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November 17, 2006

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Conservation Planning  
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Northern California - North Coast Region  
601 Locust Street  
Redding, California 96001

California Department of Fish and Game,

Please find the enclosed the comments submitted by the Quartz Valley Indian Reservation (QVIR). We would like to thank you for this opportunity to provide comments during the DEIS scoping process on the Shasta and Scott ITP and Environmental Check List.

The Reservation is located in both Scott and Shasta Valley's. The health of the fishery in these two water sheds is critical to the health and survival of the way of life of our native people, within the Shasta and Scott and the entire lower-Klamath basin.

We understand the need to compromise and work together with the agricultural community and their established way of life. However, we feel this document is in no way a compromise of two sides and regret that tribe's have not been involved from the beginning of this process.

We will continue to provide our technical comments in a hope that they are considered when preparing the final EIS. If a true desire to restore the fishery in both the Scott and Shasta Valley's exists, then we would expect a final EIS to include some of the issues we have presented.

Thank you.

Sincerely,

Harold Bennett  
Tribal Vice-Chairman  
Quartz Valley Indian Reservation

## ***Scott River Scoping Comments***

### ***Technical Memorandum***

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On October 11, 2006, Region 1 of the California Department of Fish and Game (CDFG) issued a Notice of Preparation (NOP) of a Draft Environmental Impact Statement (DEIS) for a Scott River Watershed-Wide Coho Salmon Incidental Take Permitting Program. An Incidental Take Permit (ITP) is required by the California Endangered Species Act (CESA) for any land users who may cause harm to any listed species.

Coho salmon (*Oncorhynchus kisutch*) were found to require protection as a threatened species, under the terms of the federal ESA, throughout their range in northwestern California and southern Oregon, by the National Marine Fisheries Service more than a decade ago (Weitkamp et al., 1995). The California Department of Fish and Game eventually reached a similar conclusion and moved to list coho under the CESA statutes in 2003 (CDFG, 2002). In response to the State's listing, a *Draft Scott Valley Resource Conservation District Master Incidental Take Permit Application* was filed with CDFG in April 2005 (SRCD, 2005).

The comments provided below, draw on both the 2005 *SRCD Draft ITP* and the recently-released *Environmental Check List and Initial Study (Initial Study)* (CDFG, 2006). These documents are intertwined. The *Scott River Watershed Sediment and Temperature Total Maximum Daily Loads* (NCRWQCB, 2006) is also referenced here, along with the comments on that document offered last spring by the Quartz Valley Indian Community (QVIC, 2006). The QVIC document is provided as Appendix A to these scoping comments because it provides excellent background information on the factors that limit salmon populations, including their water quality needs, and recommendations for monitoring and restoring cold water fish populations.

Because neither the *SRCD Draft ITP* nor the CDFG *Initial Study* adequately characterize the status of the coho salmon species in northwestern California; streamflow issues related to that status; the role of groundwater extractions on stream habitat; or anything resembling a best-science approach to coho salmon protection and restoration (see: Bradbury et al., 1994), background discussion on these issues is provided here.

#### **AN OVERVIEW OF CDFG'S INCIDENTAL TAKE PERMITTING PROCESS**

A fundamental flaw in CDFG's approach to the proposed permitting of the incidental take of coho salmon in the Scott River watershed is that it will not succeed in protecting coho salmon and it will not, therefore, satisfy CDFG's CESA authority for issuing such a permit in the first place.

The basic authority for these incidental take permits (California Fish and Game Code Section 2081) states, in part, that

- (c) No permit may be issued pursuant to subdivision (b) if issuance of the permit would jeopardize the continued existence of the species. The department shall make

this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities.

The *Initial Study* fails to meet the stated CESA requirements for the use of best available science; it does not properly characterize the true risk of coho salmon extinction; and it does not acknowledge that the continuation of existing land- and water uses in the watershed will, in all likelihood, cause further decline of coho salmon in the Scott River. Because the ITP does not address issues like the excessive diversion of streamflow and the over-extraction of groundwater, flow-related water quality problems in the Scott River will not be resolved and coho salmon will likely continue to decline, or will become extinct altogether. The actions that CDFG would permit will, in fact, jeopardize “the continued existence of the species”.

CDFG’s use of SRCD Draft ITP submission date as the baseline conditions for the application of CEQA may just meet the minimum requirements of CEQA but it fails altogether to comport with the department’s duties under the State and federal endangered species acts and legislative mandates such as the Fisheries Restoration Act of 1985 (CF&G Code Section 2760, et seq.), which contemplates not only the prevention of further salmon population declines in the state, but planning and implementation, by the department, of a doubling of salmon numbers, “primarily through the improvement of stream habitat”.

The preponderance of scientific evidence found in 1995 that Scot River basin coho salmon required the protection of State and federal endangered species acts because dams, land use and water extraction activities had so profoundly changed habitat quality that the species was – and it remains to this day -- on the verge of extinction. Maintaining the Scott River coho salmon population at its current depleted level will most likely only postpone their extinction until they are overcome by genetic drift or stochastic events (Rieman et al., 1993).

The *Initial Study* does not reference the *Scott TMDL* (NCRWQCB, 2006) and shows no indication that literature regarding Scott River restoration have been reviewed (Kier Associates, 1991; 1999; NAS, 2003). Ideally the Scott River watershed-wide ITP would work in conjunction with the TMDL because water quality problems are a major reason for coho salmon decline. Given the present tack of the CDFG ITP process, water quality problems are unlikely to be reversed or their remediation may take so long that it will be too late to restore coho salmon.

Actions taken under the *SRCD Draft ITP* and *Initial Study* focus only on coho salmon, which is not the only Pacific salmon species at risk in the Scott River basin nor the species of greatest economic importance. This single species “tunnel vision” results in a lack of protection under the proposed ITP for steelhead trout (*O. mykiss*) and Chinook salmon (*O. tshawytscha*) and in fact may pose jeopardy for these species as well.

If CDFG moves forward in its current mode and approves a watershed-wide ITP, it is essentially permitting many activities that are in violation of California and federal laws:

- Lack of flow releases below irrigation dams in the Scott River is not legal under CDFG Code Section 5937
- The listing of the Scott River as impaired under the Clean Water Act (NCRWQCB, 2005) recognizes the river's polluted condition; mandates the need for a TMDL water quality recovery plan; and mandates the cooperation of agencies of State government beyond those with primary responsibility for water pollution abatement.

The issuance of a watershed-wide ITP as proposed by CDFG will shield activities in the Scott River watershed which are inimical to coho salmon protection and restoration from effective and necessary legal challenge.

#### **SUMMARY COMMENTS ON THE *SRCD DRAFT ITP APPLICATION***

The *Initial Study* was written in response to the *SRCD Draft ITP* and refers to it, but does not include detailed information from it on specific actions to be taken. What follows is a brief summary of the *SRCD Draft ITP*, but more details on its stipulations are enfolded in a later section reviewing elements of the CDFG *Initial Study*.

The *SRCD Draft ITP* recommends some measures that would likely improve conditions for coho salmon, but in aggregate the actions recommended would cause jeopardy to the species. Problems exist with water rights, State Watermaster service, groundwater pumping, riparian grazing, fish screens, assessment of coho extinction risk, monitoring and data sharing.

The *SRCD Draft ITP* makes it clear that local stream diverters will only strategically contribute water to improve conditions for coho salmon and only when they are 100% compensated for any lost flow or pumping costs incurred. There is no stated goal of restoring perennial surface flows to the river or its tributaries. The actions outlined in the *SRCD Draft ITP* do not provide flows needed for fall Chinook and winter steelhead, let alone accomplish restoration of flows in the Scott River gorge to aid potential recovery of summer steelhead and spring Chinook.

The *SRCD Draft ITP* lacks scientific rigor in several regards:

- 1) It uses coho salmon data to infer population increases that the data do not support,
- 2) It treats recently collected salmon spawning, electrofishing and downstream migrant trapping data as "baseline" conditions, when in fact they present only a recent snap shot,
- 3) It asserts that increases in coho are related to habitat improvements due to previous local efforts, but supplies no data or information to support that claim,
- 4) It makes unsubstantiated statements regarding historic stream conditions that are factually questionable (all valley floor tributaries "naturally" went dry), and
- 5) Raw data to support SRCD report conclusions are not available, which is a requirement for any science-based report or model (Collison et al., 2003).

## COHO POPULATION VIABILITY ISSUES AND TARGETS FOR RECOVERY

The *SRCD Draft ITP* states that “CDFG has concluded that the viability of coho salmon runs in the Scott River is uncertain and there is a risk that the proposed activities, without benefit of take avoidance measures, could lead to severe impacts, including possible extirpation of one or more brood years.” It suggests that coho have survived despite farming and ranching practices in the past; therefore, with additional conservation measures under the ITP they will at least persist.

Coho salmon almost all spawn at identical intervals of three years, which leads to somewhat isolated year classes. California Department of Fish and Game downstream migrant trapping records (Chesney, 2001; 2002; Chesney and Yokel, 2003) show only one strong year class of Scott River coho salmon. Figure 1 is from the year 2001 when flows were low and trapping conditions ideal, but only 183 coho juveniles were captured because it coincides with a weak year class. Risk of stock loss for coho is high when there are very weak year classes (Rieman et al., 1993; NMFS, 2001; CDFG, 2002).

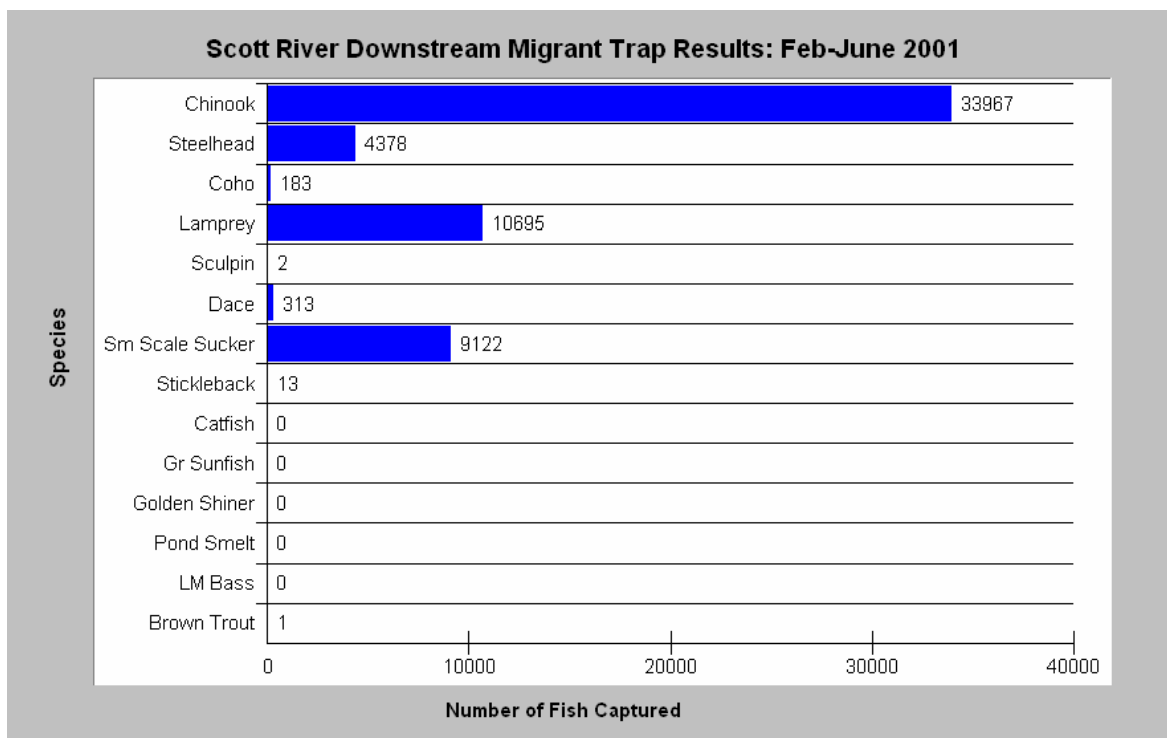


Figure 1. Scott River downstream migrant trapping results from 2001 showing very few coho juveniles. Data from Chesney (2001). Chart from KRIS V 3.0 (TCRCD, 2003).

The *SRCD Draft ITP* defines coho population levels that have been monitored within the last few years as "baseline". While the term baseline may be narrowly correct for conditions at the time of the ITP application under CEQA (see below), baseline usually refers to pre-disturbance conditions in scientific studies. With only one of three year classes at viable population levels, maintaining the current population levels is not acceptable. The DEIS should set a target for annual minimum adult coho population at levels recognized as sufficient for maintaining genetic diversity, which would be at least 500 individuals (Gilpin and

Soule, 1986; Riggs, 1990). The level of returns has in some recent years has exceeded 500, such as 2004-2005 when an estimated 1500 coho returned to the Scott River basin. The challenge is to maintain the strong year class while re-building the two weaker ones, which cannot be done without significant habitat improvement including increased flows.

Recent resurgence of Scott River coho is ascribed to habitat improvements by the SRCD Draft ITP, but may also be associated with improved ocean conditions and wet on-land cycles driven by the Pacific Decadal Oscillation (PDO) cycle (Hare et al., 1999; Collison et al., 2003). Ocean conditions off California, Washington and Oregon switched to more favorable in about 1995 and a shift to unfavorable conditions is likely to occur between 2015 and 2025 (Collison et al, 2003). When ocean conditions become unfavorable and a drier on-land climate returns, freshwater habitat conditions will have to have been improved or risk of Scott River coho extinction will be very high (see Appendix A for more in depth discussion). Consequently, if the CDFG proposed watershed-wide ITP does not increase flows and improve water quality significantly, it will pose jeopardy to the continued existence of Scott River coho.

The *Initial Study* provides no reference to the status or future viability of the Scott River coho salmon population. The DEIS must address this critical issue and include tangible measures for species recovery, including monitoring to support adaptive management. The CDFG DEIS also needs to discuss how a switch of the PDO in 2015-2025 may impact coho salmon and the effect of freshwater habitat quality at that time on their prospects for survival.

The SRCD Draft ITP and Initial Study both target measures for coho salmon only, when Scott River fall Chinook stocks have recently plummeted to an all time low (see Appendix A). As a result, the proposed Scott River watershed-wide coho salmon ITP may pose a risk of jeopardy to Chinook salmon as well (see Biological Resources discussion).

#### **DETAILED COMMENTS ON CDFG'S *INITIAL STUDY***

The CDFG (2006) *Initial Study* for issuance of a Scott River watershed-wide ITP was reviewed and the following comments refer specifically to passages from that document.

Baseline Conditions: The *Initial Study* (p 6) recognizes environmental baseline conditions as those existing at the time the *SRCD Draft ITP* application was filed. Baseline conditions are typically defined in scientific studies as undisturbed conditions such as those that existed prior to human impacts. Numerous tributaries of the mainstem reaches of the Scott River go dry during summer and fall, which is neither their historical condition nor does it comport with a strategy for coho salmon recovery, nor for that of Chinook salmon or steelhead trout. Kier Associates (1991) point out that CDFG (1934; 1974) has battled for decades to prevent the dewatering of the Scott River by agricultural diverters, so the proposed ITP deviates from established CDFG policy. Flows in the Scott River have declined dramatically since the 1970's (see below). The amount of water in late summer and fall has not met needs for maintaining salmonid juvenile rearing habitat in the Scott River canyon on U.S. Forest Service lands as required by the California State Water Resources Control Board (1980) adjudication. Small and large diversion dams in combination also violate CDFG Code 5937:

“The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam.”

Access for Inspection: The *Initial Study* (p 11) states that non-enforcement personnel must be allowed access to all lands covered under the watershed-wide ITP. The delegation of responsibility to the SRCD of reporting infractions and the need for advance notice before even non-enforcement personnel make inspections calls into question CDFG’s willingness to enforce the ITP. This is especially troubling since continuing lack of enforcement of existing law is one of the factors that precipitated the need to list coho salmon.

### **Avoidance and Minimization of Impacts**

Water Management: The *Initial Study* (p. 12) calls only for “compliance with water rights, verification of the quantity of water diverted, and a requirement to install headgates and water measuring devices on diversion structures.” To truly mitigate for agricultural activity impacts on coho salmon and other salmonids, flows would have to be increased substantially. Impacts of Scott River salmonids as a result of over-diversion have been apparent since the 1930’s (Taft and Shapovalov, 1935) and increasingly depleted over the last two decades. The DEIS must include information provided below on the state of Scott River flows and acknowledge the link between flow depletion and water pollution (see Appendix A).

Ground water pumping in the Scott River valley has been recognized as depleting flows because of interconnections between surface and ground water (Mack, 1958; Kier Associates, 1991; CSWRCB, 1980). Despite the fact that the SWRCB recognized many reaches of the Scott River to be fully allocated, ground water wells have continued to be installed. California Department of Water Resources (CDWR) well log data (Figure 2) show that the highest number of wells were installed from 1971-1980, but that installations decreased between 1981 and 1990. Prolonged drought caused an increase in well installations in the 1990’s, but continued at a lower level after 2000. CDWR estimates their record may be 30-50% low as a result of under-reporting. Individual well logs show a decrease in minimum levels consistent with draw down of ground water reserves through pumping (see Appendix A).

Data from the USGS flow gauge at Fort Jones show a substantial decrease in surface flows after ground water pumps began to increase in the 1970’s. Figure 3 shows the number of days by water year that average daily Scott River fell below 20 cubic feet per second. The flow of 20 cfs is significant because it is the amount of water legally required under the *Scott River Adjudication* (CSWRCB, 1980) for fish and aquatic ecosystem function on USFS lands in the Scott River gorge (Figure 4). The DWR Watermaster service, however, has never enforced adjudication on mainstem Scott River reaches. The flow data show that even in extremely dry years flow never fell below this threshold prior to 1975, but that now flows frequently fall lower even in moderate or wet years. Low flows contribute to increases in water temperature (NAS, 2003); therefore, they not only reduce the volume of coho juvenile rearing habitat but also the habitat suitability. This area, the Scott River gorge, was also historically used by adult summer steelhead and spring Chinook.

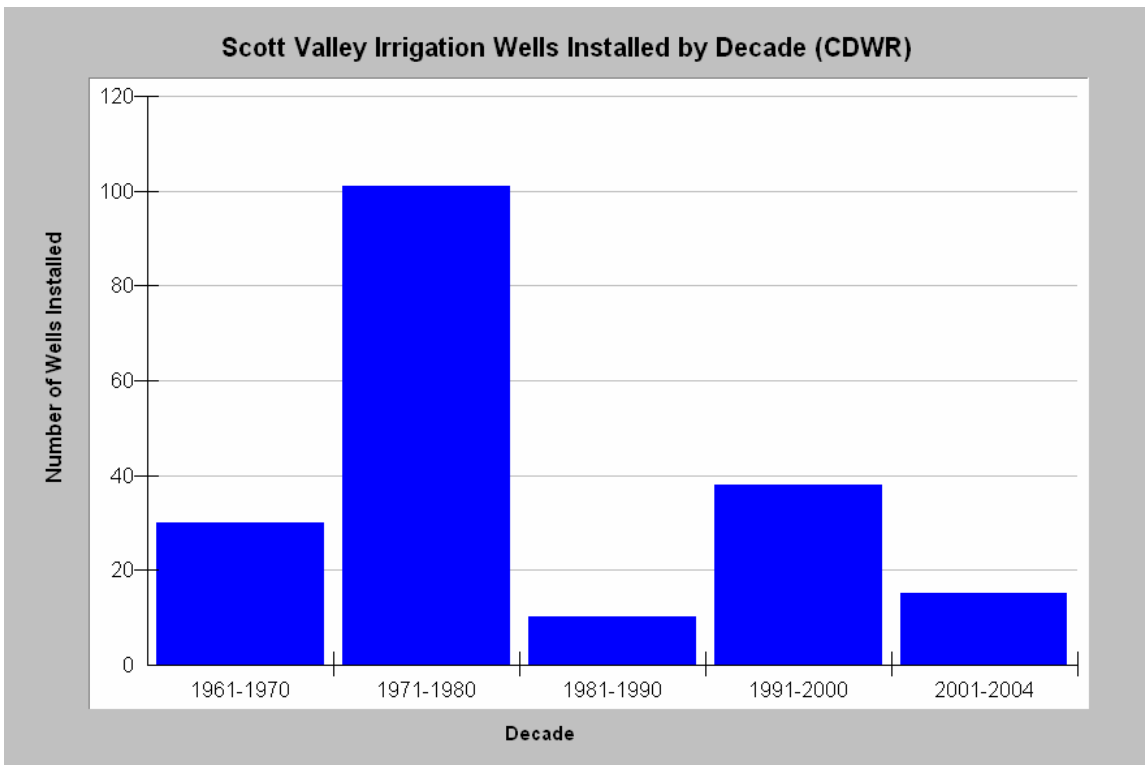


Figure 2. California Department of Water Resources agricultural irrigation wells installed from 1960-2004.

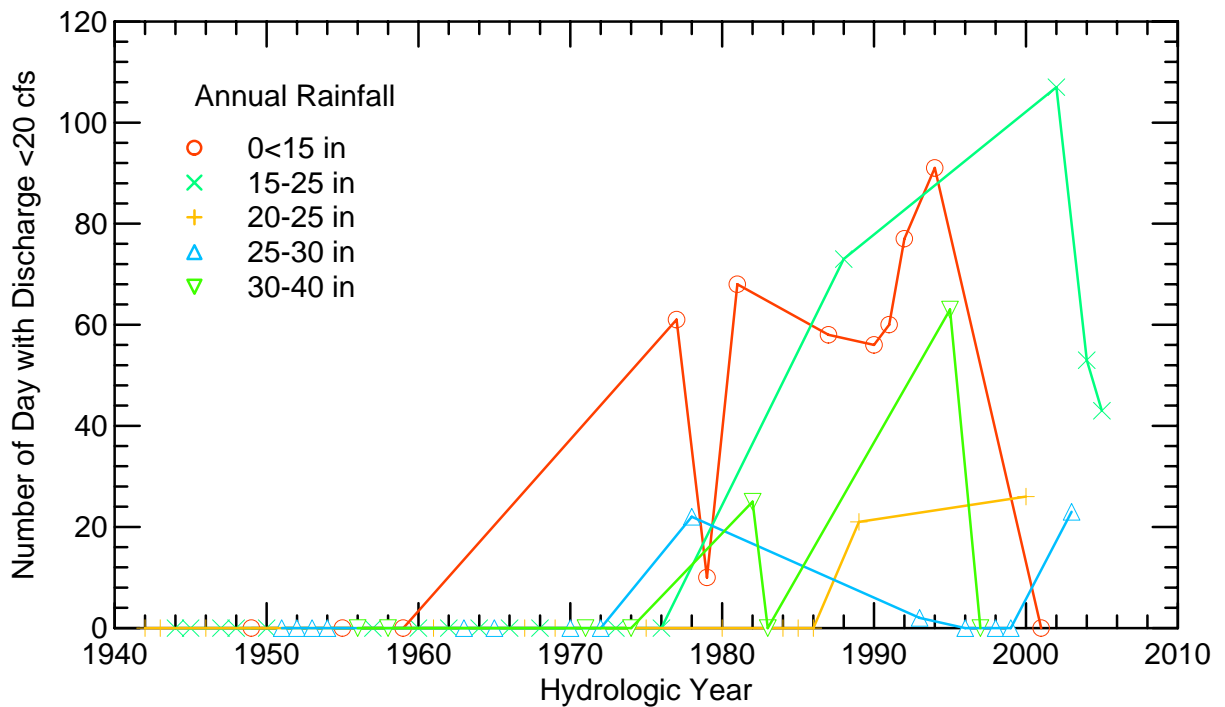


Figure 3. This chart shows the number of days that the Scott River fell below 20 cfs at the USGS gauge below Ft Jones with years with similar annual rainfall grouped together.





Figure 5. Scott River in canyon reach on USFS lands in 2002 showing very depleted flows and very poor fish habitat. Copyrighted photo used courtesy of Michael Hentz.

NAS (2003) gave the following assessment of adequacy of flows for fish in the Scott River: “During the adjudication process, the state and federal governments both failed to negotiate successfully for water that would favor robust populations of fish. There are now no adjudicated rights for fish upstream of the USGS gage in Fort Jones. Below the Fort Jones gage, the U.S. Forest Service (USFS) was allotted flow of 30 cfs during August and September, 40 cfs during October, and 200 cfs from November through March to protect fish. With no Watermaster service, USFS, a junior appropriator, commonly does not receive its adjudicated flows during late summer and fall. Table 1 shows the amount of water required by date at the USGS gage and Figure 6 shows Scott River flow data from the summer and fall of 2002. Flows fell below minimums required under the adjudication in late July and remained below legal levels until rains began in November.

Table 1. Scott River Adjudication instream flow allotment for U.S. Forest Service needs for instream flow in Scott River canyon (CDWR, 1980 as cited in Kier Assoc., 1991).

Period	Flow Requirement in Cubic Feet per Second
November – March	200 cfs
April - June 15	150 cfs
June 16 - June 30	100 cfs
July 1 - July 15	60 cfs
July 16 - July 31	40 cfs
August - September	30 cfs
October	40 cfs

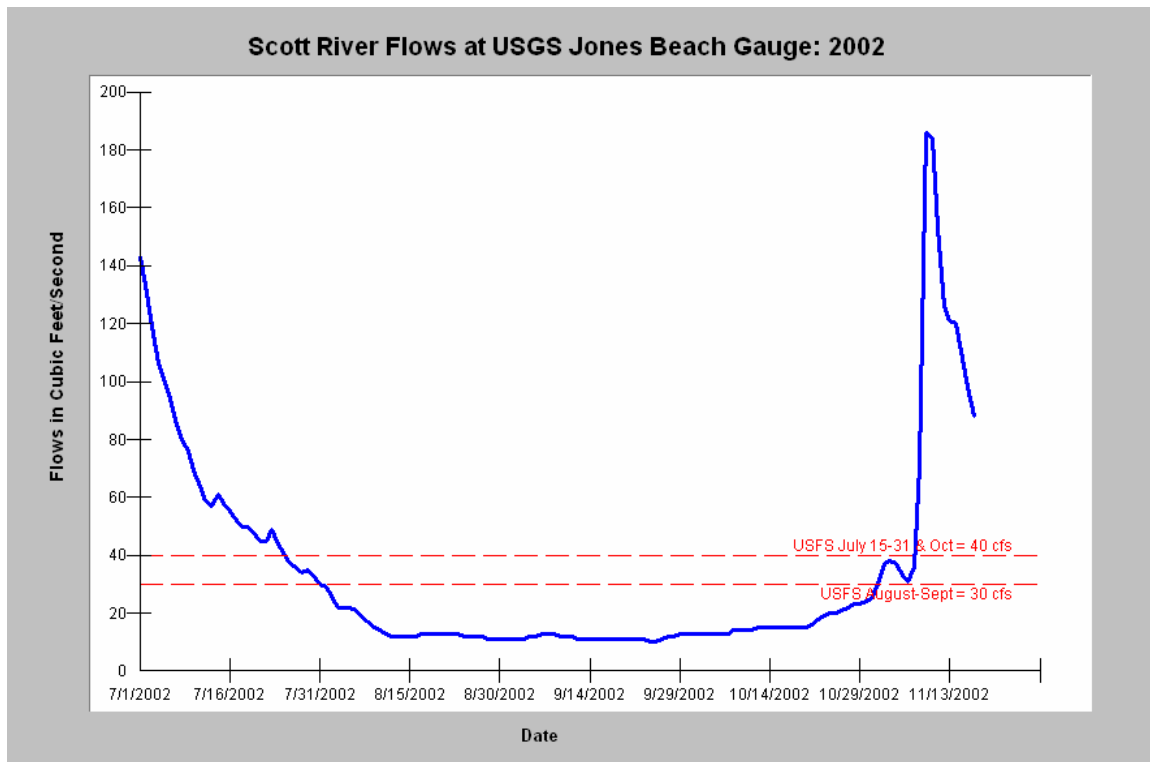


Figure 6. USGS Scott River flow gauge data from July-November 2002 show that minimum flow levels under the Scott River Adjudication were not met from late July to November.

Fish Screens/Fish Passage: The *Initial Study* (p 12) calls for screening of all agricultural water diversions and for remediation of fish passage problems at diversions, which are positive and necessary steps. All screens built since 1972 require that land owners should have them screened at their own expense (Kier Associates, 1991). Passage problems for other species of juvenile salmonids associated with de-watering of tributaries such as Shackelford Creek (Figure 7), Etna Creek and the mainstem Scott River (Figure 8) after coho salmon juvenile out migration have been mitigated since the 50's by CDFG rescue operations which have never been proven effective.

Livestock and Vehicle Crossing: Driving livestock or vehicles through stream beds would be prohibited from October 15-May 15 unless approved by CDFG. This ignores potential fall Chinook salmon spawning that can begin in early October if rains occur.

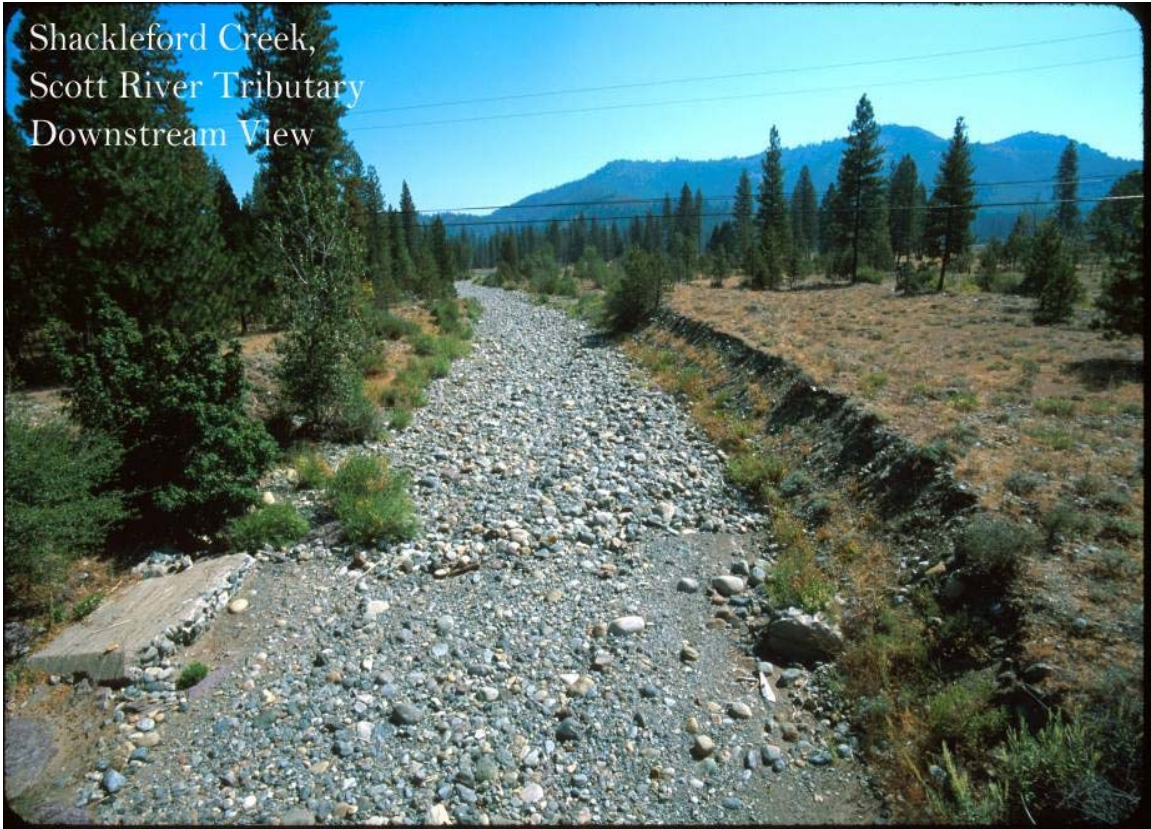


Figure 7. Shackelford Creek running dry in mid-summer 2002. Copyrighted photo courtesy of Michael Hentz.



Figure 8. This photo shows the dry bed of the Scott River in a reach near the airport looking upstream. Copyrighted photo used with permission of Michael Hentz. 2002.

Riparian Restoration: Although the *Initial Study* calls for restoring riparian areas and excluding cattle by constructing fences, the riparian buffer width in *SRCD Draft ITP* is not specified. If the distance from stream banks is too small, riparian functions, such as nutrient and thermal buffer capacity may be insufficient to protect and improve water quality. Poole and Berman (2001) noted the influence of riparian width on water temperature, with wider buffer strips more able to create cooler ambient air temperature over the stream and higher relative humidity. Bartholow (1989) showed that mean daily water temperature was most influenced in Western streams by air temperature over the stream, secondarily by relative humidity, with shade ranking third in influence.

The Scott ITP states that grazing in streambeds would continue, but that CDFG and the SRCD would put together plans for grazing to mitigate for any harm to coho. There are serious questions as to whether CDFG has the expertise and staff levels to participate in formulation of such plans and their enforcement. A permanent and effective solution to the problems of grazing in stream beds and the riparian zone of the Scott River and its tributaries would be easement acquisitions, which are not mentioned in the *Initial Study*.

Gravel “Push Up” Dams: The *Initial Study* (p 12) calls for a transition from building temporary gravel dams to use of pumps in most cases, which is a satisfactory approach.

Bank Stabilization: The *Initial Study* states that CDFG would require that all permittees under the watershed-wide ITP use living plant materials as part of bank stabilization, which is called bioengineering (CDFG, 2005). This is an ideal approach to preventing soil loss at the same time as fish habitat is maintained or improved.

Tailwater Recovery: The *Initial Study* calls for prioritizing agricultural return flows would be captured to decrease thermal and nutrient pollution. While this measure is commendable, implementation even for priority sites could be delayed for up to ten years.

Maintain Seasonal Connectivity for Tributaries: Because both French Creek and Shackelford Creek are known to harbor coho salmon, flow connection to the mainstem Scott River will be required before June 15. This action is insufficient to meet CDFG Code 5937 and will not remediate problems for steelhead trout, which are also part of CDFG’s trust responsibility.

## **MITIGATION OBLIGATIONS OF THE SRCD UNDER THE ITP**

Scott River Water Bank: The *Initial Study* (p 14) would establish a very bad precedent of paying farmers and ranchers to leave water in the Scott River and its tributaries during critical periods for coho salmon. Public trust protection is required under California water law and the Fish and Game Code; consequently land and water users are obligated to protect common property resources, such as native fish species. Enforcement action is needed if sufficient stream flows to protect public trust are not provided. Ironically, the envisioned water purchases or leases to benefit coho would likely not be sufficient to restore Chinook and steelhead. Thus, future negotiations and payments would be needed to improve flows for those species.

Retirement of some water rights through purchase might be a viable strategy, but only if adjudication were revisited and a mechanism put in place to prevent further extraction by downstream riparian land owners. The Initial Study contemplates the use of Water Code 1707 for getting water dedicated for instream flows, but there is no discussion of tangible measures to acquire such rights or how they would be enforced.

Improve Instream Flows Through Increased Efficiency of Water Use: The call for improving flows and efficiency of water use in the *SRCD Draft ITP* and the *Initial Study* are both positive steps. As noted above, flow increases would be geared only to coho salmon protection and would not likely benefit Chinook salmon and steelhead. The lack of enforcement from the DWR Watermaster (Kier Assoc., 1991) and/or the privatization of Watermaster services (SRCD, 2005) both call into question whether improvements of efficiency in water use would not be negated by re-extraction by downstream riparian water rights holders. Although the *Initial Study* references California Water Code 1707 that would allow dedication of water to instream flows for fish, insufficient detail is provided as to whether these measures would be voluntary or mandatory.

Sugar Creek Flows: The *Initial Study* (p 14) stipulates that 6 cfs of water rights will be dedicated to instream flows within one year after the ITP's implementation. This is very good, but there is not detail on how diversion by downstream riparian land owners will be avoided.

Strategy for Dry and Critically Dry Years: According to the *Initial Study* (p 15), a strategy for dry and critically dry years must be identified within one year of ITP approval. The proposed solution to maintain flows in dry and critically dry years is to increase pumping of ground water with payment from the Water Trust for pumping costs. Ground water extraction in the Scott River basin is already depleting surface flows; therefore, this strategy is unlikely to succeed. The NRCS office in Yreka has recently subsidized water pumps for farmers and ranchers in the Scott River under the rationale that they would become less reliant on diverting stream flows. What has happened instead is that stream flows have been reduced and some downstream water users have lost their supply.

Coordinating Diversions: Scott River flows may vary widely within any given day when irrigation is taking place, which may lead to short-term but critical low flow periods that do not show up in average daily flow summaries from USGS. The *Initial Study* calls for coordination of diversions through a Diversion Ramp-Up Management Plan. This is very good and much needed.

Off-stream Stock Water Development: The *Initial Study* (p 15) requires that at least two additional off-stream stock water systems be installed per year under during the term of the watershed-wide ITP. The specific target for decreasing the need for stock water from surface water diversions is migration of adult coho and ignores critical Chinook salmon needs for additional flow for passage and spawning throughout the month of October (see Attachment A).

Spawning Gravel Enhancement: Gravel enhancement in key reaches for coho spawning

is recommended in the *Initial Study* (p 16) but is not a prudent activity in the Scott River watershed. If anything, the river is over-supplied because of increased sediment yield from uplands (NCRWQCB, 2005) and the problem of maintaining appropriate stream substrate is more related to preventing cumulative watershed effects (see Appendix A). Increased peak flows associated with rain-on-snow events can increase bed shear stress and lead to an increase in the average particle size of the stream bed (Montgomery and Buffington, 1993). Watershed disturbance can also lead to an increase in fine sediment and a median particle size that is well below optimal for spawning (Knopp, 1993). The *Initial Study* and *SRCD Draft ITP* both completely ignore upland management, cumulative effects risk, potential impacts to stream channels, agricultural land, and coho salmon. This lack of integration increases the risk that conservation activities performed as part of the ITP could be confounded.

Habitat Restoration Structures: The *Initial Study* calls for installation of habitat improvement structures in reaches of the Scott River used by coho salmon. Placement of large wood debris (LWD) in upper tributary reaches may be necessary because recruitment of LWD has been decreased by logging. Frissell and Nawa (1992) point out that the incidence of failure of instream structures can be very high in streams with steep gradient and/or high peak discharge. Many habitat restoration structures in Klamath National Forest streams, including some within the Scott River watershed, were buried or blown out by the January 1997 storm (de la Fuente and Elder, 1998). Extensive watershed disturbance from logging and road building, especially in the transient snow zone, increases risk of structure failures (see Appendix A). Hence, any structures installed may have only short-term value, and resources would be better spent on other activities.

Large Diversions Identified as Barriers: The *Initial Study* (p 17) specifies that two major, long-standing fish passage problems at large scale diversions and targets them for improvement and ladder installation. The Scott Valley Irrigation District (SVID) Diversion will require a ladder to pass juvenile and adult coho within one year of the ITP approval. The Farmers Ditch is the second largest irrigation system in the Scott Valley and would be converted from a gravel “push up” dam to a vortex boulder weir. The passage in the Initial Study related to Farmers Ditch states that “The weir will be required to pass fish as long as flow is present.”

East Fork Scott River Fish Passage: The Initial Study notes that the EF Scott River harbors coho salmon in three of its headwater tributaries, but recommends establishing passage in only two out of three. All three identified tributaries are critical coho salmon habitat and it would be far preferable to acquire easements or strategic parcels to allow them all equal protection.

## **MONITORING AND ADAPTIVE MANAGEMENT UNDER THE ITP**

The responsibility for monitoring under the Scott River watershed-wide ITP would fall to the SRCD and DWR, with reporting requirements to CDFG. Provision of raw data to CDFG is required, which is a necessity in any science-based activity (Collison et al., 2003). The DEIS prepared by CDFG should also include stipulations and descriptions of mechanisms for sharing of raw data with the NCRWQCB, Tribes and the public. While both implementation

and effectiveness monitoring are called for, no specific monitoring activities are defined. In order to allow trend monitoring and adaptive management, the DEIS needs to require collection of water quality and fisheries data at the same locations and using the same methods as those employed heretofore. Study design for monitoring under the ITP should not be delegated to SRCD staff nor should specific monitoring requirements be deferred for later action.

The delegation of coho monitoring by CDFG to the SRCD is a cause of concern not only because of data sequestration issues, but also because SRCD staff may not be as well trained as CDFG personnel, increasing the risk of take of coho salmon juveniles. The suggestion that coho caught in downstream migrant traps might be transported back upstream is well-intentioned but a bad idea because it would likely exacerbate competition problems and decrease coho salmon production in tributaries where such transfer activities are carried out.

### **POTENTIAL AIR QUALITY IMPACTS OF THE ITP**

The Initial Study (p 26-35) discussion of air quality and potential impacts of ITP related activities covers nine pages. It correctly concludes that restoration will have no significant impact. The use of such “boiler plate” Environmental Check List produces dozens of pages of unnecessary narrative on similar subjects.

### **BIOLOGICAL RESOURCES AND IMPACTS OF ITP IMPLEMENTATION**

CDFG recognizes that the Scott River watershed-wide ITP will have potential impacts on other species. Discussions above note that the *Initial Study* considers validating flow levels that target coho only and could incidentally harm Chinook salmon and steelhead, if approved. Other discussions note that riparian bird species could be temporarily displaced by riparian restoration activities. As discussed above, the true impact of continuing today’s agricultural practices under the ITP on coho salmon is unaddressed in this section because of the *Initial Study’s* focus only on environmental effects of implementation of the ITP itself. The DEIS needs to discuss how maintaining current diversion practices with only minor changes for coho will avoid the risk of jeopardy to Scott River Chinook salmon and steelhead populations as discussed above. See Appendix A for more discussion on fall Chinook stock status.

### **GEOLOGIC HAZARDS AND ITP IMPLEMENTATION**

This section in the *Initial Study* (p 39-47) provides some very interesting information on the geology of the Scott River basin, but is otherwise a digression from the subject at hand. One conclusion drawn is that “the project will not likely increase the potential for an eruption of Mt Shasta” or to increase earthquake risk. Really.

### **CULTURAL RESOURCES**

The section on cultural resources in the Initial Study (p 39) only considers the narrowly defined CEQA definition. The Klamath River basin is unique in that it maintains several indigenous Indian Tribes that still reside in their ancestral territory. The DEIS needs to consider impacts to today’s Native Americans as a cultural consideration, because actions in

the Scott River basin can impact fisheries resources upon which Tribes rely. This is similar to the Klamath Hydroelectric Project impacts, where Tribes are affected by operation although they may be downstream of the immediate project area (Resighini Rancheria, 2005).

#### **POTENTIAL FOR RELEASE OF HAZARDOUS MATERIALS DURING ITP IMPLEMENTATION**

The *Initial Study* (p 47-52) concludes after lengthy discussions that the implementation of the Scott River watershed-wide ITP poses minimal risk of a release of hazardous materials into the environment. Possible “take” through exposure of coho salmon to hazardous materials such as pesticides or herbicides associated with normal agricultural operations is not discussed anywhere.

#### **HYDROLOGIC AND WATER QUALITY IMPACTS OF ITP IMPLEMENTATION**

Once again, the emphasis of the *Initial Study* on ITP implementation instead of on impacts to coho salmon makes lengthy discussion of hydrologic and water quality impacts (p 54-77) of limited value. The hydrologic conditions of the Scott River basin are well outside the range of normal variability due to intensive land use management and increase the risk of flood damage to coho salmon (see Appendix A). The DEIS needs to discuss how watershed condition and cumulative effects can affect success of ITP implementation.

In order to improve water temperature for coho salmon and meet the requirement for cold water fish as a beneficial use under the Clean Water Act, stream flows must be improved (Appendix A). Other potential water quality problems that could be associated with normal agricultural operations are ignored by the Initial Study. Figure 9 displays the pounds of pesticides and herbicides used in the Scott River watershed between 1990- 2004.

Patterns of use of pesticides indicate that there are more applied in riparian zones or parcels nearer streams than in uplands. Ewing (1999) points out that many pesticides and herbicides can be vary harmful to salmonids and that they may be responsible for population declines across the Pacific Northwest. He points out that many commonly used herbicides that are highly volatile in the atmosphere may percolate into ground water where they may persist for decades. Groundwater feeding streams may then re-introduce pesticides that have been in solution at a later date negatively affecting salmonids and other species. The CDFG DEIS needs to address the use of herbicides and pesticides and their potential affects and make their use a covered activity under the ITP. A list of pesticides determined as harmful to salmonids was released by EPA in July of 2006. According to the CA Pesticide Use Reporting Database, the following “salmon harmful” pesticides are being used in the Scott River mainstem and Shackleford Creek tributary: trifluralin, diuron, and multiple 2, 4-D compounds.

To meet with any success, the DEIS needs to coordinate actions with those recommended in the *Scott River TMDL* (NCRWQCB, 2005) and share responsibility and authority for oversight of Scott River water pollution abatement and restoration of cold water fisheries resources. It also needs to honestly address the issue of how flow affects water quality.



## NEEDED ACTIONS TO RESTORE SCOTT RIVER ECOSYSTEM AND COHO SALMON

The National Academy of Sciences (2003) characterizes the prospects for Scott River restoration as follows:

“Despite widespread decline in suitability of habitat, the Scott River retains high potential for becoming once again a major producer of anadromous fishes, especially coho salmon. The lower reaches of the tributaries on the west side of the basin, and the south and east forks, are still used extensively by coho and steelhead despite considerable degradation of the habitat. In addition to continuing efforts to reduce sedimentation and restore riparian vegetation cover in the streams, the key to restoring coho and other salmonids is to improve access of fish to the upper basin tributaries and to enhance coldwater flows.”

Rieman et al. (1993) in *Consideration of Extinction Risks for Salmonids* give council on how to best restore salmonid stocks to decrease extinction risk:

“Maintaining strong populations in the best possible habitats throughout the landscape and preserving the ecological processes characteristic of metapopulations are the best hedges against extinction.”

The DEIS must discuss the prospects for coho salmon recovery in the Klamath River basin overall and the role that the Scott River population may play.

Bradbury et al. (1996) also recognize that the most important step in restoring Pacific salmon populations is to protect refugia. In order to protect and restore coho salmon, there needs to be immediate protection of riparian zones and headwater areas of streams with current coho salmon production (i.e. Shackelford, French, Sugar, EF Scott River). CDFG personnel overseeing timber harvest applications should make this a priority.

Instead of narrow cattle exclusion zones, CDFG should work together with the agricultural community, SWRCB, NRCS and non-governmental organizations like the Nature Conservancy to acquire riparian property or easements to increase nutrient and temperature buffer capacity, increase large wood recruitment, decrease near-stream pesticide use and limit sediment contributions from bank erosion. Riparian gallery forests also trap sediment and large wood, keeping them from being deposited and creating a nuisance on farm and ranch land during storms. Land owners would receive compensation for lost agricultural production and establish natural protection mechanisms for the rest of their land from future flood damage. As soil in riparian zones builds up over time, the hydraulic energy of the Scott River will be more focused and capable of transporting excess sediment and scouring deeper pools.

The SRCD Draft ITP claims that previous restoration activities in the Scott River watershed are responsible for increased coho salmon returns yet there are no monitoring data to support that contention. The ITP will rely heavily on funding from the Natural Resources Conservation Service (NRCS) from the EQIP program. NRCS policy is to not publicly disclose who receives funds, or anything about the project, without the express written permission of the landowner. This bar to transparency hampers adaptive management and

makes it more likely that money will be spent on things that improve the economics of farming, but fall short with regard to benefits for fish. The DEIS needs to stipulate that the location of restoration investments from any public agency be made public and that effectiveness monitoring related to the activity be allowed.

## Pesticide Use in Scott River Watershed 1990-2004

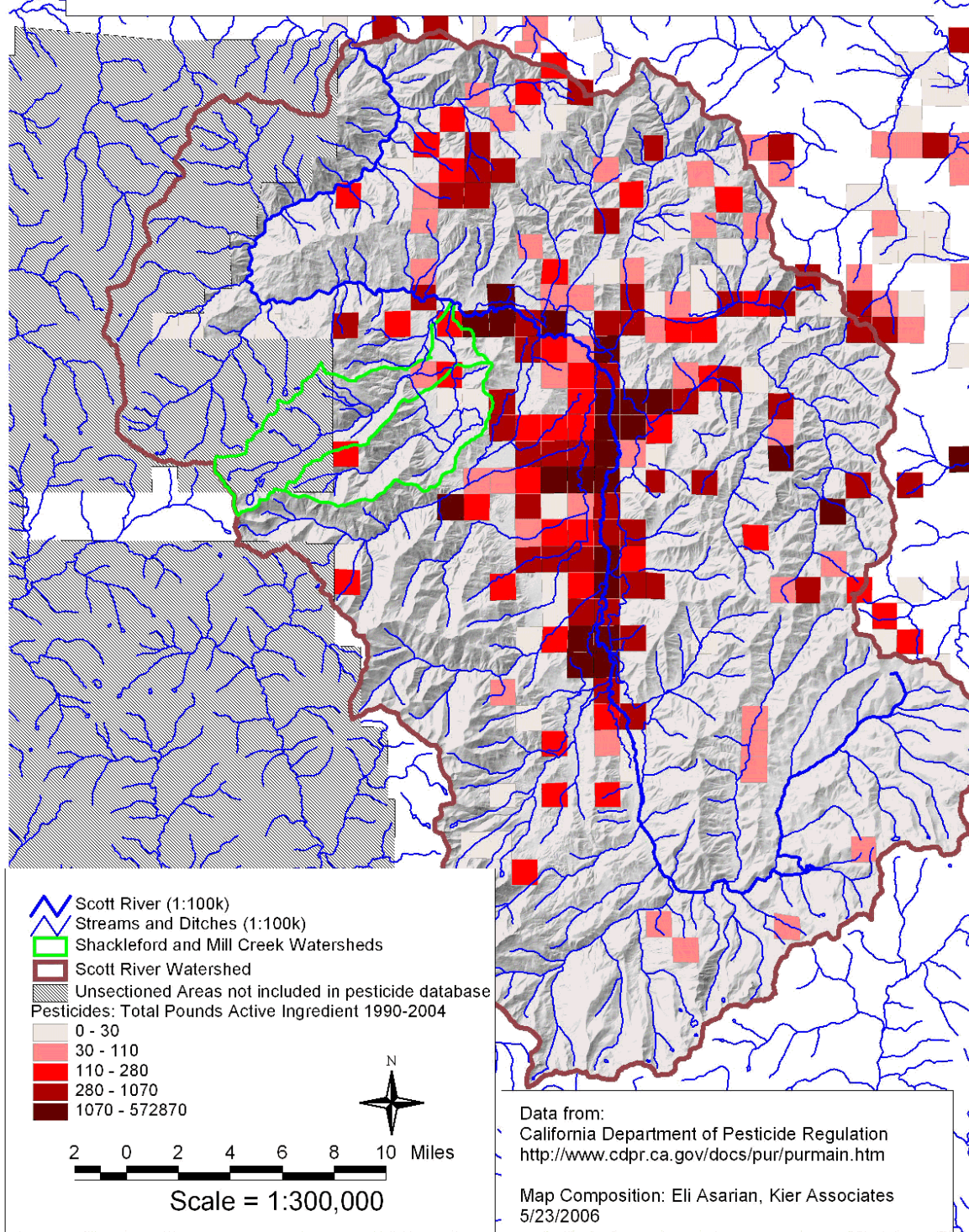


Figure 9. This map shows the total number of pounds of pesticides and herbicides used in the Scott River Valley from 1990-2004. Data from the California Pesticide Use Reporting Database.

NAS (2003) noted that there was considerable activity in the Scott River basin to restore salmon and steelhead, but “the groups have not attempted to resolve the most important but intractable issue: increasing the amounts of cold water entering the tributaries and the main stem.” The current approach to the Scott River ITP does not resolve the flow issue in that it avoids discussion of ground water, fails to restore surface flows to mainstem reaches and tributaries and would continue to provide less water than needed for upstream passage and distribution for fall Chinook salmon.

## **CONCLUSION**

CDFG should consider taking a more global approach to Scott River coho salmon conservation and recovery that would benefit all Pacific salmon species and fully remediate the Scott River basin’s water quality problems. The current approach of trying to mitigate current impacts, while maintaining the existing agricultural and water use paradigm will not likely prevent jeopardy of coho salmon under the proposed ITP as required under CESA.

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