II to Trinity County Board of Supervisors Chairman Straw dated May 17, 1984 (“DOI Letter May 17, 1984”) on file at TRBRL.
- ⁹⁴ DOI Letter May 17, 1984, supra at fact sheet .
- ⁹⁵ Management Group June 13, 1984 Minutes at 3 on file at TRBRL.
- ⁹⁶ Id.
- ⁹⁷ Action Group June 19, 1984 Minutes at 2 on file at TRBRL.
- ⁹⁸ Letter from Action Group Chairman Barnes (DWR) to Management Group Chairman Manderscheid (USBR) dated June 26, 1984 on file at TRBRL.
- ⁹⁹ Report 98-647, 98th Cong., 2d Sess. (September 29, 1984) at 1.
- ¹⁰⁰ Public Law 98-541, 98 Stat. 2721 (October 24, 1984).
- ¹⁰¹ Public Law 98-541 at Sec. 1 (1).
- ¹⁰² Public Law 98-541 at Sec. 2 (a).
- ¹⁰³ Public Law 98-541 at Sec. 4 (a) (1) and (2).
- ¹⁰⁴ Public Law 98-541 at Sec. 4 (b) (1) and (2).
- ¹⁰⁵ Trinity River Restoration Program Task Force, “Action Plan and Budget for Extended Authorization of the Trinity River Basin Fish and Wildlife Restoration Program California,” (March 1993) at 24 on file at TRBRL.

¹⁰⁶ Edwin Barnes Statement Before Merchant Marine and Fisheries Committee, Subcommittee on Fish, Wildlife and the Environment on June 4, 1984 on file at TRBRL.

¹⁰⁷ Report 98-647, supra at 5-6.

¹⁰⁸ Public Law 104-143, 110 Stat. 1338 (May 15, 1996) at Sec. 5 (a).

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¹¹⁰ Action Plan and Budget for Extended Authorization of the Trinity River Basin Fish and Wildlife Restoration Program California by Trinity River Restoration Program Task Force (March 1993) on file at Trinity River Basin Resource Library. In 1993, the Task Force estimated that over \$ 80 million would have been spent between 1982 and 1998, excluding the operating costs of the hatchery. Action Plan, supra at 3 and 8.

¹¹¹ 1979 Memo, supra at 14-15.

¹¹² Id.

Chapter 8: Let the Studies Begin. 1985-2000

¹ USFWS, “FWS Briefing Statement Trinity River Flow Evaluation Study (February 1986) at 1-2 (“1986 Flow Evaluation Briefing Statement”) on file at TRBRL.

² 1986 Flow Evaluation Briefing Statement, supra at 2.

³ Id. and USFWS and Hoopa Valley Tribe, “Trinity River Flow Evaluation Final Report” (June 1999) at 63 (“Flow Evaluation”).

⁴ Flow Evaluation, supra at 63.

⁵ Id.

⁶ Flow Evaluation, supra at C-5.

⁷ Public Law 99-552, 100 Stat. 3080 (October 27, 1986) at Sec. 1 (4).

⁸ Public Law 99-552, supra at Secs. 1 (9) and 2.

⁹ California Advisory Committee on Salmon and Steelhead Trout, *Restoring the Balance* (July 1988). The Advisory Committee was patterned after a similar citizen’s committee appointed in 1970. Executive Summary at 6.

¹⁰ Id.

¹¹ *Restoring the Balance*, supra at 64 and 58-59 (Senate Joint Resolution No. 43 introduced on April 28, 1988).

¹² *Restoring the Balance*, supra at 64.

¹³ Id.

¹⁴ Id.

¹⁵ Flow Evaluation, supra at C-7.

¹⁶ Flow Evaluation, supra at C-5.

¹⁷ Id.

¹⁸ Id.

¹⁹ Id.

²⁰ Report 102-21, Part 1, 102d Cong., 1st Sess. (March 15, 1991).

²¹ Report 102-1, supra at 9 and 13.

²² Id.

²³ Report 102-1, supra at 11.

²⁴ Id.

²⁵ Flow Evaluation, supra at C-7.

²⁶ Flow Evaluation, supra at C-2 and C-6.

²⁷ Flow Evaluation, supra at C-7.

²⁸ Flow Evaluation, supra at C-3.

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³⁰ CDFG, “Potential Effects of Sediment Control Operations and Structures on Grass Valley Creek and Trinity River Fish and Wildlife,” (September 1977) at 5. In 1979, the Director of the California Department of Water Resources described the control of sediment from Grass Valley Creek as the number one priority (after increased flow) of the Task Force since the program began. Letter from Ronald B. Robie to Billy E. Martin (USBR) dated May 7, 1979 on file at TRBRL.

³¹ Public Law 96-335, 94 Stat.1062 (September 4, 1980).

³² USBR Memorandum from Robert I. Strand to Head, Sedimentation Section dated March 11, 1981, letter from David R. Schuster, Acting Regional Director of USBR to E.C. Fullerton, Director CDFG dated August 19, 1981 and California Department of Water Resources memo from Edwin J. Barnes to Gary Magnuson dated June 16, 1982 at 3 on file at TRBRL.

³³ See Trinity River Restoration Program Task Force, “Action Plan and Budget for Extended Authorization of the Trinity River Basin Fish and Wildlife Restoration Program California” (March 1993) at 3.

³⁴ USFWS, USBIA and USWPRS, Vol. I, “Environmental Impact Statement on the Management of Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California,” (November 1980) at C4-6.

³⁵ Trinity River Restoration Program Task Force, “Action Plan and Budget for Extended Authorization of the Trinity River Basin Fish and Wildlife Restoration Program California,” (March 1993) at 24 (“1993 Action Plan”) on file at TRBRL.

³⁶ 1993 Action Plan, supra at 25.

³⁷ Public Law 102-575, 106 Stat. 4706 (October 30, 1992) at Sec. 3402 (a) and (f).

³⁸ Public Law 102-575, supra at Sec. 3406 (b).

³⁹ Public Law 102-575, supra at Sec. 3406 (b) (23).

⁴⁰ Public Law 102-575, supra at Sec. 3406 (b) (23) (A).

⁴¹ Public Law 102-575, supra at Sec.3406 (b) (23) (B).

⁴² Id.

⁴³ San Francisco Chronicle, October 31, 1992.

⁴⁴ Friant Water Users Authority, “Friant Waterline” (November 1992) at 1.

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⁴⁷ Draft Trinity River Mainstem Fishery Restoration EIS/EIR (October 1999) at 1-13.

⁴⁸ Id.; 59 Fed. Reg. ? (October 12, 1994).

⁴⁹ 59 Fed. Reg. ?

⁵⁰ [1980 EIS cite]

⁵¹ DOI, CVPIA Administrative Proposal on Trinity River (Draft 6/14/96).

⁵² DOI, CVPIA Administrative Proposal on Trinity River (Final) at 4.

⁵³ Final Administrative Proposal, supra at 6.

⁵⁴ Central Valley Project Reform Act ??

⁵⁵ CDFG, “Steelhead Restoration And Management Plan For California,” (February 1996) (“California Steelhead Plan”).

⁵⁶ California Steelhead Plan, supra at 145-146.

⁵⁷ California Steelhead Plan, supra at 146.

⁵⁸ Id.

⁵⁹ Public Law 104-143, 110 Stat. 1338 (May 15, 1996) at Sec. 5.

⁶⁰ CVPIA, supra at sec. 3406 (b) (23).

⁶¹ USBR, Environmental Assessment 1997 Trinity River Interim Fishery Flow Release (May 20, 1997) at 9 (“1997 EA”).

⁶² 1997 EA, supra at 11.

⁶³ USBR, Finding of No Significant Impact 1997 Trinity River Interim Fishery Flow Release (May 20, 1997) at 2 (“FONSI No. 97-07-MP”) and 1997 EA, supra at 9 and 12.

⁶⁴ Id.

⁶⁵ 1997 EA, supra at 9.

⁶⁶ 1997 EA, supra at 17.

⁶⁷ ??

⁶⁸ ??

⁶⁹ ??

⁷⁰ [Glase email]

⁷¹ ??

⁷² TREIS Home Page (September 1998) at 1.

⁷³ Testimony of County of Trinity to State Water Resources Control Board in Bay-Delta Water Rights Hearing (July 1 and 13 and October 14, 1998) at Exhibit 31 dated November 19, 1998 (“Trinity County 1998 Testimony”) on file at Trinity River Basin Resource Library (“TRBRL”)

⁷⁴ Trinity County 1998 Testimony, supra .

⁷⁵ Trinity County 1998 Testimony, supra at Exhibits 15 (pp. 1-3), 17, 18 and 22.

⁷⁶ Id.

⁷⁷ Id. See Article X, Section 2 of the California Constitution and California Water Code section 100.

⁷⁸ Testimony of Secretary Babbitt Before House Resources Committee, Subcommittee on Water and Power on CALFED and CVPIA Programs (May 20, 1999) at ? (“Babbitt 1999 Testimony”).

⁷⁹ Id.

⁸⁰ Id.

⁸¹ USFWS, USBR, Hoopa Valley Tribe and Trinity County, Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report (Final) (October 2000) (“Final EIS/EIR”) at D2-4.

⁸² Id. and Flow Evaluation, supra at xx.

⁸³ Id.

⁸⁴ ??

⁸⁵ USFWS, USBR, Hoopa Valley Tribe and Trinity County, Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report (Final) (October 2000).

⁸⁶ John Howard AP release in November 17, 2000 “San Francisco Chronicle.”

⁸⁷ Jim Schultz, November 18, 2000 “Redding Record Searchlight.”

⁸⁸ National Marine Fisheries Service, “Biological Opinion for the Trinity River Mainstem Fishery Restoration EIS and Its Effects on Southern/Oregon/Northern California Coast Coho Salmon, Sacramento River Winter-run Chinook Salmon, Central Valley Spring-run Chinook Salmon, and Central Valley Steelhead” (October 12, 2000) (“NMFS BA for Listed Fish”); National Marine Fisheries Service, “Biological Opinion of the Effects of Long-term Operation of the Central Valley Project and State Water Project as Modified by Implementing the Preferred Alternative in the Draft Environmental Impact Statement/Environmental Impact Report for the Trinity River Mainstem Fishery Restoration Program” (October 12, 2000).

⁸⁹ NMFS BA for Listed Fish, supra at cover letter p. 2 and at 3 and 27

⁹⁰ NMFS BA for Listed Fish, supra at cover letter p. 1 and at 44-45.

⁹¹ Flow Evaluation, supra at xxix; ?

⁹² NMFS BA for Listed Fish, supra at 28 and 33-34. 50 CFR sec. 402.02 defines “jeopardize the continued existence of” as “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 CFR sec. 402.02 defines “effects of the action” as “refer[ring] to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area”

⁹³ Flow Evaluation, supra at xxix;

⁹⁴ Federation of Fly Fishers v. Daley (N.D. Cal. 10-25-00) Order Granting Plaintiffs’ Motion for Summary Judgment ..., at 8.

⁹⁵

⁹⁶ 16 U.S.C. sec. 1536 (2).

⁹⁷ DEIS/EIR, supra at 3-176.

⁹⁸ ??

Chapter 9: Bad News: The River and the Fishery Cannot be Restored Unless the Dams are Removed, But That Was Not Evaluated. 1999- ?

¹ USFWS and Hoopa Valley Tribe, Trinity River Flow Evaluation Final Report (June 1999) at 92-93 (emphases added) (“TRFE”).

² TRFE, supra at 278 (emphases added).

³ TRFE, supra at 289. Accord USFWS, USBR, Hoopa Valley Tribe and Trinity County, Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report (Final) (October 2000) at D2-4.

⁴ USFWS, USBR, Hoopa Valley Tribe and Trinity County, Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report (Public Draft) (October 1999) at 2-11 to 2-16 and 3-175 to 3-178 (“DEIS/EIR”).

⁵ DEIS/EIR, supra at 3-175. Inriver spawner escapement goals were set in the USFWS *Final Environmental Impact Statement. Trinity River Basin Fish and Wildlife Management Program*. (1983) INT/FES 83-53. These goals refer to estimates of the number of returning fish in each species that could spawn in the river if restoration was completed. DEIS/EIR, supra at B-3.

⁶ DEIS/EIR, supra at 3-174.

⁷ DEIS/EIR, supra at Table 3-13 at 3-159.

⁸ DEIS/EIR, supra at 3-176.

⁹ DEIS/EIR, supra at 2-35 to 2-38 and 5-3 to 5-4.

¹⁰ DEIS/EIR, supra at 2-35 to 2-38.

¹¹ DEIS/EIR, supra at 5-3 to 5-4.

¹² Restoration of pre-project flows and mechanical stream restoration was estimated to achieve 81% of inriver spawner escapement goals. DEIS/EIR, supra at ? It has been estimated that the dams cut off ?percent of spawning habitat. ??

¹³ Mount, Jeffrey F., “California Rivers and Streams The Conflict Between Fluvial Process and Land Use,” University of California Press (1995) at 318-319.

¹⁴ H. Doc. No. 53, 83d Cong., 1st Sess. (1953) at 94 (“H. Doc. No. 53”).

¹⁵ USBR Memorandum from Robert B. Hamilton to Chief, Dam Safety Office, “Preliminary Estimate of Economic Consequences of Dam Failure, Trinity Dam, California (Safety of Dams) (September 9, 1993) at

¹⁶ The DEIS/EIR estimates that there is 30 million cubic yards of sediment currently behind the dams. DEIS/EIR, supra at 2-35.

¹⁷ DEIS/EIR, supra at 2-38.

¹⁸ Public Law 98-541, 98 Stat.2721 (October 24, 1984) at Sec. 2 (a).

¹⁹ DEIS/EIR, supra at 1-4 and n.4 (emphasis added).

²⁰ Id.

²¹ DEIS/EIR Executive Summary, supra at II (emphasis added).

²² Public Law 386, 84 Stat. 824 (August 12, 1955) at Sec 2 (emphasis added) (“1955 Act”).

²³ DEIS/EIR, supra at 1-11. See also Final Flow Evaluation, supra at Executive Summary at xxv and 1. The language quoted is from H. Report No. 602, 84th Cong., 1st Sess. (May 19, 1955) at 4-5.

²² Final Flow Evaluation, supra at 92-95 and 278-280.

²³ Final Flow Evaluation, supra at 279.

²⁴ Final Flow Evaluation, supra at 278.

²⁷ Final Flow Evaluation, supra at Executive Summary at xxxi, 241-258, 279 and Appendix M.

²⁸ Final Flow Evaluation, supra at Executive Summary at xxxi.

²⁹ [max flow altern.]

³⁰ [pre-dam flow]

³¹ DEIS/EIR, supra at Table 3-3.

³² DEIS/EIR, supra at 2-2 and Table 3-3.

³³ DEIS/EIR, supra at Figure 1-2. At page 3-43, the DEIS/EIR stated that the average annual export was 988 TAF.

³⁴ Final Flow Evaluation, supra at xxv.

³⁵ Public Law 102-575, 106 Stat. 4720 (October 30, 1992) at Sec. 3406 (b) (23) (“CVPIA”). The authors of the Final Flow Evaluation carefully worded their statement of purpose stating that the report provided recommendations designed to fulfill the fish “protection mandates of the 1955 Act, the 1981 Secretarial Decision, the 1984 [Act], 1991 Secretarial Decision, the [CVPIA] and the federal trust responsibility to restore and maintain the Trinity River fishery resources.” Final Flow Evaluation, supra at 2. The authors did not state that the report provided recommendations to fulfill the “restoration” mandates of Congress.

³⁶ Final Flow Evaluation, supra at Executive Summary at xxiv.

³⁷ USFWS, USBR, Hoopa Valley Tribe and Trinity County, Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report (Final) (October 2000) at D2-4.

³⁸ Final Flow Evaluation, supra at 216.

³⁹ Indeed, fish populations declined about 90% when releases averaged 10%. [cite]

⁴⁰ DEIS/EIR, supra at 3-157 to 3-160, 3-169 to 3-171 and B-22 to B-27.

⁴¹ DEIS/EIR, supra at 3-158; USFWS, USBR and USBIA, “Final Environmental Impact Statement, Trinity River Basin Fish and Wildlife Management Program,” (October 1983) at viii-ix and Table III.

⁴² DEIS/EIR, supra at 3-170 and 3-175 to 3-176.

⁴³ DEIS/EIR, supra at 2-3. The “preferred alternative” combines the flow schedule and mechanical restoration strategy recommended in the final flow evaluation study. Id.

⁴⁴ DEIS/EIR, supra at 3-169 to 3-176.

⁴⁵ DEIS/EIR, supra at 2-3.

⁴⁶ Id.

⁴⁷ CVPIA, supra at Sec. 3406 (b) (23) (B).

⁴⁸ Final Flow Evaluation, supra at 223-226.

⁴⁹ DEIS/EIR, supra at 3-174.

⁵⁰ Memorandum from DOI Solicitor to Assistant Secretary, Land and Water Resources re Proposed Contract with Grasslands Water District (December 7, 1979) at 3 (“December 1979 DOI Memo”).

⁵¹ December 1979 DOI Memo, supra at 3-4. 1955 Act, supra at Sec. 2.

⁵² H. Report No. 602, 84th Cong., 1st Sess. (May 19, 1955) at 4-5.

⁵³ H. Doc. No. 53, supra at 6; Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs, House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13-15, 1955) at 174 (“April 1955 Trinity Hearings”).

⁵⁴ Id.

⁵⁵ 43 U.S.C. sec. 383.

⁵⁶ Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs, House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13-15, 1955) at 10.

⁵⁷ Permit No. 11973 at Condition 10; Cal. Water Code secs. 10505 and 11460.

⁵⁸ Cal. Water Code sec. 11460.

⁵⁹ County of Trinity v. Andrus (E.D. Cal. 1977) 438 F.Supp. 1368, 1386

⁶⁰ County of Trinity, supra at ?; Cal. Constitution, Article 10, sec. 2.

⁶¹ Memorandum from DOI, BIA Associate Solicitor to Assistant Secretary of Indian Affairs (March 14, 1979) (“March 1979 DOI Memo”); Memorandum from DOI, BIA Associate Solicitor to Assistant Secretary of Indian Affairs (August 17, 1979).

⁶² March 1979 DOI Memo, supra at ?

⁶³ CVPIA, supra at Sec. 3406 (b) (23).

⁶⁴ ?

⁶⁵ Memorandum from USBR Regional Solicitor to Regional Director re Klamath Project (July 25, 1995) at 6-7 (“1995 USBR Memo”).

⁶⁶ 1995 USBR Memo, supra at 7.

⁶⁷ 1995 USBR Memo, supra at 8; DEIS/EIR, supra at 3-211.

⁶⁸ Testimony of Secretary Babbitt Before House Resources Committee, Subcommittee on Water and Power on CALFED and CVPIA Programs (May 20, 1999) at ? (“Babbitt 1999 Testimony”).

⁶⁹ DEIS/EIR, supra at 3-160.

⁷⁰ 64 Fed.Reg. 24049, 24050 (May 5, 1999).

⁷¹ See 16 U.S.C. sec.1536 (a)(2) and 50 CFR sec. 402.02 (definitions of *adverse modification* and *effects of the action*.)

⁷² See Final Flow Evaluation, supra at 216 and 258.

⁷³ DEIS/EIR, supra at 3-176.

⁷⁴ [H. Doc.53 ??]

⁷⁵ See DEIS/EIR, supra at 2-3.

⁷⁶ Final Flow Evaluation, supra at 92-93.

Chapter 10: What Happened to All That Water? 1964-2000

¹ USFWS, USBR, Hoopa Valley Tribe and Trinity County, “Draft Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report,” (October 1999) at Figure 1-2 (“DEIS/EIR”).

² Act of June 17, 1902, 32 Stat. 388; ??

³ H. Rept. No. 602, 84th Cong. (May 19, 1955) at 4 (“H. Rept. No. 62”). Additional water from the Trinity enabled the CVP to use delta winter surplus flows and return flows (35 percent of diversion) from the Sacramento canals unit for irrigation south of the delta. H. Doc. No. 53, 83d Cong., 1st Sess. (January 9, 1953) at 42-43.

⁴ H. Rept. No. 62, supra at 4.

⁵ Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs, House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13-15, 1955) at 8-9..

⁶ H. Rept. 102-576, Part 1, 102d Cong., 2d Sess. (June 16, 1992) at 16 (“CVPIA Report”).

⁶ Id.

⁸ Id.; Central Valley Project The San Luis Unit West San Joaquin Division, Robert Autobee, (Second Draft) Bureau of Reclamation History Program, Denver, Colorado, Research on Historic Reclamation Projects (1994) (“USBR History Program—San Luis Unit”).

⁹ Id.

¹⁰ Id.

¹¹ Id.

¹¹ Hundley, Jr., Norris, “The Great Thirst Californians and Water, 1770s-1990s,” University of California Press (1992) at 255-256 (“The Great Thirst”); Reisner, Marc, “Cadillac Desert The American West and Its Disappearing Water,” Penguin Books (1993) at 337-341 (“Cadillac Desert”); U.S. Department of Interior, Water and Power Resources Service, “Acreage Limitation, Westlands Case Study Appendix Volume 1,” (1980) at 2-6 (“USDI Westlands Case Study”).

¹³ The Great Thirst, supra at 256.

¹⁴ The Great Thirst, supra at 256 and 266.

¹⁵ The Great Thirst, supra at 255.

¹⁶ Id.

¹⁷ Id.

¹⁸ The Great Thirst, supra at 265.

¹⁹ The Great Thirst, supra at 265-266.

²⁰ The Great Thirst, supra at 266.

²¹ Hearings on “Federal Assistance for Small Reclamation Projects” before Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives (84th Cong., 1st Sess.) February 9-11, 1955 at 93.

²² Cooper, Erwin, “Aqueduct Empire,” The Arthur H. Clark Company (1968) at 161; Simmons, E., “Westlands Water District, The First Twenty-Five Years 1952-77,” ? (1983) at ? (“Simmons WWD”).

²³ USBR History Program—San Luis Unit, supra.

²¹ Id.

²⁴ H. Report No. ? (85th Cong., 2d Sess.) (1958) at 83.

²⁵ Statement of Harry H. Horton, attorney for the Irrigation Districts Association of California in Hearings on “Acreage Limitation (Reclamation Law) Review” before Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, U.S. Senate (85th Cong., 2d Sess.) April 30 and May 1, 1958 at 87-88.

²⁶ USBR, “San Luis Unit, Central Valley Project, California, A Report on the Feasibility of Water Supply Development,” (May 1955) at 88 (“1955 San Luis Feasibility Report”). 44 corporations held about 50% of the acreage under consideration in excess holdings.

Id.

²⁷ USBR, “Special Task Force Report on San Luis Unit” Pursuant to Public Law 94-46 (1978) at 193-211 (“1978 Special Task Force Report”).

²⁸ 1955 San Luis Feasibility Report, supra at 5 [cite re sodium ? – probably Special Task Force]

²⁹ Wilson, Bryan J., “Westlands Water District and Its Federal Water: A Case Study of Water District Politics,” 7 *Stanford Environmental Law Journal* 187, 192 (1987-88) (“Wilson re Westlands”).

³⁰ Wilson re Westlands, supra at 208.

³¹ USDI Westlands Case Study, supra at 2-9; Wilson re Westlands, supra at 192 n.21.

³² Wilson re Westlands, supra at 205 n. 77 and 209-210. Before 1930, Boston Land Company bought 40,000 acres in what would be the WWD. Wilson re Westlands, supra at 190.

³³ USDI Westlands Case Study, supra at 2-12.

³⁴ Villarejo, Don, “How Much is Enough Federal Water Subsidies and Agriculture in California’s Central Valley,” California Institute for Rural Studies, Inc. (1986) at 80 (“Villarejo 1986”).

³⁵ ³⁵ Hearings before Subcommittee on Irrigation and Reclamation of Committee on Interior and Insular Affairs House of Representatives (84th Cong., 1st Sess.) on H.R. 4663 (April 13, 14 and 15, 1955) at 19-20 and 143 (“April 1955 Trinity Hearings”).

³⁶ [Bain p. 404]

³⁷ [more research in Engle’s papers]

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³⁹ H. Document No. 281 (84th Cong., 2d Sess.) January 3, 1956 at 16-18; April 1955 Trinity Hearings, supra at 4, 64-66 and 180; 1955 San Luis Feasibility Report, supra at 7-8 and 48. The 1955 Feasibility Report stated that the San Luis Unit would add 756 MKW to the pumping requirements of the CVP. 1955 San Luis Unit Feasibility Report, supra at 48.

⁴⁰ January 22, 1955 letter from Engle to Ohlson and February 28, 1955 Release in Clair Engle Collection, Meriam Library, California State University, Chico, Special Collections Department (“Engle Collection CSUC”); See also April 1955 Trinity Hearings, supra at 20. According to Engle, the San Luis pumps were the best use of low cost power in the state. February 12, 1955 letter from Engle to Suttch in Engle Collection CSUC.

⁴¹ April 1955 Trinity Hearings, supra at 180.

⁴² Hearings on San Luis Unit, Central Valley Project, California before Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives (86th Cong., 1st Sess.) March 16, 17 and 19, 1959 at 33 and 134-135; 1955 San Luis Feasibility Report, supra at 8.

⁴³ 1955 San Luis Feasibility Report, supra at 6-10.

⁴⁴ 1955 San Luis Feasibility Report, supra at 12.

⁴⁵ Hearings on San Luis Unit, Central Valley Project, California before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives (84th Cong., 2d Sess.) May 11 and 14, 1956 at 19 (“San Luis 1956 Hearings”).

⁴⁶ San Luis 1956 Hearings, supra at 26.

⁴⁷ Id.

⁴⁸ San Luis 1956 Hearings, supra at 28.

⁴⁹ San Luis 1956 Hearings, supra at 49.

⁵⁰ Id.

⁵¹ Id.

⁵² Id. During the same trip east, O’Neill and Heffington appeared together before the Senate counterpart to Engle’s house subcommittee on irrigation and reclamation. Hearings on San Luis (California) Irrigation Development before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, U.S. Senate (84th Cong., 2d Sess.) May 11,12 and 14, 1956 at 108-135.

⁵³ 1978 Special Task Force Report, supra at 46

⁵⁴ Public Law 86-488, 74 Stat. 156 (June 3, 1960).

⁵⁵ 1978 Special Task Force Report, supra at 42-44.

⁵⁶ USDI Westlands Case Study, supra at 2-11.

⁵⁷ 1978 Special Task Force Report, supra at 47.

⁵⁸ 1978 Special Task Force Report, supra at 51.

⁵⁹ 1978 Special Task Force Report, supra at 58.

⁶⁰ 1978 Special Task Force Report, supra at 60.

⁶¹ USDI Westlands Case Study (Vol. 2), supra at C-26.

⁶² 1978 Special Task Force Report, supra at 38.

⁶³ USDI Westlands Case Study (Vol 2). supra at C-28.

⁶⁴ National Research Council (U.S.). Committee on Irrigation-Induced Water Quality Problems, “Irrigation-Induced Water Quality Problems : What Can Be Learned From the San Joaquin Valley Experience?”, (June 1989) at 54 (“NRC 1989”).

⁶⁴ NRC 1989, supra at 21.

⁶⁶ ??

⁶⁷ DEIS/EIR, supra at Figure 1-2.

⁶⁸ 1978 Special Task Force Report, supra at 161.

⁶⁹ 1978 Special Task Force Report, supra at 161-162.

⁷⁰ 1955 San Luis Feasibility Report, supra at 60.

⁷¹ 1955 San Luis Feasibility Report, supra at 73-74.

⁷² Public Law 86-477, supra at sec. 1 (a) (2).

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- ⁷³ 1978 Special Task Force Report, supra at 164. See Firebaugh Canal v. U.S. (9Cir. 2000) 203 F.3d 568, 571.
- ⁷⁴ Firebaugh Canal, supra at 571.
- ⁷⁵ Id.; 1978 Special Task Force Report, supra at 164-165.
- ⁷⁶ 1978 Special Task Force Report, supra at 164-165.
- ⁷⁷ Firebaugh Canal, supra at 571; 1978 Special Task Force Report, supra at 164; NRC 1989, supra at 22.
- ⁷⁸ Special Task Force Report, supra at 165; Smith, Felix E., “The Kesterson Effect: Reasonable Use of Water and the Public Trust,” (1996) 6 San Joaquin Agricultural Law Review 45, 46 (“The Kesterson Effect”).
- ⁷⁹ The Kesterson Effect, supra at 46.
- ⁸⁰ Id. Westside farm drainage contains salt, nitrates, arsenic, boron, cadmium, chromium, mercury, molybdenum, selenium, and pesticides (including diazinon, chlorpyrifos and others). The Fresno Bee, “Rescuing the San Joaquin – Westside Farming” (1999).
- ⁸¹ The Kesterson Effect, supra at 47.
- ⁸² Id.
- ⁸³ Id.
- ⁸⁴ Id.
- ⁸⁵ Id.
- ⁸⁶ Id.
- ⁸⁷ Firebaugh Canal, supra at 572.
- ⁸⁸ Id.
- ⁸⁹ The Fresno Bee, “Rescuing the San Joaquin – Westside Farming” (1999). By 1989, the DOI projected cleanup and monitoring costs in excess of \$60 million. NRC 1989, supra at 2?.
- ⁹⁰ Brazil, Eric, “Intersexed rodents found at Kesterson,” (S.F. Examiner June 11, 1999).
- ⁹¹ Sumner Peck Ranch, Inc. v. Bureau of Reclamation (E.D. CA 1993) 823 F. Supp. 715, 722.
- ⁹² Sumner Peck Ranch, supra at 724.
- ⁹³ Firebaugh Canal, supra at 572.
- ⁹⁴ Id.
- ⁹⁵ ??
- ⁹⁶ Firebaugh Canal, supra at 576-578.
- ⁹⁷ Firebaugh Canal, supra at 577-578. The USBR reported costs of San Luis drainage studies in excess of \$54 million as of September 30, 1997. Central Valley Project Statement of Construction Cost and Repayment (September 30, 1997) at Schedule No. 4.
- ⁹⁸ Firebaugh Canal, supra at 578.
- ⁹⁹ Purkey, David R. and W.W. Wallender. 2000. “Land Retirement Strategies For California’s Western San Joaquin Valley With Competing Habitat Restoration And Sustainable Agricultural Production Objectives,” *Journal of Irrigation and Drainage Engineering* (Submitted).
- ¹⁰⁰ Id.
- ¹⁰¹ Id.; California Department of Water Resources, “The California Water Plan Update Bulletin 160-98,” (1998) at Appendix 6F-1.
- ¹⁰² Grossi, Mark, “Bureau weighs land retirement Valley’s west side may benefit from a water-saving plan,” *Fresno Bee* (August 2. 1999).

¹⁰³ Howard, John, "Feds may pay growers top dollar for damaged land," *Contra Costa Times* (May 18, 2000).

¹⁰⁴ Nickles, Jim, "Drainage Dilemma Still Not Settled . . .," *Record* July 10, 2000; Doyle, Michael, "Valley drain plan washed up . . .," *Fresno Bee* (June 29, 2000).

¹⁰⁵ The O'Neill family established one of three large-scale farms before 1930. Wilson re Westlands, *supra* at 190. In 1985, O'Neill Farming Enterprises operated 6,097 acres within the WWD that were eligible to receive water from the CVP. Villarejo 1986, *supra* at 75-76 ("Villarejo 1986"). In 1985, Edwin R. O'Neill owned 1,264 acres eligible for project water. Villarejo 1986, *supra* at 80.

¹⁰⁶ [FOTR Spring/Summer 1999]

¹⁰⁷ Grossi, Mark, "Water Swap Plan Focuses on Drought," *Fresno Bee* (June 27, 2000).

¹⁰⁸ Vogel, Nancy, "U.S. to cut western San Joaquin farmers' water 50%," *Sacramento Bee* (February 18, 2000); Grossi, Mark, "Valley focus of \$10m water deal . . .," *Fresno Bee* (February 18, 2000).

¹⁰⁹ Testimony of David L. Orth before Subcommittee on Water and Power, House Committee on Resources (April 15, 1998).

¹¹⁰ Editorial, "Mendota's water mess . . .," *Sacramento Bee* (May 6, 1999).

¹¹¹ *Id.*

¹¹² Letter to the Editor from David L. Orth, *Sacramento Bee* (June 1, 1999).

¹¹³ Editorial, "Water fight shows need for corporate welfare reform," *Eureka Times Standard* (May 19, 2000).

Chapter 11: Was This A Reasonable Use of Water ?

¹ Art. 10, Sec. 2.

² State Water Rights Board, Permit Order No. 124 (September 10, 1959) at 5, par. 13.

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⁴ USBR, “Central Valley Project 1963 Annual Report” at 31 (“1963 CVP Annual Report”).

⁵ Id.

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¹² USBR,

¹³ McClurg, Susan, “Sacramento-San Joaquin River Basin Study, Report to Western Water Policy Review Advisory Commission,” (August 1997) at 26-28.

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¹⁶ H. Doc. 281, supra at 48

¹⁷ 1963 CVP Annual Report, supra at 31.

¹⁸ Committee on Irrigation-Induced water Quality Problems, Water Science and Technology Board, Commission on Physical Sciences, Mathematics, and Resources, National Research Council, “Irrigation-induced water quality problems : what can be learned from the San Joaquin Valley experience?” (June 1989).

¹⁹ General Accounting Office Report to the Chairman, Subcommittee on Water and Power, Committee on Energy and Natural Resources, U.S. Senate, “Water Subsidies: Impact of Higher Irrigation Rates on Central Valley Project Farmers” (April 14, 1994) (GAO/RCED-94-8).

²⁰ General Accounting Office Report to the Ranking Minority Member, Committee on Resources, House of Representatives, “BUREAU OF RECLAMATION - INFORMATION ON ALLOCATION AND REPAYMENT OF COSTS OF CONSTRUCTING WATER PROJECTS,” Appendix III (July 1996) (GAO/RCED-96-109).