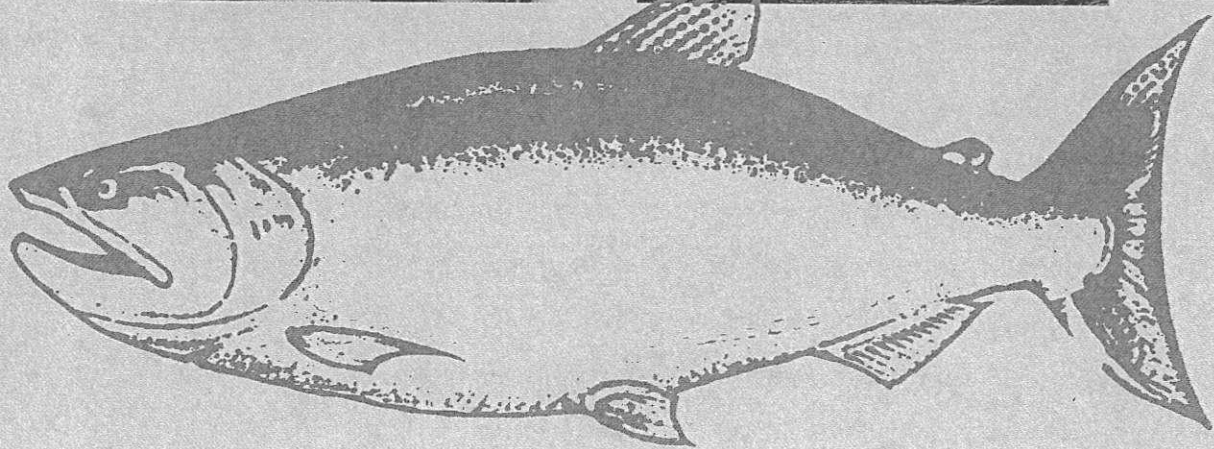
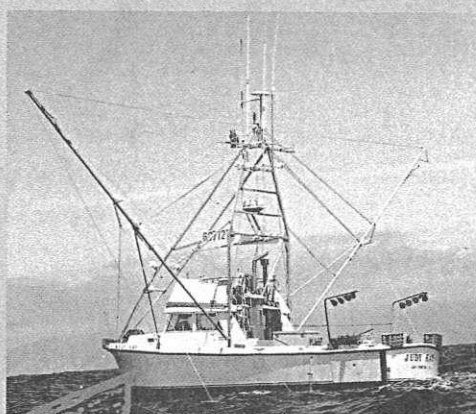
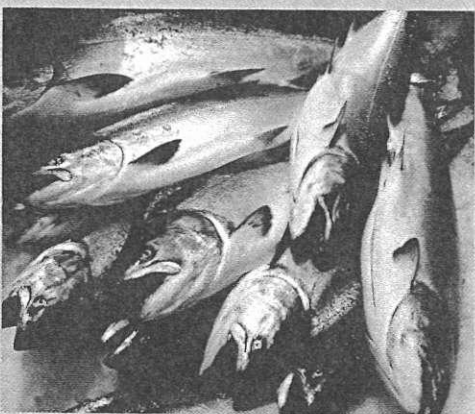
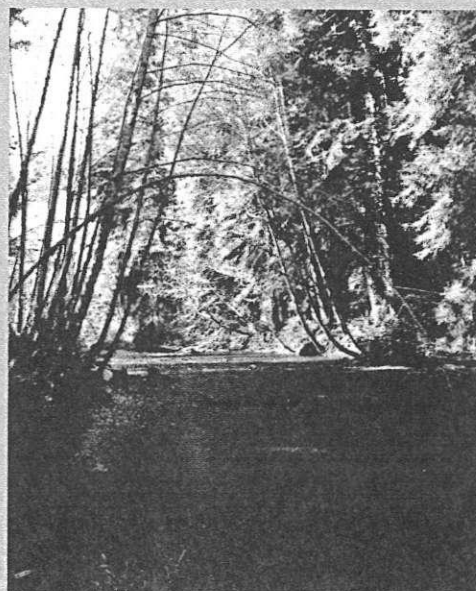
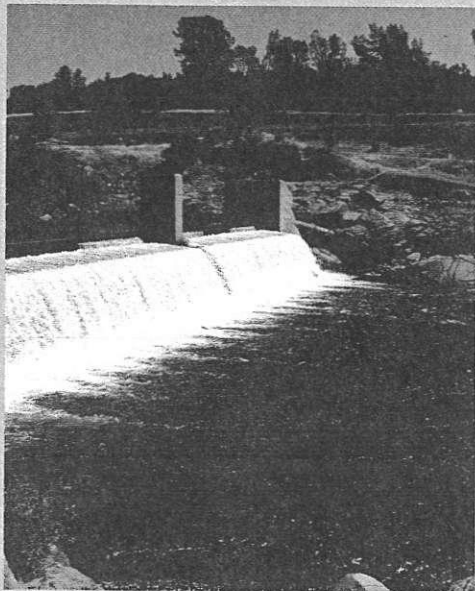




Commercial Salmon Stamp

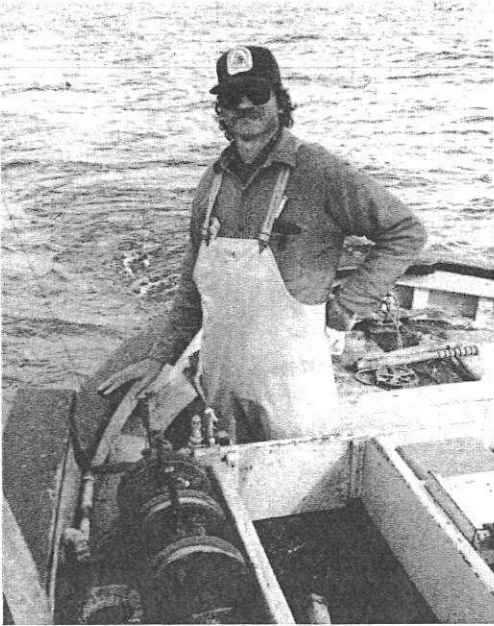
Commercial Salmon Trollers Advisory Committee



This booklet was produced by the Commercial Salmon Trollers Advisory Committee (Commercial Salmon Stamp) under contract with the California Salmon Council. The Committee would like to recognize the Department of Fish and Game and the following individuals for assisting in the production of this booklet: Jerry Ayers, David Bitts, Mitch Farro, Zeke Grader, Bob Mandella, Diane Pleschner, Jimmy Smith, John Staiti and Roger Thomas. The Committee also recognizes the achievements made by Nat Bingham, and the dedicated commercial and charter boat industry fishermen.

Nat Bingham

This booklet is dedicated to Nat Bingham, without whose efforts there would most likely be no commercial salmon fishery in California today. Nat initiated, organized, and shepherded so many projects essential to the continuation of the fishery that we probably couldn't list them all in this booklet. They included helping found PCFFA in the '70s, successfully opposing the Peripheral Canal, in the early 1980s, and initiating the Winter Run Captive Broodstock Program and getting the legislation passed that made it happen, as well as getting the Spring Run Work Group up and running in the early '90s.



His love of fishing and knowledge of salmon biology caused Nat Bingham to spend more time on land working to remove environmental barriers

Nathaniel Shaw Bingham, (1939-1998), was a husband, father, civic leader, fisherman, historian, environmentalist, activist, and consensus builder. Nat was all these and more.

A native of New London, Connecticut, Nat came from a prominent New England family. He was named after an ancestor who had been a whaling captain and arms supplier to George Washington. His great-great grandfather, Hiram Bingham, and great grandfather, Hiram II, were early Congregationalist missionaries to the Gilbert and Sandwich (Hawaiian) Islands. His grandfather, Hiram III, was the Yale archaeologist who led the exploration discovering the Incan city of Machu Picchu in 1911 and later became Governor and U.S. Senator from Connecticut.

Nat carried on the family tradition of public service through his efforts to protect and restore our nation's fisheries. Nat's professional history is impressive and demonstrates his boundless energy, dedication, and ability.

Growing up in New England and the Bahamas, Nat developed a relationship with the sea which led him to begin fishing in Northern California nearly forty years ago. In 1964 he bought his first boat and began commercial fishing for salmon, crab, and albacore tuna. He sold his last boat, FV Elliot-M, in 1995, after his more than full-time work on salmon restoration and fish habitat issues had kept him off the water for several years. During his early years he took on the first of many Northwest fisheries leadership positions, serving as president of his local fisherman's association, the Fort Bragg Salmon Troller's Marketing Association. In 1982, Nat became president of the Pacific Coast Federation of Fishermen's Associations (PCFFA, the largest commercial fishermen's organization on the west coast), a position he held for nine years. He served as the organization's Habitat Coordinator at the time of his death. Nat received the fishing industry's highest award, "Highliner of the Year", in 1989. In 1993, at President Clinton's Forest Conference in Portland, Oregon, Nat was the leading fishing industry representative and delivered eloquent testimony on the declines of the salmon fishery and healthy salmonid habitat. *(Nat Bingham continued on page 23)*



A true steward, Nat contributed more to the cause than he could harvest

"Everyone has to be able to envision a future."

—Nat Bingham

History and Background

California has a long tradition of harvesting salmon for food. With the coming of settlers and gold miners to California, commercial gillnetting began as early as 1851 on the Sacramento River. The spawning runs awed those early fishermen; the fish were large and their huge populations seemed inexhaustible. All too soon the runs began to decline as sediment from hydraulic mining washed into the rivers, choking spawning gravels and smothering juvenile salmon.

As California's human population grew, some of the nation's first environmental protection laws were enacted by the State of California to prevent mining debris from damaging the Sacramento and Feather rivers. Just as salmon runs were beginning to recover, irrigated agriculture began to develop, driven by droughts and the need to feed California's growing population. Hundreds of small dams and diversions were built in the Central Valley for hydropower and irrigation; then, beginning in the 1940's, and continuing today, the largest water diversion and delivery systems in the world were constructed. Unfortunately, mitigation for losses of salmon caused by the water projects was all too often an afterthought, insufficient to maintain runs at pre-project levels, or nonexistent.

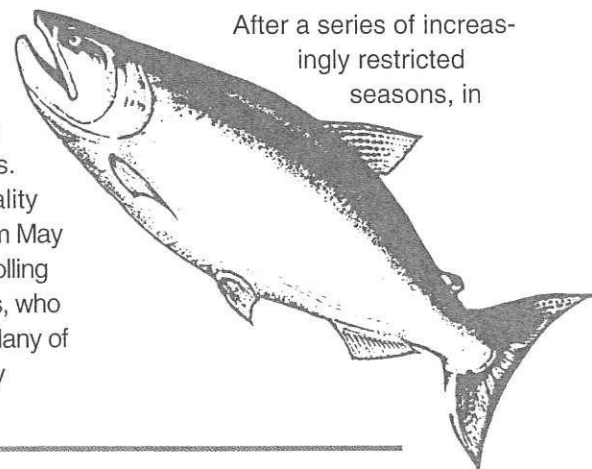
Below some of the largest dams, salmon hatcheries were constructed to mitigate for the thousands of miles of habitat lost to dam construction. The hatcheries produced fish, but not enough to stem the tide of decline, not even in the rivers where hatcheries were built. In undammed drainages, problems caused by logging, road building, livestock grazing, irrigation, and other land-use practices added

tremendously to the overall decline in salmon numbers. In dammed drainages where hatcheries were built, success in restoring salmon numbers has been mixed. In California's Central Valley drainage, where five major production hatcheries attempt to mitigate losses of salmon from dams, fall-run chinook salmon populations appear to have responded well to hatchery culture, while the spring and winter runs have declined dramatically. But throughout the Central Valley, year after year most returning spawners (in recent years usually far more than the escapement goal) spawn in gravel but probably came from hatcheries. Hundreds of diversions remain unscreened in spite of the excellent work by DFG's screen shops, while the Delta pumps that deliver water to the south remain a formidable obstacle for juvenile salmon trying to find the ocean.

Though ocean trolling began in the early 1900's, most commercial salmon fishing in California was once done with gillnets in the rivers. With statutory closing of the last such fishery in 1957, ocean trolling became the only way of commercially landing salmon in California. In recent years, mooching (drifting with rod-and-reel gear) has also become popular. With either method, California commercial salmon fishermen work from relatively small, ocean-going boats equipped with what amounts to numerous heavy-duty barbless hook-and-line fishing rigs. This technique produces high-quality fresh salmon available to market from May through September. Most salmon trolling vessels are owned by their operators, who work alone or with one deckhand. Many of the top producing boats are fished by husband-and-wife teams.

Salmon trolling became more than just an industry. A unique subculture, dependent on the annual foraging movements of California salmon along the Pacific coast, developed in small coastal communities. Some fishermen acquired larger boats capable of following salmon at sea as they migrate along the coast, while others followed the fish by trailering their small boats from port to port. As the salmon troll fishery grew, the economies of coastal ports along California's coast from Morro Bay to Crescent City developed an infrastructure and support industry based on salmon landings. It has been estimated that by 1980, as many as 50,000 California jobs were based on recreational and commercial salmon fisheries.

As habitat loss drove salmon stocks into decline, state and federal fishery managers used the powers granted them under the Magnuson Fishery Conservation and Management Act of 1976, which created the PFMCA, to recommend ever more restrictive fishing seasons and quotas on the fishery. It would be a decade before federal fisheries managers would acknowledge that habitat loss, not over-fishing, was causing salmon runs to decline.



After a series of increasingly restricted seasons, in

1985, the North Coast from Shelter Cove to Crescent City was closed to commercial salmon fishing. Since then, that area has had token fishing seasons at best. Following several years of negotiated allocations of harvestable Klamath fall chinook between the Yurok and Hoopa Tribes and nontribal commercial and sports fishermen, the federal government allocated half the harvestable Klamath fish to the tribes in 1993, effectively closing the ocean north of Point Arena to commercial fishing except for token, late-season fisheries. The commercial and sport salmon fishing industries bore, and continue to bear, the brunt of regulatory action imposed in the name of salmon recovery. As the 21st Century begins, it is as yet unclear whether this trend will continue, though signs and actions from state and federal regulatory agencies indicate that it will. The federal listing of coastal fall chinook, for example, has at this writing had minimal effect on land-use practices, but has on one occasion severely restricted ocean fishing opportunity.

Commercial trollers responded to the reductions in their seasons by sponsoring state legislation to establish a limited entry system, enacted in 1983. Limited entry restricts the number and overall fishing capabilities of salmon fishing vessels, to prevent overcapitalization in the fishery. There were about 7000 permitted salmon vessels when limited entry began; now there are less than 2000.

More significantly, working through PCFFA, commercial salmon trollers undertook a comprehensive effort to reform California water and land use policies to improve freshwater habitat conditions for salmon. This was an ambitious and politically difficult effort which the PCFFA board knew would take years to be successful. Powerful interests stood in the way of reform. To keep the fishery viable in the mean-

time, fishermen had to turn to more effective artificial propagation. Their hope was that as policy and regulatory reforms created long-term habitat protection and restoration, emphasis could be shifted toward natural production, at least in undammed streams. In drainages with irreparable habitat loss, either from dams or from damaging land use, commercial and sport fishermen and responsible, realistic members of the scientific and environmental communities agreed that salmon propagation through hatcheries was the only realistic



Typical salmon trollers moored at Bodega Bay

means available to restore salmon numbers. As an initial effort to address short-term production needs, in 1978 PCFFA sponsored legislation, carried by State Senator Barry Keene, which created the Commercial Salmon Trollers Enhancement and Restoration Program (Salmon Stamp Program).

The Salmon Stamp concept was simple: fishermen would tax themselves to pay for increasing freshwater production of young salmon. Coded-wire tag recoveries in the troll fishery showed remarkable returns from DFG's pilot program to rear hatchery

fish to yearling size. PCFFA proposed to supplement funding for DFG through self-taxation as a way to expand this pilot program, thus increasing the numbers of salmon available for ocean harvest. Fishermen believed that as salmon landings increased, the program could be augmented.

The self-taxation program required purchase of a "stamp," the commercial fishing salmon stamp, in addition to the basic commercial fishing license. The Salmon Stamp Program began in 1979 with a \$30 stamp, matched by state funds. The program reared one million surplus hatchery salmon to yearling size in an unused spawning channel at Mokelumne River Hatchery. When these fish were ready for their journey to salt water, they were trucked to release sites in the San Francisco Bay area that were far enough downriver to avoid the flow of water drawn to the large south-delta pumping plants. Bypassing the Delta pumps has substantially increased survival of juvenile salmon and, hence, salmon landings.

Since landings of the trucked yearling fish showed that the pilot Salmon Stamp Program was a profitable investment for fishermen, PCFFA returned to the Legislature to expand the scope of the program to include habitat and other salmon restoration work. Senator Keene authored legislation, passed in 1982 and modified in 1986, increasing the base fee of the Salmon Stamp to \$85 (\$30 from each stamp sold is still directed to the rearing program). In addition, when prior-year commercial landings of salmon exceed 3 million pounds, the fee increases in \$12.50 increments for each 250,000 pounds landed to a maximum fee of \$260. In 1989, following the record harvest of 14 million pounds, the stamp fee was \$260.

In 1992, following a mediocre season of 3.7 million pounds, the salmon stamp cost \$110. Both vessel operators and crew members are required to purchase a stamp.

The commercial passenger fishing vessel fleet joined the program in 1987. The recreational industry, recognizing that their livelihoods also depended on salmon, wanted to do its part in helping to restore California's salmon fishery. Operators and crew members of commercial passenger salmon fishing vessels are now required to buy a stamp. The participation of this segment of the recreational fishery in the Salmon Stamp Program reflects the long history of cooperation and mutual effort to restore fisheries among the many harvesters of salmon in Northern California.

Current law provides that the program must be reauthorized every five years, insuring that the stamp fee will continue only so long as the program is supported by the commercial fishing and commercial passenger salmon fishing vessel industries.

In addition, legislation in the mid 1990's provided that DFG could accept donations, lawsuit settlements, bequeaths, or grants from almost any source, for deposit into the Salmon Stamp Account. Approximately \$500,000 in grants have been deposited so far. To date, most of this money has come from the U.S. Bureau of Reclamation (USBR) to assist in restoration of salmon populations affected by operations of the federal Central Valley Project. Another major contribution came through a grant of \$150,000 from the U.S. Department of Commerce, Economic Development Administration, for salmon restoration projects employing displaced commercial fishermen on coastal streams north of the Golden Gate.

The Salmon Stamp Program is directed and overseen by the Commercial Salmon Trollers Advisory Committee (Stamp Committee), made up of four commercial salmon fishermen, their alternates, one commercial passenger salmon fishing vessel operator, an alternate, and a representative of DFG. By law, only the Stamp Committee may recommend Salmon Stamp funding for a project to benefit salmon.

The Stamp Committee has always, and successfully, operated on the principle of unanimity in making funding recommendations. Since commercial fishermen are paid for results, not for effort, the participation of salmon trollers on the Stamp Committee has led to extremely efficient use of fishermen's money in fulfilling the Stamp's purpose, which has always been to put as many fish as possible on the deck per dollar spent.

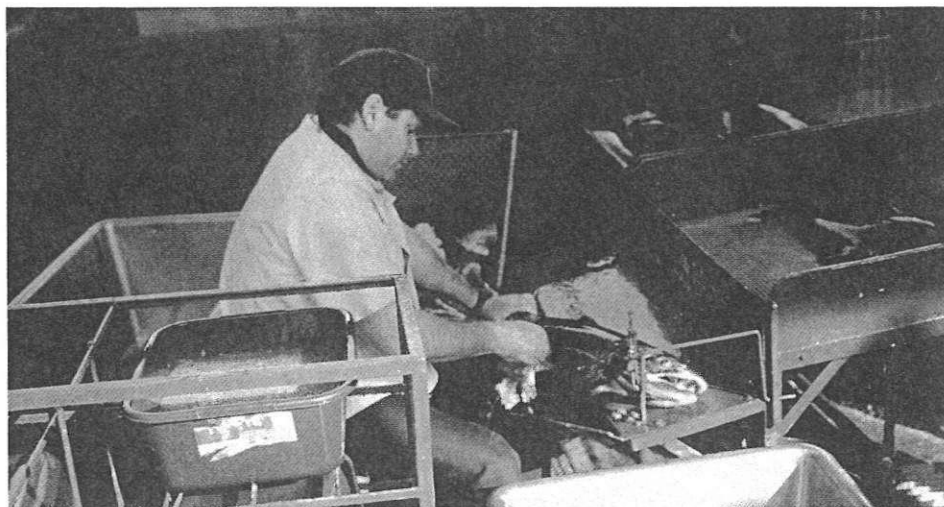
Soon after its formation, the Stamp Committee realized that the program should expand beyond rearing salmon in hatcheries. While hatchery enhancement would remain the Stamp Fund's flagship program, annually producing four million fish (two million under the statutory rearing program and another two million through an ongoing Salmon Stamp Program funding commitment at Thermalito Annex, an adjunct to the

Feather River Hatchery, the Committee would also fund educational programs and habitat and other restoration work to assist in recovery of naturally spawning salmon throughout California.

The Stamp Committee began by developing innovative, small-scale bioenhancement projects based on the hatchbox concept. These projects were designed to "jump start" naturally spawning salmon in fish-depleted watersheds, using portable equipment. After each run of fish was restored, the project would be moved to another site.

The Salmon Stamp Committee has invested in cost-effective small-scale habitat restoration projects as opportunities have arisen. In addition, the Program has a long history of providing "seed money" to show industry support for worthwhile projects. The "seed money" can often jump start a project so that it can attract larger grants and other sources of funding.

Looking forward to a long-term investment in the future, the Committee decided to dedicate \$10,000 annually to programs which would develop educational materials, foster the environmental ethic in schools, and make the public aware of the commitment of commercial and sport fisheries to salmon restoration.



In the fall hatchery staff recover salmon eggs to incubate

Commercial Salmon Stamp Projects Supported

- ▲ **Large-Scale Hatchery Enhancement**
- ▲ **Small-Scale Enhancement**
- ▲ **Habitat Restoration**
- ▲ **Education**

Large-Scale Salmon Enhancement

Mokelumne River Hatchery

Extended salmon rearing at Mokelumne River Hatchery was the original Salmon Stamp project. Initially, the project reared a million yearling-sized salmon and trucked them for release in the San Francisco Bay area, past the influence of the huge south-Delta pumps. By statute, DFG rears an additional one million salmon, with costs paid from other DFG funds. Annual operation and maintenance costs in the early years averaged about \$100,000, one-half of which was paid from Salmon Stamp funds. The program continues to rear two million yearling salmon for an annual total cost of about \$210,000, borne equally by Salmon Stamp and other DFG funds. These salmon are in addition to salmon reared at the hatchery as mitigation for losses caused by completion and operation of Camanche Dam, owned by the East Bay Municipal Utility District.



The first Salmon Stamp project was initiated at the Mokelumne River Hatchery

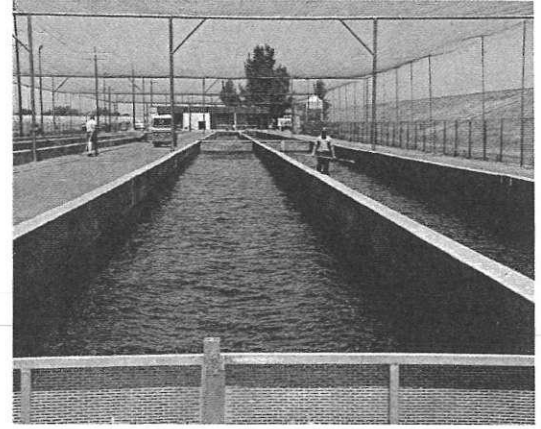
The Salmon Stamp Program has also made substantial funding commitments for equipment and capital improvements at Mokelumne River Hatchery. An initial two-year project converted old gravel-lined spawning channels at the hatchery to concrete-lined raceways, paid for construction of bird exclusion cages (without which predatory birds can kill large numbers of small salmon at hatcheries), and purchased feed trucks and other sorely needed hatchery equipment. Project costs were \$264,500 for the initial upgrade. Since then the Stamp Program has continued to make significant improvements at Mokelumne River Hatchery, including construction of a new expanded hatchery building in 1994.

Merced River Hatchery

This small but productive DFG fish facility located at Snelling was taken under care of the Salmon Stamp Program through the strong support of Stamp Committee member Dave Danbom. A long series of improvements resulted at Merced, beginning with upgrades to an old spawner trap and continuing with construction of new raceways. Part of the raceway construction costs was paid from funds made available under an agreement between DFG and the Department of Water Resources to mitigate for salmon losses at the south Delta water diversion pumps operated by the state and federal governments. Merced River Hatchery is now a full production hatchery, in large part as a result of Salmon Stamp Program involvement. This facility helps maintain San Joaquin fall-run chinook salmon, and plays a particularly important role in insuring against loss of this salmon run during dry years when natural flows in the Merced River and the San Joaquin River below its confluence with the Merced are insufficient either for spawning or for survival of outmigrating smolts.

Thermalito Afterbay Salmon Rearing

Salmon yearling production at this rearing facility, an adjunct to Feather River Hatchery, is funded in part by the Salmon Stamp Program. The Stamp Committee invests about \$180,000 annually for this rearing project. The two million yearling-sized fish reared there are trucked downriver for release below the Sacramento-San Joaquin Delta. The Stamp Program has also contributed regularly to this operation through purchase of equipment needed to implement the rearing program successfully.



Overview of Thermalito rearing facility, Oroville

Sacramento Winter Run Chinook Salmon Captive Broodstock Program

This project was conceived by an ad-hoc committee which brought biologists from the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and Department of Fish and Game (DFG) together with fishermen from PCFFA, the Tyee Club of San Francisco, and the Golden Gate Fishermen's Association, which represents the California commercial passenger fishing vessel fleet. This committee, operating under the principle of collaborative partnerships, proposed rearing 1,000 winter run chinook salmon to adults in captivity for breeding as insurance against losing this endangered run and to help maintain what remained of its genetic variability. While captive rearing significantly lessens the very high mortality suffered by naturally or hatchery spawned juvenile winter-run chinook salmon as they run the gauntlet of unscreened diversions and pumps between the upper Sacramento River or Coleman Hatchery and the Golden Gate, precautions must be taken to ensure population viability. For this reason the project adopted strict protocols to ensure that genetic variability of the endangered winter run would not be lessened further by breeding small numbers of individuals in captivity, a danger that may become acute, even to the point of extinction, with small populations of living organisms. In essence, the progeny of captive-reared fish are released into the wild, while the seed for each generation of captive-reared fish are taken from the wild, so no genetic line experiences more than one generation of captivity in succession.

The Salmon Stamp Program provided \$25,000 in seed money for this state-of-the-art project. Over a million dollars in initial funding for this multi-million dollar project were leveraged by the Stamp Program decision to support the project. Rearing facilities were constructed at the Bodega Marine Laboratory of the University of California at Davis and at the California Academy of Science's Steinhart Aquarium in San Francisco. The Bodega Marine Lab has led a dedicated team of scientists operating this project. Genetic research being conducted as part of the project may lead to new stock identification methods that can be used in the salmon fishery, at production hatcheries, and for monitoring naturally spawning populations of salmon.

Sacramento Winter Run Chinook Salmon Recovery Assistance

The California commercial salmon fishing and commercial passenger salmon fishing vessel industries, through the Salmon Stamp Program, have long been supportive of efforts to restore protected salmon. In the early 1990's, a Stamp Program funding commitment made it possible for DFG to hire a biologist whose sole duty was coordinating statewide efforts to restore endangered Sacramento winter-run chinook salmon. The Stamp Program also provided a portion of funding for a captive broodstock project, a joint effort that included U.C. Davis, DFG, and several other state and federal agencies, to rear Sacramento winter-run chinook salmon in a carefully controlled and genetically monitored hatchery environment. This project was an almost-last-ditch effort which had become necessary after winter-run numbers declined precipitously for reasons quite apart from fishing activities. Most recently, the Stamp Program assisted the winter-run recovery effort by providing partial funding for construction and first-year operating costs for a winter-run rearing facility on the Sacramento River just downstream from Shasta Dam. The project is a cooperative effort that includes the U.S. Bureau of Reclamation and the U.S. Fish & Wildlife Service (USFWS).

Sacramento Winter Run

Chinook Salmon Supplementation Facility

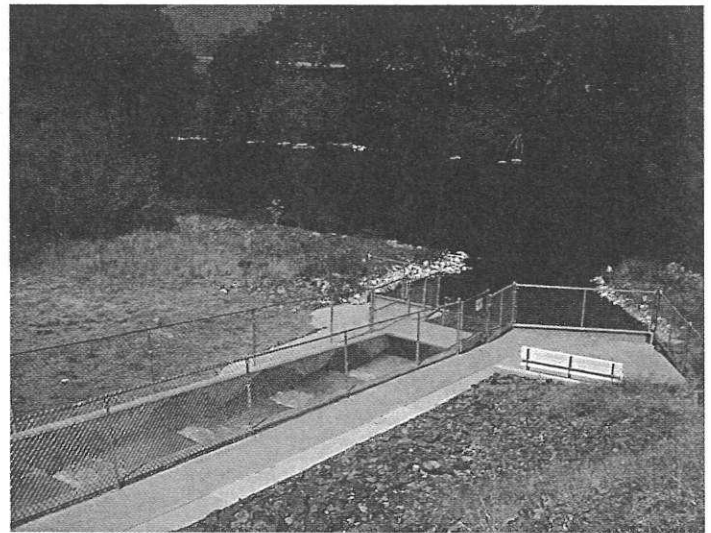
This facility was needed to ensure that hatchery-reared winter-run juveniles would return to their native waters, the Sacramento River, to spawn. Before construction of the facility, adult winter-run spawners were trapped near Keswick Dam, the upper limit of salmon migration on the Sacramento River. Fertilized eggs from trapped adults were cultured at Coleman National Fish Hatchery, located on Battle Creek, a major Sacramento River tributary that joins the main river just north of Red Bluff.

Coleman hatchery, located on Battle Creek, a tributary stream that enters the Sacramento River a few miles upstream from Red Bluff, has become a state-of-the-art facility in recent times, and is very successful at producing juvenile fall-run and late-fall chinook salmon. However winter-run fish transported there from the Keswick trap for rearing returned to the hatchery as adults instead of to spawning areas in the Sacramento River above Battle Creek as had been hoped. Furthermore, to avoid perpetuating a hatchery run of winter-run salmon, fish returning to the hatchery were destroyed as a matter of policy. As a result, benefit to winter run recovery from rearing winter-run fish at Coleman Hatchery was nil.

A rearing facility supplied with water from natural winter run spawning areas was needed. The most reasonable and cost-effective solution was construction and operation of a small satellite rearing facility on the Sacramento River near natural spawning grounds. The facility, located on USBR land a few hundred feet downstream from the Shasta Dam powerhouse, and operated by USFWS, has proven successful and stands as an example of the good that can result from cooperation between government agencies and constituents. The Salmon Stamp was a proud partner in this project.

Permanent Fish Ladder and Trap at Iron Gate Hatchery

At Iron Gate Hatchery, before the Salmon Stamp Program stepped in, the spawner trap – where adult salmon spawners first enter a hatchery, attracted to the trap by water flowing from it – was located upstream from the rearing raceways. The arrangement had never worked well because returning spawners often were more attracted by the discharge water flowing from the hatchery raceways and lingered near this drain water outlet instead of swimming to the trap. The new ladder, located at the raceway drain and built with \$60,000 from Salmon Stamp funds, has greatly increased the efficiency of Iron Gate Hatchery.



A view of the Iron Gate Hatchery fish ladder

Fish Transport Trailers

In order to transport fish from Stamp Program-funded projects, and to shorten the time needed to transport salmon from Central Valley salmon hatcheries to release locations in the San Francisco Bay area, it became necessary to purchase salmon transport tank trailers. As they roll along the highways, these gleaming trailers, emblazoned with PCFFA and DFG logos, and the message "Sending Salmon to Sea," not only improve transport efficiency, but also help inform the public of the Salmon Stamp Program. Three trailers were initially purchased with stamp funds for \$30,000 each. Two more trailers were purchased later, bringing the total to five.



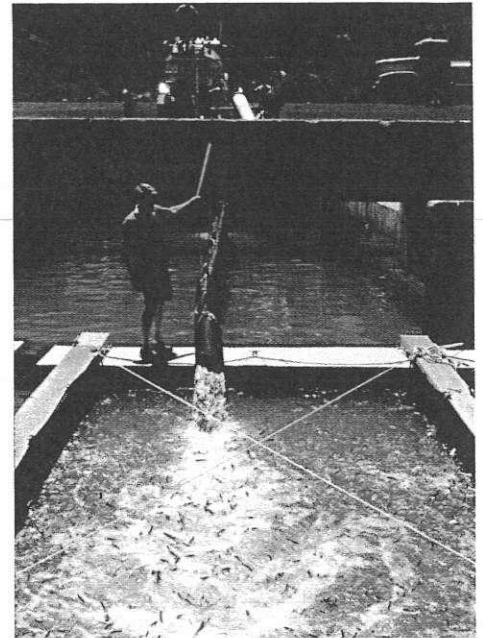
These gleaming tankers transport precious salmon from hatcheries to the ocean

**Net Pens
to Increase
Survival of
Hatchery-
Reared
Salmon
after
Stocking**

A 1993 grant from the Salmon Stamp Project to the Fishery Foundation of California provided initial funds to examine the feasibility of unloading hatchery salmon from transport trucks into net pens buoyed in the receiving waters of San Francisco Bay rather than unloading the young salmon directly into receiving waters. Direct release of the trucked fish into receiving waters had resulted in substantial loss to predatory fishes and birds. Young salmon are particularly vulnerable to predators immediately following release, since they are disoriented and completely unaccustomed to their new surroundings. This problem is compounded when hatchery release schedules do not include numerous release locations or if they do not ensure randomness in release locations and times. If a given release location is stocked frequently and regularly, predators tend to congregate in anticipation of a free salmon dinner.

The Fishery Foundation, a nonprofit associated with United Anglers, suggested releasing trucked hatchery salmon into net pens to reduce losses to predators. The floating pens provide temporary protection. Within a few minutes following their introduction to the pens, the young salmon begin to recover their equilibrium and, within a few hours, find themselves in a much-improved position for survival in the wild. After a few hours of holding, the pens are towed to open water, and the young salmon are released. The pilot project proved that net pens were feasible not only in concept, but in reality. The Salmon Stamp Program agreed to continue funding the project for several more years to evaluate its cost-effectiveness, comparing the additional return of adult salmon to the fishery with the costs of maintaining and operating the pens on a large scale.

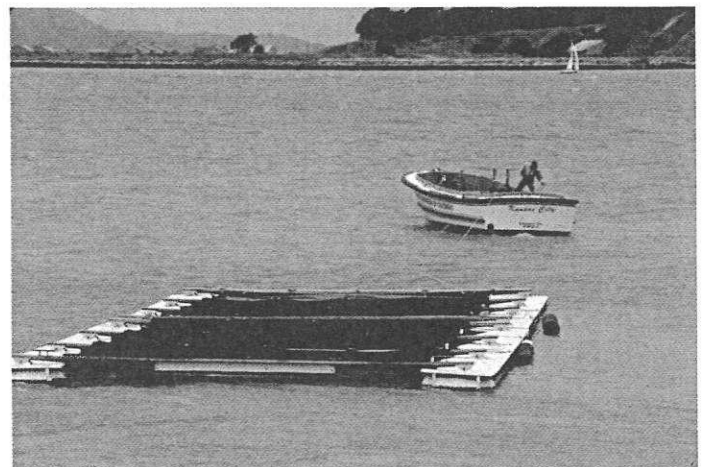
Results from coded-wire tagging studies indicate that survival of pen-acclimated salmon is much higher than that of salmon released directly at traditional sites. Presently, about three-quarters of all hatchery production in the Central Valley drainage undergoes trucking and net pen acclimation each year.



Net pen releases have proven effective in returning more salmon to the ocean

**Net Pens
for Fishing
and
Angling
Enhancement**

A different use of floating net pens as part of salmon culture has been funded through the Salmon Stamp Program in recent years at two coastal sites south of the Golden Gate. These projects are undertaken in drainages where chinook salmon never, or rarely, spawned historically. The intent of the projects was simply to make more chinook salmon available for south coast commercial fishermen and sport anglers to catch. There is no pretense of establishing runs in waters where chinook salmon have not naturally occurred. The projects, one in Monterey Bay and another in Avila Beach, receive young salmon that are excess to hatchery production needs in years when salmon hatcheries in the Central Valley have abundant returns. Following introduction into these pens, located in salt water near the ocean, the hatchery-produced salmon are held for several days or weeks and released. A short description of the two projects follows on the next page.



Loaded pens are being escorted to a release site as the juvenal fish become acclimated to the salt water

Small-Scale Salmon Enhancement

Little River, Humboldt County

This project, started by Mitch Farro of the Trinidad Fishermen's Marketing Association, targeted one of the few stocks of short-run chinook salmon entering coastal streams. It was undertaken in cooperation with Louisiana Pacific Corporation, the major landowner in the Little River Basin. The portable hatchery facilities used were similar to those developed by the Eel River Project.

The project operated for four years, successfully increasing chinook and coho runs into Little River. The Salmon Stamp funding for this program averaged \$30,000 per year.

Mattole Salmon Stock Rescue Program

The Mattole Watershed Salmon Support Group (MWSSG) has maintained a hatchbox and rearing program for native salmon stocks since 1980, resulting in the release of over 250,000 juvenile chinook salmon and 45,000 coho salmon into the Mattole River and its tributaries. The organization has also made habitat improvements in the river, including barrier modifications, spawning gravel recruitment, rearing habitat enhancements, revegetation, and erosion control. MWSSG has conducted education programs in local schools by operating incubators using native salmon eggs and releasing the salmon back into the river. The short-term goal of the Mattole Salmon Stock Rescue Program is to enhance native salmon stocks through artificial propagation, and in the long term, to restore damaged spawning and rearing habitat to achieve self-sustaining salmon runs. The Salmon Stamp has provided up to \$30,000 annually to support this project.

Hollow Tree Hatchery

The Salmon Restoration Association (SRA) of Fort Bragg, in Mendocino County, was the pioneer private nonprofit cooperative salmon rearing group in California. Founded by Ray Welsh and Bill Grader, SRA has put on the annual "World's Largest Salmon Barbecue", which helps fund their salmon restoration projects, since 1972. In 1983 the Salmon Stamp Program funded construction of a permanent fish trap on Hollow Tree Creek to replace the inoperative weir, at a cost of \$50,000. Since then the Stamp Committee has financially assisted the SRA hatchery operation at Hollow Tree Creek and a similar facility on Ten Mile River.

Ten Mile River Salmon Enhancement Project

Ten Mile River in Mendocino County empties into the ocean approximately ten miles north of Fort Bragg. The river system was once home to a significant population of coho salmon. During the 1970's efforts began to remove barriers and establish a viable, naturally spawning salmon run by stocking the river with hatchery-reared chinook salmon for several years until natural spawning made the run self-sufficient. Ten Mile River Hatchery is located on a watershed owned by Georgia Pacific Timberland.

To revive the coho salmon population, the Salmon Stamp Program invested in trapping native coho salmon broodstock in Big Bear Haven and Campbell Creek. The fish were trapped and spawned in weirs. Their progeny were held to fingerling size and released into their streams of origin during the following spring. The Ten Mile River Hatchery can raise and release 30,000 coho salmon. The project has met with mixed success, but its sponsors are dedicated and persistent, and they expect one day to achieve their salmon restoration goals.

Department of Fish and Game Technical Support

At its first official meeting the Salmon Stamp Committee recommended funding to hire a DFG Fish Culturist to provide technical assistance to cooperative salmon rearing projects and to assist in bringing new Stamp-funded cooperative rearing projects online. The advisor travels throughout the state providing technical expertise and guidance to people with projects. The position was upgraded to Fish Hatchery Manager I at a present annual cost of approximately \$75,000.

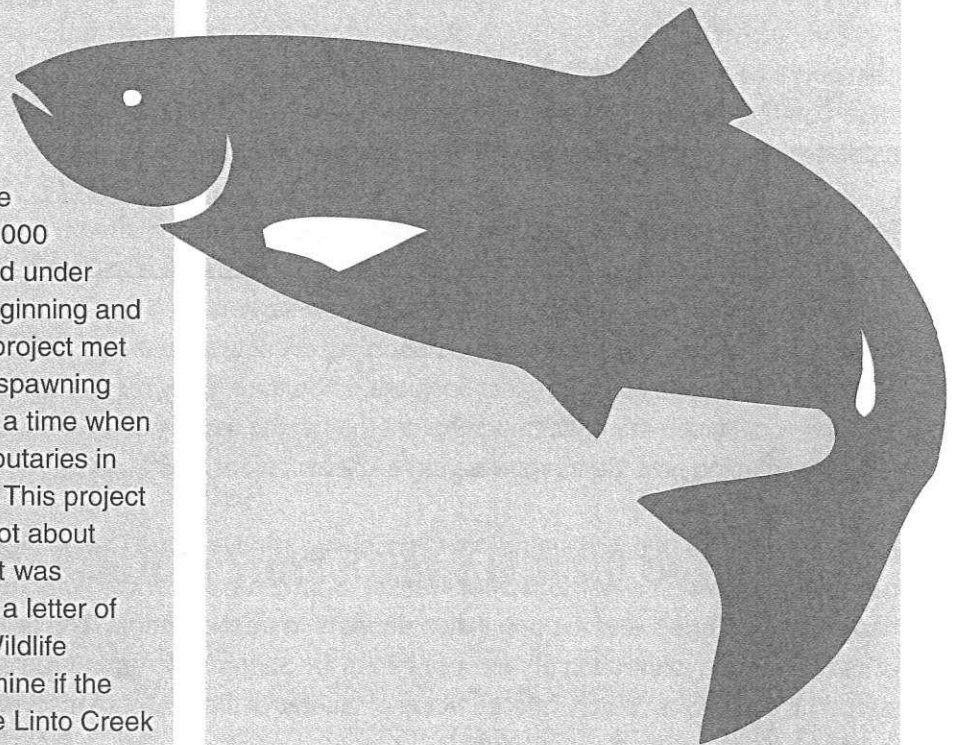
Horse Linto Creek Natural Broodstock Salmon Restoration Project, Trinity River

This innovative project was founded by PCFFA, DFG, and the U.S. Forest Service on a cooperative basis. It was intended to demonstrate the potential of low-cost, portable hatchery facilities to propagate wild salmon on-site in conjunction with restoration of spawning and rearing habitat. Once habitat restoration was complete and a viable run established, the project would be relocated to begin the process anew in a different drainage in need of a hatchery rearing "jump start" as part of its overall restoration. The concept for this project grew out of discussions at Salmon Stamp Committee meetings. Initial project costs were \$50,000 annually and the project was implemented under PCFFA administration. After a difficult beginning and following many years of low returns, the project met with success, increasing the numbers of spawning salmon returning to Horse Linto Creek at a time when salmon populations in almost all other tributaries in the Klamath-Trinity Basin were declining. This project taught the salmon restoration industry a lot about what works and what doesn't. The project was recognized as an outstanding success in a letter of commendation from the U. S. Fish and Wildlife Service. Follow-up monitoring will determine if the enhanced populations of salmon in Horse Linto Creek will stabilize at higher than pre-project levels.

Eel River Project

In 1983 Scott Downie, then a salmon troller, started a small-scale multi-pronged bioenhancement facility in the Eel River Basin. This successful program combines incubation and rearing with habitat improvement and an innovative educational element. Elementary, middle, and high school students are involved as part of the project, located at Redway in Humboldt County. The project's participants made many innovations in trapping adult salmon and improvements in rearing technology. Salmon have been observed spawning in the restored habitat. Project costs have averaged \$30,000 annually. Project releases have averaged around 100,000 smolts per year, with a combined release of over one million fish since the project's inception. This was the first Salmon Stamp project to combine all the elements of recovery in one project.

As part of the Eel River Restoration Project, the Stamp Program funded habitat improvements on Little Sproul Creek. Landslides which were contributing sediments to the Eel River were stabilized, and failing stream banks were armored with rip-rap to prevent further erosion. Deep pools and cover log structures were created to increase habitat for salmon.



Habitat Restoration

Although rearing salmon has been the major emphasis of the Salmon Stamp Program, habitat restoration has always been an important element. In the early years, Stamp monies directly funded many projects in the field. Then, as other sources of funding for habitat improvement (such as the Bosco-Keene Renewable Resources Investment Fund and Proposition 70) became available, the emphasis of Stamp funding shifted to purchase of heavy construction equipment and facilities for DFG fish habitat improvement projects. This funding improves the ability of the DFG Fish Habitat Improvement shops to restore habitat and to screen small agricultural water diversions, protecting juvenile salmon from the dangers of irrigation networks.

Mill, Deer, and Butte Creek Habitat Restoration, Sacramento River, Central Valley

Mill, Deer, and Butte Creeks are the primary tributaries supporting most of the remaining naturally spawning Sacramento spring-run chinook populations. Though populations of spring-run chinook are regularly observed on several other Sacramento River tributaries, human land and water use have reduced these runs in some years to very few fish. The remnant populations of spring-run chinook in Mill, Deer, and Butte Creeks have been recognized as a genetically distinct run.

The Salmon Stamp Program was the founding entity that developed the Spring-Run Chinook Workgroup to engage landowners and other members of the general public to undertake restoration of the spring run. Since 1991 the group has met monthly to determine the best means for improving habitat conditions for spring-run salmon, once the most abundant of the four runs in the Sacramento River. Over \$40,000 in Salmon Stamp funds were contributed to improve water flow capacities, rebuild fish ladders, improve adult passage ways, and increase habitat spawning areas along a 2-mile stretch of Mill Creek.

Proposition 70, enacted in 1988, provided \$10 million in salmon stream restoration funding, and was an initial source of funding to remove four small irrigation dams on Butte Creek that impeded salmon migration, and to screen water intakes at Parrott-Phelan Dam. These intakes now serve as a single, screened point of diversion that supplies irrigators with water that previously had been supplied through the four dams that were removed. We include this example of a Proposition 70 project because, while the money came from bond funds, Commercial Salmon Trollers Advisory Committee members made up one-half of the membership of the committee that made recommendations to DFG regarding how the funds were to be spent.

In 1998, nearly 20,000 wild spring-run Chinook returned to Butte Creek. Additionally, significant numbers of spring-run salmon spawned in Mill and Deer creeks. Spring-run spawners have been seen in other streams where they hadn't been for ages, and the population appears to be recovering. The Salmon Stamp Program is justifiably proud of its contribution to initiation of recovery efforts for Sacramento spring-run salmon, and continues to fund and support those efforts, which must continue at least until the extent of recovery leads to delisting the spring run.

Coho Salmon

Although there has been no coho fishery for many years, the Salmon Stamp Program has contributed funding to projects to improve habitats for coho salmon along the north coast. There are two reasons why it makes sense to invest in fish unavailable for harvest: 1) ocean fisheries are severely constrained by the low numbers of natural coho spawners (bearing the brunt of recovery efforts again); and 2) improvements in habitat for coho should also assist chinook salmon populations.

Many log structures have been built in the Eel River, Mattole River, Redwood Creek, and in Humboldt Bay tributaries. These structures mimic the pools and cover needed by juvenile coho salmon as they grow from fingerlings into smolts. In 1997 the Salmon Stamp Program provided



Construction phase of Prairie Creek Coho project

funding to reconstruct a flood-plain side channel in Prairie Creek (a tributary to Redwood Creek) to provide overwintering habitat. This successful project which cost \$38,000 was the first of its type in California to successfully address this critical limiting factor for coho survival in coastal streams.

In 1998 the Salmon Stamp Program provided \$40,000 for the first road removal project undertaken through DFG to reduce sediment input to Freshwater Creek, an important Humboldt Bay tributary. This effort to treat habitat loss due to sedimentation of salmon streams at its source is now widely emulated throughout coastal California. Numerous tree planting and livestock exclusion fences along streams have also been undertaken with Salmon Stamp, and with Proposition 70 funds.



Completed Prairie Creek Coho project demonstrates what can be accomplished with determination and funding

Bogus Creek Habitat Restoration, Klamath Basin

Among the early habitat projects was placement of approximately 1/4-mile of spawning gravel in a 4-mile stretch of Bogus Creek, which often has large returns of naturally spawning salmon due to its proximity to Iron Gate Hatchery. Located in a drainage of hard volcanic rock, the creek lacked adequate gravel to support the numbers of fish attempting to spawn. This work was done in 1985 at a cost of \$25,000. In 1989, boulder weirs to hold the gravel in place and provide resting pool habitat were added with further Stamp funding of \$45,000. Judging from the often very large numbers of spawners in Bogus Creek in recent years, these projects were highly successful.

Shackelford Creek Rechannelization, Scott River, Klamath Basin

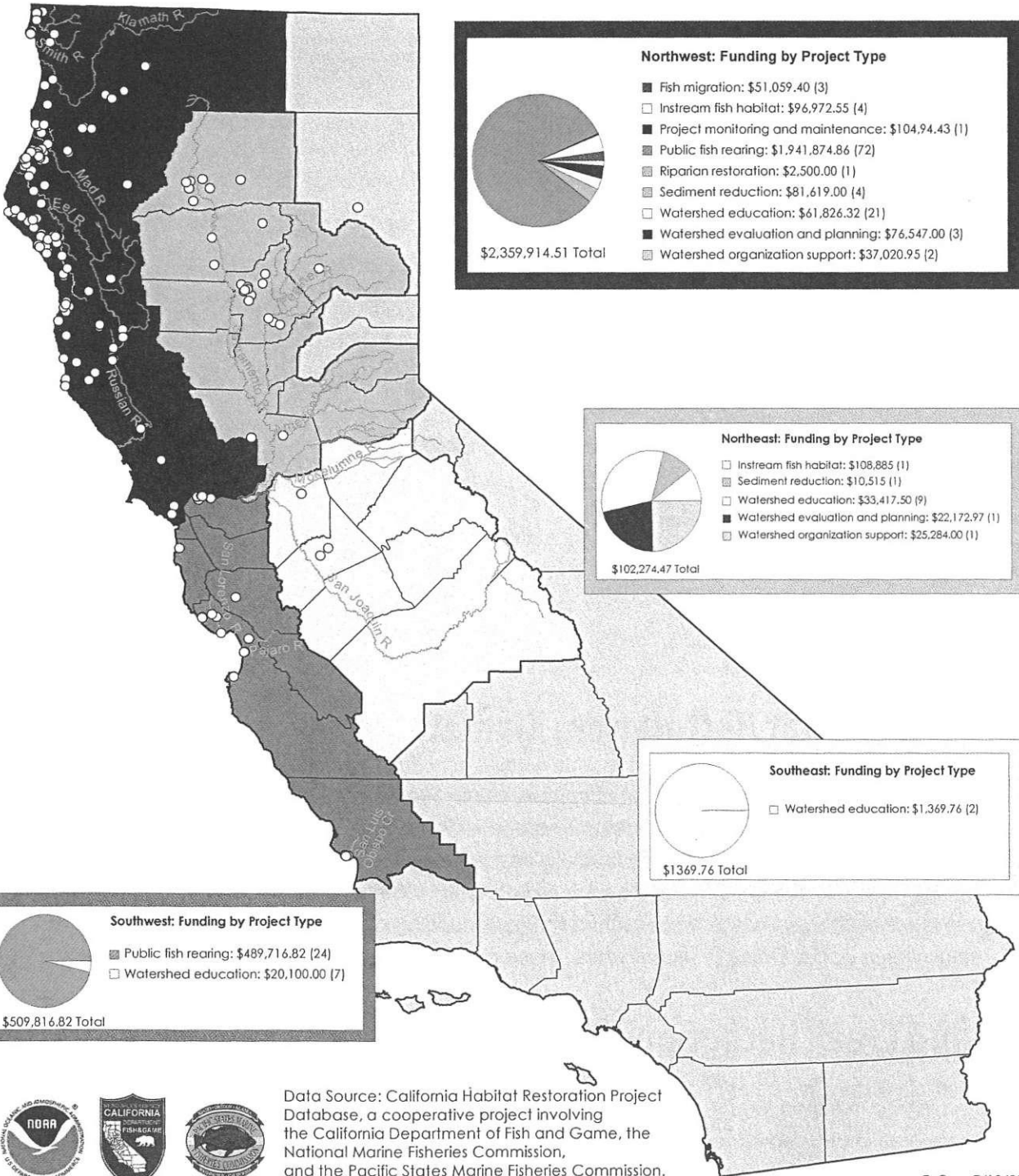
In 1983 Salmon Stamp matched funds with the Scott Valley Resources Conservation District to rebuild the creek channel in the lower mile of Shackelford Creek where it flows into the Scott River, a major tributary to the Klamath River. The creek was braided over a large alluvial fan, preventing salmon from getting up the creek. Thanks to this project, salmon are once again seen in Shackelford Creek today.

(continued on page 17)

Restoration Projects

Salmon Stamp Projects by Location

Projects may have multiple sites; all sites are shown as points on this map. Number of projects falling into each work type category are shown in parentheses after each cost summary. 6 projects were not mapped due to the extent of their coverage. This represents an additional 17,544.76 in Salmon Stamp funding. Total project funding through Salmon Stamp is \$2,990,920.32.



Data Source: California Habitat Restoration Project Database, a cooperative project involving the California Department of Fish and Game, the National Marine Fisheries Commission, and the Pacific States Marine Fisheries Commission.

(continued from page 15)

The Scott River is a major Klamath River tributary that once supported large salmon runs. It is a difficult drainage to improve for salmon because water flows in the streams are severely impeded as a result of irrigation diversions. Water rights have historically been a major issue in the drainage, and these rights finally had to be adjudicated in court. Unfortunately, the adjudication of water rights in the drainage left precious little water available for salmon, except in a few locations. In fact, it has been stated that the adjudication allocated more water than was available in the stream. Still, there is hope for improvements that will increase salmon numbers in the drainage, and the Salmon Stamp Committee has strongly supported restoration efforts there over the years.

Keswick Spawning Gravel Project

The Stamp Committee and Proposition 70 cooperatively funded the addition of seven thousand tons of spawning-sized gravel to the Sacramento River between Keswick Dam and Cottonwood Creek. The Salmon Stamp Program paid 25 percent of the \$40,000 project. Gravel mining, stream bank erosion caused by Keswick Dam, and, most importantly, the presence of Shasta Dam, which blocks natural transport by the Sacramento River of badly needed spawning gravel from the watershed above the dam, have caused the loss of 30 miles of spawning habitat in the Sacramento River. This area was once a very productive spawning ground for fall- and late-fall-run chinook salmon. Lack of proper spawning habitat is a major reason that populations have dropped to 50 percent of historic levels. The project helped replace spawning areas, at least for the short term.

The project scale required for gravel replenishment to be successful over time may restrict its use to streams where the method is likely to be most cost-effective. In the Sacramento River system, where mitigation for loss of salmon from construction of Shasta Dam was essentially an afterthought following all other project considerations, and which amounted to construction of an inadequately-sized hatchery on a tributary stream nearly 30 miles downstream from the dam, and where large salmon runs were decimated, long-term gravel replenishment is very likely appropriate.

Support of DFG Fish Habitat Improvement Shops

DFG habitat shops implement fish habitat restoration and improvement projects throughout the state. Currently four facilities exist: the Yreka shop in the Klamath River drainage; the Red Bluff shop in the upper Sacramento River drainage; the Elk Grove shop in the lower Sacramento River drainage; and the San Joaquin shop, the newest, located on the Tuolumne River in the San Joaquin River drainage, near LaGrange. Part of the work undertaken by shop crews includes building and maintaining a plethora of fish screens throughout California. These screens prevent fish from entering and becoming entrapped by water diversions. Without these screens many millions of juvenile salmon would never have a chance of reaching the ocean. The habitat shops' contribution to salmon resources goes generally unrecognized by the public. Since their personnel are "can-do" people who would prefer to be out in the field fixing a habitat problem, the shops do not always get the official attention and funding they deserve.

The Stamp Committee has long recognized the contribution of DFG fish habitat improvement shops to salmon recovery by consistently funding habitat restoration and screening projects undertaken by habitat shop crews throughout the range of salmon in California. Recognition also came through funding support for construction of badly needed new facilities to house habitat restoration staff. At both the Yreka and Red Bluff shops, Salmon Stamp funds provided a substantial portion of the required state match for federal dollars used in constructing new shop facilities. Most recently, the Salmon Stamp Program provided \$200,000 which represents the bulk of the construction costs of the newest fish habitat improvement shop on the Tuolumne River. (continued on page 18)

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Recognizing the need to support the DFG habitat improvement shops, the Stamp Committee bought a new John Deere tractor-backhoe and a 10-wheel dump truck for the Red Bluff and Yreka shops, along with many much-needed power tools and other smaller items of equipment. Large investments such as this can only be considered and justified to fishermen when fishing has been good and the Stamp Account balance is relatively high. The Salmon Stamp Program has funded several badly needed fish screens when no other funds were available to do the job. Screens and ladders are essential to keep young salmon out of water diversions and help adults get past them, and since the structures suffer damage and eventually wear out, the Salmon Stamp Program has also funded the repair, upgrading, and replacement of damaged or worn out fish screens and ladders.

San Joaquin Fish Habitat Improvement Shop Construction

Salmon restoration in the San Joaquin River drainage has faced more than its share of problems. With completion of Friant Dam in 1944 blocking passage to upstream spawning areas, as well as dewatering the river for many miles downstream from the dam, and with no salmon hatchery to mitigate the dam's effects, salmon spawning in the San Joaquin River came to an end. Runs of chinook salmon did, however, continue in three tributary streams, the Stanislaus, Tuolumne, and Merced Rivers. With the exception of a dedicated few stationed in the San Joaquin Valley, fisheries managers in government by and large had concluded that efforts to restore salmon in the San Joaquin River drainage would be futile, and believed that limited restoration dollars would be better spent in drainages with greater potential for success. The Stamp Committee did not share this belief.

The Stamp Committee, led by the vision of member Dave Danbom, took on restoration of San Joaquin Valley salmon, beginning in the 1980's. Initial support for work in the drainage focused on Merced River hatchery operations. Later, in the 1990's, funding recommendations expanded to include habitat restoration projects, and equipment to help with work taken on by the fledgling DFG fish habitat restoration crew stationed in Fresno. Having the restoration crew headquartered in Fresno while most of their work was on the Merced, Tuolumne, and Stanislaus rivers to the north was not an efficient situation. Too much crew time was spent in travel to and from work sites, time that could better be spent on projects. A solution was needed.

DFG staff in the San Joaquin Valley, working cooperatively with other agencies, had secured land on the Tuolumne River near LaGrange. The parcel was intended eventually to be home not only to a new habitat improvement shop, but to a small supplementation hatchery for San Joaquin basin anadromous fishes, as well as an educational and interpretive center. Construction of the rearing facility was put on hold because of concerns by a few vocal environmental groups and scientists over possible genetic problems that might result from releasing hatchery-reared fish into the system. Construction of the educational and interpretive center also continues to be on hold. However, the only impediment to construction of a fish habitat improvement shop was funding.

The Stamp Committee responded to the call with funding recommendations sufficient to construct a "bare-bones" steel building. DFG assured the Committee that other funding would be found to finish the interior of the building. The building was completed in the late 1990's and houses the habitat restoration crew and their equipment. Fish habitat restoration work in the San Joaquin basin now proceeds much more smoothly.

Support for Other DFG Salmon Restoration Activities

Through the years the Stamp Committee has regularly funded new equipment or replaced worn equipment for DFG facilities or programs in addition to hatcheries and habitat improvement shops. Some examples include: a precision flowmeter for evaluations of fish screen effectiveness; electronic survey equipment and software; a digital film recorder to inventory all water diversions and fish passage areas as part of DFG's Geographic Information System (GIS) project, and a one-ton pickup and other needed items of equipment for the Cooperative Fish Rearing Program Coordinator.

Education

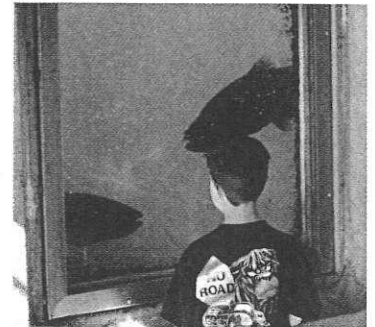
While propagation of salmon and restoration of salmon habitat have always been the main elements of the Salmon Stamp Program, the Stamp Committee has strongly supported investment in the future of salmon resources and the fishery through educational projects.

PRODUCTION OF EDUCATIONAL MATERIALS

In 1987, the Committee funded production of two twenty-minute videos. One, *Like Our Fathers Before*, documents the accomplishments of the Stamp Program; the other, *Return of the King*, describes salmon restoration programs in California more generally. Though old, these videos are well-made and contain useful information. Copies of these high-quality videos by Lone Eagle Productions are available from the Pacific Coast Federation of Fishermen's Associations, P.O. Box 29370, San Francisco, CA 94129-0370.

Salmon Stamp assisted in funding development of an educational and interpretive program at Nimbus Hatchery. This hatchery, located near Sacramento, is visited by thousands of people, often on family outings. This project developed a brochure and added docents to aid the public's understanding of the importance of the hatchery program. The Salmon Stamp Program has provided up to \$40,000 to maintain and upgrade the interpretive project.

Starting with the Eel River Project, Salmon Stamp has provided \$30,000 for classroom incubators for salmon and steelhead trout to schools in Del Norte, Humboldt, Mendocino, Tehama, and Santa Cruz Counties. These incubators are aquaria which simulate the gravel and aquatic habitat of a natural stream. Students can observe the incubation, hatching, and growth of salmon right in their own classrooms. When the young salmon or steelhead are ready, students release them into a stream at a site approved by DFG. Students often want to know if the fish will survive, and this concern has led to their involvement in habitat protection in the selected streams.



The observation window is located at the Feather River Hatchery

SALMONIDS IN THE CLASSROOM, SAN JOAQUIN VALLEY

The Salmon Stamp Committee recognized early on that educating San Joaquin Valley students about salmon is extremely important because they will be future consumers, farmers and voters there. The Salmonids in the Classroom Program was ideally suited for implementation there, because it gives students hands-on experience with early phases of salmonid natural history. The program involves hatching salmonid eggs in classrooms for subsequent releases into local rivers as well as a classroom and field curriculum to educate students about local riparian and instream biology, ecology, history, and problems, with primary focus on local salmonid populations. Stamp Committee support of the San Joaquin Valley Salmonids in the Classroom Program was essential to survival of the program in its formative years. Though unable to contribute vast sums to the newly hatched effort, the committee recommended funding for various elements of the program, allowing the program to



Salmon in the Classroom

continue, more than once, when other funds were unavailable. Funding amounts varied year to year from \$2,500 to as high as \$20,000.

The San Joaquin Valley Salmonids in the Classroom program has grown since its humble beginnings in 1988. Now there are almost 100 teachers involved and over 50 incubator units in operation. The program is supported by a large docent volunteer effort. Over 2000 students in grades K-12 are given an opportunity each year to develop a sense of responsibility for their

natural resources. A Fish and Wildlife Interpreter provides workshops in six Valley population centers to instruct teachers on the curriculum and the use of the incubators and resource kits. The media has often covered the story when the students are ready to release fish into their local streams. The program serves the following counties: Stanislaus, Tuolumne, Merced, Mariposa, Madera, Fresno, Kings, Tulare and Kern.

SACRAMENTO SPRING-RUN CHINOOK RECOVERY WORKGROUP

Historically, Sacramento spring-run chinook salmon were as abundant as fall-run chinook in California. Water project development and land use practices reduced naturally spawning spring-run chinook to mere remnant populations in Mill, Deer, and Butte Creeks. For example, Mill Creek runs decreased from 2,000 returning salmon in the 1940's to 200 in the early 1990's. With spring-run chinook spawning numbers declining to the extent that people were talking about listing them under ESA, and following some dramatic effects on landowners and water districts from the listing of winter-run chinook, landowners in the Mill, Deer, and Butte Creek watersheds were eager to take action to protect themselves from the effects of ESA by protecting and restoring the salmon that spawn in their backyards. The Stamp Committee and Nat Bingham helped landowners form Spring-Run Chinook Recovery Workgroups beginning in 1992 to focus efforts to protect and increase spring-run chinook. One such effort to maintain these fragile populations culminated in cooperative water exchanges with the Los Molinos Mutual Water Company. This initiative resulted in improved returns to Mill Creek.

The success of this project and others started with agreement by stakeholder groups to meet and discuss environmental, social, economic, and other effects of projects on surrounding areas. Approximately 300 individuals participate regularly in the Workgroups. Field trips are conducted to educate participants about relevant habitat issues that involve Mill, Deer, Butte, and Battle Creeks.

Significant restoration efforts resulting from this program include:

- ▶ Issuance of an action plan from the Governor's Water Policy Advisory Committee in Restoring Central Valley Streams;
- ▶ Funding for a Fish and Game warden to patrol the Deer and Mill Creek watersheds to provide extra protection for spring-run adults during the summer, when they live in deep, cool, isolated upstream pools, and are thus particularly vulnerable to poaching;
- ▶ Formation of watershed conservancy groups for Deer and Mill Creeks;
- ▶ Development of memoranda of understanding between conservancy groups, government agencies, and other nonprofit environmental groups that resulted in fence construction in upper watershed meadows to lessen effects of livestock use on salmon habitat;
- ▶ Facilitation of negotiations between irrigators and government agencies to exchange instream water flows for ground water to allow more water to remain in the streams for salmon during critical migration periods;
- ▶ Cooperation with the Bay-Delta Oversight Council and the Bay Institute Ricelands Fall Flooding Fishery Assessment Advisory Committee to ensure that water diversion, water quality, and fish screens were addressed in their future directives;
- ▶ Development of educational materials for farm extension advisors, schools and public exhibits.

Additional conservancy groups have been formed to address watershed issues along Battle Creek, Big Chico Creek, Cottonwood Creek and Cow Creek. The Workgroup has a long track record of success. It is now generally recognized as a valuable clearinghouse and coordinating entity by the government agencies that are responsible for the recovery of spring-run Chinook salmon. While spring-run chinook have been listed under the state and federal ESAs, the Workgroup's program has been accepted by the agencies as part of the recovery plans required for listed species under ESA.

Outlook for the Future

The salmon fishery faces an uncertain future, as do we all. Apart from changes in ocean regime and climate which are beyond human control, many human factors must be considered: the political attitudes of regulatory agencies toward the fishery, the interest and perseverance of those who would protect the resource, and most important, the fundamental attitudes of society towards natural resources and the way we use them.

The regulatory climate for ocean salmon fisheries may be stabilizing. With the commercial fishery concentrated below Pt. Arena and apparently successfully targeting Sacramento fall-run chinook while avoiding Klamath fall run, coastal fall chinook, winter run, and coho, the regulatory agencies may be content to leave this remnant fishery more or less alone while monitoring it closely.

The Klamath Basin and smaller coastal streams occasionally produce an outstanding run of naturally-spawned chinook or coho salmon, giving reason to hope that, with good rainfall and ocean conditions, our rivers are not yet totally ruined for salmon and may be restorable.

With over 33 million people living in California, it's pretty remarkable that we have the best salmon fisheries remaining south of Alaska. It's even more amazing considering that most of the salmon supplying those fisheries pass through the middle of one the nation's largest urban areas. But if we had to rely on naturally produced fish alone, we would have tiny token fisheries at best – in spite of all the work supported by the Stamp Committee and the hundreds of millions of other state and federal dollars that have been invested in salmon recovery. Hatcheries are an essential component in salmon recovery efforts and to the long term sustainability of coastal fisheries.

Fishermen thought that many of the long-term reforms in water management policy they have fought for would be achieved with passage of the Central Valley Project Improvement Act, through the Cal Fed process, and under the Endangered Species Act, especially with the listing of winter-run salmon. Indeed, much of the public money invested in salmon recovery in the Central Valley appears to have been well-spent. Winter run and spring run spawning numbers have been increasing steadily and sometimes dramatically in recent years. Attitudes towards salmon in the Central Valley have changed for the better. Who would have thought we'd see the water contractors and Metropolitan Water District joining fishermen to open up habitat in Battle Creek and other streams for winter- and spring-run chinook?

But we are just embarking on a long and difficult political and social voyage. If salmon, and salmon fishermen, are to have a future in California, we must continue to struggle along the path that Nat Bingham first among many others has shown us. Great perseverance will be required, and nothing worthwhile will be achieved without effort.



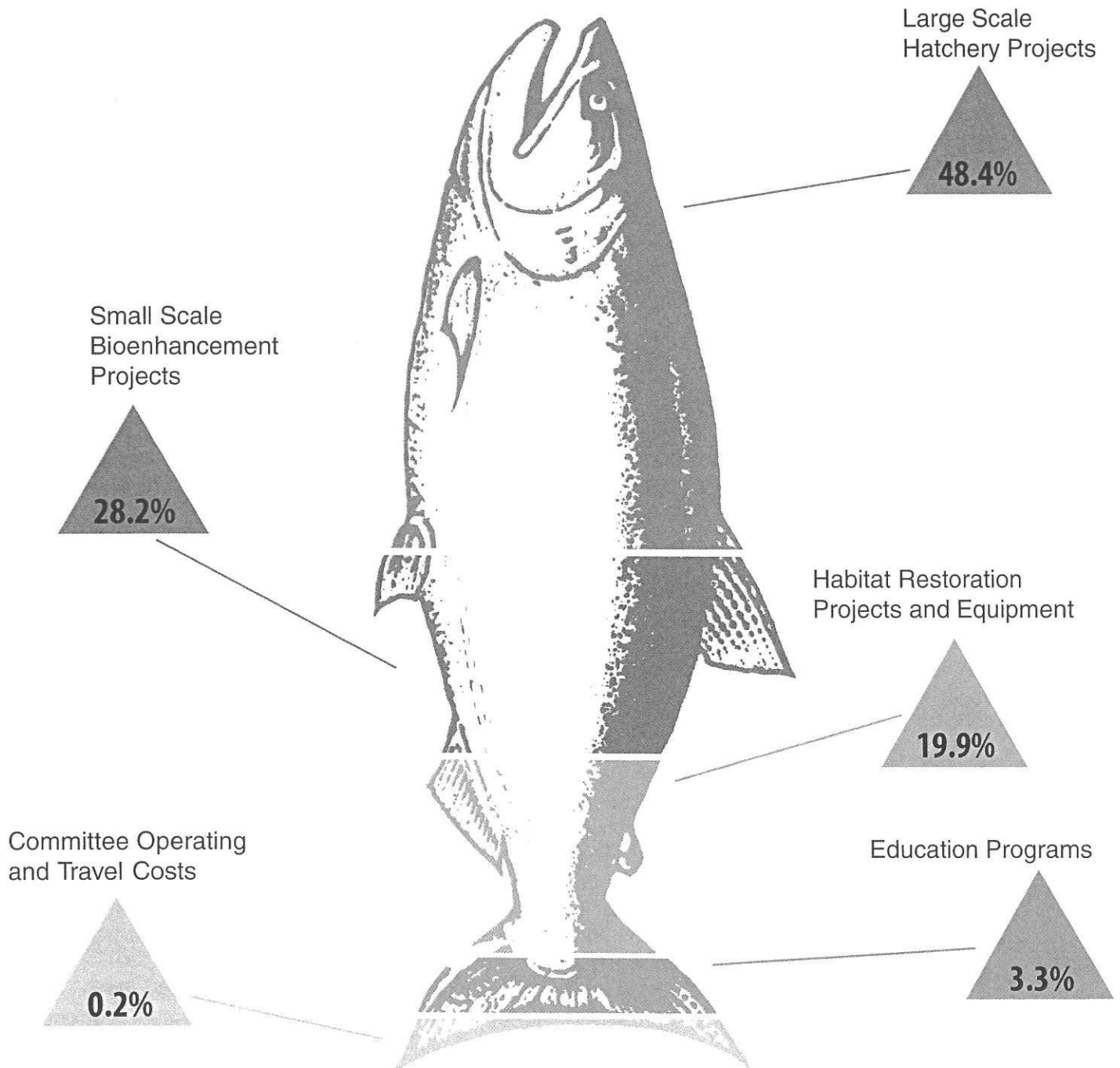
Charter boat



Although the fishery faces a totally uncertain future, the commitment of the salmon fishing industry and the Stamp Program to restore California's magnificent salmon resources remains firm.

"We can bring back the salmon and with your help we will." (Nat Bingham, Commercial Salmon Stamp Committee chairman, speaking to President Clinton, April 1993.)

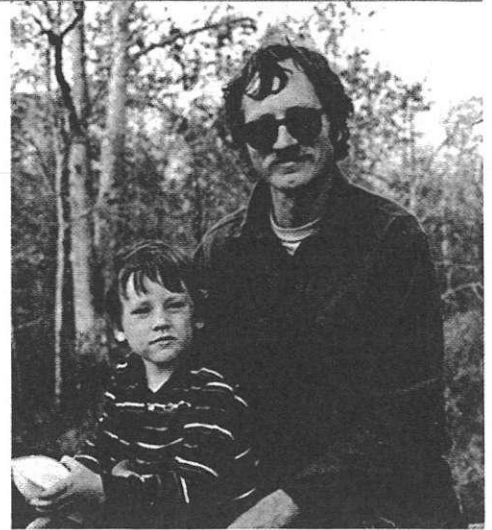
\$13.1 Million Salmon Stamp Fund Allocation 1983 — 2002*



*Based on unaudited information obtained from California Department of Fish and Game, Salmon Stamp Program.

(Nat Bingham continued)

Nat's work encompassed commercial fishing, habitat restoration and protection, fisheries management, and coalition building. In the 1970's, he was operating one of the first fish-rearing and habitat restoration programs on California's north coast. Nat served for many years as California troll salmon advisor to the Pacific Fishery Management Council (PFMC, the regional agency that recommends fishing seasons in ocean waters to the Secretary of Commerce), and served one term as a member of PFMC before his death. His efforts were principally responsible for passage of the federal legislation creating and funding the Winter-Run Salmon Captive Broodstock Program. Nat chaired both the Captive Broodstock Program and the Spring-Run Chinook Workgroup. These projects continue their work of rebuilding fish populations. Both function on a cooperative basis, bringing together a broad coalition of stakeholders that includes state and federal agencies, private landowners, fishermen, and environmental interests.



An early photo of Nat Bingham with his son Eli

In 1983 the Director of the Department of Fish & Game (DFG) appointed Nat to the Commercial Salmon Trollers Advisory Committee (Salmon Stamp Committee). The committee recommends expenditures from the Commercial Salmon Stamp Account for salmon restoration work.

After serving on the ad hoc Klamath River Salmon Management Group, a committee of PFMC, Nat helped write the bill carried by Congressman Doug Bosco that created the Klamath Fisheries Management Council and the Klamath River Task Force in 1988. He represented California salmon trollers on both bodies. Concurrently he was president of PCFFA, California troll salmon advisor to PFMC, and chaired the Stamp Committee. In his spare time, he trolled for salmon. Nat never seemed to be in a hurry.

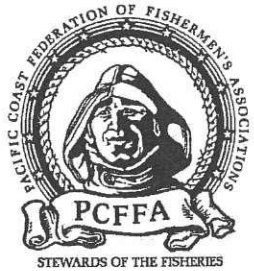
Nat's membership in the Fish, Farm & Forest Communities Forum was another example of his desire to solve problems through cooperation and consensus building among diverse groups. From his membership on the Klamath River Task Force to his participation on the Bay-Delta Ecosystems Roundtable, Nat always sought ways to restore and protect essential fish habitat throughout Northern California, and always considered the legitimate interests of the opposition in the process. His efforts in fishery restoration were honored with a proclamation from the California Legislature in 1989.



Nat setting a crab pot

On May 22, 1998 Congresswoman Nancy Pelosi (San Francisco), speaking about the loss of Nat Bingham, read the following statement into the record of the House of Representatives: "Nat was a bridge across troubled waters. He confronted forceful opposition in his work, and he always responded with grace, goodwill and solid science to support his positions. His ability to bring harmony out of discord was well known. Anyone who is aware of the Pacific Coast salmon decline also realizes that there are no simple solutions to the complex problems facing a number of salmon species in our region. Nat always had a way of emphasizing the positive and seeking solutions that would nurture and sustain the resource he devoted his life to protecting."

Perhaps Dave Bitts, PCFFA Vice-President, said it best: "Nat had an astonishing breadth and depth of vision. Whatever the forum, he always had the big picture in view, not just for the moment, but for the future as well. The fishing industry, and the many populations of salmon, were blessed to have a statesman of Nat's gifts and stature working on their behalf for the past twenty-five years. Not only will we miss him personally more than we can say, but the quality and scope of his work will also be impossible to replace."



**Pacific Coast Federation of
Fishermen's Association**



**Golden Gate
Fishermen's Association**



**State of California
Department of Fish and Game**