



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

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July 19, 1993

To Klamath River Basin Fisheries Task Force members:

Enclosed please find the draft minutes of the meeting held June 15-16, 1993, in Yreka. Due to numerous missing pages in the first edition we are enclosing a corrected version. As done in the past, we will prepare a summarized version for distribution to all interested parties.

If you have any questions, please contact me or Doug Alcorn.

Sincerely,

Ronald A. Iverson  
Project Leader

Enclosure

cc J. Grover  
Technical Work Group members

JUL 19 1993

Minutes of the  
Klamath River Basin Fisheries Task Force  
June 15-16, 1993  
Yreka, California

June 15, 1993:

Members present: Nat Bingham, Kent Bulfinch, Leaf Hillman, Rod McInnis, Mike Orcutt, Ronnie Pierce (for Walt Lara), Bill Shake, George Thackeray, Jack West (for Barbara Holder), Keith Wilkinson, Robert Rohde (for Leaf Hillman)

Absent: Don DeVol, Mitch Farro, Barbara Holder, Tom Stokely, Walt Lara Jr.

Shake called the meeting to order, welcomed all attendees, and asked for introductions of Task Force members.

Agenda item 1: Adoption of agenda.

(Shake): Any additions or deletions to the agenda (Attachment 1)?

(Bingham): I'd like to include a discussion of California Department of Fish and Game's small rearing pond policy as a part of agenda item 12.

(Pierce): I'd like to include a discussion of Task Force member attendance at work group ranking sessions.

(Shake): We'll discuss it at the bottom of today's agenda.

Motion carried to approve the agenda as amended.

Agenda item 2: Approval of minutes from March 30-31, 1993, meeting.

Motion carried to approve the minutes, as sent.

Agenda item 3: Report from budget committee on development of Fiscal Year 1994 work plan.

(Bingham): The committee met in Redding on May 28, 1993. The minutes of the meeting were sent to Task Force members. Technical Work Group Chair, Jack West, presented the list of ranked FY1994 projects (Attachment 2) and recommended endorsement of the list. The budget committee does support and endorse the list, with a couple of changes. In discussing the Klamath River Fishery Resource Office (KRFR) budget, we recommend a \$420,000 cap. The committee felt that it's time to limit the office's escalating budget. Looking at the FY1994 work plan we decided to support the order of ranking, with one modification. The committee recommends not funding proposals FP-9, FP-11, and FP-12. These are screen proposals by California Department of Fish and Game. They have high technical merit but because the non-Federal match has not been met we recommend that these not be funded. We endorse the high ranking they received but as a policy measure we recommend more effort by the Department to make up part of the non-Federal match. That concludes the report.

Agenda item 4: Task Force discussion of the 1994 work plan.

(Bulfinch): Regarding the Tulana Farms project (HR-19) located in the upper basin, in my opinion it is presumptive for us to fund projects in the upper basin without having the amendment document approved. I suggest putting it on hold and funding restoration projects that will directly benefit anadromous fish. I don't question the project's high ranking but a sucker restoration

plan has been developed by the U.S. Fish and Wildlife Service (USFWS) with funding of it's own.

(Bingham): We discussed this issue, and determined to support the ranked list as prepared by the Technical Work Group.

(Bulfinch): I agree, but anything we do in the upper basin should be with the advice of the upper basin representatives. We haven't seated them yet so I think funding this project should be deferred at this time.

(West): We discussed the proposal at length. Elwood Miller from the Klamath Tribe participated in the work group and commented extensively on upper basin proposals. I share your concerns, but from a technical standpoint, I don't know what the likelihood of that project being funded from another source. The Technical Work Group thought it was a good project with much merit, with possible application to lower basin areas. I suggest that the Task Force consider leaving the list intact, and defer funding that proposal until we have an outcome on the upper basin amendment.

(Bulfinch): I did not intend to have the project deleted, but just deferred as you mentioned.

(West): I have a list of costs, by subbasin, in the proposed FY1994 work plan, to see where money is being distributed.

Q: Will we discuss this further under agenda item 6?

(Shake): This is what we're leading to, we're on item 4 right now. Item 6 will be our final decision.

(Reynolds): I share Kent's concern about funding this project. From a technical merit standpoint, it's probably excellent. But the benefits to anadromous fish are remote, at best. My concern relates to the issue of the upper basin amendment. Our principal charge is restoration of anadromous fish.

(Shake): I don't disagree but when we determined to develop a plan for the upper basin we were concerned with water quality. We decided that we would fund work to improve water quality.

(Reynolds): That wasn't the thrust of my comment. If there's a plan in place to apply knowledge and techniques gained from this project to other areas it would be appropriate to fund. But at this point the linkages are not in place.

(West): You'll note that this proposal represents about 2% of the fiscal program. I think it should be considered as a prototype project for natural water quality restoration projects. We all share the concern that water quality is impaired. A small investment at this time will also demonstrate that the Task Force is serious about involvement in the restoration of the entire river.

(Pierce): Is it the proper time to get word from California Department of Fish and Game on which of these projects they may be able to fund?

(Reynolds): We've already gone through our Prop. 99 funds. The Prop. 70 and salmon stamp committees will meet later this week. We'll complete the process then and I can't say which ones will be picked up.

(Shake): We're always a little out of sync with the state process, however they will have our list of projects to select from. As you are aware the Secretary of Interior visited the Northwest recently and is impressed with

work in the Klamath Basin. The Restoration Program may be used as a coast-wide model for an anadromous fish restoration program. We've had an opportunity to provide input for additional funding for FY95. Before we move to public comment, Nat you mentioned the budget committee's recommendation of a \$420,000 budget cap for KRFR0. It's my understanding that \$405,000 are coming from Task Force funds and \$20,000 are being contributed from USFWS appropriated funds.

(Bulfinch): I hate to see projects of high technical merit go down the drain because of the impression that the non-Federal match isn't being met. If I read the Klamath Act correctly the non-Federal match is not required of the State alone. There are many contributions not accounted for in the annual Task Force reports. All of the screen proposals are in Siskiyou County. Grider Creek is a highly productive tributary and I would hate to see the fish allowed to stray out onto the fields. I'd like to see at least one of these screen projects funded.

(Bingham): I agree with you Kent. The budget committee agrees that these screens need to be built. The State funding committees can elect to fund these.

Agenda item 5: Public comment on the FY1994 work plan.

Diane Higgins: For the past four years I've worked to develop curricula as called for in the Long Range Plan. I'm finishing up the third stage of a five stage project. I've completed three stages in four years. I believe the ranking that my project got this year was a result of misinformation. I will complete the third phase before beginning the fourth. I was at the Technical Work Group meeting but was not asked to discuss my prior project schedules. I believe it would have resulted in a different ranking of my proposal. In order to get back on target, I did not submit a proposal last year. If no funding comes this year I can't promise that I'll be able to complete this project in future years.

(West): Diane, you said that the education project was a five part series.

(Higgins): The plan called for a five phase process. We've completed three phases.

(West): If I recollect from the Technical Work Group meeting, I was under the impression that this proposal was the last phase.

(Higgins): The fifth year was to evaluate the curricula. However, I've been incorporating evaluation in these four other phases. I would like to look for matching funds in the last year of this project, needing about \$10,000 to \$15,000 from the Task Force for the fifth phase. The last phase will evaluate the first four phases.

(Wilkinson): It's apparent that there is some misunderstanding. Before we act on this work plan I would ask the Chair to allow the education committee to caucus.

(Shake): The committee will caucus at the morning break.

Agenda item 5: Public comment on the FY1994 work plan.

(Marcia Armstrong): I agree with Mr. Bulfinch that the diversion screens should not be allowed to fall through the cracks. They're a publicly visible indicator that something is being done to help the salmon. I'd also like to speak in favor of another item -- the Shasta River outmigration study which is ranked 55. Existing information centers around adult escapement levels. This study would allow a better grasp on outmigrant production in the basin and

will allow us to pinpoint problems in this area. It's basic information that we need to evaluate production. Local farmers, CRMP, and the Farm Bureau support this study.

(Mary Taylor): I'm concerned as to where the education program came from and who set it up. Upper basin residents do not know the background of the education committee. How does this help the immediate problem? The problem is that we need to do something to restore these critters that are becoming endangered. Isn't education the responsibility of the nation-wide education organizations. Is education the mission of this Task Force? You mentioned in Klamath Falls that it wasn't your mission to get involved with harvest management. I wonder if you're not going out of your area of responsibility by writing school curricula. We in the upper basin need to have information before we can make suggestions on these curricula. We in the upper basin don't know when the education committee meets. We also didn't get any education curricula for review as promised by the Task Force at our last meeting.

(Wilkinson): I request that Diane Higgins respond to Mary's comment about not getting a draft curriculum for review.

(Higgins): Last fall I spoke with a woman in the upper basin on this curriculum. I've received calls from about a half dozen teachers from that area who want to begin teaching this.

(Shake): To respond to your comment about our mission to educate; we feel that education is an extremely important component of the Long Range Plan. Without education and understanding the importance of anadromous fish and habitat restoration, this program can't be successful. Regarding your comment about our not being involved in harvest management; this Task Force is charged by the Klamath Act to restore habitat, not to make recommendations on harvest management. That is the responsibility of the Klamath Fishery Management Council (KFMC). The Task Force sent a letter to the KFMC indicating that we support decisions that allow adequate escapement. We're trying hard to develop communication networks with upper basin folks. I spoke with Ed Kentner and insured him that we will try to keep you involved. We're hoping to improve on this.

(Rohde): I'm sorry to hear that Mary didn't get the information she requested. As a Task Force member I'd like to see KRFR staff send her what she's requested so she can remain knowledgeable of what we're up to. One of the goals of the Klamath Act indicates that we'll keep the public informed. The Long Range Plan contains a section dealing with education policies. So we have guidance from the Act and the Long Range Plan on ways that we'll accomplish the education goals. KRFR staff will send you copies of the curricula.

(Unidentified): The recent drought resulted in drastic problems for the fish. We already know that we've got a problem. I thought the education program was to inform the public about this program and what we have to do to restore the basin. I was upset to find out that \$200,000 was spent on educating children who, at this time, can't work on these issues. The \$200,000 should be spent where the money can help the fish.

(Shake): I appreciate your comment, but disagree. It's important to educate our children about the value of our natural resources. This is their legacy, if we don't teach them they won't care.

(Bingham): There's a high school in Petaluma that has a drainage ditch running by it. It was once called "Adobe Creek." One hundred years ago the City of Petaluma diverted the creek for a municipal water supply. The school kids decided to turn the ditch into a creek again. The high school is now

producing fish in a hatchery, and the City returned the water right back to the creek once again. I say this to point out that educational investments can yield fish benefits quicker than you might think.

(West): I'd like to address Marcia Armstrong's comments on FP-14, the Shasta River study. The actual cost for the project is not reflected in the work plan handout. The actual funding need is \$79,000. We discussed the issue of receiving proposals from the Department of Fish and Game. The apparent lack of importance that the Department has placed on this project (by not funding it with State funds) and the fact that similar work had been done in recent past were considered in the ranking.

(Armstrong): The CRMP recently initiated a pulse flow release in the river as a result of having more information on when the fish are in the system. Recent information which indicated the fish are still in the Shasta River in early summer was what prompted the release. Earlier assessments indicated that fish were out of the system earlier in the year. The work you refer to may not be entirely accurate.

(Joseph Riker): I'm here to discuss the upper basin amendment document. You are all aware that many plans already exist for restoring endangered suckers and habitat quality. One plan approaches restoration from the ecosystem perspective, and describes the needs of multiple species. Were these considered when developing your amendment document?

(Elwood Miller): Regarding the Tulana Farms project, the Technical Work Group discussed this and I expressed my support for it. Oregon State University helped fund some of the earlier restoration work on the Williamson River. The Tribe thinks it is a good project. The proposer said they'd work with the Tribe in looking at the ecosystem and how it interacts with Upper Klamath and Agency lakes.

(Felice Pace): I wish to express appreciation to the Technical Work Group for their efforts in ranking projects. My comment is general, I've been involved in this process for some time now but never paid much attention to the funding process in the past. At the Brookings meeting last February I presented a strategy that's been developed by the Pacific Watershed Council, focusing on key watersheds. The habitat restoration needs are so great that we need a strategy if we're going to succeed. The resources available to us are not adequate so we need to prioritize areas that need restoration work. I'm concerned, despite the fact that we have general direction in the Long Range Plan relating to how we prioritize project funding, that we don't really have a strategy to direct our funding decisions. I would ask the Task Force if you agree that there is no detailed funding strategy, and what will we do to rectify that situation? I'd like to hear comment or discussion by the Task Force and Technical Work Group on the funding process for next year, whether there will be a strategy.

(West): Agenda items 7, 8, and 9 address identification of key watersheds or developing funding strategies. In the last Technical Work Group meeting we discussed becoming more specific in future years with RFQ's. I'll report on that later.

(Gary Hegler): I want to address the habitat situation in Siskiyou Co. One critical issue identified by the California Department of Fish and Game is muddy water associated with suction dredge mining. It's never been proven that muddy water is deleterious to fish. California Department of Fish and Game and the USFWS are initiating a fifth amendment taking on the miners. Equity of impact must also be addressed. Miners can create habitat for fish. About a month ago, agencies were flushing large amounts of mud from Iron Gate Reservoir, much more mud than is stirred up in suction mining operations.

Agenda item 6: Task Force decision on a final work plan for FY1994.

(Shake): Keith would you report on the education committee caucus held at the break?

(Wilkinson): The education committee asks the Task Force to reconsider project E-06 for inclusion into the FY1994 work plan. We recognize the good work done by the Technical Work Group, however we feel there was a misunderstanding about the ability of the proposer to complete the project on time. We recommend elevating project E-06 above the cutoff line. There is bigger issue here, how to rank recurring long-term projects. I suggest that we identify long-term projects to make ranking easier for the Technical Work Group.

(Bulfinch): One thing that needs to be pointed out regarding the expenditure of \$200,000 for education is that this expense represents a major portion of the educational budget for the entire 20 year program. Maintenance costs will be much less in future years.

(Pierce): I would agree with Keith that we've had problems with ranking multi-year projects. The Yurok Tribe is waiting to receive information gathered from some of the lower river investigations by the USFWS, but funding has ceased. I would also like to see the education project completed so we can proceed with the education program. Can have a report from KRFR0 staff on any wiggle room that we have in this bottom line of the budget? Are there other funds available that will change this line?

(Shake): Ron, can you speak to the FY1993 budget?

(Iverson): Item 9 on the agenda will address the issue of how to utilize \$16,000 of remaining FY1993 funds. The question is "what to do with it?" In accordance with the Chair's instruction to us last year, as funds have become available we've utilized the money to fund the next projects on the FY1993 projects list. The only remaining funds are those identified for planning.

(Rohde): The Technical Work Group process is as democratic as possible at this point and I don't think discussion of project E-06 impacted my score for it. I look at it more pragmatically. This curriculum is used by teachers at their own volition. My 8 year old did have a teacher last year that used some of the curriculum. I looked at this proposal, knowing that we've invested in 4th-12th curriculum development, and don't feel that my little girl suffered in not having special K-3rd curriculum.

(Wilkinson): I support the education program because when I first got involved in fish restoration in Oregon we were disappointed to find that there were only four schools in the State involved in fish/estuary/science studies. That was disturbing because we had a resource at risk and people didn't understand these systems. It was clear that we had to devise educational materials. To get the Klamath Program's K-12 curricula dropped one year short of completion is ill advised. I would ask the Task Force to continue this investment.

(West): I would like to reiterate what Bob Rohde said about the Technical Work Group process and the democracy that we try to adhere to as a group. I'd also point out to the Task Force that there are at least 10 higher ranked projects between the line and the project being discussed right now, several of which are educational.

\*\*\* Motion \*\*\*

(Bingham): I move to adopt the FY1994 work plan as recommended by the Technical Work Group, as modified by the budget committee's recommendation to preclude funding for projects FP-09, FP-11, and FP-12, and to establish a cap of \$420,000 for the KRFR0.

Motion seconded.

Q: Does this mean that, for KRFR's budget \$405,000 will be taken out of restoration funding and the rest will be appropriated through the USFWS?

(Bingham): Yes, based on what Bill Shake told us this morning.

(Shake): The additional \$20,000 is for work in the upper basin and will come out of the Service's appropriated funds. Does the committee want KRFR's costs to stay under \$420,000?

(Bingham): That's where the committee makes its recommendation.

(Shake): One of these years, we'll get the money coming into our base funding so we'll have the full \$1 million for restoration work. We're closer, but still need your help. Is there any other discussion to the motion?

(Reynolds): Are you saying that staff needs 425,000?

(Shake): They would like more than that. The figure identified by the USFWS Regional Office was \$425,000 of which \$20,000 comes out of appropriated funds. \$405,000 will come from Klamath Restoration Program funds.

(Reynolds): So, the handout (Attachment 2) should actually have \$405,000 instead of \$425,000 listed in the Cost column?

(Shake): Right. Any other discussion or proposed amendments to the motion?

(Bulfinch): I recommend deferment of funding for the upper basin proposal HR-19 until the upper basin amendment is finalized and the new upper basin representatives are seated on this Task Force. I offer this as an amendment to the motion.

(Bingham): I accept the amendment.

(Shake): I'll call for the question on the amendment, only.

(The proposed amendment to the motion carried with Oregon abstaining.)

(Shake): I'll call for the question on the amended motion.

Motion, as amended, failed.

(Shake): Keith, would you like to offer another motion?

(Wilkinson): I'm not prepared at this moment. I don't want to be in a position of axing another proposal. I had asked the Task Force to reconsider the educational proposal. The education committee supports the recommendations, my vote is consistent with that recommendation.

(Bingham): Keith, I wonder if you might remove your objection and offer an amendment.

(Wilkinson): I'm aware that other proposals exist between the bottom line and project E-06. I agree that an amendment is needed but I am not prepared to offer an amendment without doing the arithmetic to determine impacts on other proposals and the overall work plan.

(Shake): The impact would be in the ballpark of \$50,000.

(Reynolds): Nat suggested removing the three CDFG screen projects from this list. If these projects aren't funded by the Prop. 70 committee or the Salmon Stamp Committee they simply won't be funded.

(Bingham): I'll work hard to get them funded by these other sources but at \$2,562 apiece there won't be a great impact on where the line is drawn. I remind the Task Force that we've modified work plans in the past.

(Wilkinson): Nat, by the amendment to the motion did we strike project HR-19?

(Shake): We didn't strike it, we put it in abeyance until such time that the upper basin amendment is adopted and the upper basin representatives are seated.

\*\*\* Motion \*\*\*

(Wilkinson): I move, pursuant to abeyance of project HR-19 and striking the three CDFG screen proposals, to insert E-06 for \$51,230 above the funding line.

Motion seconded.

(Shake): Discussion?

(Pierce): Nat, is there potential for funding the generic fencing proposal with Salmon Stamp or Prop. 70 funds?

(Bingham): I can't make promises, but can say it will be seriously considered.

(Shake): I speak in favor of the motion. I agree with Keith in terms of completing our education program as outlined in the Long Range Plan. I've used these curricula as examples for folks interested in developing curricula for their schools. The education program has far reaching benefits.

(Reynolds): I also speak in favor of it. We have several curricula in California but this is one of the best.

(Bingham): For clarification, we're putting project HR-19 on hold. At such time the upper basin amendment is adopted it returns to the ranked list in its present position.

(Bulfinch): Yes.

(West): I want to remind the Task Force that there are significant and worthy projects ranked higher than this project. If I were a proposer that had one of these projects, I would ask serious questions about why my project was not funded before this one.

(Bulfinch): This is a continuation of a larger project. It's not the same.

Q: Jack, can you explain the rationale of why this project ranked low?

(West): I don't know how anyone else rated project E-06. After discussion of a proposal each work group member rates it. We all recognize the value of the education project, but the ranking reflects how it was viewed.

(Bingham): I'm not comfortable with this no matter how it turns out. I recognize the commitment we made to the educational program and am aware that we've worked hard to develop a process that does the rating and ranking in a way that's as fair and equitable as possible. I'm afraid when we pass the amended work plan we'll have problems in the future.

(Shake): We've developed this process and I believe it's a good one. This used to take us three days, now we're down to a few hours. However, when issues come up it's our responsibility to address them. Sometimes the technical merit is not as important as the policy issue. This type of discussion is appropriate now. I don't feel as uncomfortable as you do.

Q: Will we have lost everything we've invested into development of the curricula if this project is not funded?

(Shake): It wouldn't be the end of the world but the program wouldn't be completed. There's an education component built into this program which I feel is very important. As Kent described, the education program will be low cost once it's completed. It's not an issue that we'd have to come back to.

Q: Would this be the final education proposal for this development program?

(Shake): Don't think it's the last one we'll see but is the last in the K-12 curriculum development.

(Thackeray): In looking at proposal E-4, the Klamath Forest Alliance proposes to educate 1-8 graders. Is there any coordination between this proposal and what Diane is doing? Is there overlap?

(West): As I recall the proposer for E-04 will coordinate and use the 1-8 curriculum that's been developed by Diane but adapt it to the local situation.

(Higgins): There is no K-3 curriculum so they can't use it.

(West): OK, so they would use the curricula as already developed for 4-8.

(Rohde): Peter Brucker is cooperating with the Salmon River school teachers but the teachers will actually adapt the curricula for their needs. This will be coordinated with the Salmon River Restoration Council.

(Pierce): I'd like to ask for a short break before calling for the question.

(Shake): OK, let's take a 5 minute break.

(After break)

(Shake): Are there any final comments or questions before the question?

(Rohde): This is a difficult situation. The Karuk Tribe has never been against the education program. We've encouraged it to continue but we're also supportive of the Technical Work Group process. There are many projects that ranked higher than this one. The Tribe will oppose the motion.

(Thackeray): That doesn't mean that it's killed entirely. Could it come back at a later date?

(Rohde): Yes.

(Orcutt): Much work has gone into the ranking process and we must not jeopardize the effort by the Technical Work Group.

(Pierce): It is difficult to support a work plan until we know what projects the State will fund.

(Shake): It's clear that we don't have consensus on the motion. Would someone like to take a shot at another one?

(Reynolds): In addressing Ronnie's comment, the state funding committees purposely wait until the Task Force has adopted a list so they can consider funding projects off of that list. It's highly unlikely that the committees would approve many projects on this list unless the Task Force has adopted it. I recommend that the screen projects be left on the list but not funded with Federal money. If that's what the committee recommends.

(Shake): Ok, we still have the 1994 list of ranked proposals in front of us. Do we have an alternative motion?

\*\*\* Motion \*\*\*

(Bingham): I move that we approve the work plan as proposed by the Technical Work Group, with the exception that project HR-19 is put on hold until adoption of the upper basin amendment, and the screening projects are placed back into the list for consideration by the State funding committees.

Motion seconded.

(Wilkinson): I will speak against the motion. My concern is that, despite hearing the words in support of the process, the decision was made several years ago to make this democratic. The Task Force voted not to be involved in the ranking process. It appears to me that at least two of the members seated here had a part in the ranking process.

(Shake): I suggest that we table this motion until right after lunch. Those of you that have concerns should spend time together at lunch and discuss an alternative. I'll table the motion with permission from the maker of it.

Agenda item 7: Report on draft FY1995 Request For Proposals (RFP).

(West): As you may recall at the Task Force's March meeting the Technical Work Group was given the assignment to develop a prototype FY1995 RFP that was more specific than the '94 RFP. We failed to develop this. We spent five hours on this issue. We believe that there is room to be more specific in the RFP or to develop a Request For Quotes (RFQ), dependent on the type of work that needs to be done. The Technical Work Group didn't have enough information to develop a specific RFP. We believe that from now until January 1994 we might be able to produce a more specific RFP for FY95. Lacking information on the status of every subbasin it's impossible to prioritize work activity and location. We don't have a comprehensive map that shows the range of anadromous stocks in the basin. We believe we must develop a tool that will help us identify work activity types and locations where work is needed.

(Shake): Do you have a recommendation for the Task Force on how we should proceed?

(West): Yes, it's tied to agenda item 9.

(Shake): Do you want to discuss agenda items 8 and 9 now?

(West): Yes, I'd like to discuss item 9 first.

Agenda item 9: Action Planning.

(West): The Task Force approved project PC-02 for funding in FY93. The project is to allow \$16,000 for subbasin planning. The TWG discussed this project at our last meeting. Much frustration was expressed about the lack of information in the basin when attempting to develop a specific RFP. The group feels that the best subbasin planning approach is to collect all the information available and place it into an electronic map. We hope to focus first on subbasins below Iron Gate Dam. This will enable us to compare data

gaps and to identify where specific restoration activities are needed. I put together this summary (Attachment 3) to describe our recommendation.

(Reynolds): I agree with the approach you recommend. The Department is attempting to develop these types of maps for all of our basins. We have ignored the Klamath and Trinity basins because of the existing task forces and their respective efforts.

(West): To sum it up, Bob Rohde will develop a scope of work for this effort. We hope to have a useable product by this winter to fit it into the RFP process. We hope to be able to develop two different RFPs; one specific and the other broad scoping.

(Shake): Does that mean you are or aren't going to spend the \$16,000?

(West): We wish to invest the \$16,000 into development of a Geographic Information System (GIS) map and data layers for subbasins in the lower basin. Doug Alcorn and Bob Rohde were going to work out the details of this project.

(Rohde): I was directed by the Technical Work Group to develop this. Most of the agencies represented here already have GIS capability. It's possible that we can pool the resources and develop this type of map. The logistics of pulling this together may require that the work be completed by a private firm. If we determine how to go about this we should be able to accomplish this in the given time frame.

(Iverson): I thought you were working on a detailed scope of work for a competitive bid to develop a GIS map and digitized layers. Every year we are given a cutoff for spending, usually in the middle of the 4th quarter. If we go this way there's little time to do it. If we do this in-house we have until the end of the fiscal year. If we have a detailed scope of work we can get it done, but the end date for developing this is coming up soon.

(Shake): I'd say in August sometime.

(Reynolds): I'll volunteer to work with federal agencies to develop a basin wide GIS. It would be wasteful to let a contract to set up a GIS system when so many systems already exist. We might ask a contractor to input data into an existing system. We need to know what information is available and determine what information is of value for the Technical Work Group.

(Rohde): The Task Force has yet to approve this recommendation for spending the \$16,000 on this. If approved I'll call the USGS, USFWS, US Geodetic Center in Salt Lake City and find out if they're using the same standards to develop their maps. If maps can be joined we should use the existing tools. If these systems don't join easily it might be more simple to start with a comprehensive system and fill in the blanks, or have a private firm start from scratch and develop a map for the entire basin. This tool will get us to the point of identifying specific needs of the basin and each watershed.

(Reynolds): I don't think it will be done for \$16,000. I request that Paul Viesze be present at the next TWG meeting to discuss this topic.

(Shake): In order to allow some time, I suggest that we obligate the \$16,000 of FY93 money for other projects; allowing \$16,000 from the FY1994 budget to cover this expense when a more detailed proposal is developed.

(Reynolds): Would FY1994 funding be available October 1, 1993?

(Shake): Yes.

Agenda item 8: Report on identification of critical fish refugia

(West): The TWG was asked to draft this letter at the February Task Force meeting. This is a draft letter (Attachment 4) containing a list of watersheds the Technical Work Group feels are critical for survival and perpetuation of stocks at risk. We identified critical watersheds that affect the stocks at risk and that are also in relatively good condition. There is a need for an additional list that would prioritize watersheds according to their value toward overall basin restoration.

(Reynolds): The last paragraph of your letter should be changed. It sounds like we have police powers and that we could require a response when I believe that we're asking for them to work with us to see if there's a way to avoid damaging fish. Do we have police power?

(West): That's a question that the Task Force must answer. What role the Task Force wants to take in watershed protection. The Technical Work Group wasn't asked to deal with that question. We were asked to develop a list of critical watersheds and draft a letter to landowners asking what their future plans were.

(Shake): I also have some concerns with the final paragraph. Did you discuss holding a workshop in these subbasins to discuss these issues with landowners? This would get the people together to talk with them rather than sending a letter instructing them to identify their activities and telling them whether it's OK. This is not what we want to do.

(Pierce): Are not the majority of these watersheds in public ownership? How many are on private land?

(West): Going through the list: Blue creek is primarily Federally owned; High Prairie is contained in the Yurok experimental forest; Richardson Creek is in Redwood National Park and on Simpson land; Boise Creek is primarily on Federal land but with some private along the stream; Clear, Dillon, Elk, Grider, and Red Cap Creeks are all surrounded by federal land but some private land borders the streams; Big Springs Creek and Bogus Creek are mostly privately owned, Butler Creek is almost all Federally owned.

(Bulfinch): I suggest that the last paragraph be framed more positively, indicating that we know the landowners value their contributions to fish habitat and that we would like to assist them in protecting their resources as well as meeting our fish restoration objectives.

(Pierce): Almost all of the creeks are on federal land. This letter would be going mostly to public agencies. You might want to consider a different end paragraph depending on whether the letter goes to agency or private landowner.

(Shake): At this time I'll take public comment on these three issues.

Public comment:

(Felice Pace): On the critical watershed issue I would like to ask the Task Force to consider carefully what we mean by "critical watershed." This list identifies refugia, not critical watersheds. There are no refugia identified on the Scott River, however restoration in that system is critical to overall restoration of basin fisheries. Specifically, Boulder Canyon and Kelsey Creek are both critical in terms of protecting and restoring the Scott River fish stocks. If they are classified as critical you could set sediment reduction goals and restoration goals. Since there's nothing on this list in the Scott River are we writing off the Scott? While I'm encouraged by this list I don't think the TWG is done yet.

(Bill Kier): Looking at this list, I recall the heartburn we went through in 1990 when the work group identified stocks in the basin. The decision at that time was to consider these stocks as management units keeping them in mind as you proceeded to implement the Long Range Plan. My concern is that you might be abandoning one approach contained in the Plan by considering the Pacific Rivers Council policy of identifying good watersheds. As you step away there should be some assessment as to how this differs from the Long Range Plan approach. Jack, how does this list of watersheds line up with the list of population management units identified in the Long Range Plan?

(Bingham): You may recall, Bill, that we assigned a stock identification committee to identify Klamath basin fish stocks and compare their list with the list contained in the Long Range Plan. In a way we've almost mooted that question. This list we're discussing here is somewhat different than the list in the Long Range Plan.

(Shake): My perception of this list is that it identifies relatively undisturbed habitats with the objective of maintaining the quality of those habitats.

(Marcia Armstrong): Speaking for landowners, the last paragraph of the letter concerns me. You're asking landowners to volunteer for regulation. There might be other ways of approaching this. There may be agencies or groups that could act as a buffer between this Task Force and the landowners, such as the Cooperative Extension Service or the CRMPs.

(Bob Bartholomew): I recommend that you use the CRMP groups to get these letters out. The Shasta CRMP could be used as a means to protect Big Springs Creek. I don't see any reason why they can't go forward in this by contacting the landowners for you. In the Shasta Valley you're talking about grazing/riparian management.

(Bob Franklin): In responding to Forrest's comment about needing a list of approved projects. If there is endorsement of the entire list, all you've approved is anything and everything that was sent in. As a technical person I have concern with the "stamp of approval" being put on some of the project proposals we might get. We need some way of identifying projects that we think should not be funded.

(Felice Pace): I want to say that the Pacific Watersheds Council is identifying critical watersheds in the Northwest. I would propose a reassignment from the Task Force to the Technical Work Group, to look at the list of watersheds developed by other groups. My feeling is that there is something else that needs to be done.

Agenda item 8: Report on identification of critical fish refugia (Continued).

(Shake): I'll offer my thoughts on this. First, I prefer to use the term "undisturbed" over "critical." "Refugia" also implies land classification and the comments we're hearing smack of regulatory authority. My opinion is that we want to work with landowners to protect these areas. I'm not sure how we will do that. The counties or CRMPs are one way to deal with this. Where do we want to go with these items? I think there was general head shaking to put the \$16,000 project in the bank for FY1994 funding. Is this agreeable with the Task Force? The TWG needs the tools before they can complete the assignment to develop a specific RFP. This leaves us with a decision to make regarding the draft letter to landowners and Felice's comment that there are other watersheds that must be considered.

(Thackeray): I'm in favor of working through the CRMPs. I think that the Task Force will serve itself well by working through these organizations. If this

letter goes to landowners it will be viewed as a bureaucracy trying to impose regulations on them.

(Shake): Felice also suggested identifying other watersheds.

(West): We can identify other watersheds but the Task Force must provide us with more specific criteria for making the determination of which watersheds are essential to this restoration effort.

(Rohde): The feeling I'm getting is that the letter is almost OK but the last paragraph needs some editing. The Technical Work Group has taken its best shot on identifying critical watersheds. Can I edit the letter tonight and bring it back tomorrow for consideration?

(Shake): Yes. Please do.

(Pierce): I'm still unhappy with this letter as written because, for example, it only identifies the upper portion of Blue Creek as being critical for protection. I think that there needs to be a second list developed. These areas were identified as the best remaining habitats.

(Reynolds): I agree with Ronnie. I think you've said that you will develop a secondary list. I would also ask that you consider developing separate letters to landowners to the CRMPs.

(Shake): I'll ask Bob to take another shot at this based on comments that we've heard. We'll look at this tomorrow, please give your comments to him.

\*\*\* Action \*\*\*

Bob Rohde will re-draft the letter to landowners, which identifies critical watersheds and asks for cooperation in protecting those watersheds.

(Lunch Break)

(Shake): As an announcement, we will discuss the FY1994 work plan the first thing tomorrow morning. Everyone will have a chance to consider this list before we take action. There is a meeting this evening of the Scott River CRMP in Fort Jones. There's an opportunity for all Task Force members to see how the CRMP process is working and to meet with CRMP members.

Agenda item 10: Status of the Klamath River Instream Flow Study.

(Iverson): We went over this subject at the meeting in Klamath Falls. At that meeting the Task Force committed to take the lead in developing an instream flow study. This is a shift from the position expressed in a letter the Task Force sent to the Secretary of Interior last summer, asking for the Department of Interior to initiate a study. It was decided at the Klamath Falls meeting that there should be a meeting to plan and scope out the instream flow study. We (KRFRO) put together a proposal for funding the field reconnaissance and scoping phase with the idea of getting 50% of the project funding from the Bureau of Reclamation (BOR) as a match. That proposal did not rank out very high in the '94 process. BOR's money is left on the table now and we don't have any prospective funding for this work through FY1994. So there's lots of time now to scope this out. I've suggested an ad hoc committee be appointed to look at some of the broad policy issues such as geographic scope, which streams, specific roles, study methodology, or scope of impacts (biological or geomorphological impacts), which would broaden the set of questions you'd be looking at. I suggest a committee of policy makers (executives) that can commit their respective agencies, that can determine the role of staff, and can commit financial support. If this committee is organized we can invite

other agencies and organizations to participate with a request from Chairman Shake. That's the staff recommendation to the Task Force.

Q: What did you say the request for the funds from the BOR was?

(Iverson): We put together a joint venture proposal for funding the initial phase of the instream flow study, with half funding coming from the Task Force and half from BOR. Their share was contingent upon the Task Force funding the other share.

(Rohde): Is this a recommendation to establish a committee?

(Shake): Yes, to develop a more detailed scope of the study which would be reviewed by the Task Force then by the public. Issues such as the geographic scope and study method would be thought out prior to soliciting public comment.

Public comment:

(Joseph Riker): I'm concerned that this Task Force would establish a committee to determine the scope of an instream flow study when a decision making group for water delivery exists in the Klamath Compact Commission. I believe that part of the problem is that you're looking at an IFIM study to determine the needs of the flow in the lower basin. The controls are in the upper basin and representation of the upper basin needs to be heard from. We control the supply.

(Shake): This is a study to identify habitat requirements for targeted species. It's similar to the flow study on the Trinity River. I would hope that everyone with interest would be involved.

(Felice Pace): Given what we know about the biological needs of the mainstem Klamath, I would ask if we could get an explanation from the Technical Work Group on why this ranked so low? I also ask if the rating sheets are available for public review?

(Shake): Ron, are the proposals on file in your office and are they available?

(Iverson): We have a full set of proposals, but I heard Felice ask whether the individual rating sheets are available for review.

(Shake): The Technical Work Group Chair stated that ranking is determined by individual members, and these scores are averaged.

(Bingham): The idea of establishing a committee is a good one. I've been distressed by the lack of progress on this issue. I'm not sure of why this was ranked so low.

(Rohde): The concerns expressed by upper basin residents are well founded. I don't know how to go about getting them involved. Maybe we can authorize an additional scoping meeting to identify all the participants. We're in a bottle neck right now because the USFWS and BOR tried to initiate this process last year. There's no money set aside for this but it's recognized as a priority action in the Long Range Plan.

(Shake): We decided to get involved in Klamath Falls and we determined that we must identify more specifically what we propose to do. We also must invite comments from the public. We need to frame this up a little bit so folks will know what to comment on.

(Iverson): This has now become a Task Force initiative. It is no longer and Interior one. You need to make some policy decisions on the scope, roles of

agencies, etc. then go to the public for comment. The initial scoping should include other key players not at this Task Force meeting. For example, Pacific Power and Electric and the Klamath Compact Commission. There's no agreement on the scope of the study, to date. The policy questions must first be determined prior to the technical issues and questions.

(Elwood Miller): I don't see a problem with the Task Force setting up an ad hoc committee to develop this. You could even do an Instream Flow Incremental Methodology (IFIM) study for the lower river and extrapolate the data to the upper river system. It's pretty good science. I don't see this as a ploy to exclude upper basin representation. I see it as an effort to look at the system as a whole.

(Felice Pace): Why has the Department of Interior decided not to proceed with this?

(Shake): Could you tell us where you heard that Interior has moved away from the lead position?

(Pace): I've heard this here today. How did that come about?

(Iverson): That's my impression. There was a letter to the Task Force from the Secretary of Interior which indicated that Interior agencies would pursue this. At the last two Task Force meetings I've heard this Task Force say that they want to take the lead on this. The decision at the Klamath Falls meeting was that the auspices of this project would be broadened. Forrest asked "Who's in charge?" at the last meeting. I think the Task Force agreed that they should initiate this rather than have Interior evaluate their own project.

(Shake): Did Interior respond to the letter signed by Nat?

(Iverson): Nat's letter said there's a critical flow problem in the Klamath and that the Task Force wanted an instream flow study to be carried out. The Secretary's response was that some Interior agency would be instructed to pursue this.

(Shake): If I recall, wasn't it a commitment to study what would be required to implement a flow study.

(Iverson): Yes.

(Shake): Then I interpret that as only looking at the issue, not necessarily funding the study. The Task Force has determined that they want to be the lead entity in the scoping of this instream flow study.

(Reynolds): The Department believes there should be a more broad look at flow needs relative to fish migration. IFIM is a great tool but not the entire answer.

(Rohde): We're looking at a dynamic system with water being contributed from tributaries other than the upper mainstem. We're looking at habitat requirements for migration as well as for rearing. We can begin a process to figure out what it is we need to evaluate. It seems appropriate for us to develop a mechanism to analyze the need.

(West): Felice, you asked two questions "Why did this proposal rank so low?" and "Are the rating sheets available for review?" As mentioned earlier, we talk about each individual proposal. Each member then rates each proposal and those ratings are summed and averaged. We could all agree that it was a meritorious proposal but a couple of low individual scores would drop the

average score. Regarding whether rating sheets are available for review, we've never discussed that. The TWG members don't even share their ratings.

Public comment:

(Marcia Armstrong): I would express that Farm Bureau's concern that the scope seems to have broadened to the Shasta and the Scott River flows. There are two adjudications on these river systems and the California Department of Water Resources (DWR) is also involved in flow delivery. You must include other interested parties.

Continued discussion of Agenda item 10:

(Shake): I'll bring this to closure with a suggestion. Looking at the minutes from the meeting in Klamath Falls, I'll ask KRFR0 to: 1) put together a list of upper basin and lower basin representatives that should be invited, 2) identify the issues that need to be talked about, 3) develop an agenda, 4) draft a letter explaining all of this for the Chairs' signature, 5) and set up a meeting including all interested people. George, you can look at the mail list to ensure that the upper basin is adequately represented. We will scope this issue in a future meeting. Hearing no objection this will be an action item.

\*\*\* Action \*\*\*

KRFR0 will set up a meeting of agencies/organizations wishing to participate in the initial scoping of a Klamath River flow study. A letter explaining this scoping phase and inviting participation will be provided to the Task Force Chair for signature by June 25, 1993.

Agenda item 11: Status report on Klamath and Six Rivers National Forests' Land Management Plans.

(Jim Anderson, Klamath National Forest): When we last discussed this with you we had developed multiple use alternatives for the Klamath National Forest. We tried to provide an opportunity for public input on our proposed alternatives. In that process we developed a preferred alternative. The land management plan consists of land allocation, standards and guidelines, and projected timber output. It proposes no wilderness. It is an ecosystem driven plan. We look at the composition and function of the forests horizontally and vertically. There are multiple levels of consideration. How does this affect fisheries? We must look at all resource aspects. Issues such as sediment, woody debris recruitment, shade, stock diversity, genetics. In the process of planning we found there are a few things that you can't fix if you destroy them, such as DNA, cultural values, or soil.

Regarding sediment we studied the scope of the sources of sediment. The findings were rather dramatic. Millions of tons are contributed annually. Much is caused by man's activities but most derives from natural sources. We must consider the things that man can affect. Fuel build-up and resultant fires are manageable aspects. We will prescribe fire for 30,000 acres of Klamath National Forest. This will result in low intensity burns, preventing severe erosion. Timber harvest will average about 22% of the growth (80,000,000 board feet). Within five decades we hope to reduce wood fiber levels to reduce the potential for severe burns. Specifically, forest wide standards and guidelines such as riparian buffers must be provided. At two hundred horizontal feet you run out of benefits to fisheries habitat except for protecting the microclimate and the woody debris recruitment.

Regarding key watersheds and refugia we'll try to protect stocks by protecting critical reaches in highly protected areas such as wilderness. We also have a light handed fire suppression policy and sensitive soil protection policy,

leaving some downed trees to stay on the ground for nutrient recycling. Road management is also something that we incorporate into the preferred alternative. Watershed restoration will also be initiated in the preferred alternative. (Anderson displayed some color coded maps of the Klamath National Forest). The maps are of the starting point and the preferred alternative scenario. We've identified important watersheds for protection. Key areas for fish protection have wild and scenic river status. We have proposed 212 additional miles (10% of the national goal) to be set aside for wild and scenic designation. About 600,000 acres are available for timber harvest. Intensive timber harvest is 18 to 20% of timber harvest per available acre. In the Klamath National Forest, we approach 16%.

Q: Could you go through the riparian harvest constraints?

(Anderson): We won't schedule harvests in riparian areas, but in an emergency such as a fire we could harvest the trees. We won't take trees from the inner gorge unless it is determined that these would impact the fish habitat in a negative way.

Q: When will this become Klamath National Forest policy?

(Anderson): This preferred alternative may be in place by spring '94.

Q: Would the prescription for harvest in the riparian areas be different than those prescriptions used in other areas?

(Anderson): Yes. The prescription must provide a benefit to the riparian zone, allowing for recruitment of coarse woody debris.

(Shake): The forest conference put together groups to look at timber harvest and protection of ecosystems including owl habitat and riparian areas. How will that impact your proposed alternative?

(Anderson): These forest plans constitute one of the proposed alternatives that the forest summit committees will study. The relationship between the two is still under consideration between the Department of Agriculture and the presidential administration. I'd like to get this plan out to show that we've got an in-depth analysis of this type of alternative.

(Shake): We hear that alternatives will come out in July, from the forest summit. A team will develop an EIS by July.

(Anderson): Yes, the EIS will be out in July.

(Shake): It'll be interesting to see what happens and how it comes out.

(Jerry Barnes, Six Rivers National Forest): In talking about the forest summit and PacFish, the whole emphasis in development of these alternatives is that fish need old growth trees as do other wildlife species. The current perception is that the USFS puts things in streams that nature once provided. It's not the current focus of the USFS. About a year ago Jim Anderson and I sat on a team to develop these riparian standards. The bottom line for fisheries on national forests is that we have to dedicate land, trees, and watersheds for fish. The kind of attributes that we're talking about are cool water, dense vegetative canopy providing (80%) shade, low levels of fine sediment, an appropriate mix of habitat diversity, and a stable environment. There really is no such thing as a stable environment in a stream but it should not be aggravated. All habitat needs could be provided by a generous riparian zone.

The Six Rivers National Forest has a major dedication to wildlife on the forest. Dedicated wildlife acreage is equal to timber management areas.

Riparian acreage is about 160,000 acres in all. Timber is one of the lesser allocations on the national forest. The next question is, how do you get the numbers to allocate? This system was developed in 1992 for the four forests containing anadromous fish in California. Flood plains, for example, are important for addition of large woody debris. These areas are dedicated to the stream riparian management area. The "gang of four" report was the first place that the phrase "key watersheds" showed up. This is the concept of identifying aquatic areas that are essential for recovery and maintenance of aquatic ecosystems. This has been adopted and incorporated into the Six Rivers Land Management Plan. The importance of key watershed identification is that we're putting them into a holistic approach, looking at cumulative impacts. This is a new concept and hasn't been tested yet.

In the Klamath Basin these are the key watersheds designated by forest policy: Clear, Dillon, Elk, Grider Creeks, Salmon River (not all tributaries), Bluff, Camp, Red Cap, and Blue Creeks. These watersheds are anchored in good areas, Clear, Elk, and Grider Creek headwaters are located in wilderness areas. The important thing to be noted is that in these watersheds, no management alternatives will be taken that jeopardize fish stocks.

About 70% of the Six Rivers National Forest is managed for fish protection. The current program is to increase spawning habitat and juvenile rearing habitat to reestablish spawning populations, and to restore watersheds. My feeling is that mother nature knows best and I think that the holistic management of aquatic ecosystems will provide habitat components that are necessary for survival of the fish. My hope is that we'll do all the habitat restoration in next 20 years.

(Bob Franklin): The designation of "key watershed" depends on who you ask if management will impact the aquatic ecosystem. The relative GS ranking between field biologists and upper level timber managers may determine how timber sales are evaluated. Can you comment on this thought?

(Barnes): It's not a problem in my area of management. We have well qualified personnel capable of making sound decisions.

Agenda item 11: Report on progress of the Forest Service's Pacific Salmon Work Group (PacFish).

(West): I've handed out a summary description of PacFish (Attachment 5). I've pulled out key items on the executive summary. In spring of '92 the U.S. Forest Service (USFS) initiated an effort to develop a team management strategy to address stocks at risk in the west. In March '93, the Bureau of Land Management (BLM) joined the USFS in this effort. There are three staffing levels; a policy group in the D.C. office with some high ranking policy makers from both agencies. The second level is a work group below the policy group which is made up of resource specialists. The third group is a field team led by the deputy regional forester for Region 6, and is composed of a spectrum of scientists at the forest levels. The tasks are for these groups to assess the level of impact on anadromous fish populations. The level of refinement for assessing existing condition of habitat is fairly broad.

Another major effort is to define "good" habitat. Parameters such as pool frequency, large woody debris, bank stability, angle, and width to depth ratio will be considered. The strategy is to establish objectives for riparian management, to identify key watersheds, to designate riparian habitat conservation areas, to modify planning regulations, to propose interim standards and guides, and to conduct watershed analyses to broadly prescribe watershed restoration. It's complex how this ties to the forest summit discussions but this will contribute to the proposed alternatives. I reviewed the watershed analysis element. There are three levels of assessment, basin-

wide, inter-basin, and subbasin. Real complex management is what this represents. The specifics are included in the executive summary I've provided.

(Shake): We have staff in the regional office getting everyone on board with a coast wide initiative. The State of Oregon has some legislative initiatives going and we'd like to see this expanded to cover the entire west coast. Our feeling is that other agencies could tier off of this because not all watersheds are in USPS and BLM lands. We're pleased that this is somewhat of a cooperative effort between the PacFish program and other initiatives.

(West): The proposed alternative Klamath National Forest Land Management Plan riparian habitat conservation area criteria are similar if not identical to Region 5 PacFish criteria. The restoration philosophy is very similar. The California region's aggressiveness to develop riparian conservation strategies may be one reason for this similarity. Like Jim Anderson said we don't know what effect this will have on our schedule for our Land Management Plan.

(Bill Kier): Jack, is there a person in this effort that is gathering information on stocks at risk? Is there a data base developed, or has stock maintenance been considered? The reason I ask is that I have three reports on stocks at risk for the west coast and no one is considering maintaining the current status of these stocks. I'm thinking of narrative information for example on the geographic range of fish populations.

(Shake): The four states (Washington, Oregon, Idaho, and California) all have different types of databases with differing levels of sophistication. It's been our push for a coast-wide stocks database. It would contain all existing data so trends could be studied. We've met with state and tribal representatives from Washington, Oregon, and Idaho to discuss this effort. We'll be discussing this with California Tribes and agencies too.

(West): I'm not sure how wide spread this is or applicable, but I know we were asked specific questions on stocks at risk, where they were found and what reaches of streams they used.

(Kier): Do you have a contact?

(West): I don't have a person off the top of my head, but I'll get it to you.

Agenda item 12: Presentation of Klamath Basin hatchery review final report.

(Reynolds): (Attachment 6) We discussed the draft at the last meeting. We sent bound copies and appendices to the three Chairs. The bound report will be sent to all Task Force members. This review came about as a request of the three Chairs. In the first page of the report we discuss the concerns about hatchery production in the Klamath/Trinity basin and the purposes of the review. We agreed that it would be good to look at the hatchery product, the quality and how it's released into the wild and what impact it may have on two classes of fish. One is the natural spawned fish in the river. These fish may or may not have ancestors from a hatchery and the other class is termed "wild fish" which more than likely don't have ancestors from a hatchery.

We had two meetings. I feel that we got a wide range of good comments and we also got comments that weren't directly related to the stated purpose of the review. People wanted to discuss internal operations of the hatchery. We never indicated that we were prepared to go into that because operations at both hatcheries had recently been reviewed. Essentially we looked at how well hatcheries meet their stated purposes and what needs to be done to improve their ability to meet those purposes. Our stated objectives are to meet the terms for mitigation of anadromous fish as stipulated by court or Federal Energy Regulatory Commission (FERC) orders. These are fixed numbers with changes being subject to new adjudications or FERC hearings. We can't change

these goals arbitrarily. There continues to be a concern that these numbers of hatchery fish are excessive in terms of the potential impact on wild fish.

One of the main recommendations was to convert Iron Gate Hatchery to yearling production, entirely. There probably is physical space to do that. There are two main problems however. One is that there is inadequate cold water available in Iron Gate Reservoir to operate the hatchery. Another reason for concern is that resultant adults are smaller than those released as yearlings. Many of those fish may not reach commercial size, and there would be smaller fish for sport and other inriver fisheries. Historically the freshwater rearing type II life history were not as common as 0+ outmigrating smolts. To the extent possible we hold the smolts until they are ready to migrate rapidly after most natural fish have outmigrated. They coexist in the estuary with natural fish but we don't know what the impacts are at this time. If we determine that a problem exists we'll adjust the operations to reduce this impact. At this time we are maximizing yearling production at the hatchery and will continue to do that.

The later pages of the report talk about where we tried to address the concerns relative to this review. When you read page 11 it sounds like we're not doing many things. In previous discussions we've tried to describe things that we're already doing or intend to do that will try to reduce the problems. There was apparently a misunderstanding about how we culture fish in the hatchery. I've read in innumerable publications that hatcheries conduct their business in unscientific ways, and over the last couple of years we've been accused of doing all the bad things described. We started about 10 years ago to try to eliminate the bad things. We saw these things occurring in other states and we realized that they were unsound practices. Practices, for example, of poor management of broodstock. Several years ago when we began to experience real drops in chinook harvest there was tremendous pressure to increase hatchery production. I remember that some people now criticizing the program were attempting to double hatchery production. The result was an increase in production and we saw results. As a result of all that earlier activity egg take at the hatcheries was increased dramatically for various reasons. The bottom line was they took way more eggs than they could use. The stigma of killing those extra eggs and fry was more than the Department could take, so they released these fish into the rivers. This only happened for a short period of time. Region 1 stated that they were taking too many eggs, which has been reduced now to 12 million per year. Our conversion from eggs to smolts is not as good as we'd like, but we're trying to rectify that situation. The Department won't release fish that do not meet mitigation agreement criteria. We won't release them until they reach size and won't release them early. We'll do everything we can to keep production within the limits of mitigation requirements.

The second item has to do with enhancement fish. Enhancement means to increase production over the mitigation requirement. There haven't been any enhancement activities for the past several years. We're making a commitment here that excess eggs will be destroyed or will be used for other purposes other than augmenting runs in the Klamath basin. They may be placed into an inland recreational fishery if possible. We've never been able to meet our steelhead mitigation obligations on the Trinity River. We're convinced that the answer is not to just grow more fish. Flooding the system with hatchery fish is a bad idea, but we need to come up with a scenario that will replace the fishery that was lost for Trinity River Dam.

We will set up a 2-year review of existing literature and work with other agencies and groups to find a way to meet mitigation goals of the Trinity River program. At Iron Gate we'll continue to work with PP&L to quantify potential water supplies from Fall Creek and groundwater sources for expanding the yearling production. The utility company is working with us to improve the water quality. Recognizing the downside for the fishers we still want to

move toward more yearling production if we find there's a conflict with wild fish and fingerlings. Essentially the only time that we feel trucking would be employed is that if greater than 50% planting mortality would be expected.

Overall it is my feeling that we have excellent participation from the review team members. Some folks dropped out and there may have been misunderstanding of the purposes of this review. In the final analysis this was a semi formal review of what we're doing and what we need to do. This is not the end of this issue nor an end to participation by public or other agencies. This is an ongoing process. The intent of all of these operations is that they're scrutinized by all interested parties.

Agenda item 13: Comment on the report from Task Force representatives on the hatchery review team.

(Dr. Eric Loudenslager, HSU): I wrote a memo to all advisory team members for their comments on the Department's report. At the time I wrote my comments (Attachment 7) I had not heard from all team members. I have now received comments from all members of the review team. It was the general view that we've made a good start, but we're not finished yet. I don't believe the team members considered our job as complete because we never knew what our original charge was. I was asked to participate, but never heard what it was we were supposed to do until I attended the first meeting. Many other committee members didn't realize that was what we were supposed to do. Some members were disappointed with the process. I think there are some things that should be changed in the report but the lack of direction could have been a cause for irritation.

Basically from what I've been told by the Department the Task Force is concerned about competition between hatchery and wild fish, specifically with regards to genetic swamping. I agree with Forrest in this report that we don't have good answers and that this review probably won't provide those answers. How can we develop production goals for hatcheries without knowing what the systems can support? One week the Department gets stomped on for releasing too many fish then gets criticized later on for not releasing enough fish. I would like to see a panel convened to develop production goals for these hatcheries. The Department could then defend those numbers based on the blue ribbon panel's recommendation.

One of the points that Forrest brought up is the issue of yearling releases. In studying hatchery production policies in the Columbia River basin I've found that many hatchery management goals have changed to allow coexistence of hatchery and wild fish. One of the things geneticists harp on is selection for fisheries management. The rule supported by geneticists is to try to mimic natural release and broodstock timing. It becomes a selection program when you release by policy rather than by natural fish tendencies. I think there needs to be a decision on the part of all parties, whether we want these fish to function with wild fish or entirely separate from wild fish. If this decision is made and if you determine there's competition in certain locations you can adapt your production strategies accordingly. At least one review member applauded the Department report when they indicated they would study competition.

Regarding grade-out handling, personally I don't think dumping eggs or sac fry had much of an impact. Politically the Department gets it from both ends. They're in a bind there. This is an avenue for the Department to build consensus on how to handle them.

Regarding the review process, one of the things the Department can share with us is the problems they're faced with if user groups say they "don't want to release excess broodstock back into the river." These problems can be brought to the Task Forces and other groups to consider how to deal with these

problems. It would be appropriate to have some sort of mix of wild and hatchery spawners in the river and in the hatchery. Do you want a mix? You should discuss how that can be accomplished. There may also be goals that would establish what portion of the run should be hatchery fish. Being able to discuss these issues and trying to develop solutions would benefit all parties involved.

One of the things I've been doing is reviewing Section 10 and Section 7 permitting applications from the National Marine Fisheries Service (NMFS) for hatchery operations. When something gets listed on the Federal Endangered Species List, paperwork becomes enormous. Impacts are supposed to be determined but in many cases data do not exist to determine the impacts. The final comment is that the team members would like to see some sort of hatchery review process continue.

(Wilkinson): A comment on the Department's presentation: I thank California Department of Fish and Game for changes being made, particularly to explore the supply of cooler water to increase yearling production. I also appreciate Eric's comments to investigate the interactions of fish in the system and to continue the review. Even though the report was addressed to the three Chairs, I would suggest a public review of these findings.

(Shake): Just for the public's notice, I penciled in a public comment period to give you an opportunity to provide input on this issue.

(Bingham): I participated in the first meeting. The whole issue of hatchery/natural fish interaction concerns the commercial industry. The past few years' harvest constraints are evidence of what happens to harvest when natural production is impaired. I share the feeling that this review process needs to continue. We're operating fish supplementation programs in the Klamath and other systems and need to know what the interactions are. I also agree that the focus should be on the fishes' needs rather than the fisheries needs.

(Shake): Looking through the recommendations in the Department's report, ongoing evaluation is not really addressed. Did you talk about that? I'm hearing people say there must be an ongoing evaluation component.

(Reynolds): We used to do coded wire studies when we had greater sources of income for the Department. We had the smolt quality committee who's purpose was to improve the hatchery product by evaluating various production scenarios. It was an ongoing program directed at maximizing product quality. We have evaluation programs to evaluate passage of hatchery fish from hatcheries to the ocean and out of the estuary. Regarding disease issues, we have a continual monitoring program and there is a drug certification process that prevents use of chemicals other than salt. Disease may be a problem in the future. Our pathologists are in constant communication with pathologists in the country to implement the best and modern disease control techniques. As far as this being an ongoing process, this was a one-time review that I agreed to do for the three Chairs. If the Task Force feels this should be ongoing they must be prepared to fund it. I agreed that this was appropriate and needed to be done. We've met our obligation to the three Chairs. If they disagree we'll have to hear it from them. I hope that no one takes this in the wrong way. We're continually evaluating our programs. In California the hatchery system is in a different system than the biological and research divisions. They fall under the general purview of the regional directors but they report to regional managers. Biologists are not in charge but they work cooperatively with hatcheries. Hatcheries are more than willing to comply with recommendations to improve their fish. My field people have real reservations about hatchery fish. Much conciliation is necessary to have things work. I don't feel the culprit is hatchery production, rather, the loss of habitat brought on by human beings.

Public comment:

(Jim Welters): Oregon South coast fishermen: (Read a statement, Attachment 8).

(Dave Webb): I'm doing work along the Shasta River and we're finding there are 80-90mm fish still in the system in mid-June. My question to the Task Force is "How can we get the information we need on natural stocks to dovetail into hatchery production policies in order to prevent impacts?"

(Orcutt): I agree that this is the start of hatchery review. I support continuing this endeavor. One thing reported to me was that there was no sharing of information and ideas. It was simply a call for information by the Department. They digested the information and developed their findings. We've always gone into the evaluation process with an open mind and hope that it's continued.

(Wilkinson): I have a suggestion that might bring this to closure, we can ask the Technical Work Group to investigate the impacts to wild fish on changing to a yearling release. I'm hesitant to put that into a motion because I don't know if the Task Force wants to forward this assignment to the Technical Work Group.

(Reynolds): That would save the Department some work. It would be useful if it were an initiative relative to mitigation requirements for the hatcheries. Substantial scientific documentation is needed to do that.

\*\*\* Motion \*\*\*

(Wilkinson): I'll move then, hearing no objections.

Motion carried.

\*\*\* Action \*\*\*

The Technical Work Group will investigate the impacts of hatchery yearling releases on wild populations.

(Shake): Forrest would you address the Department's policy on small scale rearing?

(Bingham): The budget committee was informed that the Department had established a new policy allowing no new permits for small scale fish rearing programs in Region 1. There are several existing fish rearing operations including the one located on Horse Linto Creek. This causes me some concern that this is a blanket policy.

(Reynolds): I believe Mitch Farro offered a motion that this Task Force develop fish rearing guidelines for the Klamath River similar to the guidelines developed for the Trinity River program. I sent out a letter to all the people on the Task Force asking for participants for that task. Evidently not everyone received the letter. We need to get on with this. There are a number of fish rearing programs in the system but there is a perception that there is a myriad of these projects. We still have our own Fall Creek program which is an adjunct to the Iron Gate hatchery program. The best that I can figure out from the Region 1 policy is that no new programs will be authorized without good justification and consistency with our fish rearing policy guidelines. They will follow guidelines as already existing in the Trinity River system. They're not saying there won't be any new projects, but that there won't be any new ones unless they are biologically justified.

(Bingham): I'm still concerned and have a question about this. The announcement was that no new rearing permits would be authorized by the

Department. When the Trinity River Technical Coordination Committee evaluated the Horse Linto Creek project there was effort by the Department to say that they couldn't evaluate this project until it was shut down for three years.

(Reynolds): The Horse Linto project was started as a cooperative program between California Department of Fish and Game and the USFS. It was agreed by me and other biologists (Jerry Barnes was involved) to raise fish from that stream, release them and try to build up the stock. We intended to cease rearing operations and evaluate for 3 or 4 years to determine if we actually built up the run or simply augmented harvest. I was not aware that they were evaluating the Horse Linto project. Nevertheless, it's not a new program but is in it's final year of operations.

(Bingham): I appreciate that statement however this may preclude us from starting a new rearing program.

(Reynolds): The policy is that there will be no new program where they are not biologically justified.

Q: When did Mitch offer the motion?

(Shake): A couple of meetings ago, I think.

(Hillman): It seems to me that we should go back and look at the Long Range Plan policy that addresses that issue. We should determine how consistent the Department's policy is with the Long Range Plan.

(Shake): Ron, can we get this out of the minutes by tomorrow morning? We'll discuss the motion tomorrow.

(Pierce): I don't know when Region 1 made the policy decision, but the Technical Work Group was made aware of it just prior to rating the FY1994 proposals. California Department of Fish and Game made no mention that some projects had been scratched off the list. I was shocked that the mid-Klamath rearing projects were to be scratched since they've been operating for many years. The timing and method of announcing this policy were unforgivable.

(Reynolds): The first time I heard of the policy was two days after the meeting. I called the region and after much discussion determined that what they meant was that programs would not be arbitrarily started. The exception being that if on tribal lands where no Department money is involved we don't exercise authority. On other lands we have the authority to exercise control over these rearing projects. That authority resides in the Regions. The Director of the Department has authority over the regions.

(Hillman): So, you're saying that this policy was not to target existing programs?

(Reynolds): I would ask Ron if he has the same understanding.

(Iverson): I would only add that Don Weidlein said that there is a new Fish and Game Commission policy that is in draft now and is expected to be adopted at the next Commission meeting. One provision in this is that a rearing program would have to have a 5-year plan of operation.

(Bingham): I'd really like to thank Forrest for this clarification. Now we understand what we're dealing with. I'm aware that this will be considered in Bridgeport. The 5-year plan is something that we've been asking for.

(Pierce): At the start of the closed door ranking session, the Department's representative identified fish rearing proposals on the list and stated that the projects should not even be rated because they would not be permitted.

Included in that list was the mid-klamath rearing pond program. Are you or are you not going to permit these projects?

(Reynolds): My best understanding of this whole thing is that the Department's representative went to the meeting with information that he got from Region 1.

(Hillman): My efforts to pinpoint the source of policy have not been successful. I'm still unclear who made the decision, what prompted the decision, and what the decision really is. I appreciate Forrest's attempts to clarify the decision but I'm still wondering, Forrest, if you could track this decision, and provide clarification on this?

(Reynolds): OK, I'll request clarification from Region 1.

(Shake): Forrest I'm not clear on your earlier comment made about looking at Trinity River criteria to base these decisions on. Could you send us a letter?

(Reynolds): Yes. I'd like advice from the chair on how to proceed.

(Shake): I'd like a copy of the letter you sent to Task Force members inviting participation on this next review. We'll discuss it tomorrow?

(Reynolds): I wrote the letter and it sounds like it never got signed.

(Shake): OK. Please redraft the letter and send it to KRFR0 for distribution.

\*\*\* Action \*\*\*

Forrest Reynolds will draft another letter inviting participation on a wild-hatchery fish review team.

(Shake): I would ask Bill Chesney to make his presentation tomorrow. Before we adjourn, we have final public comment.

Public comment:

(Paula Yoon): I've come to request a meeting with the education subcommittee tomorrow. I'd like input on the upper basin information display. I would also like to request funds from the FY1993 budget for a Klamath River field trip which fits into the Klamath River education project E-02 (Attachment 2). The objective of the class is to help a group of students put together a slide show on Klamath River fish. Diane and Pat Higgins will organize the trip and will contribute their time. I'm looking for a \$500 contribution to meet the expenses.

(Shake): Let me make a suggestion, when you meet with the education committee why don't you discuss that?

(Yoon): OK, I will.

Shake reviewed assignments and adjourned the meeting for the day.

6-16-93

Agenda item 15: Report on Shasta River 1993 unimpaired flow experiment.

(Bill Chesney): I'm a fishery biologist with the California Department of Fish and Game. I'm here to talk about the unimpaired flow experiment implemented by the Shasta Valley Coordinated Resource Management Planning (SVCRMP) group on May 17-19, 1993. I'll discuss events that took place between Big Springs Creek and the mouth of the Shasta River. There are five irrigation structures

on the Shasta River that were removed during this flow release. A downstream migrant trap was set and monitored in order to evaluate this experiment. Spawning occurs at Big Springs and in the canyon areas.

This experiment was designed to evaluate the outmigration of juvenile fish from the Big Springs area. In spring of 1992 fish were sampled in the Shasta River and water quality problems were documented at the same time. The SVCRMP investigated the potential for removing the irrigation dams on a temporary basis. This was done voluntarily. The cost to shut down and refill ditches was carried by the landowners. (Mr. Chesney showed slides of the Shasta River and diversion dams. He also described seining techniques and explained the data collected from these efforts. See Attachment 9.) The downstream trap was the primary method for monitoring. Site selection of the outmigrant trap was critical needing proper accessibility, flow velocity, and depth. The overnight sets worked well until the 29th of April when water temperatures increased and flows decreased because of the start-up of the irrigation season.

On the morning of 17 May the trap was fished effectively with the door open, with debris being pitched out as it entered. The night of the 17th, at 9:00 pm, the increased flows and debris caused trap efficiencies to be reduced. The water arrived about 36 hours earlier than we had expected. The CRMP is working at ways to prevent future fish kills, as did occur in 1985. The CRMP is looking toward developing long term solutions to the problems in the Shasta River.

Q: Could you describe the distribution of spawning in the Shasta?

(Chesney): Surveys done in the early 1980's indicated heavy use in the Big Springs area. We surveyed that creek once last year and saw high spawning densities. We don't know the percentage of the run that uses that area or the canyon area.

Agenda item 14: Report on Shasta fall chinook status with reference to California Endangered Species Act listing.

(Reynolds): After much study and discussion the Department's Region 1 Area Team recommended that the Shasta stock be listed as threatened or endangered. This recommendation was forwarded to the directorate. I was asked to evaluate their findings. I concurred with the recommendation. Many stocks in the Klamath River system are on the verge of, or are, threatened. However, the Department's view of the Shasta fall chinook stock is that it does not constitute a species. It's the consensus opinion that Shasta chinook salmon do not constitute an Evolutionarily Significant Unit (ESU).

(Shake): An ESU is a concept that the NMFS has developed to determine whether stocks are significantly different than other stocks.

(McInnis): It's a proposed policy but that's the basis from which we're working now.

(Reynolds): So, the Department will not list the Shasta fall chinook.

(West): Forrest, at our meeting last February, Dr. Barnhart reported on the findings of the stock identification committee on Klamath River stocks. The committee identified the Shasta fall chinook as a breeding population, if not a metapopulation. It seems a little odd that the Department would then say that it's not an ESU.

(Bulfinch): The Stock Identification Committee placed the Iron Gate, Bogus Creek, and Shasta River stocks into one metapopulation. I think it was an inadvertent error because on the Trinity River side they considered the

Trinity Hatchery stock separate from the natural stock. The Shasta stock wasn't regarded as a unique stock but was combined with stocks of the upper river from Bogus Creek.

(Bingham): I would like to request that the issue of the Barnhart report be placed on the agenda of a later meeting. It will be a long and controversial process to incorporate their findings into our Long Range Plan. The Barnhart report is not the final word and we may not have it until genetic work is done on all populations in the basin. We still have a school of thought out there that says that straying is bad. I urge that we place discussion of this on a future agenda.

\*\*\* Action \*\*\*

Discussion of the Stock Identification Committee report will be an agenda item at a future Task Force meeting.

Q: Forrest, is there documentation of the process the Department went through to arrive at that conclusion?

(Reynolds): It was an entirely internal decision making process. A petition was never filed. I'd be happy to give correspondence to anyone that asks for it. It's not really a Task Force issue unless the Task Force wants to take an initiative relative to listing.

(Shake): If the Department had determined that it was threatened or endangered, what would have been the process for listing?

(Reynolds): The Department would then request or petition the Fish and Game Commission to accept it as a candidate species for listing under the California Endangered Species Act. The Commission would then decide to accept or reject it as a candidate. If not accepted, additional information can be submitted anytime later. If a petition is approved by the Commission the Department will review it again and prepare a report to the Department Director. The Commission would then reconsider listing the species.

(West): We're operating under two separate Acts, State and Federal. Would the NMFS arrive at the same conclusion? And, did the state consult with the NMFS?

(Reynolds): There were informal discussions as to what constitutes an ESU.

(McInnis): The two agencies might not reach the same conclusion. If we are going to put the Barnhart report on the agenda for the next meeting, all we have is the committee's final report. We need some of the background information on how they came to their conclusions. I'll talk with staff about this.

(Shake): OK. I suggest you have Dr. Barnhart participate in that discussion.

\*\*\* Action \*\*\*

In conjunction with the discussion of the Klamath River Stock Identification Committee report, the committee will provide background information used to develop their findings.

(Shake): Another item of business left unfinished from yesterday, the assignment to ask the Technical Work Group to look into the issue of yearling release impacts on natural stocks.

(Wilkinson): My motion was to "Assign the Technical Work Group to investigate the impacts of changing to fall releases, using Klamath River data, with the

exception of the 1980 brood year." They should consider age at return, size at various ages, and ocean distribution.

(Shake): I'll read Mitch's statement on this issue from Page 10 of the February 3-4, 1993, minutes. In clarifying his motion made in the June, 1992 meeting, Mitch said "My motion was to put together a group that would look at all available biological information to assess the interaction between hatchery and wild fish. It wasn't intended for the Task Force to take over the responsibility of managing mitigation hatcheries." Keith, your motion isn't addressing wild fish interaction, but simply the hatchery program?

(Wilkinson): It does include that. The interaction between hatchery and natural fish is one of the concerns.

(Shake): Did we approve your motion?

(Wilkinson): Yes.

(Shake): As I recall, you, staff and the TWG are to clarify the assignment?

(Wilkinson): Yes.

\*\*\* Action \*\*\*

Wilkinson will discuss this assignment with KRPRO staff and the TWG.

(Pierce): Didn't we at the KFMC meeting receive a report from the KFMC Technical Advisory Team on release size and return rates? Specifically in response to questions regarding hatchery practices?

(Wilkinson): My memory says that we've had sporadic reports from downstream trapping information. My motion is to investigate the potential for going to fall releases.

(Shake): We might coordinate this with the KFMC Technical Advisory Committee.

\*\*\* Action \*\*\*

The TWG review of yearling releases at Iron Gate hatchery will also involve coordination/review by the KFMC Technical Advisory Committee.

Agenda item 17: Report from upper basin ad hoc committee.

(Thackeray): As we concluded our meeting in Klamath Falls the committee was directed to meet with upper basin representatives -- John Crawford, Elwood Miller, and Rod Kucera, to try to resolve some of the issues involving the upper basin amendment document. It's a great concern to the people of the upper basin that they be involved in these decision making processes. The comments received on the upper basin document were assimilated into a digest. The committee will consider comments in this digest. We also suggest accepting the Initial Ecosystem Plan presented by the irrigators and oral comments received at the Klamath Falls meeting as formal comment on the upper basin document. The committee has held two meetings to discuss our charge and identify what we want to do. The issues are larger than we thought they would be. The next meeting will be between the Klamath Tribe and the representatives from Klamath and Modoc Counties, on July 8. They'll meet to discuss comments and the committee will meet the week of the 20th of July, to continue their discussions. I'd like to have John Crawford and Elwood Miller provide some comments on the process.

(Miller): We've been anxious to get involved with the Task Force and hopefully this process will allow us to. We'll attempt to resolve the problems that

exist between us. The group will bring back suggestions to this body on the upper basin document and on the Long Range Plan. I hope that everyone involved keeps in mind the Tribe's rights. I've heard discussion of the Klamath Compact and the restoration program as being the vehicles for change but the Tribe has superior water rights as defined by the Supreme Court of the United States. We advocate working together as a whole and we hope in the future we'll all be sitting at the table.

(Crawford): The water users appreciate the effort of the Klamath Tribe in entering these discussions in the mode of cooperation which is necessary. The agricultural community in Klamath Falls has legitimate concerns with the upper basin document and the Long Range Plan. The task laid before the committee involves settling differences between irrigators and the Tribe and also the responsibility of considering the concerns by the agricultural community. Our only opportunity to address the Long Range Plan is to work through the process of the upper basin document. We will address all of the concerns in the Long Range Plan and bring a report to this group. The water users have met and reached the decision that the upper basin amendment is acceptable with modification if it can be used as a vehicle to address our concerns with the upper basin document and the Long Range Plan. There's going to be an exchange of technical information with the Tribe. We have not addressed the issue of representation.

(Orcutt): I apologize for missing the meeting, but intend to be available for future meetings.

(Shake): I'd like to commend George and the upper basin representatives. We recognize that it's a big task. It appears to me that you've made substantial progress.

(Bingham): I'd like to add that I'm very encouraged with this report. We're moving in the right direction in getting everyone to buy into the plan. I'll remind everyone that the Long Range Plan is a living document.

(Bulfinch): I'm encouraged with the progress being made. There is a specific plan for endangered sucker recovery. Many of the concepts contained therein are provided by the water users and many will benefit anadromous fishes. Salmonid restoration, however, is not less important than sucker recovery. It is highly unlikely that the Long Range Plan is deleterious to anyone in the upper basin. To proceed with the Long Range Plan of restoring anadromous fish in the entire river system is desirable but will cost a lot of money. The thing that I note in the water users' approach is that their interest in the Klamath Lake water and its tributaries disappears rapidly below Klamath Straights. We have to start restoration now. Releases at Iron Gate Dam impact the hatchery and Shasta River outmigrants. There are five dams on the mainstem Klamath River and Iron Gate comes up for relicensing in 2006. Dam operations have not been friendly to fish interests in the past and we have an opportunity to have input into upcoming decisions. In order for us to accomplish restoration above Iron Gate we must put the upper basin amendment into effect now. We can also coordinate our efforts with those called for in the sucker recovery plan. By doing so we'll have a better chance in getting additional funding from congress. It is time to approve the amendment with the safeguard of allowing recommendations from the upper basin committee. I'll make that a motion, to approve the amendment with the safeguard of allowing recommendations from the upper basin committee, if it is proper to make such a motion at this point. I prefer to hear what other Task Force members have to say.

(Thackeray): The committee requests a little time to discuss some of these issues. I will oppose a motion to adopt the amendment until we are allowed at least two more meetings. It will give credence to what we're doing and I don't think it will affect what the Task Force is doing at this point.

(Bulfinch): The purpose of the amendment is to give procedural authority in the area where we now have no mandate to operate.

\*\*\* Motion \*\*\*

(Bulfinch): I move to adopt the upper basin amendment to the Long Range Plan, with the amendment process to be opened October 1995 through January 1, 1996. Then to be opened thereafter in five-year cycles, providing that the amendment process can be opened at any time between five-year cycles by request of the Chair or by the consensus vote of the Task Force.

(Bulfinch): If there are changes that come up, the process can be opened at any time. It gives us legal mandate to work in that area. If we don't maintain conditions and fish in the lower basin there will be no need for restoration of the upper basin.

(Shake): We have a motion on the table. Hearing no second, the motion does not go forward. Kent, I appreciate what you're trying to do and I think it's a good idea. I feel like our promise to folks in the upper basin has been to provide an opportunity for them to meet with us. The benefits of their involvement will be to strengthen the plan. Our promise to keep them involved is why you probably didn't get a second to your motion.

(Bulfinch): I'll withdraw the motion. The intent is not to interfere with the reconciliation approach. It is simply to give us some reasonable authority for working on problems relating to anadromous fish restoration.

(Miller): I appreciate what Kent said about this issue. That's been the Tribes' position. When does this Task Force expect to make a decision on the upper basin amendment?

(Shake): After your groups have met and come to the Task Force with a recommendation.

(Miller): The Tribe is willing to meet to resolve these issues but prefers that milestone dates be established for adoption of the amendment document.

(Reynolds): The next agenda item addresses that issue.

(Shake): The ad hoc committee should tell us when they expect to have a product available. I think George alluded to some date in October.

(Miller): The Tribe has not received a response to their comments on the upper basin amendment document. Will there be a response?

(Wilkinson): There's been no Task Force action on those. The Task Force has presented them in digested and written form and will be considered in the ad hoc committee process.

(Reynolds): The state will also provide comment on the upper basin document and will send copies to the ad hoc committee members. We would like to be assured that there will be an opportunity for comment on the final upper basin document before final approval.

#### Agenda item 19: Public Comment

(Joseph Riker): The upper basin residents are very interested in recovery actions that will impact the upper basin. Much of the historic information on Upper Klamath Lake has not been addressed by your amendment. The City of Klamath Falls would like to bring this to your attention. Offstream water storage is an issue that your amendment fails to address. The amendment also leaves the impression that the amendment supersedes the authority of the Klamath Compact. The document ignores multiple use issues of the river and is

single species focused. The City feels that it can't ignore the needs of the people and that an ecosystem approach is needed. We request that the ad hoc committee efforts continue but request that the City also be involved. We think there could be resolution of these problems in a reasonable amount of time.

(Thackeray): I believe that the committee will request this type of information from you.

(Rod Kucera): I'm testifying for the Klamath County Commissioners. The commissioners feel that the amendment, as is, constitutes a threat to the water rights of the irrigators. They would also like to see the ad hoc committee continue work. They're concerned that their constituency is under-represented and believe the ad hoc committee is the only way they can work with the Task Force on this issue. Another item of concern is the correspondence between the Commission and the Task Force. They request that they receive correspondence at the Klamath County Office and would like to receive minutes of Task Force and ad hoc committee meetings

(Shake): Consider it done.

(Felice Pace): I would like to thank the Task Force members for participating in the CRMP meeting last night and to thank the upper basin folks that came over to the meeting. On this upper basin issue, marsh restoration in that area is controversial. You should keep in mind that every acre of marsh restoration provides 3 acre-feet of water storage. Most of you are aware that Oregon Natural Resources Council (ONRC) is involved in ongoing litigation in the upper basin area and will have permanent staff in the Klamath Basin this fall. It would be advantageous for the upper basin ad hoc committee to contact the ONRC representatives and environmentalists in that area. Andy Kerr will speak to the Rotary on 7/7/93 if anyone is interested in attending. It is a process of inclusion. The environmentalists are stakeholders as well, so I make this suggestion to the ad hoc committee to include them.

(Charles Wells, Chiloquin): I'm working with the upper Williamson Holistic Resource Management Team which is a group of people from agencies, interested parties, ranchers, and others trying to see how we will go about restoring the Williamson on USFS land above the Yamsi Ranch. I'm involved with Friends of Crater Lake and with the Concerned Friends of the Winema National Forest and involved in the planning group for the town of Chiloquin. We're trying to address the problems in that area. It's fitting that the Tribe be one of the first groups of people contacted by the ad hoc committee and the irrigators as well. However, they are not the only ones living there. People are the critical factor for influencing the ecosystem. You're going to step into a real problem if you don't get all the parties involved. The way this Task Force is constructed is great but the way you're approaching this upper basin amendment is going to cause problems if you don't have all the parties together. Litigation may result if all parties are not involved.

Q: How would you recommend that the parties be involved?

(Wells): The Ad Hoc committee should respond to all people that provided comments on your upper basin document. The issue that ought to be addressed is how to get people together before you develop your work plan. I'm not sure that the City of Klamath Falls and the Klamath County Commissioners fully represent all the interests in the area. You might consider holding a series of workshops and conferences to get interested parties together.

(Shake): I think the Chair of the ad hoc committee heard you folks clearly and I assume he'll proceed with that information.

Agenda item 20: Action on the upper basin amendment process -- What to do?

(Shake): I think the discussion of Kent's motion solidified our intents on how to proceed.

(Bulfinch): One of difficulties in considering comments from the upper basin representatives is their comment that there are "things" in the Long Range Plan and the upper basin amendment that are unacceptable. These "things" haven't been laid on the table as a specific item.

**\*\*\* Motion \*\*\***

(Bulfinch): I move that the ad hoc committee provide a list of specific changes needed for the upper basin amendment document.

(Thackeray): That's the intent of the committee to do so. Elwood has expressed his desire to move forward on this issue. With comments just received from Mr. Wells it is clear that we have to consider other interests.

(Wilkinson): The motion was not to put a time cap on this process but to give you a time frame. We need this list that identifies what the problems are with the two documents.

(Shake): Hearing no objection, motion carries.

**\*\*\* Action \*\*\***

The ad hoc committee will develop a list of specific concerns held by upper basin residents on the Long Range Plan and the upper basin amendment document. This list will be provided to the Task Force for consideration.

Agenda item 6: Task Force decision on a final work plan for FY1994.

(Bingham): I withdraw my original motion for adoption of the FY94 work plan.

**\*\*\* Motion \*\*\***

(Wilkinson): I move to accept the budget committee recommendation for the FY1994 work plan with these provisions: 1) abeyance of project HR-19, 2) the exclusion of projects FP-09, FP-11, and FP-12, 3) the inclusion of project E-06 in the budget as a contract extension, as funds become available.

Motion seconded.

(Bingham): Would that contract extension be for FY93 or FY94 funds?

(Wilkinson): For FY94 funds.

(Shake): Although we could use FY93 funds for this.

(Wilkinson): The education contract is essentially a FY1991 contract that was amended in FY1993. By this action the budget committee is asking for continuity of the education program.

(Shake): This motion, as I understand it, provides the Task Force the opportunity to complete an action which we've approved. We're three quarters of the way through with the curricula development and this will allow us to complete it.

(Reynolds): I'd like to know what is meant by "abeyance for HR-19" and "exclusion of projects FP-09, FP-11, FP-12."

(Wilkinson): Holding funds in abeyance is recommended because funding project HR-19, which is out of the operational area, is not desirable. The exclusion is just that, exclusion of those projects for consideration in the FY1994 budget.

(Bingham): The recommendation by the budget subcommittee came from the concern expressed by two members of the committee. State proposals submitted for funding while, at the same time, the state was failing to make the match. We were also told by the screen shop staff that they can't build the screens next year because the temporary staff position wasn't funded either.

(Reynolds): I'll oppose the motion because I still don't know what the term "abeyance" means. If the Technical Work Group rated these projects high, I don't see any justification for them being removed from the list. If it is the wish of the Task Force not to fund FP-09, 11, and 12 with federal funds, I can live with that. But can't accept having them removed from the list.

(Bingham): I would ask the maker of the motion to consider changing the motion to leave those projects on the work plan. This would enable us to secure state funding.

(Wilkinson): I agree with that.

(Shake): "Abeyance" means that this project (HR-19) will remain on the list, but funding will be put on hold until the upper basin amendment is finalized.

(Reynolds): What's not clear is how long we'll hold it?

(Shake): Until the process is completed.

(West): If that project is put on hold until the upper basin amendment issue is resolved, will FY1994 funds be available? I understand that we're using the \$21,500 to fund other work on the list.

(Wilkinson): My motion is for inclusion of project E-06, as funds become available. This could be from projects that were not completed, carryover funds from FY93, funds that we're not aware of at this point.

(West): From a technical standpoint the motion should show that this is a contract modification rather than an extension.

Motion carried. (Department of Agriculture abstained.)

Agenda item 21: A long term "needs list" for Klamath fish restoration.

(Shake): A Task Force planning committee met last year and discussed the need to develop a long term needs list. It's been on hold since last year. We need to determine what we want to do on this. We've left this planning task unfinished.

(Bingham): At the last meeting I asked that the Task Force to consider developing a list of projects that could be referenced when agencies like the USFWS get requests to identify restoration projects on a short turn-around. Some of us were concerned that the Task Force didn't have much input when the jobs bill was being considered. One thought that came to mind was to use our approved list of projects.

(Reynolds): Nat, I think this is a good idea but this would require some staff work. I'm sure that the various entities on the Task Force are more than aware of their needs relative to watersheds and problems. I feel it would be a good thing for the Task Force to have a composite list of all things needing to be done.

(Bingham): That's what I have in mind. We could use the approved list of projects or we could assign a committee to address this.

(Reynolds): Does this require a motion or can the Chair order this?

(Shake): I'd like to hear public comment on this issue.

Agenda item 22: Public comment.

(No comment.)

(Shake): Hearing none, what's the Task Force's desire on this? The suggested action is to direct staff, Technical Work Group, or committee to develop this list. What's your request?

(Bingham): I think this could fall within the purview of the Technical Work Group, to draft a list, and bring it to the Task Force.

(Pierce): I think that input from staff and the Technical Work Group would be helpful. I recommend staff develop a list to be sent to Technical Work Group members for review and discussion.

(Reynolds): I recommend that staff develop correspondence for the Chair's signature, requesting each of the Task Force members to provide a list of recommended projects back to staff. Staff will compile and forward this list to the Technical Work Group.

(Shake): I think the budget committee also needs to be involved with this.

(Rohde): Projects that are placed on this list should have the appropriate permitting processes completed so they can be implemented immediately. At least these types of projects should be listed separately.

(Shake): Hearing no objection, KRFR0 will do this. This list must be developed within the sideboards of the Long Range Plan.

Agenda item 23: Direction to identify/develop the long term needs list.

\*\*\* Action \*\*\*

KRFR0 staff will prepare a letter to Task Force members, asking for ideas and recommended projects to be included in a long term needs list. Staff will compile the list, and work with the Technical Work Group and the budget committee to develop recommendations for the Task Force.

Agenda item 24: Take care of unfinished business.

(Shake): Is there any unfinished business?

(Pierce): We have one small issue. We should clarify who should be allowed into the TWG annual proposal ranking meeting. Those that have attended in the past include Task Force members, KRFR0 staff and additional agency representatives. I don't know whether we want this to be a Technical Work Group or a Task Force decision. I personally think that Task Force members should be allowed access to the process. It's a good learning process for Task Force members to see some of our hassles we have while ranking proposals. I defer to you, Bill, to determine how you want to handle this discussion.

(Shake): I don't know all the details, and am not sure that I want to air this issue at this level. Lets talk about it among us and maybe we'll resolve it.

(Shake): Another item of unfinished business, we have a recommendation by the Education Committee.

(Wilkinson): Paula Yoon has requested funds from our FY1993 budget.

(Paula Yoon): I'm here to request a \$500 contribution to pay for expenses for a Eureka High School 5-day field trip on the Klamath River. It will occur the first week of July, 1993. A group of 15 students will participate. It'll give them skills how to develop presentations on fishery issues for use at other high schools. I recognize that there is a funding policy matter here but hope that accommodation can be made for this project.

(Pierce): What's the money going to be used for?

(Yoon): Food, camping expenses, and gasoline.

(West): Could staff give us an estimate of surplus or deficit in this year's budget?

(Iverson): The identifiable surplus is the \$16,000 for project PC-02. Otherwise, the money would come from the bottom of the '94 list.

(Bulfinch): Have you approached local sport fishing organizations?

(Yoon): This is actually a \$4,500 project. The Pacific States Marine Fisheries Commission (PSMFC) is contributing as well as many other organizations.

(Shake): In terms of precedent, we have funded workshops and printing costs in the past. It is a small amount requested.

\*\*\* Motion \*\*\*

(Wilkinson): I move to approve the request for \$500.

(Rohde): Is this part of the proposal E-02 (Attachment 2) that is above the funding line for FY1994?

(Yoon): No. It is in conjunction with that project but is a request for additional funding to pay for this field trip.

Motion carried. (Department of Agriculture abstained.)

(Shake): We have another item of business -- the letter from California Department of Fish and Game dealing with the review of artificial propagation policies and procedures.

(Reynolds): I undertake this reluctantly. I agree with Leaf that we need to go back to the plan to develop a policy for fish rearing, similar to the guidelines developed by the Trinity Task Force. If we don't resolve this at this time it will persist as an issue of controversy. Would the Chair prefer to appoint representatives or a committee to discuss this issue?

(Shake): I'd just as soon have Task Force members respond back to you individually.

(Pierce): I assume that in responding that we will be able to remind you of the long range planning process in which we spent a lot of time on these policies. The Department's request seems to be in conflict with that process.

(Reynolds): This is in response to a motion made by Mitch Farro last year (which carried) stating that this process should be initiated in order to develop a specific policy paper.

(Pierce): Then that motion was in conflict of the Long Range Plan policy.

(Shake): Earlier today I read the motion by Mitch Farro. (Chairman Shake re-read Farro's original motion excerpted from the minutes of the February, 1993 meeting.) This policy Forrest is working on is a State policy, right Forrest?

(Reynolds): I'll have to do some more research. I recall another motion that was made that suggested that we have a Klamath Task Force policy on the issue of fish rearing projects.

(Bingham): I'm not sure if there is an inconsistency with this motion and a policy in the Long Range Plan. I suggest this matter be placed on a future meeting agenda, providing an opportunity for Forrest to resolve the matter.

(Reynolds): We'll research it. I believe there was a motion made by the Task Force. If it's the will of the Task Force not to follow up on this, I'll stop now, because there is already a State policy.

(Pierce): You'll find that this issue had been resolved at an earlier date.

Agenda item 8: Report on identification of critical fish refugia (Continued).

(Rohde): The Task Force asked me to re-draft the letter to landowners. A letter was put together to send to landowners regarding critical watersheds identified by the Technical Work Group. I tried to include the ideas that I heard yesterday.

(Thackeray): Thanks Bob. It looks OK now.

(Shake): Hearing no objections, we'll have the letter finalized by staff, sent to me for signature before sending it out to landowners.

(Rohde): There was some discussion about the term "critical" and other definitions of watersheds outside of these critical watersheds. The phrase "key" watershed was discussed yesterday. Is there some direction from the Task Force on how the Technical Work Group could better define the critical watersheds?

(Bingham): I suggest that we direct the Technical Work Group to go ahead with the "key watershed" concept and suggest that it be in the form of a two tier system. High quality pristine areas would be included in the first tier and "key" or essential watersheds would be included in the second tier, noting that "key" watersheds are important for basin-wide recovery of stocks. This list would be sent out for public comment and then brought back to the Task Force for final review and adoption.

(Rohde): We've developed the first tier. Now we'll identify the second tier of "key" watersheds but specific to what fish stocks?

(Bingham): Critical stocks.

(West): We need specific guidance as to which stocks. Those identified in the Long Range Plan?

(Shake): You should go through the Long Range Plan and the report by the Stock Identification Committee (Dr. Barnhart's report) rather than getting into the Stocks at Risk identified by the Humboldt Chapter of the AFS.

(Bingham): I agree because this Task Force has not considered the Stocks At Risk paper formally.

(West): Mr. chairman, we'll end up listing every basin because each watershed is critical for restoration.

(Bingham): Is there any possibility of prioritization?

(West): Yes. If you give us some guidance on how you would like the basins prioritized.

(Shake): Can we ask you to give us some guidance on how you think it ought to be prioritized?

(West): Yes. We can come up with some alternatives.

\*\*\* Action \*\*\*

The TWG will develop a recommendation for prioritizing "key watersheds" in the Klamath Basin.

(Shake): Ok. Thank you. There is a field trip today at 2:00 p.m. sponsored by the Scott River CRMP.

Future agenda items:

CDFG will give a report at the next meeting on the FY1994 State work plan.

Set meeting date and location for winter meeting.

January 18-19, in Eureka, (To begin at 12:00 noon on the 18th).

Next meeting: Oct 5-6, 1993, in Hoopa, California.

(Wilkinson): Didn't we make a decision on a KFMC meeting in Hoopa in the same week?

a: Yes.

(Wilkinson): This is an excellent opportunity for a joint meeting.

(Shake): Mike Orcutt will get all information on accommodations.

(Bingham): I think it would be good to have a joint meeting. There would be some real benefits to a half day concurrent session with the KFMC.

(Shake): Meeting adjourned.

Attendance Roster:

Doug Alcorn  
Marcia Armstrong  
Jerry Barnes  
Craig Bienz  
Bob Byrne  
Harry Carlson  
Earl Danosky  
Bob Davis  
Robert Franklin  
Bruce Halstead  
Ron Hathaway  
Gary Hegler  
Wilma Heiney  
Diane Higgins  
Ralph Hinton  
David Howell  
Nancy Huffman  
Ron Iverson  
Mary Jacobs  
Robert Jones  
Stephen Kaffka  
Dorothy Kandra  
William A. Kier  
Tom Kisanuki  
Rod Kucera  
Chuck Lane  
Eric Loudenslager  
Elwood Miller  
Felice Pace  
Sharon Ramey  
Joseph Riker  
Patricia Parker  
Linda Schwinck  
Sari Sommarstrom  
Billy L. Stanford  
Mary K. Taylor  
David Webb  
Charles H. Wells Jr.  
Jim Welters  
Desma Williams  
Paula Yoon

Representing:

USFWS  
Siskiyou Co. Farm Bureau  
USFS  
Klamath Tribe  
Self  
University of California  
Tulelake I. D.  
USBR  
Hoopa Valley Tribe  
USFWS  
Self  
Siskiyou County  
Self  
KREP  
Calif Dept of Water Resources  
BLM  
Modoc County  
USFWS  
  
KFMZC  
Univ. of California, Davis  
  
William Kier Associates  
USFWS  
Klamath County  
USFWS  
HSU/KRBFTF Hatchery Committee  
Klamath Tribes  
Klamath Forest Alliance  
Self  
City of Klamath Falls  
USFWS  
USFWS  
Scott River Basin CRMP  
Self  
OFBF  
Shasta Valley CRMP  
Self  
KFMZC  
  
Fisheries Focus

MEETING AGENDA FOR THE  
 KLAMATH RIVER BASIN FISHERIES TASK FORCE  
 JUNE 15-16, 1993, YREKA, CALIFORNIA

June 15:

- 8:00 am Convene meeting; opening remarks, introductions.
1. Discussion/adoption of agenda.
  2. Approval of minutes from March 30-31, 1993 meeting.
- 8:15 3. Report from budget committee on development of Fiscal Year 1994 work plan. (Bingham)
- 8:30 4. Task Force discussion of work plan recommendation.
- 10:00 Break
- 10:15 5. Public comment on FY1994 work plan.
- 10:45 6. Action: Task Force decision on final FY1994 work plan.
- 11:00 7. Report on draft FY1995 Request For Proposals. (West)
- 11:30 8. Report on identification of critical fish refugia. (West)
- 12:00 Lunch
- 1:00 9. Action planning: Should the TWG increase subbasin planning effort by implementing Project 93-PC-2 during FY1993? (West)
- Action: Task Force will provide direction to the Technical Work Group.
- 1:30 10. Status of the Klamath River Instream Flow Study. (Shake)
- Action: Appointment of ad hoc scoping committee.
- 2:00 Break.
- 2:15 11. Status report on Klamath and Six Rivers National Forests' Land Management Plans. (Holder)
- 3:15 11. Report on progress of the Forest Service's Pacific Salmon Work Group (PacFish). (Holder)
- 3:30 12. Presentation of Klamath Basin hatchery review final report. (Reynolds)
- 3:45 13. Comment on the report from Task Force representatives on the hatchery review team. (Bingham, Eric Laudenschlager)
- 4:00 14. Report on Shasta fall chinook status with reference to California Endangered Species Act listing. (Reynolds)
- 4:30 15. Report on Shasta River 1993 unimpaired flow experiment. (Bill Chesney)
- 4:45 16. Public comment.
- 5:00 Adjourn meeting for the day.

June 16:

- 8:00 Reconvene. Announcements.
- 8:05 17. Report from upper basin ad hoc committee. (Thackeray)
- 8:30 18. Task Force discussion on how to proceed with development of the upper basin amendment document.
- 8:45 19. Public comment.
- 9:15 20. Action: Upper basin amendment process -- What to do?
- 9:45 Break.
- 10:00 21. A long term "needs list" for Klamath fish restoration. (Bingham)
- 10:30 22. Public comment.
- 11:00 23. Action: Direction to staff, TWG, or committee to identify/develop the long term needs list.
- 11:00 24. Take care of unfinished business.
- Identify new agenda items.
- Review assignments.
- Set meeting date and location for winter meeting.
- 12:00n Adjourn meeting.

Klamath Fishery Restoration Program  
Fiscal Year 1994 Project Proposals

(listed by rank)

PROJECT NUMBER	COOPERATOR	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
PC-4	USFWS -- KLAMATH RIVER PRO	BASIN	PROVIDE STAFF SUPPORT FOR PROGRAM COORDINATION AND ADMINISTRATION	426000		
PC-2	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT	SCOTT RIVER WATERSHED COORDINATED RESOURCE MANAGEMENT PLAN	27280	TO CONTINUE THE POSITIVE WORK STARTED BY THE CRMP TO RESTORE AND MAINTAIN A HEALTHY AND PRODUCTIVE WATERSHED.	83
MP-08	GREAT NORTHERN CORPORATION	OREGONA	OREGONA IRRIGATION DISTRICT	400	ASSIST THE OREGONA IRRIGATION DISTRICT WITH COSTS ASSOCIATED WITH PULSE FLOW PROJECT.	88
E-07	SALMONID RESTORATION FEDERATION	BASIN	1994 CALIFORNIA SALMON, STEELHEAD & TROUT RESTORATION CONFERENCE	3000	IMPROVE THE EFFECTIVENESS OF PROGRAM SALMON AND STEELHEAD FISHERIES RESTORATION CONTRACTORS AND COOPERATORS, AND INFORM THE PUBLIC OF PROGRAM RESTORATION OPPORTUNITIES.	81
NR-19	TULANA FARMS	UPPER	TULANA WATERSHED ENHANCEMENT PROJECT	21800	IMPROVE WATER QUALITY THRU RESTORATION OF RIPARIAN, EMERGENT & AQUATIC VEGETATION & REDUCTION OF SOIL EROSION. RESTORE & PROTECT SPawning, REARING & FEEDING HABITAT FOR FISH SPECIES IN THE KLAMATH WATERSHED. PROMOTE PUBLIC UNDERSTANDING OF THE IMPORTANCE OF & NEED FOR A HEALTHY WATERSHED & THE RESTORATION & PRESERVATION OF PRODUCTIVE FISH HABITAT.	81
FP-09	CALIF DEPT OF FISH & GAME	MIDDLE	GRIDER CREEK DIVERSION SCREEN	2862	TO SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD AND CHINOOK SALMON.	80
PC-1	KLAMATH FOREST ALLIANCE	SALMON	SALMON RIVER COMMUNITY RESTORATION PROGRAM	19625	THROUGH A COOPERATIVE PLANNING AND IMPLEMENTING EFFORT, EDUCATE, INVOLVE AND TRAIN COMMUNITY MEMBERS TO IDENTIFY, PROTECT, AND TO RESTORE THE SALMON RIVER SUB-BASIN.	78
FP-11	CALIF DEPT OF FISH & GAME	SCOTT	MAYDEN DIVERSION DITCH SCREEN	2862	SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD AND JUVENILE CHINOOK AND COHO SALMON.	78
NR-33	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT	SCOTT RIVER RIPARIAN WOODLAND REVEGETATION	12117	DEMONSTRATE THE FEASIBILITY OF RE-ESTABLISHING A RIPARIAN FOREST	78

Subtotal 574,046

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
			WITHIN THE FENCED, RIPARIAN ZONE OF THE SCOTT RIVER IN SCOTT VALLEY.	
FP-12 CALIF DEPT OF FISH & GAME	SCOTT	ETHA CREEK DIVERSION SCREEN	2662 SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD.	76
NR-21 KLAMATH NF	SALMON	STABILIZATION ANALYSIS FOR THE MONTE CREEK-86 LANDSLIDE	26983 PREPARE A DESIGN PACKAGE AND NEPA DOCUMENT FOR THE STABILIZATION OF A LARGE LANDSLIDE THAT THREATENS ANADROMOUS FISHERIES HABITAT AND WATER QUALITY IN THE LOWER 6 MILES OF THE SALMON RIVER.	75
FP-10 USFWS -- CA/MV FISH HEALTH CENTER	MIDDLE	HEALTH AND PHYSIOLOGY EVALUATION OF HATCHERY YEARLING CHINOOK EMIGRANTS	10000 BUILDING ON THE PATHOGEN PREVALENCE STUDY OF SALMONID SMOLTS CONDUCTED IN FY92. THIS STUDY WILL: A) DOCUMENT THE INCIDENCE AND INTENSITY OF PATHOGEN INFECTION B) MONITOR IMMUNE DEFENSE CHARACTERISTICS OF HATCHERY CHINOOK C) CORRELATE PHYSIOLOGICAL AND NON-SPECIFIC IMMUNE DEFENSE MEASUREMENTS WITH HEALTH STATUS PRIOR TO HATCHERY RELEASE, COLLECTION SITE AND TIME, INFECTION, AND ENVIRONMENTAL CONDITIONS (FLOW, TEMPERATURE).	75
FP-19 USFWS -- COASTAL CALIF PRO	BASIN	AGE COMPOSITION OF THE 1993 KLAMATH RIVER FALL CHINOOK RUN	7850 DETERMINATION OF THE AGE COMPOSITION OF THE KLAMATH RIVER FALL CHINOOK RUN IN 1993 FOR USE IN THE MANAGEMENT OF THIS STOCK.	74
E-04 KLAMATH FOREST ALLIANCE	SALMON	ADOPT-A-STREAM STEWARDSHIP AND EDUCATION PROGRAM	4480 EDUCATE STUDENTS GRADES 1-8 ON IMPORTANCE & INTRACACY OF AQUATIC ECOSYSTEMS & WATERSHED PROCESSES. FORGE PARTNERSHIP IN STEWARDSHIP & EDUCATION BETWEEN RESTORATION COUNCIL, FORKS OF SALMON SCHOOL, FOREST SERVICE, CA DEPT. OF FISH & GAME, OTHER INDEPENDENT SPECIALISTS & THE SALMON RIVER COMMUNITY.	73
NR-23 KLAMATH FOREST ALLIANCE	SALMON	BARE COUNTRY LANDSCAPE COMMUNITY PARTNERSHIP PROJECT (RIPARIAN PLANTING)	8636 EDUCATE, INVOLVE AND BASICALLY TRAIN LOCAL COMMUNITY RESIDENTS AND THE PRIVATE LANDOWNERS WITHIN THE BARE COUNTRY LANDSCAPE TO IDENTIFY.	72

Subtotal 574,554

KLAMATH FISH RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(list rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				PRIORITIZE, AND RESTORE CRITICAL RIPARIAN ECOSYSTEMS ON BOTH PUBLIC AND THEIR OWN PRIVATE LANDS.	
NR-10	KLAMATH NP -- OAK KNOLL RD	MIDDLE HORSE CREEK RESTORATION PROJECT	38797	TO STABILIZE ROADBED AND STREAMBANK EROSION WHICH IS CONTRIBUTING HIGH LOADS OF SEDIMENT INTO THE HORSE CREEK DRAINAGE. THESE AREAS OF HIGH SEDIMENT DELIVERY ARE ADVERSELY AFFECTING EGG AND FRY SURVIVAL AND REDUCING THE AVAILABILITY OF REFUGIUM AND REARING HABITAT.	72
NR-32	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT STOCKWATER FOR CHINOOK - SCOTT VALLEY IRRIGATION DITCH	7880	CONDUCT A STUDY ON THE SCOTT VALLEY IRRIGATION DITCH TO DETERMINE FEASIBILITY OF PROVIDING STOCKWATER FROM WELLS RATHER THAN DIVERTED SURFACE WATER.	72
NR-37	GREAT NORTHERN CORPORATION	SHASTA GENERIC FENCING	80928	CONSTRUCT APPROXIMATELY 3 MILES OF CATTLE EXCLUSION FENCE, PLANT EXCLUSION AREAS TO ACCELERATE RIPARIAN RECOVERY.	71
FR-04	NORTHERN CALIF INDIAN DEVEL COUNCIL	MIDDLE MID-KLAMATH CHINOOK ACCELERATED RESTORATION PROGRAM	164787	RESTORE THE LOCALLY ADAPTED FALL CHINOOK IN SELECT TRIBUTARIES OF THE KLAMATH RIVER.	71
E-02	FISHERIES FOCUS	LOWER EUREKA HIGH SCHOOL KLAMATH RIVER PROJECT	1265	OFFER A HIGH SCHOOL CLASS TO STUDENTS WHO HAVE BEEN EXTENSIVELY INTRODUCED TO AND STUDYING THE KLAMATH SALMON ISSUE AND WHO ARE READY TO RECEIVE TRAINING IN PRODUCING A QUALITY PRESENTATION TO TAKE TO OTHER HIGH SCHOOL STUDENTS.	71
NR-34	GREAT NORTHERN CORPORATION	SHASTA RIPARIAN PLANTING EVALUATION	31816	IMPROVE SUCCESS RATE OF RIPARIAN PLANTINGS ALONG THE SHASTA RIVER.	70
FR-02	NORTHERN CALIF INDIAN DEVEL COUNCIL	LOWER YUROK RESERVATION LATE RUN FALL CHINOOK ACCELERATED STOCKING PROGRAM	168915	E. RESTORE FISH STOCKS	70
NR-18	KLAMATH NP	MIDDLE MID-KLAMATH SUB-BASIN SEDIMENT ANALYSIS	84228	DETERMINE SEDIMENT PRODUCTION RATES, SHARE INFO, PRIORITIZE WATERSHED RESTORATION ACTIVITIES, PREPARE LIST OF PROJECTS, INVOLVE PUBLIC, AND COMPILE INFO INTO GIS.	69
NR-19	KLAMATH NP -- SALMON RIVER RD	SALMON SOUTH FORK BACKWATER POOL WITH COVER STRUCTURE	2850	INCREASE WINTER REARING AND POST EMERGENCE HABITAT FOR JUVENILE	69

Total 1,037,643

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
			STEELHEAD AND CHINOOK FRY IN THE SOUTH FORK SALMON RIVER.	
NR-29	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - BLACK RANCH	113409 INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	69
E-03	KLAMATH NF	MIDDLE KLAMATH BASIN FISHERIES SEMINARS	1403 CONDUCT FIVE PUBLIC INFORMATION/EDUCATION SEMINARS TO DISCUSS KLAMATH RIVER BASIN FISH SPECIES, HABITAT REQUIREMENTS AND LIFE HISTORY. A PORTABLE COLD WATER AQUARIUM WOULD BE USED TO ENHANCE THE DISCUSSION.	69
NR-17	KLAMATH NF -- HAPPY CAMP RD	MIDDLE INDIAN CREEK TERRACE AND RIPARIAN RE-ESTABLISHMENT	21088 RESTORE CHANNEL CONDITIONS WHICH PROVIDE FOR REESTABLISHMENT OF NATIVE FLOOD PLAIN AND TERRACE VEGETATION WHILE ENHANCING STREAMBED AND BANK STABILITY.	68
NR-182	KLAMATH NF -- SALMON RIVER RD	SALMON SALMON RIVER SUB-BASINS RIPARIAN PLANTING PROJECT	16300 PLANT RIPARIAN SPECIES IN AREAS ALONG A NUMBER OF DIFFERENT STREAMS THAT SUPPORT CHINOOK AND STEELHEAD. THE RIPARIAN PLANTING WILL EVENTUALLY PROVIDE SHADE AND COVER, AND WILL INCREASE BANK STABILIZATION.	68
E-08	KIDDER CR. OUTDOOR/ETNA ELEM. SCH.	SCOTT KIDDER CREEK RESTORATION PROJECT	3250 CONTINUE TO IMPLEMENT A RESTORATION PROJECT INCLUDING A TREE PLANTING PROGRAM ON KIDDER CREEK AND EDUCATE STUDENTS AND OUR ADULT COMMUNITY OF HABITAT REQUIREMENTS AND THE ECONOMIC AND CULTURAL IMPORTANCE OF OUR SALMON POPULATION.	68
FP-08	USFWS -- COASTAL CALIF FRO	LOWER SPawning GROUND SURVEYS OF LOWER KLAMATH TRIBUTARIES	84480 ESTABLISH CONSISTENT MONITORING REGIME FOR LOWER KLAMATH RIVER TRIBUTARIES AND GATHER INFORMATION REGARDING SPawner RETURNS TO THESE STREAMS.	67
NR-31	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT SCOTT RIVER FLOW ENHANCEMENT - PILOT PROJECT	14482 STORE WATER IN AND UNDER LANDS ADJACENT TO SCOTT RIVER FOR RELEASE AS NEEDED IN THE FALL TO INCREASE FLOW.	67

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
FP-13	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT RIVER TRIBUTARIES	10827	STUDENTS FROM ETNA HIGH SCHOOL WILL RESEARCH, DESIGN, FABRICATE, INSTALL MONITOR AND MAINTAIN TWO FISH SCREENS ON SUGAR CREEK AND ONE FISH SCREEN ON FRENCH CREEK.	66
NP-06	KLAMATH NP -- SALMON RIVER RD	BALMON	17180	LITTLE NORTH FORK WATERSHED IMPROVEMENT NEEDS INVENTORY	65
FP-06b	USFWS -- COASTAL CALIF PRO	LOWER	24141	STATUS OF SALMON STOCKS AT BLUE CREEK	65
E-06	DIANE HIGGINS	BASIN	81230	KLAMATH RIVER EDUCATIONAL PROGRAM FOR GRADES K-3	65
NR-28	KLAMATH FOREST ALLIANCE	BALMON	12480	BARE COUNTRY LANDSCAPE COMMUN. PARTNERSHIP PROJ. #3(ROADS; RIPAR. STABILIZ.	64
NR-02	KLAMATH NP -- HAPPY CAMP RD	MIDDLE	15268	INDIAN AND BLK CREEK RIPARIAN HABITAT RESTORATION #1	63
E-01	CALIF CONSERVATION CORPS	LOWER	19842	LOWER KLAMATH FISHERIES INFORMATION DISPLAYS	63
FP-04	USFWS -- COASTAL CALIF PRO	LOWER	24200	SPRING EMIGRATION ASSESSMENT OF KLAMATH RIVER JUVENILE SALMONIDS	63
FP-05	USFWS -- COASTAL CALIF PRO	LOWER	11000	KLAMATH RIVER YEARLING SALMONID EMIGRATION MONITORING	63
FR-05	ART FRAZIER	BALMON	12032	HANDEL CREEK HATCHING/REARING PROJECT	63
				BOOST PRODUCTION OF FALL CHINOOK, THROUGH BIO-ENHANCEMENT, WITHIN THE SALMON RIVER SUB-BASIN, PARTICULARLY IN	

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT NUMBER	COOPERATOR	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
					TRIBUTARIES WHERE FALL CHINOOK NUMBERS APPEAR DEPRESSED OR FAR BELOW THE STREAM'S KNOWN CARRYING CAPACITY.	
FP-18	USFWS -- COASTAL CALIF PRO	BASIN	CHINOOK SALMON STOCK DISCRIMINATION/OPTICAL PATTERN RECOGNITION OF SCALE SAMPLE	22478	DISCRIMINATE BETWEEN KLAMATH RIVER FALL CHINOOK STOCKS USING SCALE SAMPLES.	63
HR-01	USFWS -- KLAMATH RIVER PRO	BASIN	KLAMATH RIVER INSTREAM FLOW STUDY - PHASE I	25168	TO INITIATE AN INSTREAM FLOW STUDY ON THE MAINSTEM KLAMATH RIVER.	63
FP-01	USFWS -- COASTAL CALIF PRO	MAINSTEM	G.STURGEON AGE&GROWTH ANALYSES W/OPTICAL PATTERN RECOGNITION OF PECTORAL FINRAYS	18683	DETERMINE AGE STRUCTURE AND PROVIDE DESCRIPTIVE GROWTH DATA RELATED TO PAST LIFE HISTORY.	63
FP-20	USFWS -- YUROK TRIBAL FISH DEPT	BASIN	MONITORING OF KLAMATH BASIN JUVENILE CHINOOK PRODUCTION PRIOR TO ESTUARY ENTRANCE	39793	INDEX KLAMATH RIVER BASIN JUVENILE CHINOOK PRODUCTION AND DETERMINE RELATIVE CONDITION AND CONTRIBUTION OF HATCHERY AND NATURAL STOCKS. DETERMINE THE RELATIVE SURVIVAL OF MARKED CHINOOK AND RELATE TO RIVER FLOW.	63
FR-06	ROBERT WILL	SALMON	LITTLE NORTH FORK CHINOOK HATCHING/REARING PROJECT	26885	BOOST PRODUCTION OF NATIVE FALL CHINOOK, THROUGH BIOENHANCEMENT, WITHIN THE NORTH FORK SALMON RIVER SUB-BASIN PARTICULARLY IN NORTH FORK SALMON RIVER TRIBUTARIES WHERE FALL CHINOOK NUMBERS APPEAR DEPRESSED OR FAR BELOW THE STREAM'S KNOWN CARRYING CAPACITY.	62
HR-20	KLAMATH NF -- SALMON RIVER RD	SALMON	ZONE LANDSLIDE STABILIZATION	41100	PREVENT FURTHER MASS WASTING FROM A COMPLEX LANDSLIDE. SLIDE FAILURE WOULD DIRECTLY INFLUENCE THE QUALITY OF WATER AND HABITAT IN NEGRO CREEK AND THE SOUTH FORK OF THE SALMON.	62
FP-17	USFWS -- COASTAL CALIF PRO	BASIN	EVALUATION OF STATUS/TRENDS OF COMO SALMON IN KLAMATH R. TRIBS.(EXCLTRINITY R.	39120	DETERMINE THE STATUS AND TREND OF COMO SALMON IN SELECTED KLAMATH RIVER TRIBUTARIES.	62
HR-35	GREAT NORTHERN CORPORATION	SNASTA	EKSTROM FENCING	9180	FENCE CONSTRUCTION WITHIN A YEAR OF CONTRACT AWARD. PLANTING WILL BE CONDUCTED DURING WINTER AFTER FENCE CONSTRUCTION.	61
HR-36	GREAT NORTHERN CORPORATION	SNASTA	LINQUIST PLANTING	4565	PLANT 7725 LINEAL FEET OF RIVER BANK TO ACCELERATE RIPARIAN RECOVERY.	61
MR-22	KLAMATH FOREST ALLIANCE	SALMON	FISHERIES AND HABITAT PROTECTION AND	5190	PROMOTE COMMUNICATION BETWEEN DREDGERS	61

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
		ENHANCEMENT PROJECT FOR DREDGERS		AND THE MINING COMMUNITY. EDUCATE AND INVOLVE THE DREDGING COMMUNITY IN FISHERIES PROTECTION. INVESTIGATE VARIOUS METHODS OF HABITAT ENHANCEMENT UTILIZING A SUCTION DREDGE. INVOLVE VOLUNTEER DREDGERS TO COLLECT WATER QUALITY, HABITAT, AND DREDGING ACTIVITY DATA.	
NR-08	KLAMATH NP -- OAK KNOLL RD	MIDDLE HUMBOLDT CREEK REFUGIUM HABITAT RESTORATION PROJECT	9788	CREATE REFUGIUM HABITAT DURING LOW OR NO FLOW SEASONS.	80
FP-06a	USFWS -- COASTAL CALIF PRO	LOWER STATUS OF SALMON STOCKS AT BLUE CREEK	56464	MONITOR CONDITIONS OF A WILD STOCK OF FALL CHINOOK AT BLUE CREEK, A MAJOR TRIBUTARY TO THE LOWER KLAMATH RIVER. A) SPawner surveys and juvenile emigration trapping and coded wire tagging. B) Spawner surveys and year-round flow and temperature data.	80
NR-38	YREKA FISH. HABITAT IMPROVE. HEADQ.	BASIN TEMPORARY HELP FOR THE YREKA FISHERIES HABITAT IMPROVEMENT HEADQUARTERS	31118	PROVIDE 1 PERSON YEAR OF STAFFING CAPABILITY TO MAINTAIN EXISTING SCREENS.	80
FR-01	CALIF CONSERVATION CORPS	LOWER LOWER KLAMATH SALMONID RESCUE PROJECT	26112	A COOPERATIVE PROJECT INVOLVING CCC & DPO DESIGNED TO RESCUE NATURALLY PRODUCED JUVENILE SALMONIDS FROM LOWER KLAMATH TRIBUTARIES EXPERIENCING SEASONAL LOSS OF SURFACE FLOWS. CREWS WILL EMPLOY TRAPS, SEINES AND ELECTROFISHING METHODS. RESCUED FISH WILL BE TRANSPORTED TO SUITABLE, UNDERSEEDED HABITAT WITHIN THE SAME WATERSHED. NO FISH REARING WILL TAKE PLACE. MEETS OBJECTIVE E: RESTORE FISH STOCKS.	80
NR-09	KLAMATH NP -- OAK KNOLL RD	MIDDLE GRIDER CREEK SIDE CHANNEL IMPROVEMENT	18586	PROVIDE REFUGIUM TO INCREASE CHINOOK SALMON AND STEELHEAD PRODUCTION IN GRIDER CREEK.	80
NP-02	KLAMATH NP -- HAPPY CAMP RD.	MIDDLE OAK FLAT CREEK SEDIMENT STUDY	11825	IMPROVE OUR UNDERSTANDING OF SEDIMENT PRODUCTION AND INFLUENCES ON FISH HABITAT.	80
NP-07	SISKIYOU RESOURCE CONSERVATION SCOTT	SCOTT RIVER GRANITIC SEDIMENT MONITORING	12540	ASSESS THE 1994 HABITAT CONDITIONS AND	80

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	DIST	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
					COMPARE WITH THE 1989 HABITAT CONDITIONS FOR: STREAMBED GRAVEL COMPOSITION (11 SITES) AND FOR CHANNEL MORPHOLOGY (16 SITES).	
FP-03	USFWS -- COASTAL CALIF PRO	MAINSTEM	MAINSTEM KLAMATH RIVER FALL CHINOOK SPAWNING ESCAPEMENT	18383	ESTIMATE THE FALL CHINOOK SALMON SPAWNING ESCAPEMENT IN THE MAINSTEM KLAMATH RIVER.	88
FR-08	ORLEANS ROD AND GUN CLUB	SCOTT	REAR STEELHEAD RESCUED FROM SCOTT RIVER TRIBUTARIES	18719		89
FP-07	USFWS -- COASTAL CALIF PRO	LOWER	FISHERIES INVESTIGATIONS AT TERVER CREEK	62628	MONITOR SALMON AND STEELHEAD STOCKS, ASSESS HABITATS AND EROSION SOURCES, AND MAKE RECOMMENDATIONS FOR SPECIFIC MEASURES TO RESTORE AQUATIC HABITAT.	88
PC-3	USFWS -- KLAMATH RIVER PRO	BASIN	DEVELOP SCOPE OF WORK FOR 1995 FISHERY RESTORATION PROGRAM REVIEW	2300	PREPARE A DETAILED PLAN OF WORK TO IMPLEMENT POLICY 7.4.	87
FP-02	HUMBOLDT STATE UNIVERSITY	MAINSTEM	BIOLOGY, HARVEST & RESTORATION OF KLAMATH RIVER GREEN STURGEON	46588	COLLECT INFORMATION ON THE HARVEST OF GREEN STURGEON IN THE KLAMATH RIVER. INITIATE COMPREHENSIVE LIFE HISTORY STUDIES INCLUDING AN ASSESSMENT AND DESCRIPTION OF SPAWNING AREAS. PROVIDE INFORMATION FOR FUTURE RESTORATION MEASURES.	87
MR-01	CALIF CONSERVATION CORPS	LOWER	TECTAH CREEK SALMON & STEELHEAD HABITAT RESTORATION PROJECT	48049	DESIGN AND CONSTRUCT INSTREAM STRUCTURES AT 12 SITES ON THE LOWER 2 MILES OF TECTAH CREEK TO CREATE SCOUR POOLS, DEEPEN EXISTING POOLS, PROVIDE POOL AND EDGEWATER COVER, AND HIGH WATER REFUGE HABITAT. PLACE ROOTWADS, LOGS AND LWD IN STREAM CHANNEL AND MARGINS. DPO STAFF WILL COMPLETE SITE DESIGN. CCC WILL PROVIDE CREW LABOR AND TECHNICAL SUPERVISION.	87
MR-11	KLAMATH NP -- OAK KNOLL RD	MIDDLE	GROUSE CREEK STABILIZATION PROJECT	8283	STABILIZE STREAM BANKS AND RESTORE RIPARIAN AREAS TO PREVENT BRODED MATERIAL FROM BEING DELIVERED TO BEAVER CREEK.	86
MR-18	CALIF CONSERVATION CORPS	MIDDLE	CCC/USFS PARTNERSHIP FOR MIDDLE KLAMATH SUB-BASIN	167218	DEMONSTRATE THE VIABILITY OF A STATE/FEDERAL PARTNERSHIP AS A COST-EFFECTIVE WAY TO UNDERTAKE RESTORATION EFFORTS IN THE MIDDLE	86

KLAMATH FISH RECREATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
KLAMATH SUB-BASIN. (YEAR-ROUND)					
NR-27	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT R. BANK PROTECT, RIPAR. FENCE/PLANT - MARK MURLINANN	118209	INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	54
NR-30	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - PASTURES OF HEAVEN	21448	INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	54
NR-15	KLAMATH NF -- HAPPY CAMP RD	MIDDLE EAGLE 6 LANDSLIDE STABILIZATION	105000	ASSURE THAT THE EARTHFLOW LANDSLIDE IS STABLE AND CONTROL SURFACE EROSION AND SLIDING ON THE FOOT OF THE LANDSLIDE BY CONSTRUCTING A REINFORCED WALL AT THE TOE OF THIS SLIDE AND GRADING THE FOOT OF THE SLIDE TO A STABLE CONFIGURATION. THE GRADED SLOPE WILL THEN BE VEGETATED.	55
NR-24	KLAMATH FOREST ALLIANCE	SALMON BARE COUNTRY LANDSCAPE RIPARIAN NURSERY PARTNERSHIP	22920	EDUCATE, INVOLVE AND BASICALLY TRAIN THE RESIDENTIAL PRIVATE LANDOWNERS WITHIN THE SEVERLY DAMAGED SOUTH FORK SALMON RIVER BARE COUNTRY LANDSCAPE TO IDENTIFY, GATHER, PROPAGATE GROW, PLANT AND MONITOR VARIOUS NATIVE DECIDUOUS RIPARIAN VEGETATIVE SPECIES. THE 4,000 NURSERY STARTS WILL BE USED TO REVEGETATE AND STABILIZE PRIORITIZED RIPARIAN HABITAT AND WATERSHEDS WITHIN THE SALMON RIVER SUB-BASIN. THIS PROPOSAL WILL PROMOTE COMMUNITY AWARENESS, SUPPORT AND INVOLVEMENT, AND A MORE COOPERATIVE LANDSCAPE PLANNING EFFORT WILL RESULT BETWEEN THE PUBLIC AND PRIVATE LAND OWNERS WITHIN THE BARE COUNTRY LANDSCAPE LEVEL.	55
NR-14	KLAMATH NF -- HAPPY CAMP RD	MIDDLE ASSESSMENT OF DISSOLVED HEAVY METALS AND ACIDIC DRAINAGE IN INDIAN CREEK	5000	IDENTIFY CHRONIC OCCURRENCE OF ACIDIC DRAINAGE FROM UNREGULATED SOURCES ASSOCIATED WITH OLD WORKING OF THE GREY EAGLE MINE. THIS INFORMATION IS ESSENTIAL TO THE ASSESMENT OF NEED FOR	55

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank	
			REMEDICATION OF TOXIC DRAINAGE FROM THIS SITE.		
FP-14	CALIF DEPT OF FISH & GAME	SHASTA	SHASTA R. FALL CHINOOK SPAWNING DISTRIB., JUVENILE REARING & OUTMIGRATION STUDY	64795 TO DETERMINE THE SPATIAL AND TEMPORAL DISTRIBUTION OF SPAWNING ACTIVITY FOR THE 1993 FALL CHINOOK RUN IN THE SHASTA RIVER. DETERMINE THE TIMING OF EMERGENCE, REARING DISTRIBUTION AND RELATIVE ABUNDANCE, TIMING AND RATE OF OUTMIGRATION OF YOUNG-OF-THE-YEAR FALL CHINOOK DURING THE SPRING AND EARLY SUMMER OF 1994.	66
NR-08	KLAMATH NP -- OAK KNOLL RD	MIDDLE	GRIDER CREEK FISH HABITAT IMPROVEMENT #3	22768 INCREASE PRODUCTIVITY OF REARING AND SPAWNING HABITAT FOR ANADROMOUS FISHERIES ON GRIDER CREEK.	64
FP-18	COASTAL RESOURCES INSTITUTE	BASIN	KLAMATH BASIN CHINOOK STOCK DIFFERENTIATION/DISTINGUISHING GEN DIFFSCOAST POPS.	83620 PROVIDE FISHERIES MANAGERS WITH TOOLS/TECHNIQUES FOR IDENTIFYING STOCKS/POPULATIONS THAT WILL AID THEM IN MANAGEMENT DECISIONS. SECOND, TO TRANSFER THE BASIC DNA TECHNIQUES INTO THE DAILY FISHERIES MANAGEMENT SCHEME BY THE DETERMINATION OF THE IDENTITY OF POPULATIONS/STOCKS CURRENTLY IN THE FISHERY.	63
NR-26	SISKIYOU RESOURCE CONSERVATION SCOTT DIST		SCOTT RIVER BANK PROTECT., RIPARIAN FENCE/PLANTING - WALTER HANSEN RANCH	136274 INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	63
NR-26	SISKIYOU RESOURCE CONSERVATION SCOTT DIST		SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - RANCHO DEL SOL	129742 INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	63
NR-04	SIX RIVERS NP	MIDDLE	BLUFF CREEK - DRAGON AREA INSTREAM HABITAT ENHANCEMENT	16700 INCREASE THE QUALITY AND QUANTITY OF INSTREAM HABITAT FOR FALL RUN CHINOOK SALMON AND SUMMER AND WINTER RUN STEELHEAD IN BLUFF CREEK.	62
NP-05	KLAMATH NP	SALMON	RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	62824 DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND	62

KLAMATH FISH RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	
NR-03	SIX RIVERS NP	MIDDLE RED CAP CREEK INSTREAM HABITAT ENHANCEMENT	24100	INCREASE THE QUALITY AND QUANTITY OF INSTREAM HABITAT FOR FALL RUN CHINOOK SALMON AND SUMMER AND WINTER RUN STEELHEAD IN RED CAP CREEK.	81
NR-08	SIX RIVERS NP -- ORLEANS RD	MIDDLE 1994 OLD BLUFF CREEK ROAD OBLITERATION PLAN	21398	TO PROPERLY PLAN THE OBLITERATION OF AN ABANDONED ROAD THAT WAS BUILT IN THE INNER GORGE OF BLUFF CREEK, A KEY WATERSHED IDENTIFIED BY THE SCIENTIFIC PANEL ON LATE-SUCCESSIONAL FOREST ECOSYSTEMS.	81
NR-13	KLAMATH NP -- HAPPY CAMP RD	MIDDLE INTEGRATED MONITORING & ASSESSMENT OF SEDIMENT PRODUCTION & FISH HABITAT QUALITY	4700	1) DESCRIBE METHODS TO ASSESS SEDIMENTATION AND THEIR UTILITY IN DESCRIBING RIPARIAN ENVIRONMENTS, 2) INDICATE VALUABLE METHODS, 3) PROVIDE EXAMPLE OF INTEGRATED ASSESSMENT OF EROSION..., 4) DESCRIBE METHODS FOR MONITORING, 5) ID RESEARCH OPPORTUNITIES.	80
NR-12	KLAMATH NP -- HAPPY CAMP RD	MIDDLE FIBER REINFORCEMENT OF ROAD FILL	60000	1) DEMONSTRATE FIBER REINFORCEMENT TECHNIQUES, 2) STABILIZE SITES.	80
PR-07	OLSON/MCBROOM	SALMON SIDE CHANNEL SCREENING, SPAWNING, & REARING FOR FALL CHINOOK SALMON	27938	SCREEN EXISTING SIDE CHANNEL AND RETURN SALMON RIVER AND ITS TRIBUTARIES TO HISTORICAL FISH LEVELS USING EXISTING SIDE CHANNEL FOR SPAWNING AND REARING FALL CHINOOK SALMON AT METHODIST CREEK.	49
NP-05B	KLAMATH NP	SALMON RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	64827	DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	48
NP-05A	KLAMATH NP	SALMON RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	128199	DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	48

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	WATER BASIN	PROJECT DESCRIPTION	COST	Comment	Rank
MP-04A	KLAMATH NF	SALMON POOL FREQUENCY AND VOLUME OF THE SALMON RIVER	83900	1) DETERMINE WHY POOL FREQUENCY IS SO LOW ON THE NORTH FORK SALMON RIVER, AND QUANTIFY THE DIFFERENCES BETWEEN THE POOLS IN THE NORTH FORK, SOUTH FORK AND MAIN STEM. 2) CHARACTERIZE THE EFFECT LOW POOL FREQUENCY WILL HAVE ON ANADROMOUS FISH. 3) INITIATE THE USE OF STATE OF THE ART REMOTE SENSING TECHNOLOGY FOR: A. ASSESSING THE QUALITY OF FISH HABITAT B. MONITORING CHANGES IN HABITAT OVER TIME C. INVESTIGATION OF GEOMORPHIC INFLUENCES ON HABITAT 4) COMMUNICATE WITH AND EDUCATE THE PUBLIC ON RELATIONSHIPS BETWEEN FISH HABITAT, AND GEOMORPHIC PROCESSES.	42
MP-04	KLAMATH NF	SALMON POOL FREQUENCY & VOLUME OF THE SALMON RIVER	44598	1) DETERMINE WHY POOL FREQUENCY IS SO LOW ON THE NORTH FORK SALMON RIVER, AND QUANTIFY THE DIFFERENCES BETWEEN THE POOLS IN THE NORTH FORK, SOUTH FORK AND MAIN STEM. 2) CHARACTERIZE THE EFFECT LOW POOL FREQUENCY WILL HAVE ON ANADROMOUS FISH. 3) INITIATE THE USE OF STATE OF THE ART REMOTE SENSING TECHNOLOGY FOR: A. ASSESSING THE QUALITY OF FISH HABITAT. B. MONITORING CHANGES IN HABITAT OVER TIME. C. INVESTIGATION OF GEOMORPHIC INFLUENCES ON HABITAT. 4) COMMUNICATE WITH AND EDUCATE THE PUBLIC ON RELATIONSHIPS BETWEEN FISH HABITAT, AND GEOMORPHIC PROCESSES.	42
MR-07	KLAMATH NF -- OAK KNOLL RD	MIDDLE ORIDER CREEK SUMMER STEELHEAD HABITAT SURVEY	3278	INCREASE PRODUCTIVITY OF SUMMER STEELHEAD BY PROMOTING ACCESS TO BLOCKED AREA HABITATS.	43
PA-1	KLAMATH NF -- HAPPY CAMP RD	BASIN HISTORICAL FISHERY HABITATS OF WESTERN SISKIYOU CTY - A HISTORICAL BIBLIOGRAPHY	4400	RESEARCH AND PUBLICATION OF HISTORICAL INFORMATION RELATED TO WESTERN SISKIYOU COUNTY.	59
FR-03	FRANK FISCHL	MIDDLE KLAMATH RIVER GREEN STURGEON HATCHERY AND	84551	UNDER GLOSSARY OF OBJECTIVES ADDRESSES: 97	

KLAMATH FISH RECREATION PROGRAM  
 FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
		REARING PILOT PROJECT		PUBLIC INVOLVEMENT, RESTORE FISH STOCKS, DEVELOP COOPERATION, PROTECT STURGEON.	
FP-16	BIOSYSTEMS ANALYSIS, INC.	BASIN EGG SURVIVAL OF FALL-RUN CHINOOK SALMON (ONCORHYNCHUS Tshawytscha)	52532	QUANTIFY CHINOOK SALMON EGG SURVIVAL IN 35 TWO TRIBUTARIES OF THE KLAMATH RIVER.	
HP-09	CALIF REG WATER QUALITY CONT BOARD	BASIN KLAMATH RIVER WATER QUALITY MONITORING SUPPORT	79280	MONITOR AND EVALUATE WATER TEMPERATURE AND WATER CHEMISTRY IN KLAMATH RIVER AND MAJOR TRIBUTARIES.	35
HP-03	OREGON STATE UNIV EXT SERVICE	UPPER EVALUATION/ENHANCEMENT OF WATER QUALITY-WOOD R. S/B RESULTING FROM LAND USES	14814	DEVELOP BASELINE DATA ON NUTRIENT LOADING CONTRIBUTION FROM VARIOUS CULTURAL PRACTICES (EX. FORESTRY & LIVESTOCK GRAZING) IN THE WOOD RIVER VALLEY, & WORK COOPERATIVELY TO REDUCE LOADING.	20

\*\*\* Total \*\*\*

3741877

Status Report: Project 93-PC-02 (Technical/Operational Support for Watershed Based Restoration Planning)

**WATERSHED, FISH HABITAT, AND FISH POPULATION  
RESTORATION PROCEDURE**

- 1) Describe desired future condition of resource using measurable criteria.
- 2) Identify existing condition of resource using same criteria as in #1 (above).
- 3) Determine difference between existing and desired future condition.
- 4) Prescribe activities or measures necessary to move from existing condition to desired condition.
- 5) Implement prescribed activities.
- 6) Evaluate effectiveness of prescribed activities in accomplishing objective(s) or meeting criteria.

**PROBLEM STATEMENT**

Watersheds, habitats, and fish populations within the Klamath River basin and its subbasins are in varying condition. The information available regarding these conditions is also at varying levels. Some subbasins have enough information available so activities can be prescribed and implemented, while others lack basic information necessary to determine whether or not there is a difference between existing condition and desired condition.

The Technical Work Group finds it difficult to prioritize and schedule work activities in the subbasins because there is no consolidated summary of a subbasins status available to work from (eg: one subbasin may have enough information available to prescribe and implement restoration activities, while an adjacent subbasin has inadequate information available to describe the existing condition).

## SOLUTION

Prepare a series of electronic map layers (accurate to scale) of the entire Klamath River Basin which illustrates the tributaries, their watersheds, and the status of information available for each watershed. The advantage of creating electronic map layers is that it can be reproduced at various scales (from small watersheds to the entire basin) and be integrated into a Geographic Information System for refined planning and work scheduling purposes.

Bob Rohde has been directed by the Technical Work Group to coordinate this project (93-PC-02) incorporating existing interagency mapping resources into a basinwide product. The product is scheduled for delivery in fall 1993, so it may be used by the Technical Work Group to prepare the FY 1995 RFP/RFQ and prioritize future work activities.

June 15, 1993

Landowner  
Address  
-----  
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Dear -----,

In 1986 Congress passed Public Law 99-552, the Klamath Act, which authorized a 20 year Federal and State cooperative fishery restoration program for the Klamath River basin. The Act established a 14 member Klamath River Basin Fisheries Task Force to cooperate with the U.S. Secretary of Interior to restore anadromous fisheries (salmon, steelhead, and other fish species) to optimum levels by the year 2006. The Task Force developed a Long Range Plan which indicates the need for both fish habitat protection and fish habitat restoration from a total watershed, not simply an instream, perspective. In addition, the Task Force recognized that the success of the Klamath River Basin Fishery Restoration Program would depend, in large measure, on the extent to which we can draw upon the goodwill and relevant authority of all interested parties. For these reasons, we are requesting your assistance in protecting and restoring fishery resources within your land ownership.

Salmon and steelhead populations have dramatically declined for several years. In February 1993, we directed our Technical Work Group to identify watersheds critical to anadromous fish population survival. They provided us a list of watersheds (attached) that are still relatively undisturbed and are critical for the long-term survival of fish stocks at risk of extinction. The basins' critical watersheds provide habitat that is essential to long-term population survival and eventual restoration of anadromous fish populations basinwide. All other areas outside these critical watersheds are in varying stages of land use and need to be evaluated for future restoration. For the majority of the basin, outside the critical watersheds, we would like the opportunity to work with you to develop a coordinated resource management strategy which meets your land use needs and simultaneously protects and restores anadromous fish habitats and populations.

We request that you join us in our fishery restoration efforts by avoiding any future adverse land uses in the Klamath River Basin critical watersheds. If you anticipate any land management activities in these critical watersheds, please provide us a copy of your proposed actions six months in advance so we may have adequate time to consult with you to ensure that productive fish habitat conditions can be maintained. Information on anticipated activities should be forwarded to the Task Force via the U.S. Fish and Wildlife Service, Klamath River Fishery Resource Office, P.O. Box 1006, Yreka CA, 96097-1006; phone (916) 842-5763.

We appreciate your cooperation and look forward to working with you.

Sincerely,

William F. Shake, Chairperson  
Klamath Task Force

## CRITICAL WATERSHEDS OF THE KLAMATH RIVER BASIN

### Lower Klamath River Subbasin

Blue Creek (upstream from Nickowitz Creek; East Fork and Crescent City Forks)  
High Prairie Creek (Yurok Experimental Forest)  
Richardson Creek (entire watershed)

### Mid-Klamath River Subbasin

Boise Creek (entire watershed)  
Clear Creek (upstream from Five Mile Creek)  
North Fork Dillon Creek (upstream from confluence with mainstem)  
Elk Creek (entire watershed)  
Grider Creek (upstream from Salt Creek)  
Redcap Creek (upstream from Middle Fork)

### Salmon River Subbasin

Butler Creek (entire watershed)  
East Fork of South Fork Salmon River (entire watershed)  
North Fork Salmon River (upstream from Idlewild)  
South Fork Salmon River (upstream from Blindhorse Creek)  
Wooley Creek (entire watershed)

### Shasta River

Big Springs Creek (upstream from confluence with Shasta River)  
Bogus Creek (entire watershed)

**PACFISH STRATEGY SUMMARY**  
(Summarized by J. West, June 1993)

**BACKGROUND**

AFS report on Salmon at the Crossroads (Nehlsen, et al 1991) identified 214 salmonid stocks at "moderate" or "high" risk of extinction or of "special concern". About 134 "at risk" stocks identified in that report are found on National Forests and 109 are found on BLM lands.

**PACFISH FRAMEWORK**

Forest Service initiated a team effort in spring of 1992 to assess and develop a management strategy that addresses habitat needs of all anadromous "at risk" stocks on National Forests. In March 1993 FS and BLM announced shared commitment to develop a common strategy for anadromous salmonid management on FS and BLM administered lands in the West. Strategy became known as "PACFISH".

**STAFFING LEVELS**

- Washington Office Policy Group
- Washington Office Work Group
- Inter-regional Field Team

**PACFISH TASKS**

- Assess Current Habitat Conditions
- Define Good Habitat
  - Pool Frequency
  - Water Temperature
  - Large Woody Debris
  - Bank Stability/Bank Angle
  - Width/Depth Ratio

**PACFISH STRATEGY ELEMENTS**

- Riparian Management Objectives
- Key Watersheds
- Riparian Habitat Conservation Areas
- Modify Planning Direction
- Interim Standards and Guidelines
- Watershed Analyses
- Watershed Restoration

# PACFISH STRATEGY

## Executive Summary

Revised May 1, 1993

### Introduction

The purpose of this executive summary is to provide an overview of the background, issues and current status of the Pacific salmon and steelhead management strategy of the USDA Forest Service (Forest Service) and USDI Bureau of Land Management (BLM). Updates to this briefing will be provided periodically.

Over the past several years, significant new research information about the status of Pacific salmon and steelhead stocks, current habitat conditions, and habitat requirements has become available. This new information makes it necessary for the Forest Service and BLM to take immediate and long-term actions to assure proper management of anadromous fish habitat in Alaska, California, Idaho, Oregon and Washington. Changes in management guidance will affect about 75% of the Ranger Districts on 34 National Forests in five Forest Service Regions and 29 Area Offices on 16 Districts in four BLM State Offices.

### Background

Pacific anadromous salmonids (including salmon, steelhead and sea-run cutthroat trout, and dolly varden) occur naturally from southern California northward to the Arctic Ocean. These fish are comprised of a large number of stocks, or populations that originate from specific watersheds during specific times of year as juveniles, migrate to the ocean, and generally return to reproduce in their natal streams at the same time of year they were spawned. In many areas of the West Coast, naturally reproducing stocks of Pacific salmon, steelhead and sea-run cutthroat trout are at risk of extinction. Of the more than 400 stocks from California, Idaho, Oregon, and Washington recently evaluated by the American Fisheries Society (AFS), 214 were considered to be at "moderate" or "high" risk of extinction or of "special concern," 106 were extinct, and about 120 were considered secure.

About 134 "at risk" stocks identified by the AFS report are found on National Forests and 109 are found on Public Lands administered by the BLM. Recent information suggests that coho and chum salmon, and steelhead stocks in Alaska probably are declining also. To more accurately characterize the situation in Alaska, Forest Service researchers began an investigation in 1992 that is due to be completed in late spring 1993 to identify the unique stocks of anadromous fish on National Forests in Alaska. The Alaska Chapter of the AFS has undertaken a review of the status of anadromous fish throughout the state of Alaska and in 1994 expects to publish a report on stocks at risk in Alaska.

Reasons for the decline of the Pacific anadromous salmonids vary by species and geographic area. The depressed status of the 214 stocks reflects the interaction of inherently variable environmental conditions, such as oceanic productivity and weather patterns, and a variety of management activities. In general, stock survival is threatened by some combination of hydroelectric development and operation, fish harvest, fish hatchery influences on disease and genetic fitness, and fish habitat conditions. These management activities sometimes are referred to as the "four H's."

- o **Hydroelectric**, flood control, and irrigation dams have reduced fish production in many drainages throughout the range of the Pacific salmon, steelhead, and sea-run cutthroat trout. This is especially true in the San Joaquin and Sacramento River Valleys of central California, and the Columbia River Basin of Idaho, Oregon and Washington. Recovery of as many as 20% to 40% of the stocks identified by AFS as "at risk" is limited primarily by dam operations. The problem of hydroelectric development and operations is particularly acute in the Columbia River Basin, where: (a) more than 30% of the salmon, steelhead and sea-run cutthroat trout's historic range has been blocked by dams without fish passage facilities, (b) adult fish have difficulty in locating and negotiating past dams where ladders have been installed, (c) direct mortality of juvenile fish as a result of passing through power turbines is estimated at 12-20% per dam, and (d) mortality of juvenile fish has increased due to an approximately four-fold increase in downstream travel time (from 7-9 days to nearly 4 weeks) as a result of turning all but about 50 miles of the Columbia River into a series of placid lakes. The demise of a large majority of the extinct stocks is attributable to dam construction and operation.
- o **Harvest** of Pacific salmon, steelhead, and sea-run cutthroat trout occurs in a variety of sport, commercial, and subsistence fisheries. Because small naturally spawning fish stocks mix in the ocean with abundant hatchery stocks, management for a "maximum sustained yield" can result in overharvest of some stocks, appropriate harvest of some, and underharvest of others. Further confounding the issue is the fact that much of the commercial harvest occurs outside the national waters of the U.S. and of Canada, and much of the subsistence harvest is guaranteed under treaty or given special priority by law. As a result, complex jurisdictional authorities must grapple with allocating a "fair share" of an ever-dwindling resource among various nations, states, and tribes.
- o **Hatcheries** were built to be a part of the solution to declining populations of salmonids. However, many have become part of the problem and some have had a subtle, but adverse impact. Traditional hatchery practices have contributed to the decline, or may limit recovery, of 104 of the 214 stocks identified by AFS as "at risk." Hybridization of hatchery stock with wild salmonids can reduce the genetic fitness of the wild stock by affecting run timing and life history characteristics important to long-term viability. Competition between juvenile wild salmon, steelhead, and sea-run cutthroat trout and juvenile hatchery fish (that typically are larger because of hatchery feeding and/or time of hatching, and are released in large numbers) can be overwhelming. Further, crowded rearing conditions, warmer water, and greater concentrations of fish waste in many hatcheries can increase the incidence of disease among hatchery fish that can be transmitted to naturally-reproducing fish. Genetic contamination of the remaining lower Columbia River coho population by hatchery fish, and the resulting extinction of "wild" genes,

was one of the primary reasons cited by the National Marine Fisheries Service in their decision that listing the stock was not warranted.

**Habitat** is an very important component of salmonid production. In fact, declining habitat condition is the single factor affecting nearly all of the stocks at risk. Degradation of spawning and rearing habitat has occurred on all land ownerships throughout the range of Pacific anadromous fish stocks. Detrimental changes in habitat condition include reduction in water quality (as measured by increases in temperature, sedimentation, changes in nutrient levels and water chemistry, and the presence of toxic substances), changes in water quantity and/or timing of water flow, and reduction in habitat complexity (as indicated in loss of deep pools, reduction in amounts of large woody debris, and changes in width:depth ratios and bank angles).

The Forest Service and BLM have an important role to play in the management of watersheds and fish habitat in Alaska, California, Idaho, Oregon, and Washington. The watersheds on National Forests encompass approximately 50% of the remaining freshwater anadromous fish spawning and rearing habitat in the lower 48 states and about 25% of such habitat in Alaska. Public Lands managed by the BLM include 13,200 stream miles in the lower 48 states and 133,000 miles in Alaska that provide anadromous fish spawning and rearing habitat.

For those stocks affected primarily by habitat factors, the management of watersheds ensure good fish habitat on National Forests and Public Lands is important. Management of these lands also can play an important role in moderating the rate of decline for those stocks affected primarily by hydroelectric development and operations, hatcheries, and fish harvest, and can provide a buffer against environmental extremes. Of the 134 "at risk" stocks identified by the 1991 AFS report that are found on National Forests in the lower 48 states and the 109 "at risk" stocks that are found on BLM administered Public Lands, approximately 23% are affected primarily by hydroelectric development and operation. For the remaining stocks that are limited primarily by other factors (habitat, harvest, hatcheries), poor habitat condition most often is the primary cause of decline or impediment to recovery.

### **PACFISH Strategy Framework**

The 1991 AFS report, coupled with the November 1991 listing of the Snake River sockeye salmon as endangered and the April 1992 listing of the Snake River spring/summer and fall chinook salmon as threatened, served as a wake-up call for the Forest Service, BLM, and others to provide more sensitive management of Pacific anadromous fish and their habitat. In an effort to address the issue of declining fish stocks in the Alaska, California, Idaho, Oregon and Washington, the Forest Service initiated a team effort in early spring 1992 to undertake an assessment and develop a management strategy that addresses the habitat needs of all Pacific anadromous "at risk" stocks on National Forests (see December 1992 Informational Report). During this same time, the BLM began revising its 1988 "Anadromous Fish Habitat on Public Lands" strategic plan. In March 1993, the Forest Service and the BLM announced their commitment to develop a common strategy for management of Pacific salmon and steelhead habitats and

associated watersheds on Forest Service and BLM administered lands in the West. This comprehensive strategy has become known as "PACFISH."

To facilitate a strong linkage between management and research, the PACFISH effort is staffed with technical specialists and managers from the Forest Service National Forest System and the BLM, and research scientists from the Forest Service research organization. The organizational framework for the PACFISH effort includes three components:

- o **Washington Office Policy Group** - Provides overall direction for development of the strategy. This group is led by USDA-FS Associate Deputy Chiefs Dave Unger, National Forest System, and Eldon Ross, Research, and USDI-BLM Deputy Assistant Director Kemp Conn, Land and Renewable Resources. Members of the group include Washington Office Staff Directors from the Forest Service and Washington Office Division Chiefs from the BLM. Ad hoc members include representatives from the Department of Agriculture Office of General Counsel and the Department of Interior Office of the Solicitor.
- o **Washington Office Work Group** - Established to work with the Field Team to develop the strategy for managing salmon and steelhead habitats on Forest Service and BLM administered lands. This group is led by Forest Service Assistant Director for Wildlife and Fisheries Phil Janik, Pacific Northwest Research Station Aquatic/Land Interactions Program Team Leader Jim Sedell, BLM Science Advisor Jack Williams, and BLM Rangeland Resources Branch Chief Glen Secret. Core members include representatives with expertise in fisheries, economics, public affairs, watershed management, land management planning, and range management. Additional representatives with other expertise serve ad hoc as needed.
- o **Inter-regional Field Team** - Established to provide information and work with the Washington Office Work Group in the development of the strategy. This team is led by Forest Service Deputy Regional Forester Bob Joslin and Pacific Northwest Research Station Aquatic/Land Interactions Program Project Leader Fred Everest, and BLM Deputy State Directors for Resources Elaine Zielinski (OR/WA) and Dick Bastin (ID). Members include representatives from each of the three Forest Service Research Stations (PSW, PNW, INT) and five Regions (1, 4, 5, 6, 10), and each of the four BLM State Offices (CA, ID, OR/WA, AK) responsible for management of Pacific anadromous fish habitat. Forest Service and BLM Anadromous Fisheries Coordinators, Gordon Haugen and Bob House, assist with Field Team activities.

### **Current Habitat Conditions Were Assessed**

As part of the PACFISH assessment, Forest Service research scientists, working with fisheries biologists and watershed specialists on National Forests with Pacific anadromous fish habitat, have characterized current habitat conditions in many watersheds on National Forests and other lands in Alaska, California, Idaho, Oregon and Washington. Generally, these habitats have 30% to 70% fewer large, deep pools, more fine sediments in spawning gravels, and greater disturbance of riparian vegetation than is acceptable and have experienced a reduction in fish habitat capability. These downward trends in

habitat conditions represent the cumulative effects, across all ownerships, of past and present land management activities. For example:

- o Coastal Oregon streams on west-side forested lands have been degraded. The amount of bedrock bottom exposed has gone from 30% to 80-90%. Pool-riffle ratios have gone from about 50:50 to 20:80 or 10:90 based on Oregon Game Commission surveys in 1960 and Forest Service surveys in the 1970's. The loss of 50% of deep pools and complex edges since late 1960's translates directly into a 50% loss of summer rearing habitat for juvenile salmonids. Stream channel condition in 77% of the 211 miles of anadromous fish habitat in BLM's Salem District of western Oregon fail to meet desired BLM standards.
- o East-side Oregon habitat in the Upper Grande Ronde River Basin has been degraded. 80% of fish habitat fails to meet current Forest Plan standards and guidelines for temperature, sediment, and riparian condition. 20% exceeds current Forest Plan standards and guidelines. BLM habitat in the basin has undergone similar degradation.
- o Upper Snake River Basin habitat in the developed portions of the Middle Fork Clearwater and Lochsa Rivers watersheds on the Clearwater National Forest in Idaho have been degraded. 70% fail to meet Forest Plan standards and guidelines. Between 1935 and 1992, the number of large pools in the Salmon River Basin has decreased by 52% in managed watersheds and increased by 29% in Wilderness area watersheds.

#### "Good" Habitat Conditions Were Defined

With the help of historic inventory and survey data, as well as current research, "good" anadromous fish habitat conditions have been defined. This was determined by comparing quantitative habitat surveys, completed between 1989 and 1992, with surveys done by the Bureau of Fisheries, now the National Marine Fisheries Service, between 1934 and 1941 on 116 watersheds in Alaska, Idaho, Oregon and Washington. "Good" habitat has been defined using physical features as surrogates for the processes that form salmonid habitat. One key feature (pool frequency) and four supporting features (water temperature, amount of large woody debris interacting with stream channels, streambank stability and bank angle, and width to depth ratio of stream channels) are used to describe habitat quality. In "good" habitat, all five features are above the following threshold levels:

- o **Pool Frequency** (pools per mile). Varies by wetted width of stream.  
Wetted Width: 5 10 15 20 25 50 75 100 125 150 175 200  
Pools/Mile: 184 96 70 56 47 26 23 18 14 12 10 9
- o **Water Temperature.** Compliance with State Water Quality standards generally provide adequate protection for salmonid assemblages, except that summer temperatures should be less than 68 degrees F.

- o **Large Woody Debris.** The amount of large wood debris needed varies by geographic location.  
Southeast Alaska, Northern California, and western Oregon and Washington: greater than 80 pieces per mile; greater than 24 inch diameter; greater than 50 foot length.  
  
East of Cascade Crest in Oregon, Washington, and Idaho: greater than 20 pieces per mile; greater than 12 inch diameter; greater than 35 foot length.
- o **Bank Stability and Lower Bank Angle (non-forested setting):** Bank stability exceeds 80%. 75% of banks should be undercut (i.e. less than 90 degree angle). Less than 25% of bank angles should be greater than 90 degrees.
- o **Width to Depth Ratio:** less than 10 in all systems (measured as mean wetted width divided by mean depth).

### Elements Of The PACFISH Strategy

The PACFISH effort is a proactive, ecosystem approach to management of watersheds and Pacific anadromous fish habitats across five Forest Service Regions and four BLM state administrative units, including the states of Alaska, California, Idaho, Oregon and Washington. Eight alternatives are being evaluated, including six developed by the PACFISH Field Team, alternative 8A from the Gang of Four Report, and a draft riparian management strategy from Region 5 of the Forest Service. The eight alternatives include some combination and application of key watershed identification, watershed analysis, Riparian Habitat Conservation Areas and standards and guidelines, and watershed restoration. The PACFISH strategy is building upon a scientifically sound assessment that characterizes current habitat conditions, provides an understanding of the elements of "good" habitat condition, provides the knowledge of how to manage watersheds to maintain "good" habitat where it now occurs and achieve "good" habitat conditions in areas that currently are degraded.

- o **Riparian Management Objectives** are being refined that call for the maintenance or restoration of: (a) water quality to a degree that provides for stable and productive ecosystems (i.e. timing and character of temperature, sediments and nutrients), (b) stream channel integrity, channel processes and sediment regime under which the ecosystems developed (e.g. timing, volume, and character of sediment input and transport), (c) instream flows to support desired riparian and aquatic habitats, stream channel stability and effective function, and ability to route flood discharges, (d) natural timing and variability of the water table elevation in meadows and wetlands, (e) diversity and productivity of native and desired non-native plant communities, (f) riparian vegetation so amount and distribution of large woody debris is characteristic of natural riparian and aquatic ecosystems, (g) habitat for populations contributing to viability of riparian-dependent communities (i.e. native and desired non-native plants, vertebrates, and invertebrates), (h) riparian vegetation for adequate summer and winter thermal regulation, (i) riparian vegetation so the rates of surface and bank erosion and channel migration are similar to the rates under which the communities developed, and (j) riparian and

aquatic habitats for the unique genetic stocks that evolved within that specific geo-climatic region.

- o **Key Watersheds** are being identified by determining which watersheds are important to "at risk" stocks, and currently are in "good" condition, or have a high *potential for restoration*. Key watersheds will receive top priority for watershed analysis, maintenance and restoration activities.
- o **Riparian Habitat Conservation Areas (RHCAs)** where particular management sensitivity is warranted are being defined. RHCAs include the traditional riparian corridor along permanent fish-bearing streams, and also include areas of unstable soils, wetlands, intermittent headwater streams, and other areas where proper ecologic functioning is crucial to maintenance of the stream's water, sediment, woody debris and nutrient delivery systems. Based on regional averages throughout the five state area, minimum interim widths for delineation of RHCAs, in the absence of site-specific information, are as follows:

Fish bearing streams and lakes	=	300 ft
Permanently flowing non-fish bearing streams	=	150 ft
Ponds, reservoirs, and wetlands > 1 acre	=	150 ft
Seasonally flowing or intermittent streams, wetlands < 1 acre, landslides and landslide-prone areas	=	100 ft

- o **Modified Planning Direction** is being developed to improve consistency of content and approach in Forest Service and BLM planning documents.
- o **Interim Standards and Guidelines** for all National Forests and BLM administered Public Lands that support Pacific anadromous fish stocks are being developed.
- o **Watershed Analyses** will be conducted to identify "problem" areas that need immediate, corrective management. Watershed analysis also will allow the delineation of RHCAs to be tailored to site specific conditions, and will provide the foundation for determining modifications to the interim standards and guidelines necessitated by site specific conditions. Watershed analyses will be conducted in two steps. Level I allows for timely assessment and modification of existing practices and identification of "hot spots" that should immediately be targeted for maintenance and/or restoration. Level II allows for a more complete assessment of cumulative effects and refinement of RHCA delineation. Both Level I and Level II watershed analyses will be certified by appropriate line officers upon completion. Public involvement in watershed analyses will be encouraged.

- o **Watershed Restoration** efforts in key watersheds will receive priority. All restoration work will be designed at a watershed/landscape scale and will involve coordination between changes in land management activities and active restoration projects.

### **Implementation Process**

Direction provided by the PACFISH strategy will be science based, practical, and economically feasible. It also will provide assurance to the public that we are responding seriously to the situation. Because of critical status of many of the "at risk" anadromous fish stocks and the Forest Service and BLM's need to demonstrate commitment to improved habitat conditions on lands they administer, consideration is being given to the issuance of interim direction that will apply to Forest Service and BLM stewardship of all anadromous fish habitat on National Forests and Public Lands in the West. Appendix 5K of the Report of the Scientific Analysis Team is one of the six PACFISH developed alternatives, and provides some indication of the type of interim direction being considered. Selection of final management direction will proceed with a full NEPA review of all alternatives that meet technical and legal requirements.

**RESULTS OF A REVIEW OF SALMON AND STEELHEAD  
HATCHERY PRODUCTION IN THE KLAMATH RIVER SYSTEM**

**A Report to the Chairpersons of**

**The Klamath River Basin Fisheries Task Force**

**The Klamath Fishery Management Council**

**and**

**The Trinity River Basin Fish and Wildlife Task Force**

**State of California  
The Resources Agency  
Department of Fish and Game  
Inland Fisheries Division**

## RESULTS OF A REVIEW OF SALMON AND STEELHEAD HATCHERY PRODUCTION IN THE KLAMATH RIVER SYSTEM

### Background and Process

During the summer of 1992, the chairpersons of the Klamath River Basin Fisheries Task Force, the Klamath Fishery Management Council, and the Trinity River Basin Fish and Wildlife Task Force, collectively known as the "Three Chairs", requested a review of California salmon and steelhead hatchery production in the Klamath River system. The requests resulted from concerns over issues related to hatchery production that were expressed by committee members and other interested parties. Two major concerns were expressed:

1. Potential competition between hatchery and naturally produced juvenile fish for limited rearing habitat in the river system may depress the survival of naturally produced salmon or steelhead;
2. Genetic variability throughout the system may be decreasing because of the perceived overwhelming influence of a large population of hatchery fish that could have significantly less genetic variability than the naturally reproducing stocks.

In light of these concerns, the Three Chairs requested a review of production at Iron Gate and Trinity River hatcheries, which are operated by the Department of Fish and Game (Department), and appointed representatives from each of the three advisory groups as participants on a hatchery production Review Team. Appointed advisory group team members included representatives from the United States Fish and Wildlife Service, the United States Bureau of Reclamation, Humboldt State University, the Hoopa Valley Tribal Council, California's commercial salmon fishing industry, and the Oregon Department of Fish and Wildlife. A complete listing of participants appears as an appendix to this report. The Department responded positively to the request for a review of hatchery production, establishing the Review Team as a forum for potential development of new ideas useful in the periodic review and revision of the operating goals and constraints for its salmon and steelhead hatcheries in the Klamath/Trinity system. The Department review had commenced approximately one year earlier, but it was essentially restarted with the advent of the Review Team.

The team first convened in November, 1992, in Redding. At that meeting, all of the major concerns and corollaries of these concerns were discussed in a general manner. The advisory nature of the Review Team was highlighted amidst the legal mandates and policies under which the Department must operate its anadromous hatcheries. The meeting adjourned following a call by the Department for participants to provide specific written comments on hatchery production issues by December 10. The group agreed to meet again in January, 1993 to allow the Department to respond to any comments it had received.

The second meeting was held on January 13, 1993, also in Redding. Where possible, the Department provided written responses to comments received by the due date, and the group discussed the responses. In addition, several specific findings were made regarding hatchery production in the Klamath and Trinity basins. The Department stated that it would prepare a progress report that detailed the findings of the Review Team at the March, 1993 meeting of the Klamath River Basin Fisheries Task Force. A final report was to have been presented by the Department at the May, 1993 meeting of the Klamath River Basin Fisheries Task Force. The report presentation sequence was subsequently changed to presentation of a draft report to the March, 1993 meeting of the Task Force and presentation of the final report to the next Three Chairs meeting.

#### Production Goals and Constraints

Production at each of California's salmon and steelhead hatcheries is governed by a formal set of written production goals and constraints for that hatchery. These documents state the target number of eggs that is to be taken for each species and stock reared at the hatchery, how many fish are to be reared, the size of the fish to be reared, and times and locations of release. The documents further provide that eggs will be taken throughout spawning runs and that any excess early eggs taken will be destroyed or used for other programs. Other programs may include offsite rearing, education, or non-anadromous fisheries enhancement. Exceptions to the stated criteria require the written approval of the appropriate Regional Manager and the Chief of Inland Fisheries Division. Copies of the current documents for Iron Gate and Trinity River hatcheries are appended to this report.

California originally adopted the working policy of having a set of formal production goals and constraints for its salmon and steelhead hatcheries to ensure that these hatcheries produce fish in numbers sufficient to meet mitigation goals and make the best use of hatchery space without adversely affecting naturally spawning salmon and steelhead. These production criteria minimize the potential for significantly lessened genetic variability in hatchery products, when compared to naturally

spawned fish, and reduce the likelihood for in-hatchery genetic mixing of unique stocks. Release sizes and timing take into account the best information available on survival to adulthood and interactions that may occur between hatchery fish and their naturally spawned counterparts.

Salmon and steelhead hatchery goals and constraints are reviewed periodically and revised as new information becomes available or as conditions in the environment change. Revisions take into account the knowledge and suggestions of hatchery managers and inland and ocean fishery managers. They also are strongly influenced by the Department's obligations to meet mitigation goals, to provide fishing opportunities to sport and commercial fishers, and to meet the special needs of tribes covered under Federal mitigation. Proposed changes to production goals and constraints are adopted following thorough review and written approval by the appropriate Regional Manager and the Chief of Inland Fisheries Division. Iron Gate Hatchery Goals and Constraints had recently been modified and deviations had occurred during recent years with less than satisfactory results. Consequently, California began its most current updating of production goals and constraints for its Klamath and Trinity rivers salmon and steelhead hatcheries approximately one year ago, making the current Review Team activity timely.

#### Specific Issues Raised by the Review Team

This section deals with relevant specific issues that were discussed by team members during the review. Although the subjects generally fell into the two broader categories listed in the Introduction, the intent here is to summarize the points that were brought up by team members.

#### Competition Between Hatchery and Naturally Spawned Fish

Discussion on this subject centered primarily on the time, hence size, at which fish are released. Some team members strongly supported confining hatchery releases of chinook salmon to the fall, as yearlings, in both the Klamath and Trinity rivers. They suggested this approach because of the belief that yearling hatchery fish, unlike advanced fingerlings, move downstream relatively quickly and are less likely to residualize and compete for food and cover with naturally spawned fish rearing in the river. Further, they contended that the majority of naturally spawned fish have migrated from the river system by fall.

Another argument offered by some team members in support of yearling releases was their contention that some fish released from the hatchery in the spring as smolts remain in the estuary longer than fish released as yearlings. They felt that during the period of estuarine residency, fish become susceptible to mortality factors related to competition for food and space in

suitable habitats. Their belief was that yearling releases resulted in hatchery fish reaching the estuary coincident with their natural time of movement into the ocean, thus avoiding the period of estuary residence.

Production of coho salmon at Trinity River Hatchery was questioned by some team members. These members wondered why there was mitigation for a species that they thought may not have occurred historically in areas upstream from the site of Trinity Dam. They felt that production of this species resulted in needless competition with fish that were naturally produced farther down stream. Some also suggested that if coho were not reared, more space would be available at the hatchery for rearing additional chinook yearlings.

The team agreed that mitigation for steelhead was not achieving its goals in the Trinity River. The group did not, however, conclude that hatchery production was the reason for this. Rather, they agreed that a basin-wide investigation, geared to determining specific actions needed for increasing steelhead numbers, should be implemented by the Department. The study would include consideration of hatchery production, as well as habitat factors potentially in need of modification in restoring Trinity River steelhead. It was generally agreed that costs of the studies should be borne by the water development agencies to the extent that they are directed toward meeting a mitigation obligation.

For all species, the team expressed concern over disposition of excess eggs by hatcheries. Excess egg take occurs because the exact magnitude and duration of a spawning run and the conversion from egg to fry in a hatchery are difficult to predict each year. Therefore, a disproportionate number of eggs may be taken earlier in the season to insure against a shortfall in the total egg take if the run proves to be smaller than expected. Further, an overall surplus of eggs is taken in case the hatchery experiences catastrophic egg or fry mortality. The team members were concerned regarding the disposition of excess eggs. They considered the offspring from them as potential competitors for food and cover with naturally spawned fish. They were also concerned with genetic considerations.

Team members were also concerned over the disposition of "grade-outs". After eggs are hatched and the juveniles are moved to outside raceways, they are periodically graded for size and thinned as necessary to maintain optimum numbers of fish for the hatchery's capacity. The number of fish during a season that is thinned, the "grade-outs", can be significant. Review Team members expressed concern that releasing these fish into the river causes unnecessary competition with naturally spawned fish, and possible reduction in genetic variability of the stocks.

The subject of genetic effects of hatchery production received less direct discussion than the subject of competition, although it was recognized by the team that all of the items discussed under competition also had implications for the genetic makeup of salmon and steelhead stocks in the Klamath and Trinity systems. For example, some team members believed that failure to destroy or otherwise prevent entry into anadromous waters of the offspring from excess eggs taken during any part of a spawning run may result in production of an overall hatchery product that would fail to mirror natural genetic variability. Likewise, they believed that releasing hatchery fish at times when they are likely to compete with naturally spawned fish for limited available habitat can decrease overall genetic variability of the stocks. They contended that hatchery stocks lack the genetic variability of natural spawners, and that the hatchery offspring could successfully displace their naturally spawned counterparts.

The team members made it known that they believed rearing of enhancement fish was inappropriate at either of the hatcheries. They contended that hatchery production should be limited to replacing natural production from habitat now lost because of dams. They considered rearing more than the number of fish called for under mitigation agreements a practice that had the potential to lessen the genetic variability of salmon and steelhead populations in the river system. Some believed that hatchery products would eventually overwhelm natural spawners. They also were concerned over potential increases in competition for habitat between hatchery and naturally produced fish and net reductions in total production to the ocean.

The question of why coho rearing was part of the Trinity River mitigation agreement was asked in the contexts of genetics and competition. It has long been rumored that coho were introduced to the Trinity River in an attempt to enhance the ocean and river anadromous fisheries. Some of the team members felt that coho should not be reared unless it could be demonstrated that they had occurred above the dam site prior to construction. If not, rearing them would be an enhancement activity with the potential to decrease the genetic variability of naturally spawning coho in the Trinity River.

Another question raised by the team was: Why did the mitigation agreement governing Trinity River Hatchery operations call for return of 9,000 chinook adults to the hatchery each year? Discussion revealed that this number took into account not only the actual number of spawners that occurred upstream prior to dam construction, but also the sport harvest. Since sport fishing ceased following dam construction, the contention was that the target number of adults returning to the hatchery should be lowered. The feeling was that these "extra" spawners of hatchery

origin would spawn naturally, thereby reducing the overall genetic variability of Trinity River chinook salmon.

A final concern expressed by the team was over potential mixing of spring-run and fall-run chinook at Trinity River Hatchery. There was fear that mixing in the hatchery could cause the two stocks to lose their unique genetic characteristics.

#### Other Subjects Raised and Discussed

The team briefly discussed interim cooperative rearing projects. These projects were intended to be temporary and to provide a means for accelerating restocking of streams that had benefitted from habitat restoration work. Following a fair effort at reestablishment of naturally reproducing stocks, under Department guidelines, the interim projects should have terminated. Most of these projects have been in the Klamath River system, although the Hoopa Valley Tribal Council has operated a project on the lower Trinity River for several years and the Department has contracted for operation of a small facility on Horse Linto Creek, tributary to Trinity River, for about 6 years. The Department explained that a 50 percent decrease in funds has eliminated most State sponsored programs on the Klamath system, and that State rearing efforts outside the hatchery in that system are now confined to the Fall Creek facility on the upper river. Reference was made to interest by the United States Forest Service in pursuing the Hoopa Valley Tribal Council's interim rearing program as a means for restoring naturally reproducing populations in the Trinity River.

Although the team's purpose was to discuss hatchery production, other subjects, more related to hatchery operations, arose and were discussed. In that operations can affect production, some of the discussion items are briefly presented here for information.

Stocking density of fish in hatchery raceways was discussed. Some team members suggested that the facilities are not used optimally and that fish could be stocked less densely in the hatcheries. The Department responded that unused hatchery space is more a reflection of depressed runs than lack of efficiency, but was open to considering any new information pertinent to in-hatchery stocking rates.

Water quality and availability were discussed for each of the hatcheries in terms of how they affected hatchery production. Recent modernization at Trinity River Hatchery and plumbing modifications at the Lewiston Reservoir outlet appear to have solved many of the water quality and quantity problems at Trinity River Hatchery.

Iron Gate Hatchery experiences a chronic problem with solids in its water supplies. These solids settle in incubator trays and may lead to egg losses caused by fungus. Tests at the hatchery have indicated a 15 percent increase in egg survival in incubators supplied with filtered water. Pacific Power and Light Company is working with us to determine if the problem can best be solved through installation of a filtration system, or through installation of equipment for pumping ground water for the incubators. Water quantity and quality also constrain Iron Gate Hatchery in its ability to rear additional yearling chinooks, and Klamath River water temperature constrains the Department to spring, late-fall and winter fish releases.

Disease, survival, and condition of the fish in the hatcheries were also discussed. As a result of these discussions, the US Fish and Wildlife Service provided disease control suggestions and reports to the hatchery staffs.

#### Conclusions

Given current mitigation requirements, water availability, and physical space in the hatcheries, they are operating in the manner most likely to meet mitigation goals and maintain fisheries, and least likely to result in competition between hatchery and naturally spawned fish. Further, under current practices, hatchery fish are unlikely to significantly lessen the genetic variability of salmon and steelhead in the Klamath and Trinity rivers.

#### Yearlings vs Advanced Smolts

Strong feelings were expressed that the Department should convert entirely to a yearling program for chinook salmon. Our hatcheries do not have the capacity to hold enough yearling chinook salmon to meet mitigation requirements for all races, nor are we convinced that an exclusively yearling program is desirable. We were told by members of the Klamath Fishery Management Council that management decisions by the Klamath Fishery Management Council and the Pacific Fishery Management Council are based on strategies developed on smolt releases. We are committed to emphasizing natural production and to conserving wild stocks where they exist, but we are also obligated to manage our fisheries to provide opportunities for sport and commercial fishers and to tribes covered under Federal mitigation. Restricting hatchery production to only yearling releases could significantly reduce the size, and potentially the number, of fish available for harvest in the ocean and rivers.

Until documentation becomes available to us demonstrating conclusively that smolt releases in late May and June have significant detrimental effects on naturally spawning populations, we must continue to release most chinook salmon as

advanced fingerlings (larger than 90/lb.) We will also continue to release chinook yearlings to the extent feasible. Our Natural Stocks Assessment Project has begun a pilot study that will address time of entry and period of residency of hatchery and naturally produced salmonids in the Klamath River estuary, where current information indicates a conflict is most likely.

Our production and stocking program for artificially produced salmon smolts is based on several considerations including the following: 1) Ocean fishery management decisions are historically based on advanced fingerling releases, and a change to yearling release would require significant revisions of the production and harvest models; 2) Advanced fingerling smolt emigration is a natural occurrence for chinook salmon in the Klamath and Trinity systems; 3) Yearling releases tend to result in increased returns rates of grilse and to produce smaller adults, thus reducing benefits for ocean and inland fishers; 4) Hatchery produced fish planted at the hatcheries do not tend to stray far into main stem tributaries; and 5) There is a significant genetic mixing between hatchery and naturally produced main stem fish.

We are exploring the potential for increased yearling production at Iron Gate Hatchery and searching for answers to the questions of adequate water supply and funding. We understand that water flow and quality in the Klamath River are largely dependent on how much water remains in the river following diversions for agricultural and other uses outside California and on how much cold water can be stored in the depths of Iron Gate Reservoir. Taking all this into consideration, we are prepared to convert some of our advanced fingerling production at Iron Gate Hatchery to a corresponding level of yearling production if water of acceptable quality and in sufficient quantity is made available.

#### Trinity Coho Mitigation Goal

We believe that mitigation for coho salmon at Trinity River Hatchery is appropriate. Trapping records show that substantial numbers of this species naturally occurred above the present dam site. The review team was provided references on this issue.

#### Trinity Chinook Mitigation Goal

After review, the Department considers the mitigation target of 9,000 chinook salmon adults returning to Trinity River Hatchery appropriate. Experience has shown that there will usually be adults returning to the hatchery site in excess of the number required for egg collection when a hatchery and associated fishery are functioning properly.

### Trinity Steelhead Mitigation

The Review Team agreed that a goal-oriented investigation is badly needed to find ways to meet mitigation goals and to restore steelhead in the Trinity River.

### Excess Production

We continue to share the concerns of the Review Team over disposition of excess eggs and grade-outs. Our goal has been and continues to be, to take eggs throughout each run, with the take being in proportion to the magnitude and duration of the run. Our policy, stated in the goals and constraints documents, is to destroy excess eggs or fry, or to use them for other cooperative or nonanadromous programs.

We concur with the team that use of the term "enhancement" to describe part of the production at the two hatcheries is inappropriate. The use of the term is inaccurate and the fish should be correctly considered part of the production needed to meet mitigation requirements. Henceforth, "enhancement" will be used only when referring to production in excess of mitigation requirements. For Iron Gate and Trinity River hatcheries, this means that it will probably not be used, since the Department has no plans for production except as necessary for prescribed mitigation.

The Department supports cooperative interim artificial fish propagation programs where appropriate. These temporary programs under our jurisdiction must operate in accordance with State regulations and guidelines and must be confined to areas where natural production is insufficient to fully utilize available habitat. Proposals for initiation of new projects or continuance of existing projects must undergo a formal review process and be approved by the Department prior to implementation. The review procedures of the Trinity River Basin Fish and Wildlife Task Force follow its 1991 Policy and Procedures for Use of Interim Artificial Propagation Under the Trinity River Restoration Program to Accelerate the Restoration of the Anadromous Salmonid Fish in the Trinity River Basin for proposed projects in the Trinity system. Although it incorporates California's laws, policies, and guidelines pertinent to interim rearing, projects approved under it are still subject to State approval and permitting requirements.

### Protection of Discrete Stocks

Our greatest concern for salmon and steelhead genetics is the potential for mixing fish from different stocks. Our statewide policy prohibits artificial movement of stocks between basins without compliance with stated standards and the written approval of the appropriate Regional Manager, the Chief of Inland

Fisheries Division, and the Deputy Director for fisheries. Such movements and mixing are strongly discouraged. Our hatchery personnel take great care to ensure that stocks are not mixed during hatchery operations. Genetic mixing of hatchery and naturally reproducing components of a common stock is of much less concern to us than is mixing between stocks of different run timing or from different basins.

We believe that, provided there is no interbasin or interstock mixing, the potential for losing genetic variability because of hatchery production is not significant.

First, except in the cases of the endangered Sacramento River winter-run chinook salmon and the Carmel River steelhead, anadromous hatcheries in California, unlike trout hatcheries, do not maintain breeding stocks of adults. Because egg donors are randomly selected at the hatchery, genetic drift is far less likely to occur than it is in situations in which a small broodstock is cultured or maintained from year to year. Each year, anadromous hatcheries capture and spawn an essentially random subset of the fish that have successfully entered the hatchery. There is no reason to believe that this subset has less genetic variability than the whole population. Hatchery spawners are taken randomly from throughout a run and in proportion to its magnitude to generally reflect the genetic variability of the population that would have otherwise spawned at or above the hatchery site.

Second, the offspring of the hatchery-spawned adults are released into the natural environment where they become susceptible, like their naturally spawned cousins, to predation, competition, and all of the other limiting factors that are present in that environment, both in fresh and salt water. These limiting factors take their toll, and individuals lacking the genetic makeup necessary for survival are more likely to die before reaching adulthood. This tends to remove, or cause to occur at low frequencies, any "undesirable" genes that may have been encouraged at increased frequency in the hatchery population. This natural culling process may be reduced and straying increased, however, by trucking the hatchery product to the estuary.

Finally, the adult survivors produced at the hatchery and those produced naturally return to spawn. Some of the hatchery fish spawn naturally with other hatchery fish, but some spawn naturally with naturally produced fish. When the hatchery captures its adults, most of them are hatchery products, but others are products of natural spawning. Thus there is a two-way exchange of genetic material between the hatchery component and the naturally produced component both in the stream and in the hatchery. This, in conjunction with natural selection of survivors in the natural environment, works against selection for

genes that might initially appear at elevated frequencies in groups of hatchery produced fish. In this way, the genetic integrity and diversity of the stock is protected.

Under an ideal situation, we would operate hatcheries so that hatchery fish would leave the hatchery site at the same times, the same sizes, and in the same numbers that preproject naturally produced fish would have passed the site on their seaward migration. This would more closely mimic preexisting natural conditions. We recognize that this would be unrealistic under current budget and hatchery size constraints and that flow regimes have been altered by the projects for which mitigation fish are produced. Therefore, the hatchery produced fish releases must be tailored for the revised river system, the annual characteristics of the stream and the hatchery product, and the progress of the naturally produced emigrant fish.

We will continue to evaluate our hatchery operations, production and stocking criteria to improve them as new technology and methodology become available. However, we believe our anadromous hatcheries are presently being operated to replicate natural conditions to the extent possible.

#### Summary

We conclude that hatcheries are a necessary part of California's salmon and steelhead conservation program. In the Klamath-Trinity system, they exist to produce fish to replace natural production that was lost in areas above the main stem dams. We consider unreasonable, the hypothesis that preproject fish populations can be sustained in the absence of hatcheries. No amount of habitat restoration or enhancement down stream has been found to have the potential to replace the habitat that has been lost upstream to dams. The Department recognizes that hatcheries must be operated in a manner that has the least affect on naturally spawning stocks. The Department will do all that it can to ensure against harming natural stocks, while meeting mitigation goals and providing reasonable opportunities to sport and commercial fishers and to tribes covered under Federal mitigation.

#### Findings and Actions Planned by the Department

The Department plans to undertake the following six actions related to future production at Iron Gate and Trinity River hatcheries:

1. Fall chinook salmon egg take at Iron Gate Hatchery will be reduced to 12 million per year. This will be incorporated into the goals and constraints for Iron Gate Hatchery. The 18 million egg figure is excessive and was established at a time when the Department believed that maximum hatchery

production was a desirable goal and excessive egg mortalities were expected. In reality, this egg take goal has not been reached in most years;

2. The production goals and constraints for Iron Gate and Trinity River hatcheries will not refer to "enhancement" fish, but will more correctly refer to all production as mitigation fish;
3. The revised goals and constraints will specify that no pre-smolts will be planted, and that excess eggs or fry will be destroyed or used for purposes other than release into anadromous waters;
4. We will seek funding from the Trinity River Basin Fish and Wildlife Task Force or the U.S. Bureau of Reclamation for a study to develop an action program for steelhead population mitigation. The study will emphasize the need for management to assure that steelhead mitigation goals can be met without undue effects on wild stocks;
5. We will request Pacific Power and Light Company to review potential water supplies from Copco Lake, Iron Gate Reservoir, Fall Creek, and groundwater sources to determine if adequate water of proper quality exists that could be provided for an expanded yearling program at Iron Gate Hatchery. The utility company is cooperating with us in solving the incubator water quality problem. They will install a filtration system or ground water pumping equipment at the hatchery to provide adequate water quality to hatchery incubators;
6. We will continue to release our hatchery production at times and under conditions that most closely approximate natural patterns while minimizing competition with naturally produced fish. Smolt releases will take place as late in spring as possible to avoid competition with naturally spawned fish, yet ensure that hatchery fish avoid excessive mortality from high river water temperatures. Trucking of hatchery fish will be considered only under extreme emergency conditions when release at the hatchery site could be expected to result in greater than 50 percent planting mortality.

#### Acknowledgements

We thank each of the participants on the Review Team. We believe that it is always beneficial for Department and other government programs to be reviewed periodically by interested and concerned citizens and agencies. The assistance of the Department's Mr. John Hayes, Senior Fishery Biologist, Region 1 and Mr. Robert Corn, Senior Hatchery Supervisor, Region 1, and his staff,

Mr. Curt Hiser, Manager of Iron Gate Hatchery, and Mr. Gary Ramsden, Manager of Trinity River Hatchery, was invaluable and very much appreciated.

**COPY FOR YOUR  
INFORMATION****Advisory Team Comments on Hatchery Review Report**

Eric J. Loudenslager  
Department of Fisheries  
Humboldt State University

In a May 17, 1993 memo Mr. Doug Alcorn asked me to follow Mr. Forrest Reynolds presentation of the Klamath Basin hatchery review final report, to provide input to the Klamath Fisheries Task Force concerning advisory team impressions of the report. In response to Mr Alcorn's request I sent a memo to all advisory team members asking for input for my presentation. It is my hope that I will provide you with a reasonable summary of their comments.

I have communicated with all but one of the advisory team members, and all believe that the review process has started but should not be considered finished. Some of the advisory team members work on a day to day basis in the Klamath Basin and their comments and concerns involve very specific problems. These team members do not concur with at least some of the conclusions in the report. Other team members, myself included, are generally knowledgeable about fish hatcheries, fish genetics, disease etc, but don't consider themselves experts on the Klamath Basin. These members were not comfortable concurring or disagreeing with the reports findings based on information presented at the two meetings. I suspect that the main reason many team members don't consider our job finished is the lack of direction and instruction given to team members from the three chairs.

As an advisory team member I was never given any instructions or had a good idea of what we were charged with doing. I expected that at the first meeting the members would clarify our charge, develop a formal process for deciding on issues to evaluate, and get an idea of what experimental data and analysis were needed or available. To quote one team member's comment to me: "I thought perhaps the Team would spend several months getting deeper into subjects....I was a bit taken aback at the end of the second meeting when Forrest Reynolds said words to the effect 'Well that's it. Thank you for your review and ideas. I now will write a report to submit to the three chairs.'" I think it is accurate to say that a number of team members were surprised to find out that we were not conducting a review, but were acting as advisors to a CDFG review.

Based on background given at the first meeting and DFG's report, the chairs expressed concern about competition between hatchery and wild fish and loss of genetic variation owing to "swamping" by having a preponderance of hatchery fish on wild spawning grounds. These are important facets in understanding the interaction of these population components. Unfortunately they present formidable analytical problems and solutions or prescriptions are probably not going to be available soon.

The advisory team focused attention on production goals and methods which create the above concerns. Progress in understanding the concern and possible solutions were made in some areas. Team members have expressed frustration that we were not given written responses to issues raised prior to receiving the draft final report. Further, many of the DFG findings do not provide the justification for the finding. The major subjects discussed and raised were:

1. Release numbers for all species. The release numbers seem based on historic estimates and contractual agreements. I have asked if these numbers can be supported by current habitat conditions. That question has not been answered to my satisfaction. I suspect we don't know. DFG is maintaining most release numbers, but is reducing egg take at Iron Gate for fall chinook.

2. Release time/size. Some team members were interested in yearling releases for chinook. The Department is exploring an increased yearling program at Iron Gate, but has taken a strong stand in opposition to an entire yearling program. The yearling program could have fishery benefits and relieve competition pressure in the estuary. However, this would be moving the hatchery program away from releases which mimic the natural behavior of the fish. Some team members were concerned about large 2+ steelhead releases. The DFG recognize that steelhead mitigation has been unsuccessful, but no changes are currently proposed. In their findings DFG proposes to put together a steelhead action plan. This is an area where work is still needed.

3. Handling excess gradeouts and eggs. The team members were concerned about stocking eyed eggs, swimup fry, etc. as they became excess. The department will destroy or use excess eggs and fry in non-anadromous programs. I think this concern has been adequately dealt with.

4. Handling excess hatchery origin spawners. The Department indicated that known hatchery origin spawners returning to the hatchery but not needed for egg production were returned to the river. Some team members expressed genetic concerns about this practice. The Department indicated that handling these excess fish presented considerable disposal time and problems. This concern has not been dealt with in the report. No goals exist for the mix of hatchery and wild fish in the hatchery or adjacent waters. The Department indicates an interest in having the hatchery population be a mix, which would maintain genetic characteristics with the wild fish. Clarification of the mix, and methods (tagging) to achieve it are needed.

5. Rearing methods. The Department briefly addressed rearing densities in the report under other subjects raised and discussed. I believe the Department considers this more a hatchery operations matter than a production issue. However, there is accumulating evidence (some references provided to DFG) that how we rear and

release anadromous fish affects their performance. I think this subject warrants further consideration.

6. The U.S. Fish and Wildlife office in Weaverville provided a list of questions and concerns. Concerns not yet mentioned included diseases and sampling/tagging strategies. Diseases received mention but no elaboration in the report. In their comments on the draft final report the Weaverville group still requested additional consideration of diseases. This group questions the accuracy of release numbers. They request additional consideration of enumeration methods and tagging/sampling strategies so inriver and harvest management programs will be more accurate.

cc: Advisory Team Members

June 15, 1993

TO: Klamath Restoration Task Force

FROM: Jim Welter  
Representing O.S.C.F., Inc. and KMZF Coalition

RE: C.D.F. & G.  
Hatchery Review Draft

We have a hard time understanding C.D.F. & G.'s reluctance to use the input offered through the three chairs - "review committee-hatchery", to help you do a better job of managing the hatcheries in the Klamath system. To hire this kind of a review - with the people involved would have been expensive to say the least.

We don't feel that concern for the natural production - being impacted by hatchery releases has been addressed.

Also of major concern is the unwarranted dominion of mitigation over the whole process. Where is your balance of nature. You have variable spawner escapement and water flow. Mitigation is a constant that will not work, but is detrimental! Your major concern should be to produce a smolt that will not have to rear in competition in the system and be able to survive in the ocean.

Release timing needed to be looked at, as it effects returns and when maturation occurs.

We feel this kind of knowledge was available to you through the Review Committee and would have been extremely beneficial to the restoration process.

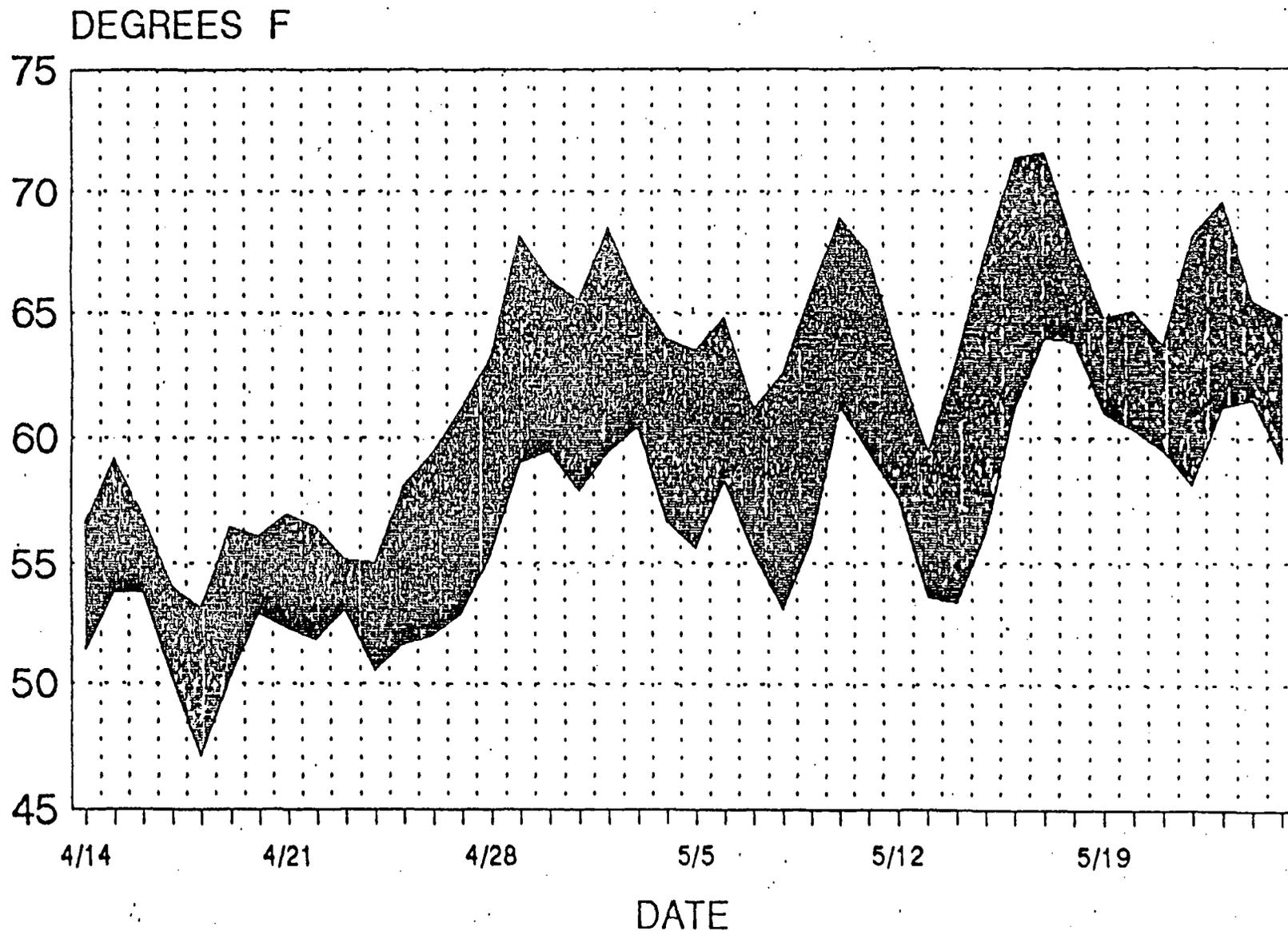
To reject it is to say you don't need any advice and know the solution. However, after all of the years you have been managing these stocks, please look at where you are today.

Thank you for the opportunity to comment.

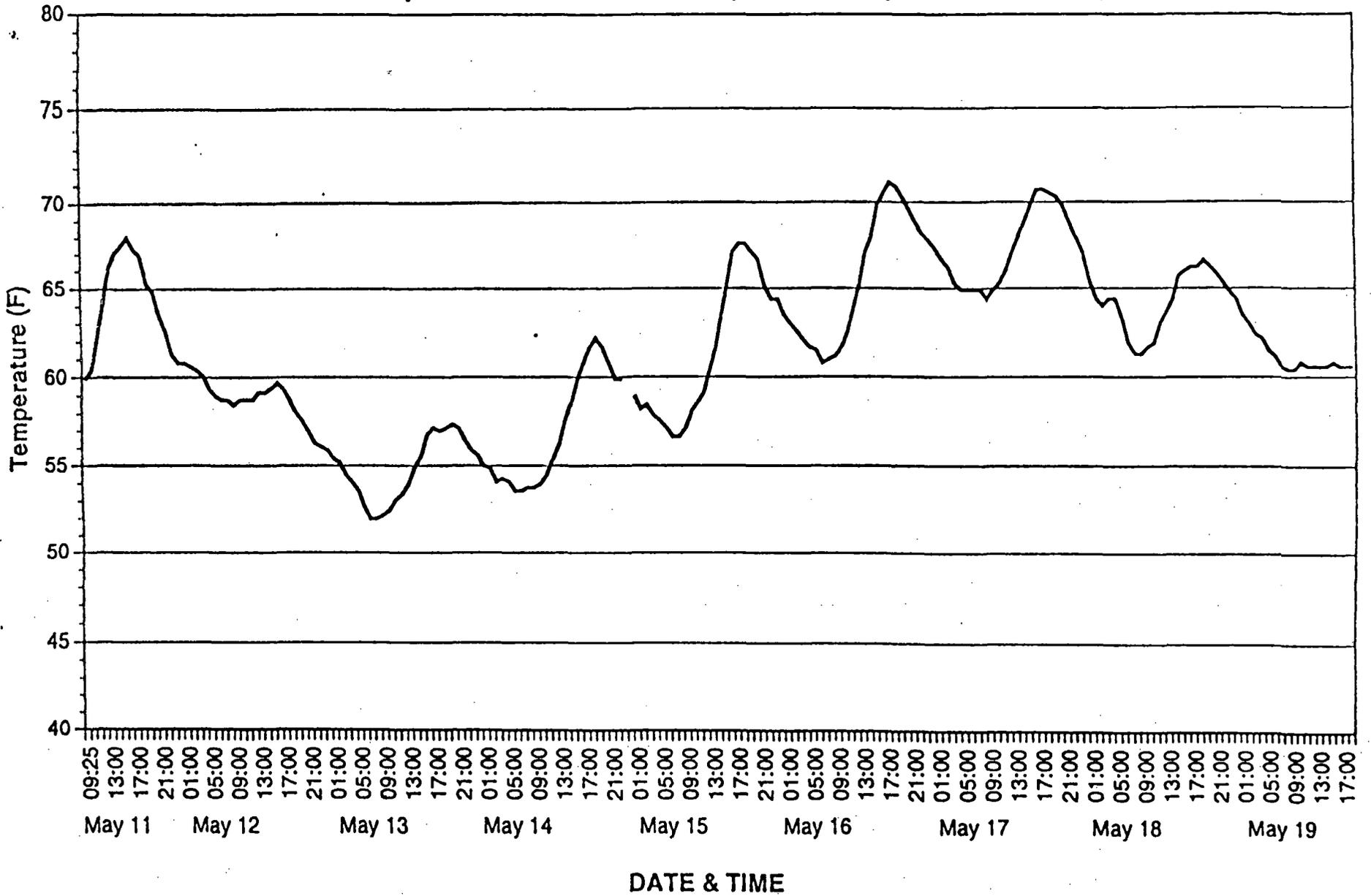
Jim S. Welter

# SHASTA RIVER WATER TEMPERATURES 4/14/93 - 5/25/93

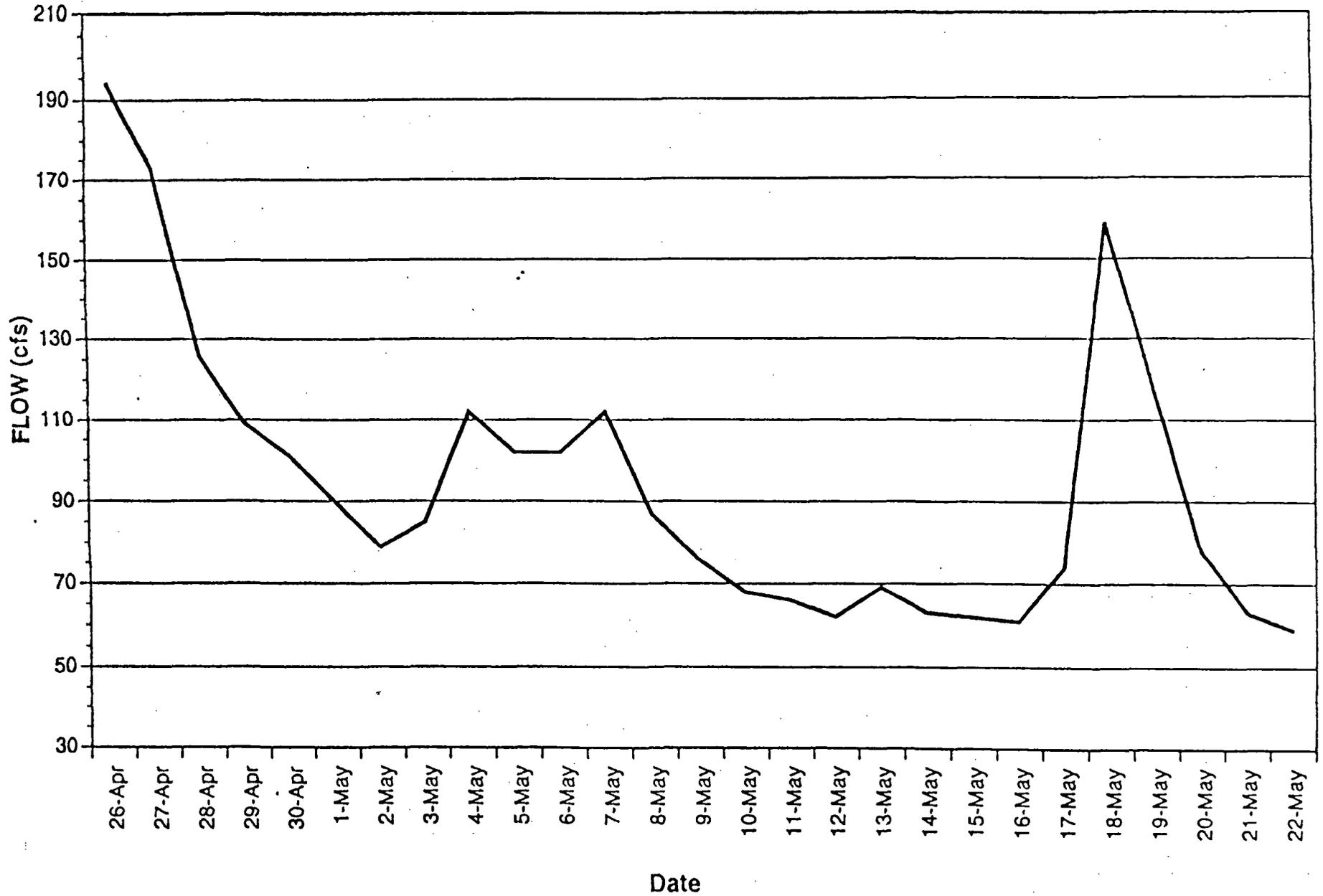
DAILY HIGH/LOW  
RECORDED AT ANDERSON GRADE BRIDGE



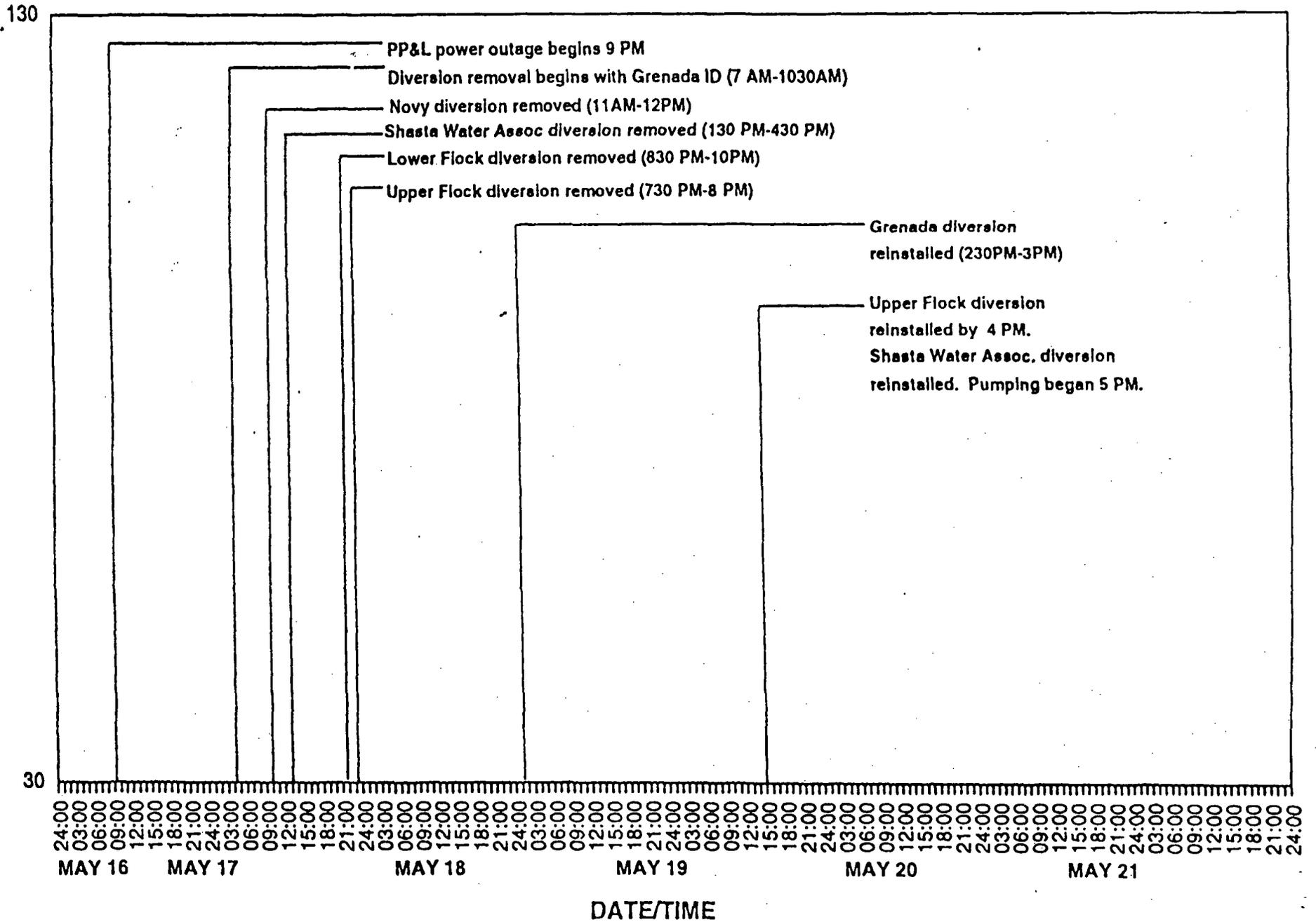
# Shasta River impoundment water temperature upstream of trap site



Mean Daily flows in the Shasta River, 1993  
(U.S.G.S. Provisional data)

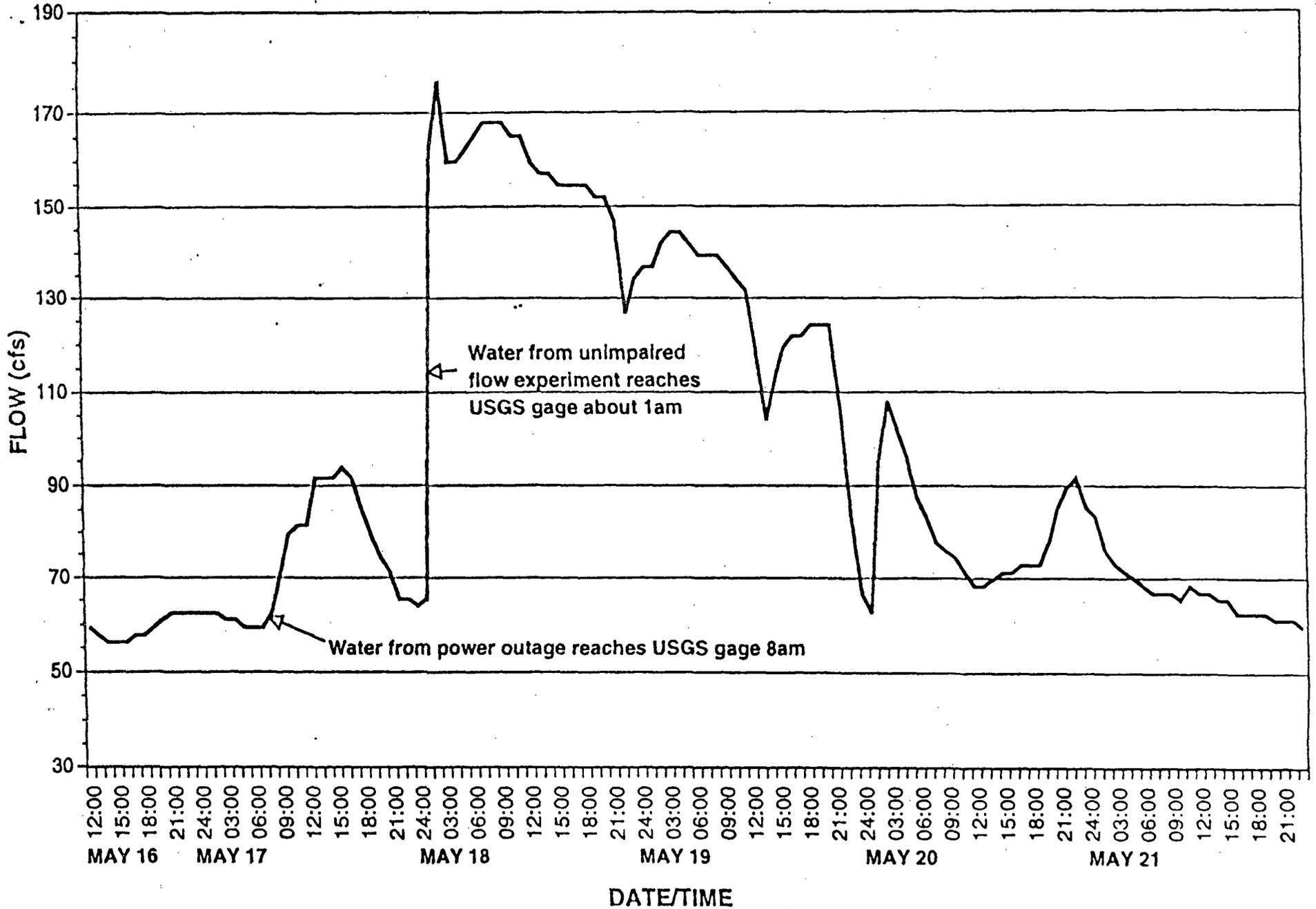


# Key events for the Shasta River unimpaired flow experiment

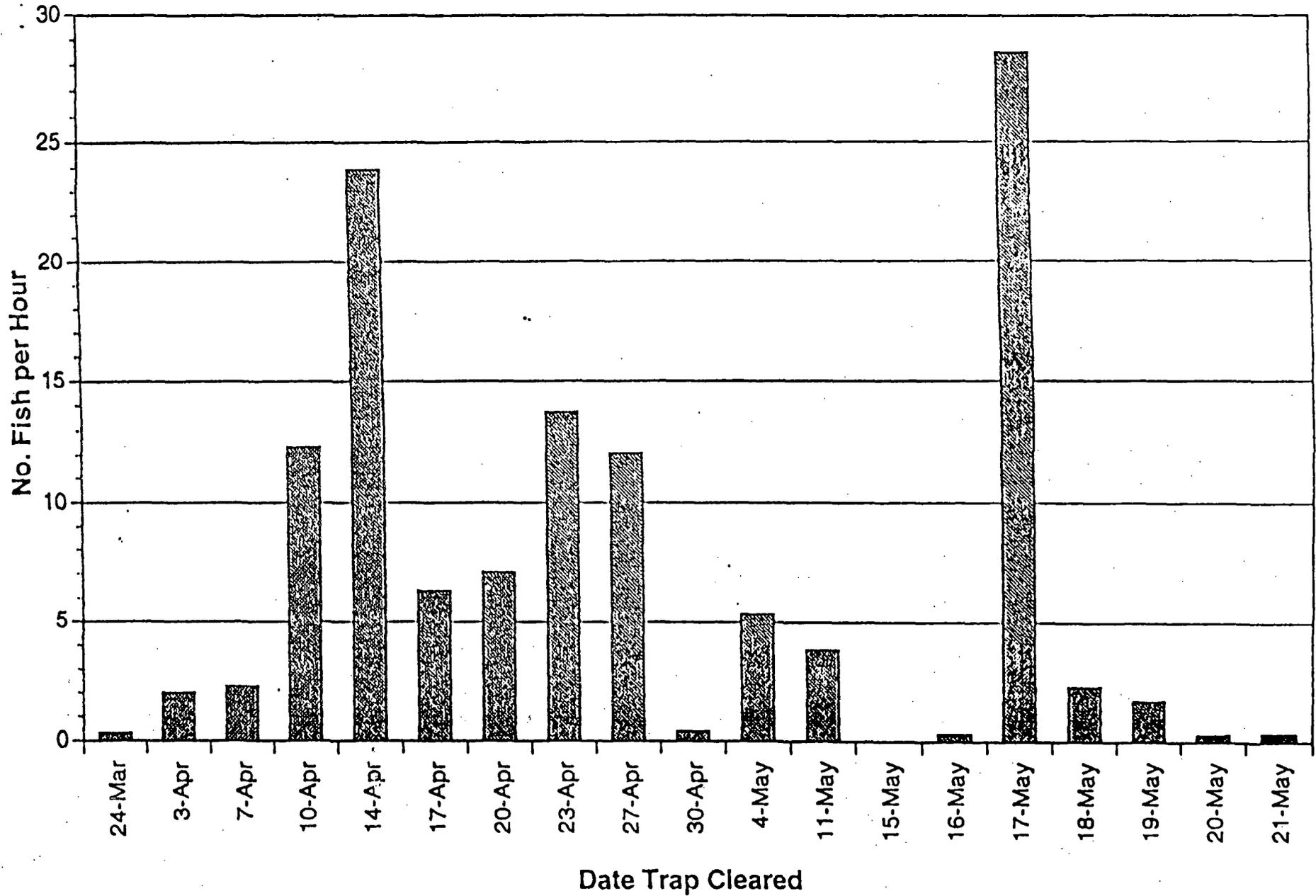


# Shasta River Flow (cfs)

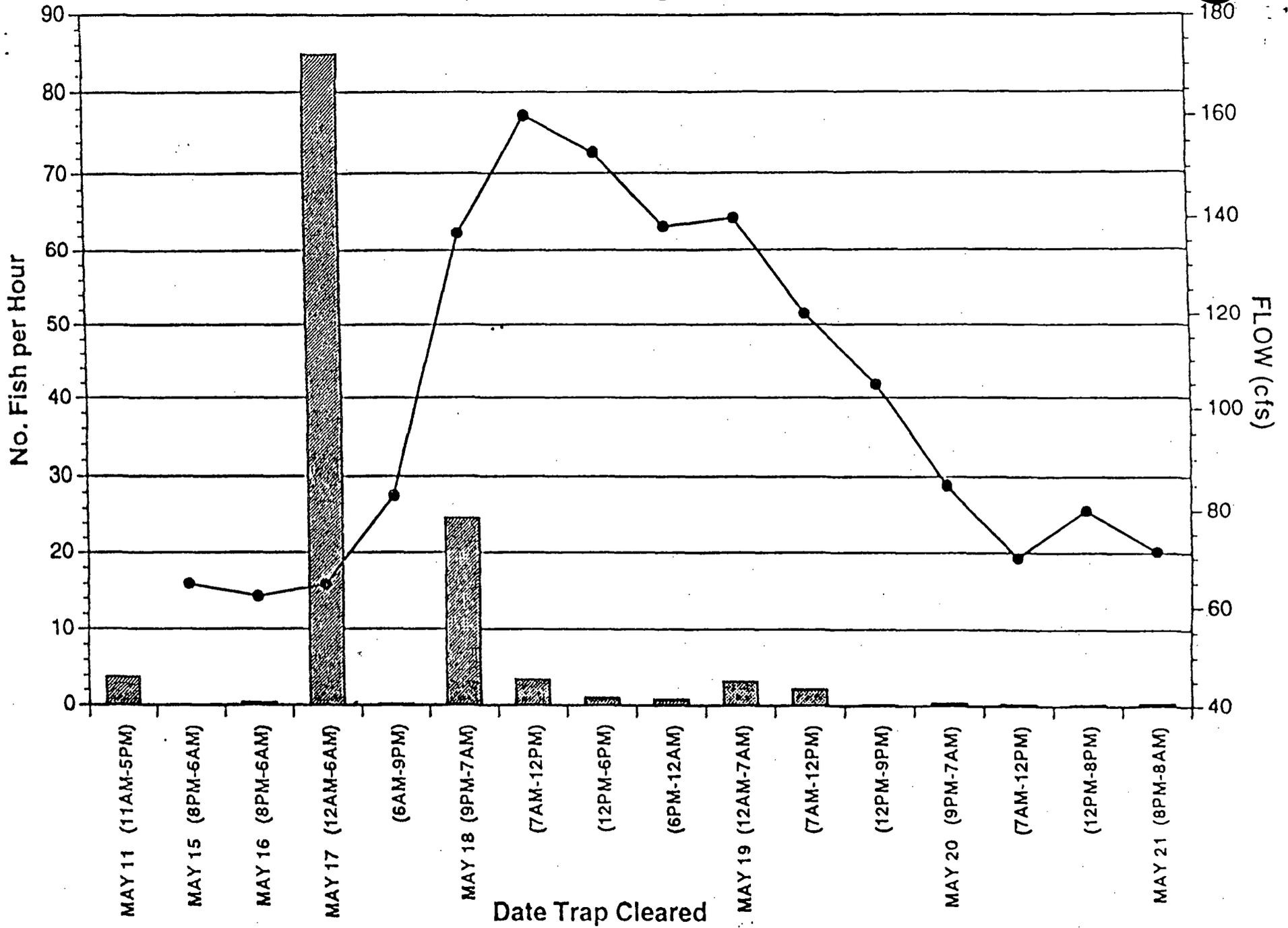
U.S.G.S. Provisional Flows



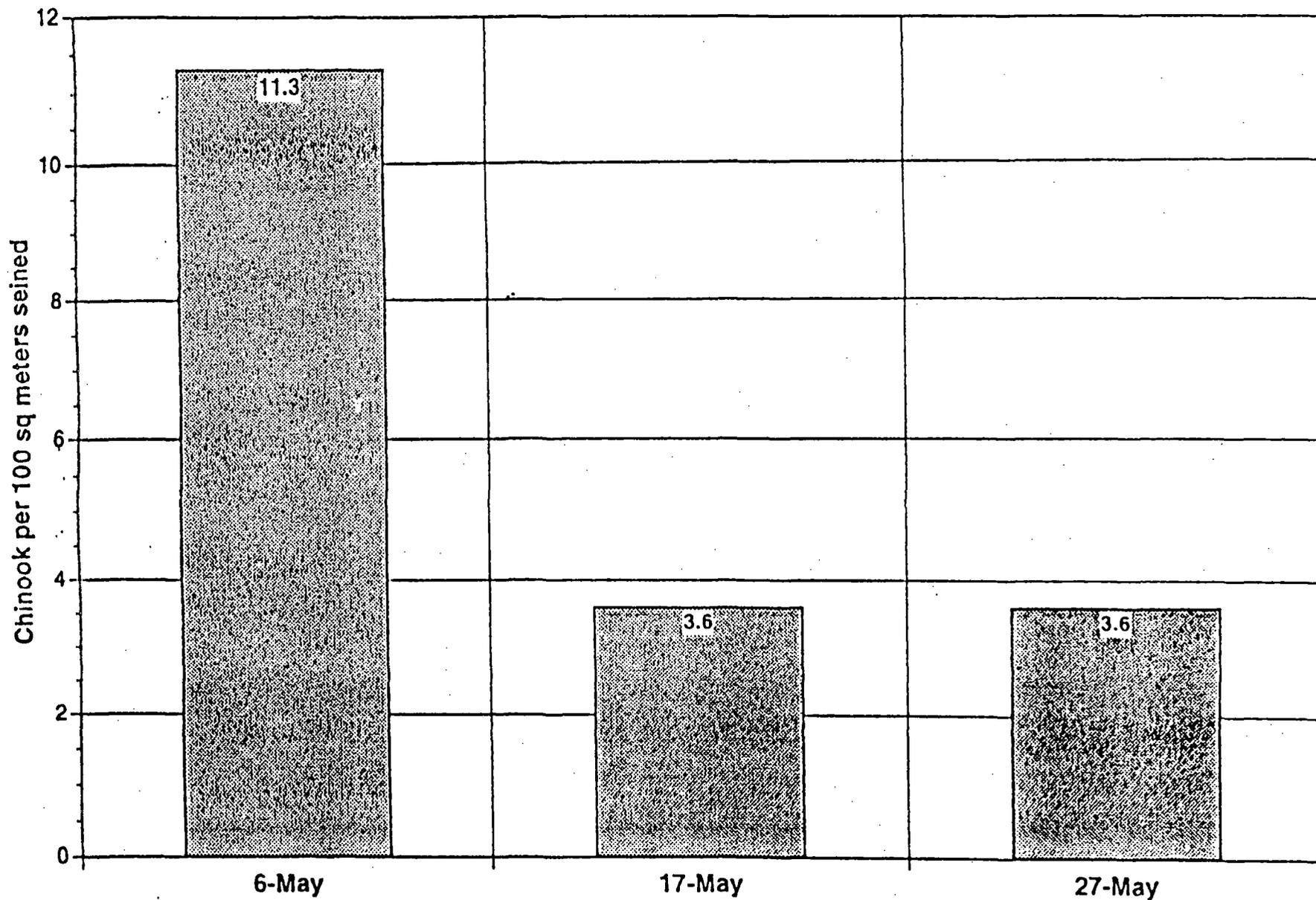
# Shasta River trapping dates and chinook salmon captured per hour



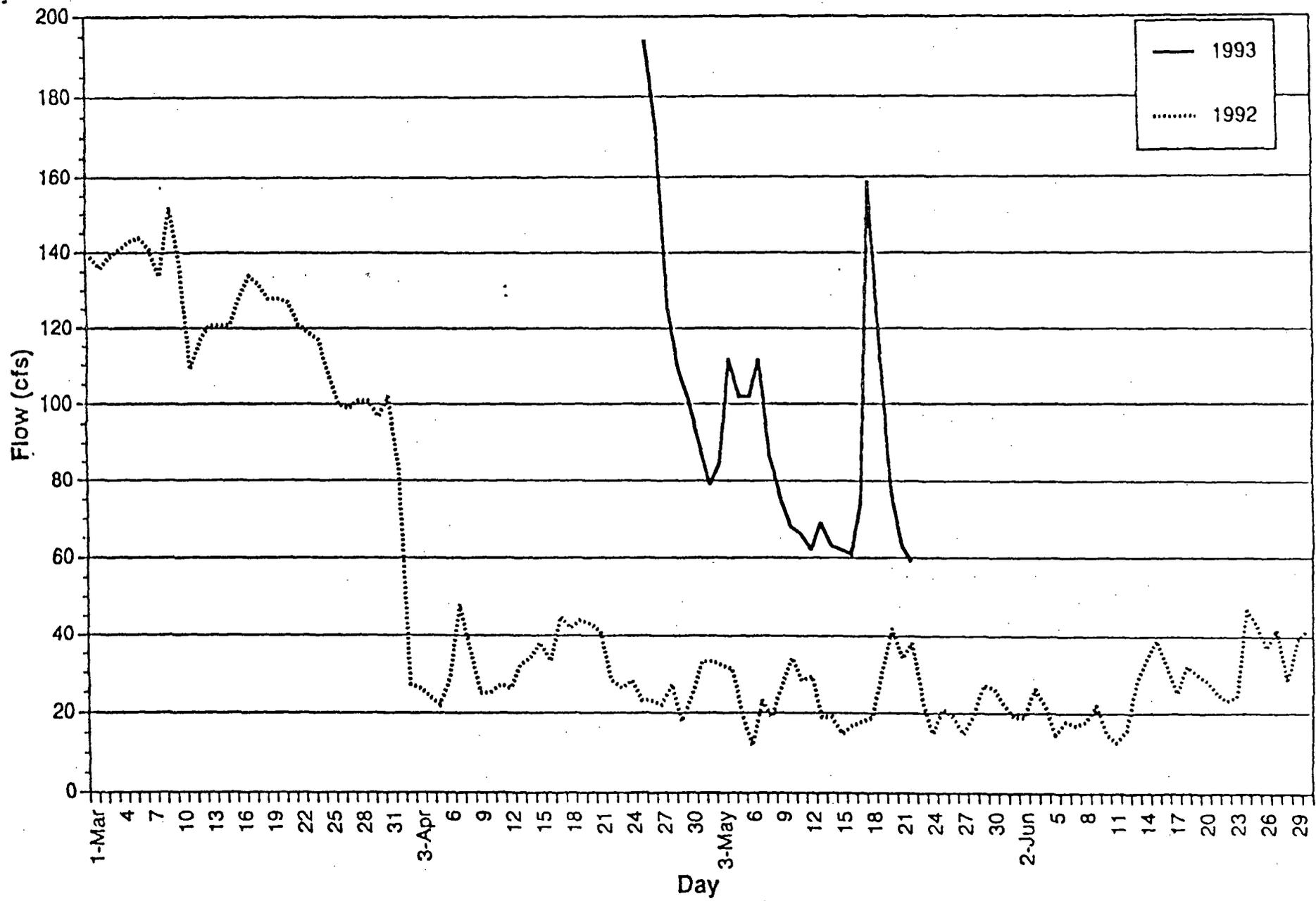
# Chinook salmon trapped per hour and flow at trap



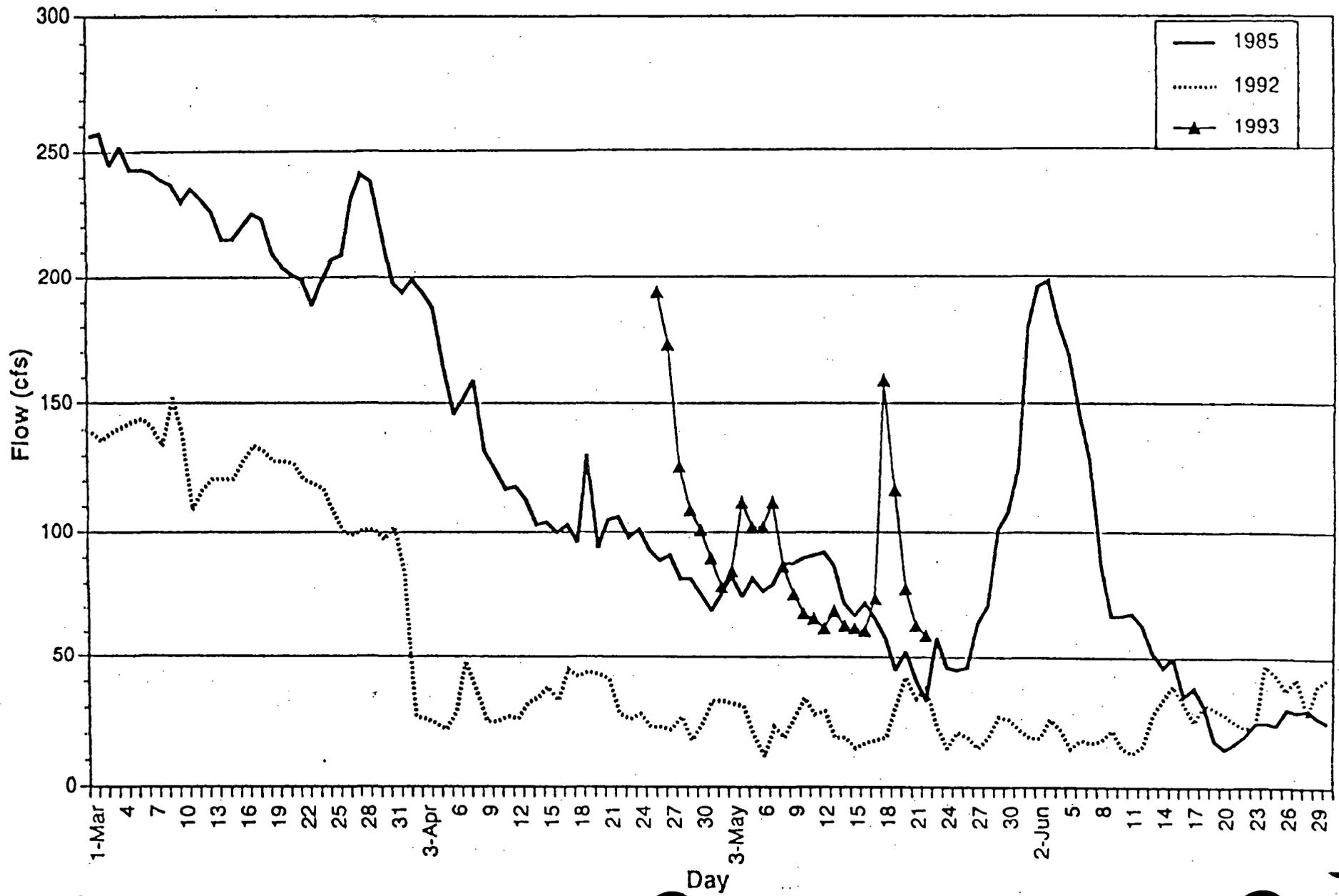
# Chinook salmon seined above Ager Rd per 100 square meters of area sampled



# Shasta River flows for March through June



# Shasta River flows for March through June





# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Klamath River Fishery Resource Office  
P.O. Box 1006  
Yreka, CA 96097-1006  
(916) 842-5763

July 19, 1993

Dear Interested Party:

Enclosed are the summarized minutes of the Klamath River Basin Fisheries Task Force meeting held June 15-16, 1993, in Yreka. Attachment 2 to the minutes is a list of ranked Fiscal Year 1994 project proposals. This list will be used to develop the Fiscal Year 1994 Federal work plan for the Klamath River Fishery Restoration Program. Projects ranked 70 and higher will probably be funded, in FY 1994, by the California Department of Fish and Game or the Fish and Wildlife Service as elements of the Klamath Fishery Restoration Program. Projects ranked below 70 are not likely to be funded from those sources.

If you would like more information regarding this meeting, the ranked list of proposals, or a copy of the long-version minutes please contact this office.

Sincerely,

Ronald A. Iverson  
Project Leader

Enclosure

cc: Task Force members  
Technical Work Group Members

Summary minutes of the  
Klamath River Basin Fisheries Task Force  
June 15-16, 1993  
Yreka, California

June 15, 1993:

Members present: Nat Bingham, Kent Bulfinch, Leaf Hillman, Rod McInnis, Mike Orcutt, Ronnie Pierce (for Walt Lara), Bill Shake, George Thackeray, Jack West (for Barbara Holder), Keith Wilkinson, Robert Rohde (for Leaf Hillman)

Absent: Don DeVol, Mitch Farro, Barbara Holder, Tom Stokely, Walt Lara Jr.

Shake called the meeting to order, welcomed all attendees, and asked for introductions of Task Force members.

Agenda item 1: Adoption of agenda. (Attachment 1)

Bingham asked to include a discussion of California Department of Fish and Game's small rearing pond policy as a part of agenda item 12. Pierce asked to include a discussion of Task Force member attendance at work group ranking sessions.

Motion carried to approve the agenda as amended.

Agenda item 2: Approval of minutes from March 30-31, 1993, meeting.

Motion carried to approve the minutes, as sent.

Agenda item 3: Report from budget committee on development of Fiscal Year 1994 work plan. (Attachment 2)

Bingham said that the committee recommended adoption of the list of ranked FY1994 projects contingent on a couple of changes. The first change is to establish a \$420,000 Restoration Program cost limit for the Klamath River Fishery Resource Office (KRFRO). The second modification is to remove the CDFG proposed screening projects (FP-9, FP-11, and FP-12) from the list. Bingham said the committee endorsed the projects received but as a policy measure they recommend more effort by the Department to make up part of the non-Federal match.

Agenda item 4: Task Force discussion of the 1994 work plan.

Bulfinch suggested deferring funding for project HR-19 until the upper basin amendment was adopted. Bingham and West indicated that the budget committee and the Technical Work Group (TWG) support funding the project because of its technical merit. Shake mentioned that the U.S. Fish and Wildlife Service would appropriate \$20,000 for operation of the KRFRO, thereby reducing the Program funding requirement to \$405,000. The group discussed the need for the screening projects, but concurred with the recommendation to withhold funding of these state proposals.

Agenda item 5: Public comment on the FY1994 work plan.

Diane Higgins described the Klamath Education Program in which she has developed curricula for grades 4-12. She stated that if her proposal E-06 was possibly ranked low because of a misunderstanding of her past contract performance. Higgins claimed that she might not be available to complete the fourth phase of the project if not funded in FY1994.

Wilkinson asked for an education committee caucus before the Task Force took action on the work plan. Chairman Shake approved the request and asked the committee to meet at the morning break.

Agenda item 5: Public comment on the FY1994 work plan.

Marcia Armstrong expressed support for the CDFG screening projects by stating that they were valuable and good for public education. She also said that project FP-14 was greatly needed to evaluate production in the Shasta River.

Mary Taylor stated her concern about the education program; specifically regarding the backgrounds of education committee members. She also said that education was not addressing the immediate needs of the resource, and that national education organizations should be in the lead. She asked for more information on the education committee, advance notice of when they meet, and for an opportunity to review the education curricula as it is developed.

Shake responded by stating that the Long Range Plan calls for developing education curricula focusing on fish and habitat restoration issues.

Joseph Riker stated that an ecosystem recovery plan already exists for the upper Klamath basin and asked if this document and other recovery plans had been considered when the Task Force developed their long range plan amendment.

Felice Pace asked the Task Force to consider developing a key watershed funding strategy for use in developing future years' work plans.

Gary Hegler said that there was no documented proof that suction dredge mining was having deleterious impacts on Klamath River fish populations, and that the CDFG and the Task Force were initiating a fifth amendment taking on the miners. Hegler suggested that the mining work force could be utilized to restore fish habitat.

Agenda item 6: Task Force decision on a final work plan for FY1994.

Wilkinson reported that the education committee recommends that project E-06 be included in the FY-1994 work plan. He pointed out that a larger issue for consideration is need to determine how the Task Force and TWG should consider recurring, long-term, projects such as E-06. Pierce asked for an explanation of the FY1993 budget, specifically if surplus funds were anticipated. Iverson answered that agenda item 9 would be a discussion of \$16,000 remaining in the FY1993 budget. Rohde and West pointed out that the TWG ranking process was fair and that many projects rated higher than project E-06 would be passed over if the education committee recommendation were adopted.

**\*\*\* Motion \*\*\***

Bingham moved to adopt the FY1994 work plan as recommended by the Technical Work Group, as modified by the budget committee's recommendation to preclude funding for projects FP-09, FP-11, and FP-12, and to establish a cap of \$420,000 for the KRFR0.

Bingham added that \$405,000 of the KRFR0 budget would be made up from Program funds the remaining \$20,000 would be provided by the USFWS. Shake clarified the budget committee recommendation of establishing a cap of \$420,000 Program expense for KRFR0. Shake pointed out that \$405,000 of FY1994 Program funds would be required for KRFR0 services, and the cost column in the ranked list (Attachment 2) should be changed accordingly. Bulfinch recommended that the motion be amended to defer funding of project HR-19 until the upper basin amendment is finalized and the upper basin representatives are seated on the Task Force. Bingham accepted the amendment. (The proposed amendment to the motion carried with Oregon abstaining.) The motion, as amended, failed.

\*\*\* Motion \*\*\*

Wilkinson moved, pursuant to abeyance of project HR-19 and striking the three CDFG screen proposals, to insert E-06 for \$51,230 above the funding line.

Rohde said that the Karuk Tribe would oppose the motion because it circumvented the evaluation and ranking process. This position was supported by others, so Chairman Shake never called for a vote. He asked for an alternative motion.

\*\*\* Motion \*\*\*

Bingham moved to approve the work plan as proposed by the Technical Work Group, with the exception that project HR-19 would be put on hold until adoption of the upper basin amendment, and the screening projects would be placed back into the list for consideration by the State funding committees.

Wilkinson stated his opposition to the motion because of process; at least two of the representatives on the Task Force participated in the ranking process. Shake suggested tabling the motion until after lunch. He asked members with concerns to develop an alternative motion. Bingham concurred with the suggestion to table his motion.

Agenda item 7: Report on draft FY1995 Request For Proposals (RFP).

West stated that the TWG should be able to develop a more specific Fiscal Year 1995 RFP by January 1994, but they need a comprehensive map that shows the range of anadromous stocks in the basin. He informed the Task Force that they will attempt to get one. West asked to discuss item 9 on the agenda before item 8.

Agenda item 9: Action Planning.

West mentioned that \$16,000 of FY1993 funds are available for subbasin planning, and recommended that this money be used to develop a comprehensive map of the geographic range of anadromous fish in the basin. He said they want to focus first on subbasins below Iron Gate Dam. West said Bob Rohde will develop a scope of work for a contract to get this map produced by winter. Ron Iverson commented that the spending deadline for FY1993 is coming soon, and that it might be better to obligate FY1994 money to allow more time. Reynolds asked that a CDFG representative, Paul Viesze, be present at the next TWG meeting to discuss this topic. Chairman Shake concurred with Iverson's suggestion.

Agenda item 8: Report on identification of critical fish refugia.

West reported that the TWG had identified these refugial areas (Attachment 3) and had drafted a letter for Task Force consideration, to be sent to the owners of these areas. He said the TWG identified critical watersheds that affect the stocks at risk and those that are also in relatively good condition. He said we need an additional list which prioritizes watersheds according to their value toward overall basin restoration. Many Task Force members expressed their concerns about the wording and intent of the letter. Shake called for public comment.

Public comment:

Felice Pace asked the Task Force to consider what they mean by "critical watershed." He said the TWG's list identifies refugia, not critical watersheds. He pointed out that there are no refugia identified on the Scott River, however restoration in that system is critical to overall restoration

of basin fisheries. He suggested that the Task Force ask the TWG to study the list of watersheds developed by the Pacific Rivers Council.

Bill Kier voiced his concern that the Task Force may be abandoning the population management unit approach contained in the Long Range Plan by considering the Pacific Rivers Council policy of identifying good watersheds. He said there should be some assessment as to how this differs from the Plan approach.

Marcia Armstrong indicated that landowners would not appreciate the draft letter because the Task Force is asking them to volunteer for regulation. She suggested that there are agencies or groups that could act as a buffer between the Task Force and the landowners, such as the Cooperative Extension Service or the CRMPs.

Bob Bartholomew suggested approaching landowners through the CRMPs.

Agenda item 8: Report on identification of critical fish refugia (Continued).

Shake opened discussion by saying he prefers to use the term "undisturbed" over "critical." He said the term "Refugia" implies a land classification and consequent regulation of such lands. Shake stated that it was the purpose of the Task Force to work with landowners, not threaten them with regulation. He suggested utilizing FY1994 funds instead of FY1993 funds to allow more time to develop a basin wide map. He pointed out that Felice Pace had suggested identifying other watersheds in the basin. West responded that the Task Force must provide more specific criteria for making the determination of which watersheds are essential to this restoration effort. Rohde asked to be allowed to edit the letter that evening, and bring it back for consideration on the 16th. The Task Force consented to this request.

**\*\*\* Action \*\*\***

Bob Rohde will re-draft the letter to landowners, which identifies critical watersheds and asks for cooperation in protecting those watersheds.

After lunch, Shake announced that the FY1994 work plan would be the first discussion item on the 16th. He also announced a Scott River Watershed CRMP meeting the evening of the 15th and recommended that Task Force members attend if possible.

Agenda item 10: Status of the Klamath River Instream Flow Study.

Iverson reported that at the Klamath Falls meeting the Task Force committed to take the lead in developing an instream flow study. He stated that this was a shift from their position last year when they asked the Secretary of Interior to initiate a study. Iverson said that a FY1994 funding proposal for initial scoping of the study was ranked too low for funding, which now allows the Task Force more time to decide how to proceed. He suggested that the Task Force Chair call a meeting of executive level staff to discuss the broad policy issues such as geographic scope, which streams, specific roles, study methodology, or scope of impacts (biological or geomorphological impacts), to develop a more detailed scope of the study. Their product would be reviewed by the Task Force followed by a public review period.

Public comment:

Joseph Riker expressed his concern that the Task Force would establish a committee to determine the scope of an instream flow study when a decision making group for water delivery already exists in the Klamath Compact Commission. He pointed out that the controls for delivery are in the upper basin and upper basin representation is necessary.

Felice Pace asked: 1) Why did the instream flow proposal rank low, given that we all recognize the need for identifying minimum instream flows? 2) Are the TWG rating sheets available for public review? 3) Why has the Department of Interior decided not to proceed with this? The Task Force responded that no one knows exactly why the proposal rated low, and that individual proposal ratings given by each TWG member are confidential and unknown even to other TWG members. Shake responded that the Department of Interior committed to look into the need and development of an instream flow study, but never committed to funding one.

Elwood Miller stated that he does not have a problem with the Task Force setting up an ad hoc committee to develop an instream flow study. He said he doesn't see this as a ploy to exclude upper basin representation but as an effort to look at the system as a whole.

Marcia Armstrong expressed concern by the Farm Bureau that the scope of the instream study seems to have broadened to the Shasta and the Scott Rivers. She mentioned that there are two adjudications on these river systems and the California Department of Water Resources (DWR) is also involved in flow delivery. She said that the Task Force must include other interested parties.

Continued discussion of Agenda item 10:

Shake asked KRFR0 to: 1) put together a list of upper basin and lower basin representatives that should be invited, 2) identify the issues that need to be talked about, 3) develop an agenda, 4) draft a letter explaining all of this for the Chair's signature, 5) and set up a meeting including all interested people. He asked George Thackeray to look at the mail list to ensure that the upper basin is adequately represented. Shake said the Task Force would discuss this issue in a future meeting.

\*\*\* Action \*\*\*

KRFR0 will set up a meeting of agencies/organizations wishing to participate in the initial scoping of a Klamath River flow study. A letter explaining this scoping phase and inviting participation will be provided to the Task Force Chair for signature by June 25, 1993.

Agenda item 11: Status report on Klamath and Six Rivers National Forests' Land Management Plans.

Jim Anderson reported that the Klamath National Forest's LMP changes the way the forest has been managed in past decades. It is an ecosystem driven plan, developed by much public input. The LMP considers many aspects of forest management including fish and wildlife habitat concerns, erosion control, fuel buildup, and timber production. Key watersheds and refugial areas have been identified and will be protected. Anderson reported that the LMP should be adopted policy by spring of 1994.

Jerry Barnes reported similar resource emphasis for the Six Rivers National Forest's LMP. Barnes stated that riparian standards have been developed in order to protect the riverine ecosystem. The LMP dedicates land, trees, and watersheds for fish. He stated that dedicated wildlife acreage is equal to timber management areas. Riparian acreage is about 160,000 acres in all. Timber is one of the lesser allocations on the national forest. Barnes said about 70% of the Six Rivers National Forest is managed for fish protection. The current program is to increase spawning habitat and juvenile rearing habitat to reestablish spawning populations and to restore watersheds.

Agenda item 11: Report on progress of the Forest Service's Pacific Salmon Work Group (PacFish).

West said that in spring of '92 the U.S. Forest Service (USFS) began a team management approach for stocks at risk in the west. In March '93, the Bureau of Land Management (BLM) joined the USFS in this effort. He stated that there are three staffing levels; a policy group in the D.C. office with some high ranking policy makers from both agencies. The second level is a work group below the policy group which is made up of resource specialists. The third group is a field team led by the deputy regional forester for Region 6, and is composed of a spectrum of scientists at the forest levels. The tasks are for these groups to assess the level of impact on anadromous fish populations. This group is also trying to define "good" habitat. Parameters such as pool frequency, large woody debris, bank stability, angle, and width to depth ratio will be considered. The strategy is to establish objectives for riparian management, to identify key watersheds, to designate riparian habitat conservation areas, to modify planning regulations, to propose interim standards and guides, and to conduct watershed analyses to broadly prescribe watershed restoration.

Agenda item 12: Presentation of Klamath Basin hatchery review final report.

Reynolds pointed out that the report focuses on the quality of the hatchery product, how fish are released into the wild and what impact they may have on wild and natural fish. He said CDFG held two committee meetings to discuss the issues and take comments. The report looks at how well hatcheries meet their stated purposes and what needs to be done to improve their ability to meet those purposes. There was discussion of shifting from fingerling production to yearling production, but mitigation requirements are established by the Federal Energy Regulatory Commission and changes are difficult. Hatcheries will be operated to meet the goals and to keep the impacts to a minimum. Future work at the two hatcheries will involve setting up a 2-year review of existing literature and working with other agencies and groups to find a way to meet mitigation goals of the Trinity River program. At Iron Gate CDFG will continue to work with PP&L to quantify potential water supplies from Fall Creek and groundwater sources for expanding the yearling production. Reynolds closed by saying this is not the end of this issue nor an end to participation by public or other agencies. This is an ongoing evaluation process.

Agenda item 13: Comment on the report from Task Force representatives on the hatchery review team.

Dr. Eric Loudenslager stated that the review team felt that they've made a good start at reviewing hatchery operations, but they're not finished yet. He said there are some things that should be changed in the report. He asked "How can we develop production goals for hatcheries without knowing what the systems can support?" Loudenslager recommended convening a panel to develop production goals for these hatcheries. He pointed out that many Columbia River Basin hatchery operations have been changed to reduce impacts on natural and wild fish. Loudenslager said there needs to be a decision by all parties, whether we want these fish to function with wild fish or entirely separate from wild fish. Production strategies could be developed accordingly. He closed by saying the review team wishes to continue the hatchery review process.

Wilkinson suggested that CDFG circulate their final report for public comment even though the report was written for the 3 Chairs.

Bingham commented that the whole issue of hatchery/natural fish interaction concerns the commercial industry. He said he also shares the feeling that

this review process needs to continue, citing the small, localized fish-rearing programs and unknown impacts as reasons to continue.

Shake asked if ongoing evaluation was a recommendation made by the committee. Reynolds responded by saying Coded Wire Tagging and disease investigations are continuing projects. Reynolds also stated that ongoing review of hatchery operations would take money and staff resources and the Task Force must be willing to fund these efforts if they want them to continue.

Public comment:

Jim Welters stated that he did not believe the Department had adequately investigated the impacts that hatcheries are having on natural stocks. He questioned the value of meeting mitigation goals at the expense of natural stocks. He asked for CDFG to assess their current position, and make changes to protect fish stocks.

Dave Webb pointed out the need to collect information on natural fish production throughout the basin and use it to guide hatchery operations.

**\*\*\* Motion \*\*\***

Wilkinson moved to direct the Technical Work Group to investigate the impacts on natural fish populations, of shifting hatchery releases from fingerling to yearling sized fish.

Motion carried.

**\*\*\* Action \*\*\***

The Technical Work Group will investigate the impacts of hatchery yearling releases on wild populations.

Additional agenda item: Discussion of CDFG's policy on small scale rearing projects.

Reynolds stated that Mitch Farro had made a motion at a past Task Force meeting to develop fish rearing guidelines for the Klamath River similar to the guidelines developed for the Trinity River program. Reynolds said he sent out a letter to all the people on the Task Force asking for participants for that task. Evidently not everyone received the letter. Reynolds' interpretation of the Region 1 policy is that no new fish rearing programs will be authorized without good justification and proof of consistency with CDFG's fish rearing policy guidelines.

Bingham responded that the TWG and budget committee were informed that no new rearing permits would be authorized by the Department. Hillman recommended that the Task Force and CDFG review the Long Range Plan policies that address the fish rearing issue, to determine how consistent the Department's policy is with the Long Range Plan. Shake asked staff to research past meeting minutes to get the original motion made by Farro. Pierce stated that the timing of the announcement was inappropriate, because it possibly impacted the rating of all fish rearing projects at the TWG meeting. Hillman asked Reynolds to find out why the policy was established. Reynolds agreed to find out and report back to Task Force members. Shake asked for a copy of the letter mentioned earlier by Reynolds. Reynolds agreed to distribute the letter once again.

**\*\*\* Action \*\*\***

Forrest Reynolds will draft another letter inviting participation on a wild-hatchery fish review team.

6-16-93

Agenda item 15: Report on Shasta River 1993 unimpaired flow experiment.

Bill Chesney described the Shasta River and stated that there are five irrigation structures that were removed during this flow release. A downstream migrant trap was set and monitored in order to evaluate this experiment. He said that the experiment was designed to evaluate the outmigration of juvenile fish from the Big Springs area. Chesney stated that recent fish sampling indicated that juvenile chinook, steelhead, and coho remained in the Shasta River much later than once thought. Water quality in 1992 declined to lethal levels while fish were still there -- leading to a fish kill. He said that the Shasta River Coordinated Resource Management Planning group (SRCRMP) investigated the potential for voluntarily removing the irrigation dams on a temporary basis. Chesney showed slides of the Shasta River and diversion dams. He also described seining techniques and explained the data collected from these efforts. Chesney described the fish monitoring effort that occurred during the release and stated that some fish did move out of the system. He pointed out that many fish still remained after the release. Chesney said the CRMP is working on ways to prevent future fish kills as occurred in 1985 and 1992. The CRMP is looking toward developing long term solutions to the problems in the Shasta River.

Agenda item 14: Report on Shasta fall chinook status with reference to California Endangered Species Act listing.

Reynolds reported that the Department's Region 1 Area Team recommended state listing of Shasta fall chinook. The recommendation was forwarded to the directorate for review. Reynolds stated that the CDFG directorate does not consider the Shasta River fall chinook a separate species or an Evolutionarily Significant Unit (ESU). Reynolds concluded his report by saying the Department will not list the Shasta River fall chinook.

West commented that it seems odd that CDFG does not consider the Shasta River fall chinook as an ESU when the Klamath Basin stock identification committee (Chaired by Dr. Barnhart) identified the stock as a breeding population. Bulfinch added that the Shasta River stock was considered part of the upper river metapopulation which included the Iron Gate Hatchery stocks. Bingham suggested that the Barnhart report be discussed at a later Task Force meeting. The Task Force concurred with his suggestion.

\*\*\* Action \*\*\*

Discussion of the Stock Identification Committee report will be an agenda item at a future Task Force meeting.

West asked if CDFG consulted with NMFS before making their final decision. Reynolds responded that they were consulted informally. McInnis added that the two agencies might not reach the same conclusion. He also mentioned that if Dr. Barnhart's report was going to be discussed, the Task Force needed the background information leading to the stock identification committee's findings. McInnis said he would talk with KRFR staff about getting this information prior to the discussion. Shake suggested that Dr. Barnhart participate in that discussion.

\*\*\* Action \*\*\*

In conjunction with the discussion of the Klamath River Stock Identification Committee report, the committee will provide background information used to develop their findings.

Agenda item 12 and 13 (continued):

Shake mentioned that there was an item of business left unfinished from yesterday, the assignment to ask the Technical Work Group to look into the issue of yearling release impacts on natural stocks. After reading Mitch Farro's original motion from page 10 of the February 3-4, 1993, minutes, Shake pointed out that Keith's motion doesn't address the issue of wild fish interaction, as mentioned by Farro. Wilkinson responded that he did intend for the TWG to investigate the impacts of yearling releases on natural stocks. Shake asked Wilkinson to clarify the assignment with staff and the TWG.

**\*\*\* Action \*\*\***

Wilkinson will discuss with KRPRO staff and the TWG, the assignment to investigate the impacts of shifting to yearling releases at the hatcheries on natural fish populations.

Pierce and Shake recommended that the TWG coordinate this effort with the KFMC Technical Advisory Committee.

**\*\*\* Action \*\*\***

The TWG review of yearling releases at Iron Gate hatchery will also involve coordination/review by the KFMC Technical Advisory Committee.

Agenda item 17: Report from upper basin ad hoc committee.

Thackeray reported that the committee had met with the upper basin representatives twice since the March, 1993, Task Force meeting. The comments on the upper basin amendment document have been assimilated into a digest, and the upper basin representatives have scheduled a meeting to discuss their positions on the issues. Thackeray said the committee recommends accepting the Initial Ecosystem Plan (developed by the Klamath Basin Water Users Protective Association), and oral comment received at the March Task Force meeting, as formal comment on the upper basin document. Thackeray said the committee will meet the week of the 20th of July to continue their discussions. He then invited Elwood Miller and John Crawford to speak to this issue.

Miller said the Klamath Tribe is anxious to get involved with the Task Force. He said the Tribe and the irrigators will attempt to resolve the problems that exist between them and make a consolidated recommendation on the upper basin amendment document. Miller closed by saying he hoped that everyone keeps the Tribe's superior water rights in mind while discussing these issues.

Crawford said the water users appreciate the Klamath Tribe participating in these discussions. He stated further that the agricultural community is concerned about the upper basin document and the Long Range Plan. Crawford said the upper basin representatives will address all of their concerns in these documents and bring a report to this group. He stated that the water users have decided that the upper basin amendment is acceptable, with modification, if it can be used as a vehicle to address their concerns with the Long Range Plan. He closed by saying that the committee has not addressed the issue of representation.

**\*\*\* Motion \*\*\***

Bulfinch moved to adopt the upper basin amendment to the Long Range Plan, with the amendment process to be opened October 1995 through January 1, 1996. Then to be opened thereafter in five-year cycles, providing that the amendment process can be opened at any time between five-year cycles by request of the Chair or by the consensus vote of the Task Force.

No second. Shake stated that he felt it necessary to provide an opportunity for the upper basin constituents to meet with the Task Force on this issue. He said their involvement will strengthen the Plan amendment. Bulfinch withdrew the motion. Elwood Miller asked for a date the Task Force expects to make a decision on the upper basin amendment. Shake responded that a decision would come after the upper basin committee made its recommendation.

Miller asked if the Task Force would respond to the Klamath Tribe's comments on the upper basin document. Wilkinson said there's been no Task Force action on the comments, but the committee has comments in digested and "as written" form. Reynolds said that the State of California will also provide comment on the upper basin document and will send copies to the ad hoc committee members. He also commented that he hopes there will be an opportunity to comment on the final upper basin amendment document before final approval.

#### Agenda item 19: Public Comment

Joseph Riker said that much of the historic information on Upper Klamath Lake has not been addressed in the amendment document. The City of Klamath Falls wanted to bring that to the Task Force's attention. He continued that offstream water storage is an issue that the document fails to address, and that it implies that the Task Force authority supersedes that of the Klamath Compact. He further stated that the document ignores multiple use issues of the river and is single species focused. Riker ended his statement by requesting that the City of Klamath Falls also be involved in the upper basin committee discussions.

Thackeray responded by saying the committee would contact the City for the kind of information Riker described.

Rod Kucera said the Klamath County Commissioners feel that the amendment, as is, constitutes a threat to the water rights of the irrigators. He said they're concerned that their constituency is under-represented on the Task Force and believe the ad hoc committee is the only way they can work with the Task Force on this issue. Kucera stated that the Commissioners request that they receive correspondence and minutes of Task Force and committee meetings at the Klamath County Office. Shake consented to the request.

Felice Pace thanked the Task Force members for attending the Scott River Watershed CRMP the night before. He reminded the Task Force that marsh restoration would provide three acre-feet of water for every acre restored. He mentioned that the Oregon Natural Resources Council (ONRC) will have permanent staff in the Klamath Basin this fall. It would be advantageous for the upper basin ad hoc committee to contact the ONRC representatives and environmentalists in that area in their discussions with upper basin representatives. He stated that environmentalists are stakeholders as well.

Charles Wells said it's fitting that the Klamath Tribe was one of the first groups of people contacted by the ad hoc committee and the irrigators as well. He said, however, they are not the only ones living there. "People are the critical factor for influencing the ecosystem. You're going to step into a real problem if you don't get all the parties involved. Litigation may result if all parties are not involved." When Wells was asked how to get all parties involved, he stated that the Ad Hoc committee should respond to all people that provided comments on the upper basin document. The issue that ought to be addressed is how to get people together before a work plan is developed. He also recommended holding a series of workshops and conferences to get interested parties together.

Shake said that the ad hoc committee chairman heard these comments and he will proceed with that information.

Agenda item 20: Action on the upper basin amendment process -- What to do?

Shake said that discussion of Bulfinch's motion clarified the Task Force's intents on how to proceed.

Bulfinch stated that upper basin representatives must be more specific when mentioning "things" in the Long Range Plan and the upper basin amendment that are unacceptable. These "things" haven't been laid on the table as a specific item.

**\*\*\* Motion \*\*\***

Bulfinch moved that the ad hoc committee provide a list of specific changes needed for the upper basin amendment document.

Thackeray stated that it is the intent of the committee to do so. He also referred to comments received from the environmental community that they must also be involved.

Motion carried.

**\*\*\* Action \*\*\***

The ad hoc committee will develop a list of specific concerns held by upper basin residents on the Long Range Plan and the upper basin amendment document. This list will be provided to the Task Force for consideration.

Agenda item 6: Task Force decision on a final work plan for FY1994.

Bingham withdrew his motion to adopt the FY94 work plan, anticipating a different motion by other members.

**\*\*\* Motion \*\*\***

Wilkinson moved to accept the budget committee recommendation for the FY1994 work plan with these provisions: 1) abeyance of project HR-19, 2) the exclusion of projects FP-09, FP-11, and FP-12, 3) the inclusion of project E-06 in the budget as a contract extension, as funds become available.

Shake said the motion, as he understood it, provided the Task Force the opportunity to complete the education curriculum. Reynolds asked for clarification on what was meant by "abeyance of HR-19" and "exclusion of projects FP-09, FP-11, FP-12." Wilkinson responded that holding funds in abeyance for project HR-19 was recommended because the amendment document has not been adopted yet. He said that "exclusion" is simply that, to exclude those projects from consideration in the FY1994 budget. Reynolds stated that he would oppose the motion because "abeyance" wasn't adequately defined and that projects FP-09, 11, and 12 should not be removed from the list. He said he would accept the decision not to fund them, but not to remove them from consideration by other funding sources. Wilkinson agreed to change his motion to leave projects FP-09, 11, and 12 on the list. Shake said that "Abeyance" means that project HR-19 will remain on the list, but funding will be put on hold until the upper basin amendment is finalized.

Motion carried. (Department of Agriculture abstained.)

Agenda item 21: A long term "needs list" for Klamath fish restoration.

Shake said that a Task Force planning committee met last year and discussed the need to develop a long term needs list. He said the Task Force has left this planning task unfinished and needs to determine what to do.

Bingham pointed out that agencies such as the U.S. Fish and Wildlife Service are regularly asked to identify restoration projects in the basin. He said that some Task Force members were concerned that the Task Force didn't have much input when the jobs bill was being considered. Bingham suggested using the approved list of projects.

Reynolds stated that this was a good idea but needed further staff work. Shake called for public comment on this issue but received none. Bingham suggested that the Technical Work Group should be asked to draft a list and bring it to the Task Force. Pierce added that input from staff would be helpful. She suggested that staff develop a list to be sent to Technical Work Group members for review and discussion. Reynolds recommended that staff develop correspondence for the Chair's signature, requesting each of the Task Force members to provide a list of recommended projects back to staff. Staff will compile and forward this list to the Technical Work Group. Shake said the budget committee also needs to be involved with this. Rohde stated that this list should have appropriate permitting processes completed so they can be implemented quickly, or that these kinds of projects should be listed separately. Shake asked KRFR staff will do this, keeping in mind side boards of the Long Range Plan.

Agenda item 23: Direction to identify/develop the long term needs list.

\*\*\* Action \*\*\*

KRFR staff will prepare a letter to Task Force members, asking for ideas and recommended projects to be included in a long term needs list. Staff will compile the list, and work with the Technical Work Group and the budget committee to develop recommendations for the Task Force.

Agenda item 24: Take care of unfinished business.

Paula Yoon addressed the Task Force to request a \$500 contribution to pay for expenses for a Eureka High School 5-day field trip on the Klamath River.

\*\*\* Motion \*\*\*

Wilkinson moved to approve the request for \$500.

Motion carried. (Department of Agriculture abstained.)

Shake stated that there was another item of unfinished business -- the letter from California Department of Fish and Game dealing with the review of artificial propagation policies and procedures.

Reynolds asked the Chair if he preferred to appoint representatives or a committee to discuss this issue. Shake stated that he wanted Task Force members to respond directly. Reynolds said he would research this issue further to determine if the state's policy is in conflict with Long Range Plan policies.

Agenda item 8: Report on identification of critical fish refugia (Continued).

Rohde presented his redraft of the letter to landowners regarding critical watershed protection. He stated that his redraft was an attempt to include the ideas that were presented earlier. The Task Force agreed to send the letter, Shake asked staff to finalize the letter for his signature.

Rohde asked for direction from the Task Force on identifying critical watersheds. Bingham suggested that they direct the Technical Work Group to go ahead with the "key watershed" concept and suggested that it be in the form of a two tier system. High quality pristine areas would be included in the first

tier and "key" or essential watersheds would be included in the second tier, noting that "key" watersheds are important for basin-wide recovery of stocks. This list would be sent out for public comment and then brought back to the Task Force for final review and adoption. Rohde stated that the TWG has developed the first tier. He said now they'll identify the second tier of "key" watersheds; but asked "Specific to which fish stocks?" Bingham said that "critical stocks" should be considered. West stated that the TWG needs specific guidance as to which stocks. Shake directed the TWG to go through the Long Range Plan and the report by the Stock Identification Committee (Dr. Barnhart's report) rather than getting into the Stocks at Risk identified by the Humboldt Chapter of the AFS. West responded that the TWG will end up listing every basin because each watershed is critical for restoration. Shake asked the TWG to prioritize the basins.

\*\*\* Action \*\*\*

The TWG will develop a recommendation for prioritizing "key watersheds" in the Klamath Basin.

Future agenda items:

CDFG will give a report at the next meeting on the FY1994 State work plan.

Set meeting date and location for winter meeting.

January 18-19, in Eureka, (To begin at 12:00 noon on the 18th).

Next meeting: Oct 5-6, 1993, in Hoopa, California.

The Task Force agreed that they should try to have a joint meeting with the Klamath Fishery Management Council at the meeting in Hoopa.

Meeting adjourned.

MEETING AGENDA FOR THE  
 KLAMATH RIVER BASIN FISHERIES TASK FORCE  
 JUNE 15-16, 1993, YREKA, CALIFORNIA

June 15:

- 8:00 am Convene meeting; opening remarks, introductions.
1. Discussion/adoption of agenda.
  2. Approval of minutes from March 30-31, 1993 meeting.
- 8:15 3. Report from budget committee on development of Fiscal Year 1994 work plan. (Bingham)
- 8:30 4. Task Force discussion of work plan recommendation.
- 10:00 Break
- 10:15 5. Public comment on FY1994 work plan.
- 10:45 6. Action: Task Force decision on final FY1994 work plan.
- 11:00 7. Report on draft FY1995 Request For Proposals. (West)
- 11:30 8. Report on identification of critical fish refugia. (West)
- 12:00 Lunch
- 1:00 9. Action planning: Should the TWG increase subbasin planning effort by implementing Project 93-PC-2 during FY1993? (West)  
 Action: Task Force will provide direction to the Technical Work Group.
- 1:30 10. Status of the Klamath River Instream Flow Study. (Shake)  
 Action: Appointment of ad hoc scoping committee.
- 2:00 Break.
- 2:15 11. Status report on Klamath and Six Rivers National Forests' Land Management Plans. (Holder)
- 3:15 11. Report on progress of the Forest Service's Pacific Salmon Work Group (PacFish). (Holder)
- 3:30 12. Presentation of Klamath Basin hatchery review final report. (Reynolds)
- 3:45 13. Comment on the report from Task Force representatives on the hatchery review team. (Bingham, Eric Laudenschlager)
- 4:00 14. Report on Shasta fall chinook status with reference to California Endangered Species Act listing. (Reynolds)
- 4:30 15. Report on Shasta River 1993 unimpaired flow experiment. (Bill Chesney)
- 4:45 16. Public comment.
- 5:00 Adjourn meeting for the day.

June 16:

- 8:00 Reconvene. Announcements.
- 8:05 17. Report from upper basin ad hoc committee. (Thackeray)
- 8:30 18. Task Force discussion on how to proceed with development of the upper basin amendment document.
- 8:45 19. Public comment.
- 9:15 20. Action: Upper basin amendment process -- What to do?
- 9:45 Break.
- 10:00 21. A long term "needs list" for Klamath fish restoration. (Bingham)
- 10:30 22. Public comment.
- 11:00 23. Action: Direction to staff, TWG, or committee to identify/develop the long term needs list.
- 11:00 24. Take care of unfinished business.
- Identify new agenda items.
- Review assignments.
- Set meeting date and location for winter meeting.
- 12:00n Adjourn meeting.

KLAMATH FISH RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank	
PC-4	USFWS -- KLAMATH RIVER FRO	BASIN	PROVIDE STAFF SUPPORT FOR PROGRAM COORDINATION AND ADMINISTRATION	425000		
PC-2	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT RIVER WATERSHED COORDINATED RESOURCE MANAGEMENT PLAN	27200	TO CONTINUE THE POSITIVE WORK STARTED BY THE CRMP TO RESTORE AND MAINTAIN A HEALTHY AND PRODUCTIVE WATERSHED.	83	
MP-08	GREAT NORTHEAN CORPORATION	OREMADA	IRRIGATION DISTRICT	400	ASSIST THE OREMADA IRRIGATION DISTRICT WITH COSTS ASSOCIATED WITH PULSE FLOW PROJECT.	88
E-07	SALMONID RESTORATION FEDERATION	BASIN	1994 CALIFORNIA SALMON, STEELHEAD & TROUT RESTORATION CONFERENCE	3000	IMPROVE THE EFFECTIVENESS OF PROGRAM SALMON AND STEELHEAD FISHERIES RESTORATION CONTRACTORS AND COOPERATORS, AND INFORM THE PUBLIC OF PROGRAM RESTORATION OPPORTUNITIES.	81
WR-18	TULANA FARMS	UPPER	TULANA WATERSHED ENHANCEMENT PROJECT	21800	IMPROVE WATER QUALITY THRU RESTORATION OF RIPARIAN, EMERGENT & AQUATIC VEGETATION & REDUCTION OF SOIL EROSION. RESTORE & PROTECT SPawning, REARING & FEEDING HABITAT FOR FISH SPECIES IN THE KLAMATH WATERSHED. PROMOTE PUBLIC UNDERSTANDING OF THE IMPORTANCE OF & NEED FOR A HEALTHY WATERSHED & THE RESTORATION & PRESERVATION OF PRODUCTIVE FISH HABITAT.	81
FP-08	CALIF DEPT OF FISH & GAME	MIDDLE	ORIDER CREEK DIVERSION SCREEN	2542	TO SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD AND CHINOOK SALMON.	80
PC-1	KLAMATH FOREST ALLIANCE	SALMON	SALMON RIVER COMMUNITY RESTORATION PROGRAM	19825	THROUGH A COOPERATIVE PLANNING AND IMPLEMENTING EFFORT, EDUCATE, INVOLVE AND TRAIN COMMUNITY MEMBERS TO IDENTIFY, PROTECT, AND TO RESTORE THE SALMON RIVER SUB-BASIN.	78
FP-11	CALIF DEPT OF FISH & GAME	SCOTT	MAYDEN DIVERSION DITCH SCREEN	2662	SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD AND JUVENILE CHINOOK AND CONO SALMON.	78
WR-33	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT RIVER RIPARIAN WOODLAND REVEGETATION	18117	DEMONSTRATE THE FEASIBILITY OF RE-ESTABLISHING A RIPARIAN FOREST	78	

Subtotal 514,046

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
			WITHIN THE FENCED, RIPARIAN ZONE OF THE SCOTT RIVER IN SCOTT VALLEY.	
FP-13 CALIF DEPT OF FISH & GAME	SCOTT	ETHA CREEK DIVERSION SCREEN	2882 SCREEN AN EXISTING OPEN AGRICULTURE/STOCKWATER DIVERSION DITCH TO PREVENT THE LOSS OF JUVENILE AND ADULT STEELHEAD.	78
NR-21 KLAMATH NF	SALMON	STABILIZATION ANALYSIS FOR THE MONTE CREEK-88 LANDSLIDE	2881 PREPARE A DESIGN PACKAGE AND NEPA DOCUMENT FOR THE STABILIZATION OF A LARGE LANDSLIDE THAT THREATENS ANADROMOUS FISHERIES HABITAT AND WATER QUALITY IN THE LOWER 6 MILES OF THE SALMON RIVER.	78
FP-10 USFWS -- CA/NV FISH HEALTH CENTER	MIDDLE	HEALTH AND PHYSIOLOGY EVALUATION OF HATCHERY YEARLING CHINOOK EMIGRANTS	10000 BUILDING ON THE PATHOGEN PREVALENCE STUDY OF SALMONID SMOLTS CONDUCTED IN FY92, THIS STUDY WILL: A) DOCUMENT THE INCIDENCE AND INTENSITY OF PATHOGEN INFECTION B) MONITOR IMMUNE DEFENSE CHARACTERISTICS OF HATCHERY CHINOOK C) CORRELATE PHYSIOLOGICAL AND NON-SPECIFIC IMMUNE DEFENSE MEASUREMENTS WITH HEALTH STATUS PRIOR TO HATCHERY RELEASE, COLLECTION SITE AND TIME, INFECTION, AND ENVIRONMENTAL CONDITIONS (FLOW, TEMPERATURE).	78
FP-10 USFWS -- COASTAL CALIF PRO	BASIN	AGE COMPOSITION OF THE 1993 KLAMATH RIVER FALL CHINOOK RUN	7850 DETERMINATION OF THE AGE COMPOSITION OF THE KLAMATH RIVER FALL CHINOOK RUN IN 1993 FOR USE IN THE MANAGEMENT OF THIS STOCK.	74
E-04 KLAMATH FOREST ALLIANCE	SALMON	ADOPT-A-STREAM STEWARDSHIP AND EDUCATION PROGRAM	4480 EDUCATE STUDENTS GRADES 1-8 ON IMPORTANCE & INTRACACY OF AQUATIC ECOSYSTEMS & WATERSHED PROCESSES. FORGE PARTNERSHIP IN STEWARDSHIP & EDUCATION BETWEEN RESTORATION COUNCIL, FORKS OF SALMON SCHOOL, FOREST SERVICE, CA DEPT. OF FISH & GAME, OTHER INDEPENDENT SPECIALISTS & THE SALMON RIVER COMMUNITY.	73
NR-23 KLAMATH FOREST ALLIANCE	SALMON	BARE COUNTRY LANDSCAPE COMMUNITY PARTNERSHIP PROJECT (RIPARIAN PLANTING)	8635 EDUCATE, INVOLVE AND BASICALLY TRAIN LOCAL COMMUNITY RESIDENTS AND THE PRIVATE LANDOWNERS WITHIN THE BARE COUNTRY LANDSCAPE TO IDENTIFY.	73

Subtotal 574,554

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				PRIORITIZE, AND RESTORE CRITICAL RIPARIAN ECOSYSTEMS ON BOTH PUBLIC AND THEIR OWN PRIVATE LANDS.	
NR-10	KLAMATH NF -- OAK KNOLL RD	MIDDLE HORSE CREEK RESTORATION PROJECT	28797	TO STABILIZE ROADBED AND STREAMBANK EROSION WHICH IS CONTRIBUTING HIGH LOADS OF SEDIMENT INTO THE HORSE CREEK DRAINAGE. THESE AREAS OF HIGH SEDIMENT DELIVERY ARE ADVERSELY AFFECTING EGG AND FRY SURVIVAL AND REDUCING THE AVAILABILITY OF REFUGIUM AND REARING HABITAT.	73
NR-32	BISKIYOU RESOURCE CONSERVATION DIST	STOCKWATER FOR CHINOOK - SCOTT VALLEY IRRIGATION DITCH	7880	CONDUCT A STUDY ON THE SCOTT VALLEY IRRIGATION DITCH TO DETERMINE FEASIBILITY OF PROVIDING STOCKWATER FROM WELLS RATHER THAN DIVERTED SURFACE WATER.	73
NR-37	GREAT NORTHERN CORPORATION	SHASTA GENERIC FENCING	80620	CONSTRUCT APPROXIMATELY 3 MILES OF CATTLE EXCLUSION FENCE, PLANT EXCLUSION AREAS TO ACCELERATE RIPARIAN RECOVERY.	71
PR-04	NORTHERN CALIF INDIAN DEVEL COUNCIL	MIDDLE MID-KLAMATH CHINOOK ACCELERATED RESTORATION PROGRAM	164787	RESTORE THE LOCALLY ADAPTED FALL CHINOOK IN SELECT TRIBUTARIES OF THE KLAMATH RIVER.	71
E-02	FISHERIES FOCUS	LOWER EUREKA HIGH SCHOOL KLAMATH RIVER PROJECT	1285	OFFER A HIGH SCHOOL CLASS TO STUDENTS WHO HAVE BEEN EXTENSIVELY INTRODUCED TO AND STUDYING THE KLAMATH SALMON ISSUE AND WHO ARE READY TO RECEIVE TRAINING IN PRODUCING A QUALITY PRESENTATION TO TAKE TO OTHER HIGH SCHOOL STUDENTS.	71
NR-34	GREAT NORTHERN CORPORATION	SHASTA RIPARIAN PLANTING EVALUATION	31818	IMPROVE SUCCESS RATE OF RIPARIAN PLANTINGS ALONG THE SHASTA RIVER.	70
PR-03	NORTHERN CALIF INDIAN DEVEL COUNCIL	LOWER YUROK RESERVATION LATE RUN FALL CHINOOK ACCELERATED STOCKING PROGRAM	168918	E. RESTORE FISH STOCKS	70
NR-16	KLAMATH NF	MIDDLE MID-KLAMATH SUB-BASIN SEDIMENT ANALYSIS	84228	DETERMINE SEDIMENT PRODUCTION RATES, SHARE INFO, PRIORITIZE WATERSHED RESTORATION ACTIVITIES, PREPARE LIST OF PROJECTS, INVOLVE PUBLIC, AND COMPILE INFO INTO GIS.	69
NR-18	KLAMATH NF -- SALMON RIVER RD	SALMON SOUTH FORK BACKWATER POOL WITH COVER STRUCTURE	2680	INCREASE WINTER REARING AND POST EMERGENCE HABITAT FOR JUVENILE	68

Total 1,037,643

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				STEELHEAD AND CHINOOK FRY IN THE SOUTH FORK SALMON RIVER.	
NR-20	SISKIYOU RESOURCE CONSERVATION DIST.	SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - BLACK RANCH	113400	INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	89
E-03	KLAMATH NF	MIDDLE KLAMATH BASIN FISHERIES SEMINARS	1400	CONDUCT FIVE PUBLIC INFORMATION/EDUCATION SEMINARS TO DISCUSS KLAMATH RIVER BASIN FISH SPECIES, HABITAT REQUIREMENTS AND LIFE HISTORY. A PORTABLE COLD WATER AQUARIUM WOULD BE USED TO ENHANCE THE DISCUSSION.	89
NR-17	KLAMATH NF -- HAPPY CAMP RD	MIDDLE INDIAN CREEK TERRACE AND RIPARIAN RE-ESTABLISHMENT	21000	RESTORE CHANNEL CONDITIONS WHICH PROVIDE FOR REESTABLISHMENT OF NATIVE FLOOD PLAIN AND TERRACE VEGETATION WHILE ENHANCING STREAMBED AND BANK STABILITY.	88
NR-102	KLAMATH NF -- SALMON RIVER RD	SALMON SUBBASIN RIPARIAN PLANTING PROJECT	10300	PLANT RIPARIAN SPECIES IN AREAS ALONG A NUMBER OF DIFFERENT STREAMS THAT SUPPORT CHINOOK AND STEELHEAD. THE RIPARIAN PLANTING WILL EVENTUALLY PROVIDE SHADE AND COVER, AND WILL INCREASE BANK STABILIZATION.	88
E-05	KIDDER CR. OUTDOOR/ETNA ELEM. SCH.	SCOTT KIDDER CREEK RESTORATION PROJECT	3200	CONTINUE TO IMPLEMENT A RESTORATION PROJECT INCLUDING A TREE PLANTING PROGRAM ON KIDDER CREEK AND EDUCATE STUDENTS AND OUR ADULT COMMUNITY OF HABITAT REQUIREMENTS AND THE ECONOMIC AND CULTURAL IMPORTANCE OF OUR SALMON POPULATION.	88
FP-08	USFWS -- COASTAL CALIF PRO	LOWER SPawning GROUND SURVEYS OF LOWER KLAMATH TRIBUTARIES	84400	ESTABLISH CONSISTENT MONITORING REGIME FOR LOWER KLAMATH RIVER TRIBUTARIES AND GATHER INFORMATION REGARDING SPawner RETURNS TO THESE STREAMS.	87
NR-31	SISKIYOU RESOURCE CONSERVATION DIST	SCOTT RIVER FLOW ENHANCEMENT - PILOT PROJECT	14600	STORE WATER IN AND UNDER LANDS ADJACENT TO SCOTT RIVER FOR RELEASE AS NEEDED IN THE FALL TO INCREASE FLOW.	87

KLAMATH P... RESTORATION PROGRAM  
FISCAL Y... PROJECT PROPOSALS

(list by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
FP-13 SISKIYOU RESOURCE CONSERVATION SCOTT DIST		STUDENT-BUILT FISH SCREENS ON SCOTT RIVER TRIBUTARIES	10827 STUDENTS FROM ETNA HIGH SCHOOL WILL RESEARCH, DESIGN, FABRICATE, INSTALL MONITOR AND MAINTAIN TWO FISH SCREENS ON SUGAR CREEK AND ONE FISH SCREEN ON FRENCH CREEK.	68
NP-08 KLAMATH NP -- SALMON RIVER RD	SALMON	LITTLE NORTH FORK WATERSHED IMPROVEMENT NEEDS INVENTORY	17150 PROVIDE AN INVENTORY THAT INCLUDES CURRENT INSTREAM CONDITIONS AND A LIST OF PROJECTS THAT WOULD IMPROVE HABITAT IN LITTLE NORTH FORK WATERSHED.	68
FP-06b USFWS -- COASTAL CALIF PRO	LOWER	STATUS OF SALMON STOCKS AT BLUE CREEK	24141	68
E-08 DIANE HIGGINS	BASIN	KLAMATH RIVER EDUCATIONAL PROGRAM FOR GRADES K-3	51280 DEVELOP CURRICULUM AND FIELD ACTIVITIES, CONDUCT TEACHER WORKSHOPS, EVALUATE 4-12TH GRADE CURRICULUM.	68
NR-28 KLAMATH FOREST ALLIANCE	SALMON	RARE COUNTRY LANDSCAPE COMMUN. PARTNERSHIP PROJ. #3(ROADS; RIPAR. STABILIZ.	12450 THIS PROJECT WILL FOCUS ON LEARNING ABOUT: 1) ROAD STABILIZATION IN RIPARIAN AREAS, 2) FIREPROOFING ON A LANDSCAPE LEVEL, 3) ROAD MAINTENANCE TECHNIQUES WHICH FOCUS ON EROSION CONTROL.	64
NR-02 KLAMATH NP -- HAPPY CAMP RD	MIDDLE	INDIAN AND ELK CREEK RIPARIAN HABITAT RESTORATION #1	15268 PROVIDE CONIFER AND DECIDUOUS COVER WITHIN THE RIPARIAN MANAGEMENT ZONES THAT MAY HAVE A GREATER CHANCE OF SURVIVING LARGE FLOOD EVENTS.	63
E-01 CALIF CONSERVATION CORPS	LOWER	LOWER KLAMATH FISHERIES INFORMATION DISPLAYS	19542 A COLLABORATIVE PROJECT INVOLVING CCC, CAL TROUT, CDFG, CALIF DEPT OF PARKS AND REC, AND UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION TO PROVIDE VISITORS WITH INFORMATION CONCERNING ANADROMOUS SALMONID STOCKS.	63
FP-04 USFWS -- COASTAL CALIF PRO	LOWER	SPRING EMIGRATION ASSESSMENT OF KLAMATH RIVER JUVENILE SALMONIDS	24200 MONITORING OF THE SPRING-SUMMER JUVENILE SALMONID EMIGRATION FROM THE KLAMATH RIVER.	63
FP-05 USFWS -- COASTAL CALIF PRO	LOWER	KLAMATH RIVER YEARLING SALMONID EMIGRATION MONITORING	11000 MONITORING THE YEARLING JUVENILE SALMONID EMIGRATION FROM THE KLAMATH RIVER.	63
FR-05 ART FRAZIER	SALMON	HANDEL CREEK MATCHING/REARING PROJECT	12032 BOOST PRODUCTION OF FALL CHINOOK, THROUGH BIO-ENHANCEMENT, WITHIN THE SALMON RIVER SUB-BASIN, PARTICULARLY IN	63

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank	
				TRIBUTARIES WHERE FALL CHINOOK NUMBERS APPEAR DEPRESSED OR FAR BELOW THE STREAM'S KNOWN CARRYING CAPACITY.		
FP-16	USFWS -- COASTAL CALIF PRO	BASIN	CHINOOK SALMON STOCK DISCRIMINATION/OPTICAL PATTERN RECOGNITION OF SCALE SAMPLE	22478	DISCRIMINATE BETWEEN KLAMATH RIVER FALL CHINOOK STOCKS USING SCALE SAMPLES.	63
NP-01	USFWS -- KLAMATH RIVER PRO	BASIN	KLAMATH RIVER INSTREAM FLOW STUDY - PHASE I	25169	TO INITIATE AN INSTREAM FLOW STUDY ON THE MAINSTEM KLAMATH RIVER.	63
FP-01	USFWS -- COASTAL CALIF PRO	MAINSTEM	O. STURGEON AGE/GROWTH ANALYSES W/OPTICAL PATTERN RECOGNITION OF PECTORAL FINRAYS	15693	DETERMINE AGE STRUCTURE AND PROVIDE DESCRIPTIVE GROWTH DATA RELATED TO PAST LIFE HISTORY.	62
FP-20	USFWS -- YUROK TRIBAL FISH DEPT	BASIN	MONITORING OF KLAMATH BASIN JUVENILE CHINOOK PRODUCTION PRIOR TO ESTUARY ENTRANCE	39793	INDEX KLAMATH RIVER BASIN JUVENILE CHINOOK PRODUCTION AND DETERMINE RELATIVE CONDITION AND CONTRIBUTION OF HATCHERY AND NATURAL STOCKS. DETERMINE THE RELATIVE SURVIVAL OF MARKED CHINOOK AND RELATE TO RIVER FLOW.	62
FR-06	ROBERT WILL	SALMON	LITTLE NORTH FORK CHINOOK HATCHING/REARING PROJECT	26885	BOOST PRODUCTION OF NATIVE FALL CHINOOK, THROUGH BIOENHANCEMENT, WITHIN THE NORTH FORK SALMON RIVER SUB-BASIN PARTICULARLY IN NORTH FORK SALMON RIVER TRIBUTARIES WHERE FALL CHINOOK NUMBERS APPEAR DEPRESSED OR FAR BELOW THE STREAM'S KNOWN CARRYING CAPACITY.	62
NR-20	KLAMATH NF -- SALMON RIVER RD	SALMON	ZONE LANDSLIDE STABILIZATION	41100	PREVENT FURTHER MASS WASTING FROM A COMPLEX LANDSLIDE. SLIDE FAILURE WOULD DIRECTLY INFLUENCE THE QUALITY OF WATER AND HABITAT IN NEGRO CREEK AND THE SOUTH FORK OF THE SALMON.	62
FP-17	USFWS -- COASTAL CALIF PRO	BASIN	EVALUATION OF STATUS/TRENDS OF COMO SALMON IN KLAMATH R. TRIBS. (EXCL. TRINITY R.)	39120	DETERMINE THE STATUS AND TREND OF COMO SALMON IN SELECTED KLAMATH RIVER TRIBUTARIES.	62
NR-35	GREAT NORTHERN CORPORATION	SEASTA	EKSTROM FENCING	6180	FENCE CONSTRUCTION WITHIN A YEAR OF CONTRACT AWARD. PLANTING WILL BE CONDUCTED DURING WINTER AFTER FENCE CONSTRUCTION.	61
NR-36	GREAT NORTHERN CORPORATION	SEASTA	LINQUIST PLANTING	4565	PLANT 7725 LINEAL FEET OF RIVER BANK TO ACCELERATE RIPARIAN RECOVERY.	61
NR-22	KLAMATH FOREST ALLIANCE	SALMON	FISHERIES AND HABITAT PROTECTION AND	5190	PROMOTE COMMUNICATION BETWEEN DREDGERS	61

KLAMATH FISH RESTORATION PROGRAM  
 FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
		<b>ENHANCEMENT PROJECT FOR DREDGERS</b>	<b>AND THE MINING COMMUNITY. EDUCATE AND INVOLVE THE DREDGING COMMUNITY IN FISHERIES PROTECTION, INVESTIGATE VARIOUS METHODS OF HABITAT ENHANCEMENT UTILIZING A SUCTION DREDGE. INVOLVE VOLUNTEER DREDGERS TO COLLECT WATER QUALITY, HABITAT, AND DREDGING ACTIVITY DATA.</b>	
NR-06 KLAMATH NF -- OAK KNOLL RD	MIDDLE	MUNBUG CREEK REFUGIUM HABITAT RESTORATION PROJECT	9766 CREATE REFUGIUM HABITAT DURING LOW OR NO FLOW SEASONS.	60
FP-06a USFWS -- COASTAL CALIF FRO	LOWER	STATUS OF SALMON STOCKS AT BLUE CREEK	54484 MONITOR CONDITIONS OF A WILD STOCK OF FALL CHINOOK AT BLUE CREEK, A MAJOR TRIBUTARY TO THE LOWER KLAMATH RIVER. A) SPawner SURVEYS AND JUVENILE EMIGRATION TRAPPING AND CODED WIRE TAGGING. B) SPawner SURVEYS AND YEAR-ROUND FLOW AND TEMPERATURE DATA.	60
NR-38 YREKA FISH. HABITAT IMPROVE. HEADQ.	Basin	TEMPORARY HELP FOR THE YREKA FISHERIES HABITAT IMPROVEMENT HEADQUARTERS	31116 PROVIDE 1 PERSON YEAR OF STAFFING CAPABILITY TO MAINTAIN EXISTING SCREENS.	60
FR-01 CALIF CONSERVATION CORPS	LOWER	LOWER KLAMATH SALMONID RESCUE PROJECT	26112 A COOPERATIVE PROJECT INVOLVING CCC & DPO DESIGNED TO RESCUE NATURALLY PRODUCED JUVENILE SALMONIDS FROM LOWER KLAMATH TRIBUTARIES EXPERIENCING SEASONAL LOSS OF SURFACE FLOWS. CREWS WILL EMPLOY TRAPS, SEINES AND ELECTROFISHING METHODS. RESCUED FISH WILL BE TRANSPORTED TO SUITABLE, UNDERSEEDED HABITAT WITHIN THE SAME WATERSHED. NO FISH REARING WILL TAKE PLACE. MEETS OBJECTIVE E: RESTORE FISH STOCKS.	60
NR-09 KLAMATH NF -- OAK KNOLL RD	MIDDLE	GRIDER CREEK SIDE CHANNEL IMPROVEMENT	16586 PROVIDE REFUGIUM TO INCREASE CHINOOK SALMON AND STEELHEAD PRODUCTION IN GRIDER CREEK.	60
NP-02 KLAMATH NF -- HAPPY CAMP RD	MIDDLE	OAK FLAT CREEK SEDIMENT STUDY	11826 IMPROVE OUR UNDERSTANDING OF SEDIMENT PRODUCTION AND INFLUENCES ON FISH HABITAT.	60
NP-07 SISKIYOU RESOURCE CONSERVATION SCOTT	SCOTT	SCOTT RIVER GRANITIC SEDIMENT MONITORING	12640 ASSESS THE 1994 HABITAT CONDITIONS AND	60

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST Comment	Rank
DIST			COMPARE WITH THE 1989 HABITAT CONDITIONS FOR: STREAMBED GRAVEL COMPOSITION (11 SITES) AND FOR CHANNEL MORPHOLOGY (18 SITES).	
FP-03 USFWS -- COASTAL CALIF PRO	MAINSTEM	MAINSTEM KLAMATH RIVER FALL CHINOOK SPawning ESCAPEMENT	18888 ESTIMATE THE FALL CHINOOK SALMON SPawning ESCAPEMENT IN THE MAINSTEM KLAMATH RIVER.	88
FR-08 ORLEANS ROD AND GUN CLUB	SCOTT	REAR STEELHEAD RESCUED FROM SCOTT RIVER TRIBUTARIES	18710	88
FP-07 USFWS -- COASTAL CALIF PRO	LOWER	FISHERIES INVESTIGATIONS AT TERWER CREEK	88880 MONITOR SALMON AND STEELHEAD STOCKS, ASSESS HABITATS AND EROSION SOURCES, AND MAKE RECOMMENDATIONS FOR SPECIFIC MEASURES TO RESTORE AQUATIC HABITAT.	88
PC-3 USFWS -- KLAMATH RIVER PRO	BASIN	DEVELOP SCOPE OF WORK FOR 1995 FISHERY RESTORATION PROGRAM REVIEW	2300 PREPARE A DETAILED PLAN OF WORK TO IMPLEMENT POLICY 7.4.	87
FP-02 HUMBOLDT STATE UNIVERSITY	MAINSTEM	BIOLOGY, HARVEST & RESTORATION OF KLAMATH RIVER GREEN STURGEON	46680 COLLECT INFORMATION ON THE HARVEST OF GREEN STURGEON IN THE KLAMATH RIVER, INITIATE COMPREHENSIVE LIFE HISTORY STUDIES INCLUDING AN ASSESSMENT AND DESCRIPTION OF SPawning AREAS. PROVIDE INFORMATION FOR FUTURE RESTORATION MEASURES.	87
NR-01 CALIF CONSERVATION CORPS	LOWER	TECTAH CREEK SALMON & STEELHEAD HABITAT RESTORATION PROJECT	48040 DESIGN AND CONSTRUCT INSTREAM STRUCTURES AT 12 SITES ON THE LOWER 2 MILES OF TECTAH CREEK TO CREATE SCOUR POOLS, DEEPEN EXISTING POOLS, PROVIDE POOL AND EDGEWATER COVER, AND HIGH WATER REFUGE HABITAT. PLACE ROOTWADS, LOGS AND LVD IN STREAM CHANNEL AND MARGINS. DFO STAFF WILL COMPLETE SITE DESIGN. CCC WILL PROVIDE CREW LABOR AND TECHNICAL SUPERVISION.	87
NR-11 KLAMATH NP -- OAK KNOLL RD	MIDDLE	GROUSE CREEK STABILIZATION PROJECT	8883 STABILIZE STREAM BANKS AND RESTORE RIPARIAN AREAS TO PREVENT ERODED MATERIAL FROM BEING DELIVERED TO BEAVER CREEK.	86
NR-18 CALIF CONSERVATION CORPS	MIDDLE	CCC/USFWS PARTNERSHIP FOR MIDDLE KLAMATH SUB-BASIN	187210 DEMONSTRATE THE VIABILITY OF A STATE/FEDERAL PARTNERSHIP AS A COST-EFFECTIVE WAY TO UNDERTAKE RESTORATION EFFORTS IN THE MIDDLE	86

KLAMATH FOREST RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(ranked by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
KLAMATH SUB-BASIN. (YEAR-ROUND)					
NR-27	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT R. BANK PROTECT, RIPAR. FENCE/PLANT - MARK HURLIMAN	118203	INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	58
NR-30	SISKIYOU RESOURCE CONSERVATION SCOTT DIST	SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - PASTURES OF HEAVEN	21448	INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	58
NR-15	KLAMATH NF -- HAPPY CAMP RD	MIDDLE EAGLE 6 LANDSLIDE STABILIZATION	105000	ASSURE THAT THE EARTHFLOW LANDSLIDE IS STABLE AND CONTROL SURFACE EROSION AND SLIDING ON THE FOOT OF THE LANDSLIDE BY CONSTRUCTING A REINFORCED WALL AT THE TOE OF THIS SLIDE AND GRADING THE FOOT OF THE SLIDE TO A STABLE CONFIGURATION. THE GRADED SLOPE WILL THEN BE VEGETATED.	58
NR-24	KLAMATH FOREST ALLIANCE	SALMON BARE COUNTRY LANDSCAPE RIPARIAN NURSERY PARTNERSHIP	22920	EDUCATE, INVOLVE AND BASICALLY TRAIN THE RESIDENTIAL PRIVATE LANDOWNERS WITHIN THE SEVERLY DAMAGED SOUTH FORK SALMON RIVER BARE COUNTRY LANDSCAPE TO IDENTIFY, GATHER, PROPAGATE GROW, PLANT AND MONITOR VARIOUS NATIVE DECIDUOUS RIPARIAN VEGETATIVE SPECIES. THE 4,000 NURSERY STARTS WILL BE USED TO REVEGETATE AND STABILIZE PRIORITIZED RIPARIAN HABITAT AND WATERSHEDS WITHIN THE SALMON RIVER SUB-BASIN. THIS PROPOSAL WILL PROMOTE COMMUNITY AWARENESS, SUPPORT AND INVOLVEMENT, AND A MORE COOPERATIVE LANDSCAPE PLANNING EFFORT WILL RESULT BETWEEN THE PUBLIC AND PRIVATE LAND OWNERS WITHIN THE BARE COUNTRY LANDSCAPE LEVEL.	58
NR-14	KLAMATH NF -- HAPPY CAMP RD	MIDDLE ASSESSMENT OF DISSOLVED HEAVY METALS AND ACIDIC DRAINAGE IN INDIAN CREEK	5000	IDENTIFY CHRONIC OCCURRENCE OF ACIDIC DRAINAGE FROM UNREGULATED SOURCES ASSOCIATED WITH OLD WORKING OF THE GREY EAGLE MINE. THIS INFORMATION IS ESSENTIAL TO THE ASSESSMENT OF NEED FOR	58

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				REMEDICATION OF TOXIC DRAINAGE FROM THIS SITE.	
FP-14	CALIF DEPT OF FISH & GAME	SHASTA	SHASTA R. FALL CHINOOK SPawning DISTRIB., JUVENILE REARING & OUTMIGRATION STUDY	64786 TO DETERMINE THE SPATIAL AND TEMPORAL DISTRIBUTION OF SPawning ACTIVITY FOR THE 1993 FALL CHINOOK RUN IN THE SHASTA RIVER. DETERMINE THE TIMING OF EMERGENCE, REARING DISTRIBUTION AND RELATIVE ABUNDANCE, TIMING AND RATE OF OUTMIGRATION OF YOUNG-OF-THE-YEAR FALL CHINOOK DURING THE SPRING AND EARLY SUMMER OF 1994.	86
NR-08	KLAMATH NF -- OAK KNOLL RD	MIDDLE	ORDER CREEK FISH HABITAT IMPROVEMENT #3	23768 INCREASE PRODUCTIVITY OF REARING AND SPawning HABITAT FOR ANADROMOUS FISHERIES ON ORDER CREEK.	84
FP-18	COASTAL RESOURCES INSTITUTE	BASIN	KLAMATH BASIN CHINOOK STOCK DIFFERENTIATION/DISTINGUISHING GEN DIFFSCOAST POPS.	83820 PROVIDE FISHERIES MANAGERS WITH TOOLS/TECHNIQUES FOR IDENTIFYING STOCKS/POPULATIONS THAT WILL AID THEM IN MANAGEMENT DECISIONS. SECOND, TO TRANSFER THE BASIC DNA TECHNIQUES INTO THE DAILY FISHERIES MANAGEMENT SCHEME BY THE DETERMINATION OF THE IDENTITY OF POPULATIONS/STOCKS CURRENTLY IN THE FISHERY.	83
NR-28	SISKIYOU RESOURCE CONSERVATION SCOTT DIST		SCOTT RIVER BANK PROTECT., RIPARIAN FENCE/PLANTING - WALTER HANSEN RANCH	138274 INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	83
NR-28	SISKIYOU RESOURCE CONSERVATION SCOTT DIST		SCOTT R. BANK PROTECTION, RIPARIAN FENCE/PLANT - RANCHO DEL SOL	129742 INSTALL LARGE ROCK RIPRAP, FENCE AREA TO RESTRICT LIVESTOCK ACCESS TO RIPARIAN ZONE, AND PLANT TREES AND SHRUBS TO PROVIDE BOTH REDUCED SEDIMENT FROM STREAMBANK EROSION AND DEVELOP RIPARIAN VEGETATION FOR STREAM SHADING.	83
NR-04	SIX RIVERS NF	MIDDLE	BLUFF CREEK - DRAGON AREA INSTREAM HABITAT ENHANCEMENT	18700 INCREASE THE QUALITY AND QUANTITY OF INSTREAM HABITAT FOR FALL RUN CHINOOK SALMON AND SUMMER AND WINTER RUN STEELHEAD IN BLUFF CREEK.	82
NP-05	KLAMATH NF	SALMON	RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	62824 DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND	82

KLAMATH FISH RESTORATION PROGRAM  
FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
				UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	
NR-03	SIX RIVERS NP	MIDDLE RED CAP CREEK INSTREAM HABITAT ENHANCEMENT	24100	INCREASE THE QUALITY AND QUANTITY OF INSTREAM HABITAT FOR FALL RUN CHINOOK SALMON AND SUMMER AND WINTER RUN STEELHEAD IN RED CAP CREEK.	81
NR-08	SIX RIVERS NP -- ORLEANS RD	MIDDLE 1994 OLD BLUFF CREEK ROAD OBLITERATION PLAN	21395	TO PROPERLY PLAN THE OBLITERATION OF AN ABANDONED ROAD THAT WAS BUILT IN THE INNER GORGE OF BLUFF CREEK. A KEY WATERSHED IDENTIFIED BY THE SCIENTIFIC PANEL ON LATE-SUCCESSIONAL FOREST ECOSYSTEMS.	81
NR-13	KLAMATH NP -- HAPPY CAMP RD	MIDDLE INTEGRATED MONITORING & ASSESSMENT OF SEDIMENT PRODUCTION & FISH HABITAT QUALITY	4700	1) DESCRIBE METHODS TO ASSESS SEDIMENTATION AND THEIR UTILITY IN DESCRIBING RIPARIAN ENVIRONMENTS, 2) INDICATE VALUABLE METHODS, 3) PROVIDE EXAMPLE OF INTEGRATED ASSESSMENT OF EROSION... 4) DESCRIBE METHODS FOR MONITORING, 5) ID RESEARCH OPPORTUNITIES.	80
NR-12	KLAMATH NP -- HAPPY CAMP RD	MIDDLE FIBER REINFORCEMENT OF ROAD FILL	60000	1) DEMONSTRATE FIBER REINFORCEMENT TECHNIQUES, 2) STABILIZE SITES.	80
PR-07	OLSON/MCBROOM	SALMON SIDE CHANNEL SCREENING, SPawning, & REARING FOR FALL CHINOOK SALMON	27635	SCREEN EXISTING SIDE CHANNEL AND RETURN SALMON RIVER AND ITS TRIBUTARIES TO HISTORICAL FISH LEVELS USING EXISTING SIDE CHANNEL FOR SPawning AND REARING FALL CHINOOK SALMON AT METHODIST CREEK.	49
NP-08B	KLAMATH NP	SALMON RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	64627	DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	46
NP-05A	KLAMATH NP	SALMON RIPARIAN POTENTIAL NATURAL COMMUNITY CLASSIFICATION/SALMON RIVER WATERSHED	126199	DEVELOP AN INTEGRATED RIPARIAN ECOLOGICAL CLASSIFICATION SYSTEM AND UNIFORM RIPARIAN ECOSYSTEM FRAMEWORK FOR USE IN LAND AND RESOURCE PLANNING, MANAGEMENT AND INTERPRETATIONS OF RIPARIAN ECOSYSTEMS.	46

KLAMATH FISHERY RESTORATION PROGRAM  
FISCAL YEAR 1994 PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
NP-04A	KLAMATH NF	SALMON POOL FREQUENCY AND VOLUME OF THE SALMON RIVER	\$3900	1) DETERMINE WHY POOL FREQUENCY IS SO LOW ON THE NORTH FORK SALMON RIVER, AND QUANTIFY THE DIFFERENCES BETWEEN THE POOLS IN THE NORTH FORK, SOUTH FORK AND MAIN STEM. 2) CHARACTERIZE THE EFFECT LOW POOL FREQUENCY WILL HAVE ON ANADROMOUS FISH. 3) INITIATE THE USE OF STATE OF THE ART REMOTE SENSING TECHNOLOGY FOR: A. ASSESSING THE QUALITY OF FISH HABITAT B. MONITORING CHANGES IN HABITAT OVER TIME C. INVESTIGATION OF GEOMORPHIC INFLUENCES ON HABITAT 4) COMMUNICATE WITH AND EDUCATE THE PUBLIC ON RELATIONSHIPS BETWEEN FISH HABITAT, AND GEOMORPHIC PROCESSES.	48
NP-04	KLAMATH NF	SALMON POOL FREQUENCY & VOLUME OF THE SALMON RIVER	44898	1) DETERMINE WHY POOL FREQUENCY IS SO LOW ON THE NORTH FORK SALMON RIVER, AND QUANTIFY THE DIFFERENCES BETWEEN THE POOLS IN THE NORTH FORK, SOUTH FORK AND MAIN STEM. 2) CHARACTERIZE THE EFFECT LOW POOL FREQUENCY WILL HAVE ON ANADROMOUS FISH. 3) INITIATE THE USE OF STATE OF THE ART REMOTE SENSING TECHNOLOGY FOR: A. ASSESSING THE QUALITY OF FISH HABITAT. B. MONITORING CHANGES IN HABITAT OVER TIME. C. INVESTIGATION OF GEOMORPHIC INFLUENCES ON HABITAT. 4) COMMUNICATE WITH AND EDUCATE THE PUBLIC ON RELATIONSHIPS BETWEEN FISH HABITAT, AND GEOMORPHIC PROCESSES.	48
NR-07	KLAMATH NF -- OAK KNOLL RD	MIDDLE ORIDER CREEK SUMMER STEELHEAD HABITAT SURVEY	3878	INCREASE PRODUCTIVITY OF SUMMER STEELHEAD BY PROMOTING ACCESS TO BLOCKED AREA HABITATS.	48
PA-1	KLAMATH NF -- HAPPY CAMP RD	BASIN HISTORICAL FISHERY HABITATS OF WESTERN SISKIYOU CTY - A HISTORICAL BIBLIOGRAPHY	4400	RESEARCH AND PUBLICATION OF HISTORICAL INFORMATION RELATED TO WESTERN SISKIYOU COUNTY.	39
FR-03	FRANK FISCHL	MIDDLE KLAMATH RIVER GREEN STURGEON HATCHERY AND	84661	UNDER GLOSSARY OF OBJECTIVES ADDRESSES:	37

KLAMATH FISH RECREATION PROGRAM  
 FISCAL YEAR PROJECT PROPOSALS

(listed by rank)

PROJECT COOPERATOR NUMBER	SUBBASIN	PROJECT DESCRIPTION	COST	Comment	Rank
		REARING PILOT PROJECT		PUBLIC INVOLVEMENT, RESTORE FISH STOCKS, DEVELOP COOPERATION, PROTECT STURGEON.	
FP-16	BIOSYSTEMS ANALYSIS, INC.	BASIN	EGG SURVIVAL OF FALL-RUN CHINOOK SALMON (ONCORHYNCHUS TSHAMYTSCHA)	52532	QUANTIFY CHINOOK SALMON EGG SURVIVAL IN 36 TWO TRIBUTARIES OF THE KLAMATH RIVER.
NP-09	CALIF REG WATER QUALITY CONT BOARD	BASIN	KLAMATH RIVER WATER QUALITY MONITORING SUPPORT	79280	MONITOR AND EVALUATE WATER TEMPERATURE AND WATER CHEMISTRY IN KLAMATH RIVER AND MAJOR TRIBUTARIES.
NP-03	OREGON STATE UNIV EXT SERVICE	UPPER	EVALUATION/ENHANCEMENT OF WATER QUALITY-WOOD R. S/B RESULTING FROM LAND USES	14814	DEVELOP BASELINE DATA ON NUTRIENT LOADING CONTRIBUTION FROM VARIOUS CULTURAL PRACTICES (EX. FORESTRY & LIVESTOCK GRAZING) IN THE WOOD RIVER VALLEY, & WORK COOPERATIVELY TO REDUCE LOADING.

\*\*\* Total \*\*\*

3741577

## CRITICAL WATERSHEDS OF THE KLAMATH RIVER BASIN

### Lower Klamath River Subbasin

Blue Creek (upstream from Nickowitz Creek; East Fork and Crescent City Forks)  
High Prairie Creek (Yurok Experimental Forest)  
Richardson Creek (entire watershed)

### Mid-Klamath River Subbasin

Boise Creek (entire watershed)  
Clear Creek (upstream from Five Mile Creek)  
North Fork Dillon Creek (upstream from confluence with mainstem)  
Elk Creek (entire watershed)  
Grider Creek (upstream from Salt Creek)  
Redcap Creek (upstream from Middle Fork)

### Salmon River Subbasin

Butler Creek (entire watershed)  
East Fork of South Fork Salmon River (entire watershed)  
North Fork Salmon River (upstream from Idlewild)  
South Fork Salmon River (upstream from Blindhorse Creek)  
Wooley Creek (entire watershed)

### Shasta River

Big Springs Creek (upstream from confluence with Shasta River)  
Bogus Creek (entire watershed)