

EVALUATION OF SITE SPECIFIC
RESTORATION PROJECTS FOR THE
ENTIRE KLAMATH RIVER BASIN.

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1989 Klamath Field Review Comments

The following comments are based primarily upon field observations made by Scott Downie and Andy Kier during the summer and autumn of 1989. Some of the review was made accompanied by personnel responsible for the projects and their comments are incorporated as well.

In many streams individual project sites are linked and/or similar in nature. This review generalizes these in its comments and ratings, but notes exceptions where required. Grades A-F were assigned, but like all grades lacking set criteria and good base-line information, they are somewhat subjective. Evaluations were based upon the observed or perceived physical response made by the stream to the project, whether or not the project satisfied the objectives of the proposal, and whether or not the project appeared to have durable structure and function without maintenance or modification. Biological evaluation was impossible except to note observed fish at the time of the review. Cost effectiveness is again somewhat subjective without more front-end information, but based upon personal experience an attempt to measure product for cost entered into grade assignment.

GENERAL:

1000, 1001, 1003: The racks on Bogus Crk, Scott R. & Shasta R. were all operational Summer 1989.

1002: The Salmon R. weir operations were modified during our review period in response to public input:

1. The trap and weir will be staffed 24 hrs/day.
2. Weir and trap operations will cease at 73 F.
3. Fishing will not be allowed below weir.
4. An alternate site will be developed ASAP.

LOWER KLAMATH SUBBASIN:

Ah Pah Creek (11006, 07, 08, 09, 10, 18-\$123,928): A CCC, DFG, & Simpson Timber Co. project to provide improved access for adults into upper Ah Pah Crk., and to control sedimentation from failing banks in the treatment area. In Oct. 1989, the Hewitt Ramp structures were successfully passing coho and steelhead adults and juveniles through a previous adult barrier section. Large wood and boulder cover elements had been placed in the associated pools. Treated banks were armored with rock filled gabions and planted with alder, willow and conifers. No evidence of sediment production to the stream from these treated slopes was observed. The workmanship and construction are sturdy and of high quality. Grade A. (Since we visited Ah Pah Crk. the day after the RNP bypass failure, the stream was loaded with suspended sediments)

Bluff Creek (11022, 23, 24, 31, 32-\$212,000): Access provided through lower Bluff Crk's former barrier section is still passing adults and juveniles following the Feb. 1986 flood event. The boulder weirs and boulder clusters near the yearling rearing facility are providing limited spawning improvement, but they do contain pockets of gravel utilized by spawners. Both the weirs and clusters have provided some good quality summer rearing habitats, and also refuge areas during winter flows. Two cluster groups are now buried under large streambank failures. These events could have been exacerbated by the placement of the boulders too close to the now failed right bank. No large wood or brush cover elements were utilized in the structures, although some were available. Personnel explained that the extreme velocities and power at high discharges prevented incorporating these organic components into their instream structures on Bluff Crk. Grade C.

Camp Creek (11029, 30-\$125,000): Six boulder weirs were constructed by USFS to trap spawning gravels. Two of the six weirs are now scattered boulder clusters, having been rearranged by the stream. The surviving weirs have provided gravels and are being used by fish. The boulder groups, both designed and incidental, are providing some good quality rearing habitats and some pockets of gravel used for spawning salmonids. Grade C.

Cappell Creek (11027-\$125,000): BIA artificial propagation project. Project has operated for one year. It has released 17,035 CWT chinook. Typical of the lower river hatchery programs, securing desired numbers of late running chinook broodstocks is very difficult. A lot of money in terms of fry produced, but the facility start-up costs are now over and the annual cost will be much less than the initial investment. Grade C.

Hunter Creek (11001, 11002, 11013-\$19,328): A CCC, DFG, and Simpson project to improve Hunter Creek on a basin scale. CCC now have a thorough instream assessment and instream structure plan prepared by Clearwater Biostudies, Inc. under contract to them. Instream structure work is now underway by CCC crews. The construction is of excellent quality and design. All upper stream barrier work is now completed. The dry lower reaches of the stream pose a dewatered, complete barrier to all adults running before early November in most years (T. Payne, 1989). Some concern over future land management's effect on the stream in the event of a major flood occurrence. Grade B.

McGarvey Creek (11025, 11014, 11003-\$24,264): Status of the hatch box project is not known. The barrier work is all done and passing fish. Grade C.

-Review Comments-

Pecwan Creek (11021, 11036, 11028-\$50,000): A total of 21,626 yearling chinook were released from 1982-84 from this facility. They were from Iron Gate stocks and deemed not suitable for the restocking goals of the project area. Since 1985, the facility's production is not well documented, but 27,000 for the period 1985-88 is estimated. None of the releases from this site have been CWT. The Pecwan site has been used as a broodstock source for Cappell Creek as well. Grade D.

Red Cap Creek (11033, 34, 35-\$70,000): USFS project has produced some impressive results. Failing banks have been armored and vegetated. A series of over thirty boulder weirs and clusters have provided some high quality spawning and rearing habitats. Large wood cover elements have been used somewhat in the project. The project reach is in a stream section of former generally poor habitats and low utilization by salmonids; they were abundant during our visits. There is a yearling pond adjacent to the treatment section. Grade A.

Richardson Creek (11026-\$25,200): This project removed a barrier to salmonids and is functional. Seemed expensive. Grade C.

Salt Creek (11000, 11012-\$18,944): CCC successfully stabilized failing banks. All barrier work is completed and functional. One of the few upslope erosion control projects in the review has controlled the sediment output from the roadway. There is a lot of product here for the money. Grade A.

Surpur Creek (11005-\$3,456): CCC removed barriers at a bargain price. Still functional. Grade A.

Tarup Creek (11004, 11011, 11015, 16, 17-\$77,024): CCC has a plan for the creek and instream treatments done under contract by Inter-Fluv Inc. The work outlined in the plan is now completed, and is of very high quality and design for the most part. The work involved barrier modification, instream structures, revegetation upslope as well in the riparian zone, and some upslope erosion control (one site upslope was quite major, in fact). Tarup, regardless of all these improvements, has a low flow access problem in its delta. Grade B.

Pine Creek (10019, 20-\$0-): Not reviewed.

Various streams (11019-20-\$550,000): This is the CCC operation fund for the Lower Klamath program. This ongoing general fund was not deemed suitable for field review or rating. However, our general observation of the CCC/DFG Lower Klamath program has certainly produced a positive impression of their work and approach.

MIDDLE KLAMATH SUBBASIN:

Beaver Creek (6000-05, 6035, 6053, 6065, 6066-\$124,400): The boulder cluster groups and weirs constructed on Beaver Creek are not well utilized at this time. Silts and sediments have impacted the quality of the gravel associated with the structures to the extent that some cementing has occurred. Therefore, it is believed that utilization by spawners has also been effected. The structures designed for the provision of rearing habitats have done better, and some of course do both, some neither. Grade C.

The rearing facility (6035) was closed in 1985, but there is now talk of re-opening it. 1980-84 releases averaged 29,423 yearling chinook of Iron Gate origin. Grade C.

The gravel seeding occurred in 1985 (6052) and no evaluation was considered possible in 1989, nor was any proffered by staff. The two screens (6065-66) are functional, but require regular upkeep and periodic thorough maintenance. Grade B.

Bluff Creek (6036-\$-0-): This is one of the Klamath system's highest production cooperative rearing facilities. It has averaged 66,462 chinook yearlings for the past three years. These fish are of Iron Gate origin. Although adult runs are up in Bluff Creek, there is little baseline data, and until the current brood no CWT's were done on the ponded fish. Grade B.

Bogus Creek (6046-47, 6053-54, 6061-\$94,750): Bogus Creek is heavily utilized by naturally spawning chinook of Iron Gate Hatchery origin as well as by stocks of its own. The projects designed to provide more and/or better gravels for these fish have met with apparent success, since in almost all cases the projects are used by the spawners, but so is everything else. What that means in real incremental gains that can be credited to particular habitat treatments is therefore difficult to assess. CWT and DSM evaluation programs are ongoing. Grade C.

Camp Creek (6037-\$-0-): This rearing facility switched from Iron Gate chinook stocks to natal stocks in 1987. Yearling releases dropped from an average of 27,533 to 14,573 after the change. This can be attributed to the difficulty in trapping adults in an open, high discharge system. Still, the fact that they are now utilizing later running stocks that are adapted to Camp Creek's flow regime and conditions counts for a great deal. The natal brood have been marked with alternating maxillary clips (right one year, left the next) prior to release and some have been recovered as adults. Grade B+.

China Creek (6008-09-\$9,300): Not reviewed. Report is that the access is good throughout the stream now. No report on the status of the structures.

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Clear Creek (6010, 6068-69-\$66,400): Fish and Game's barrier removal is providing access successfully. Report is that access is good throughout Clear Creek at this time. Grade B.

Coon Creek (6056-\$30,000): This ladder passes steelhead, but DFG is not certain about coho. It also requires some light upkeep. Grade B.

Cottonwood Creek (6049-\$22,966): Gravel placed on these weirs needs to be re-seeded periodically at the cost of \$2,000 each time. Grade D.

(6057-\$6,000): Not reviewed.

(6055-\$5,000): Ladder is on line and working well. Grade B.

(6058-60-\$29,500): These screens are all on line and operational, but require light periodic maintenance which is conducted by the Yreka Screen Shop on a rotating basis. Grade B.

(6070-\$1,200): The potholes blasted to trap gravel have trapped sand instead, so the goal of creating spawning habitat was not met. However, fry usage and survival seem to be good in the resultant pools. Not a high cost project. Grade C.

(Total Cottonwood Creek budget: \$64,666)

Dillon Creek (6071-\$5,000): This functional project opened five miles of good habitat now utilized by steelhead and chinook. Grade A.

Doolittle Creek (6011-\$2,300): The treated log jam has not reformed and access is still good for steelhead. Grade C.

Elk Creek (6012-14-\$41,000): The boulder weirs and clusters are now all installed and need flows for evaluation of performance.

(6034, 6045-\$10,000): The washout pond has averaged 31,205 released Iron Gate chinook yearlings since 1984. Grade B.

(Total Elk Creek budget: \$51,000)

Grider Creek (6015-16, 6038-\$18,500): The falls are now passing fish successfully. Grade A.

The boulder weirs have been successful in trapping spawning gravel and are being used by chinook. Grade A.

The ponds have grown an average of 34,426 Iron Gate chinook yearlings since 1987. Grade B.

Horse Creek (6062-64, 6074-\$35,000): The three screens are installed and operational, but require light maintenance. Yreka Screen Shop provides this on an alternating basis. Grade B.

The log jam is no longer an access problem. Grade A.

(Extant diversion dam is a major problem on this creek)

Humbug Creek (6017-18-\$5,300): The boulder weirs are not successful and are physically failing. Grade F.

The log weirs have worked well and are providing spawning and rearing habitat. Grade A.

In any event, ten miles of good quality habitat are blocked to salmonids by dredge tailings in lower Humbug Creek.

-Review Comments-

Independence Creek (6019-\$5,000): The stream's mouth is still open and fish access it. Grade B.

Indian Creek (6006, 6020-28, 6039-40, 6067, 6072-\$200,600): All modified former barriers are now passing fish. Grade A. The recent instream structures all appear to be performing to design; biological evaluation is underway now. Grade B. The spawning channel is used extensively by steelhead, and to a lesser extent by coho, but not by chinook. It is also a maintenance item (ie. supplemental gravel). Grade D. The rearing ponds have averaged 74,134 Iron Gate yearlings since 1985. Grade B.

Irving Creek (6029-\$9,300): The use of small boulders to construct inadequately sized structures resulted in no net gain from this project. Grade F.

Iron Gate Hatchery (6033-\$-?-): The hatchery is modifying its operations to better cope with problems associated with temperatures, density, and release timing according to the hatchery manager. Grade C.

Badger Flat and Tree of Heaven (6050-51-\$136,000): These spawning channels have both been unsuccessful due to design flaws. They require constant maintenance which is not possible during usage. Gravel seeding is an ongoing project. Grade F.

Little Bogus Creek (6048-\$20,000): These seeded weirs were not reviewed, but they are reported to be intensely utilized by spawners. However, some maintenance is also required.

Pearch Creek (6041-\$-0-): These ponds are operated by the Orleans Rod and Gun Club and have good public involvement and educational value. About 9,000 steelhead of Salmon River origin are reared here. A lot of enthusiasm and local stocks. Grade A.

Red Cap Creek (6042-\$-0-): This rearing pond has averaged 37,862 Iron Gate chinook yearlings since 1985 and is operated in a system that has also had significant habitat improvement projects recently completed. A CWT program would help evaluate both of these aspects of the Red Cap Creek endeavor. Grade B.

Seiad Creek (6030-31, 6073-\$5,100): The barrier project has been successful. Grade A. The weir projects were not found and therefore not reviewed.

Thompson Creek (6032, 6043-\$5,000): The rearing ponds were closed in 1985. The instream structures were not reviewed.

West Branch Creek (6007-\$5,500): The weirs are used by steelhead for spawning, according to local observers; they seem functional. Grade C.

-Review Comments-

Wilson Creek (6007-\$-0-): This private rearing facility was not reviewed. According to locals, it is not in use at this time.

SALMON RIVER:

Black Bear Creek (5000-\$11,000): This USFS project successfully provided access for steelhead into the creek, and it is currently being utilized. Grade A.

Kelly Gulch (5002-03-\$9,500): This project was not reviewed, but USFS staff reported that the barrier was still not passing all fish attempting to access the system. Their evaluation is underway now.

Knownothing Creek (5004-06, 5021-\$153,114): The removal of the diversion dams and other barriers resulted in doubling the chinook and coho runs into the creek. Grade A. The weirs (5006) were not completed at the time of the review. Delays were incurred because the rock was overshot resulting in boulders too small for the structures. Grade F.

Nordheimer Creek (5007, 5008-\$90,000): The log weirs (5007) failed. Grade F. The fishway (5008) is successful and passing fish. Grade A.

Salmon River (5023, 5024-\$8,000): This selective barrier was modified at a very reasonable cost and has improved access for all fish. Grade A.

East Fork Salmon River (5013-\$60,000): This project was not reviewed; USFS is evaluating now.

South Fork Salmon River (5009-12, 5014-15, 5022, 5001-\$176,200): (5009) This natal stock bioenhancement facility was located at a site with poor water temperature conditions for intense fish culture. Broodstock acquisition was also very difficult. The facility is now closed (equipment will be relocated in the watershed, if possible). The project released 36,667 natal chinook smolts in the period from 1985 to 1987. Grade D. The boulder group projects were undergoing evaluation during the review period for biological response. The initial physical evaluation was not conclusive because many of the projects had not been subject to higher flows. Grade C. (5022) The "rough passage" area currently allows fish to pass without undue struggle. Grade B. (5001) The Blind Horse Creek weirs have not all been successful in providing spawning habitat. Many are trapping silt rather than spawning gravel. Rearing habitats are being provided by most of them, however. Grade D.

-Review Comments-

Specimen Creek (5016-\$500): Steelhead now pass the treated log jam barrier. Another jam has formed above this site and requires monitoring and possible modification. Grade B.

St. Claire Creek (5017-20-\$15,000): Steelhead now pass the modified barrier. The log weirs are holding gravel and in use by spawners. Juvenile cover is good associated with the weirs as well as the cover elements used in the project. The boulder weirs and clusters are also in place and in use. Grade A.

SCOTT RIVER:

Scott River and tribs. (4031-4334 [not inclusive]-\$2,715,810): These Soil Conservation District projects primarily involved placing rip-rap armor at 304 different sites in the upper Scott system. Not all were reviewed, and although the rock is stable and in place, many were found to lack streamside vegetation that would provide important shade and cover for the stream and aquatic life. Some others were buried in decomposed granite, sand or silt and therefore had little benefit for fish by way of providing complex micro-habitats. The value of these projects would be much greater if some of these items were addressed. Grade C.

French Creek (4001, 4016-18-\$32,100): The sediment check dam initially filled in one storm event. It was excavated but refilled during the next runoff event. A high maintenance approach that treats the symptoms of the watershed's chronic erosion problem. Grade F.
The screens are all in place and functional, but are dependent upon periodic light upkeep provided by the Yreka Screen Shop. Grade B.

Kelsey Creek (4002-04-\$147,500): The weirs work well and are used by all species for spawning and rearing. Grade A.
The USFS spawning channel has not performed as hoped. Problems have occurred relating to channel liner failure. The average number of pairs using the channel during the period 1985-88 were: nine chinook, three coho, and twelve steelhead. In 1989 no usage was observed. It is also a very costly installation. Grade D-.

Kidder Creek (4020-21-\$26,000): Both screens are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

Patterson Creek (4019-\$9,000): This screen is in place and functional, but is dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

-Review Comments-

Scott River (4005-06, 4012-15-\$94,800): Although the gravels were 'cleaned' the sedimentation problem returned the next year. This treatment does not address the problem, but rather the symptoms and would require constant maintenance. Grade F. The boulder groups were not installed after gauging the rapid sedimentation rate. The four screens are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

East Fork Scott River (4010-11-\$20,000): These two screens are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

Shakleford Creek (4009, 4022-4030 incl., 4323, 4329-\$343,720): (4009) The bank armor was not surveyed, but is reported to be stabilizing the soft banks. The fishery benefits are not known. (4022-30) These nine screens are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B. (4323, 4329) The rip-rap bank armor is in place, but needs vegetation and cover elements added to increase fishery values. Grade C.

Thomkins Creek (4007-08-\$6,500): The weirs are installed but are not highly utilized because of the recruited fine sediments now accumulated on them. Grade D. The fishway has provided access and is currently functional. Grade B.

SHASTA RIVER:

Parks Creek (3018-\$42,000): These four screens are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

Shasta River (3000-04, 3005-08, 3009-17-\$519,000): (3000-04) These weirs have deteriorated over the past few years due to the use of undersized boulders in construction. Only about 10% of the effective structures remain. In 1989 only 32 redds were observed on the weirs. Very expensive (\$363,000) spawning gravel. Grade D. The four fishways (3005-08-\$17,000) are all currently passing fish. Grade B. The nine screens (3009-17-\$139,000) are in place and functional, but are dependent upon periodic maintenance provided by the Yreka Screen Shop. Grade B.

-Review Comments-

UPPER KLAMATH RIVER:

Fall Creek (2000-\$-0-): The Fall Creek hatchery facility is on line and ready to augment Iron Gate's production. The site has very good water quality and can be instrumental in relieving crowding problems at Iron Gate.