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CALIFORNIA TROUT

KEEPER OF THE STREAMS

April 20, 1992

Mr. Donald C. Tuttle, Manager
Environmental Services
Humboldt County Department of Public Works
1106 Second Street
Eureka, CA 95501-0579

RE: DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT ON GRAVEL REMOVAL FROM THE LOWER EEL RIVER

Dear Mr. Tuttle:

California Trout submits the following comments on the Draft EIR on Gravel Removal from the lower Eel River. Additional comments from California Trout's Streamkeeper, Mr. Fred Neighbor, are being submitted in a separate letter, and this letter incorporates those comments by reference.

California Trout is a non-profit, charitable, conservation organization with 4,200 dues-paying members and sixty three affiliated angling clubs statewide. Several hundred of our members reside within twenty-five miles of the project area identified in the DEIR, and these members, in addition to our San Francisco Bay Area members, recreate extensively on the Eel River, both in the project area and in tributaries upstream from the project area.

Since the 1960s California Trout (CalTrout) has worked to protect and restore wild trout, native steelhead, and their waters in California, and to provide high quality angling for the public's enjoyment. CalTrout has been especially active on the Eel river since it galvanized efforts to defeat the proposed Dos Rios Dam in the late 1960s. Most recently, in February 1992, California Trout co-sponsored with the American Fisheries Society and the California Department of Fish and Game a symposium on the environmental threats facing the Eel River.

CalTrout is concerned about the proposed project's possible impact on the integrity of the river channel. The reaches of the Eel and Van Duzen Rivers in the project area serve a variety of purposes that are key to the survival of salmonids in this area. These purposes include providing a migration corridor for salmon and steelhead, holding areas for adult fish returning to spawn upriver, and rearing areas for juvenile fish that may spend up to two years in these reaches before migrating out to the Pacific Ocean.

CalTrout is not categorically opposed to the extraction of

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gravel from riverine areas. CalTrout is opposed to the removal of gravel from streams when such operations place the integrity of the stream channel in jeopardy, and thus pose a threat to salmonids that reside in the stream. It shouldn't need pointing out that California's anadromous salmonids are in the historically most depressed state ever. In the face of the recent closure of the commercial salmon season on the North Coast it would be insanely irresponsible to permit any land use activity that threatens salmon and steelhead populations.

In theory it is possible to extract gravel from a stream and not upset the delicate balance between stream flows and the quantities of bedload that over time have defined the river system that is used by salmonids. This theory is, however, quite general and in need of substantial corroboration by scientifically appropriate empirical data. CalTrout believes the County of Humboldt has not provided such data in the DEIR; in fact it is this organization's opinion, based on discussions with at least two expert fluvial geomorphologists, that there is still no consensus among the experts about an accurate method for assessing the potential to extract gravel instream on a sustained yield basis. 159

CalTrout believes the repeated references to the Dames and Moore report are scientifically inappropriate for the purpose of analyzing the annual recruitment of gravel. The purpose of the Dames and Moore report was to provide a worse case scenario for scouring flows with respect to the placement of a pipeline in the river bed. The Dames and Moore report makes assumptions based on a statistically spurious extrapolation of the 1964 flood event to postulate volumes of water in 100 year events which CalTrout finds extremely unlikely. The overall effect of the DEIR's application of the Dames and Moore data is to exaggerate the Eel River's potential gravel supply rate, and, at the same time, underestimate the effects of instream gravel extraction. 160

CalTrout also finds the putative benefits from instream gravel extraction operations to the Eel River estuary spurious, even misleading. The DEIR fails to substantiate a functional relationship between the gravel extraction operations and the enlargement of the tidal prism. 161

CalTrout suggests that the County has put the cart before the horse in the preparation of this Programmatic DEIR. Modeling (as opposed to the mere reuse of the inappropriate Dames and Moore data) should have been done and included in the DEIR. It would be wrongheaded to programmatically approve permits for instream gravel extraction and expect to amend those permits contingent upon future information. (Not to mention that the monitoring proposed is not extensive enough to be of any value. Cf. Dunne, Thomas & William Dietrich, Neil Humphrey, & Donald Tubbs, "Geologic and Geomorphic Implications for Gravel Supply", in Salmon Spawning Gravel: A Renewable Resource in the Pacific Northwest? Pullman, 1981.) 162 163

In closing California Trout strongly recommends that the

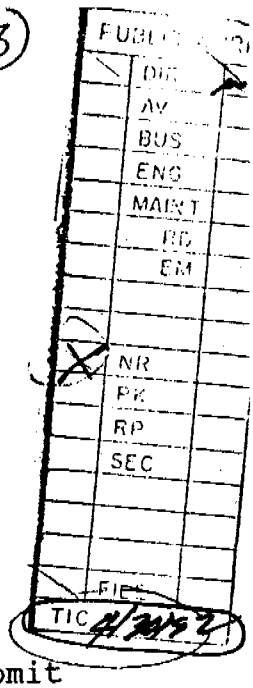
County extend the period of public review of this document, and submit the document to peer review by experts in the fields of fluvial geomorphology, hydrology, fisheries biology, and riparian ecology. California Trout will be glad to help the County in identifying experts in these fields. CalTrout is concerned that not enough talent is being focused on a programmatic document that could make, break or do nothing for the Eel River. The anadromous fisheries of Eel River are simply too valuable a resource to be compromised by land use practices permitted with too little useful information. 164

California Trout thanks the County of Humboldt for this opportunity to submit these comments.

Sincerely,

James Hamilton
Conservation Director

(13)



CALIFORNIA TROUT

KEEPER OF THE STREAMS

April 20, 1992

Mr. Donald Tuttle
Environmental Services Manager
1106 Second Street
Eureka, CA 95501

Re: DEIR for Gravel Removed From the Lower Eel River/Van Duzen River

Dear Don:

California Trout appreciates this opportunity to submit comments regarding the above-referenced project. We know you have personally put great effort into this matter. We commend your effort, given the time constraints, financial constraints and the political climate in which you've had to work.

At the onset, we want to emphasize the importance of the Eel River as an anadromous fishery resource. It was primarily for this value that it was designated a Wild and Scenic River by both the federal government and our state. It hosts the largest run of summer steelhead in California in it's middle fork reach, which for years has precariously hovered at a population between 500-1200 fish. The project section of the Eel River is historically one of the most frequented angling areas for salmon and steelhead in our state. In the late 40's and early 50's, this portion of the Eel River was nationally famous for its fantastic sport angling. In 1980 your own Department deemed the annual value of Eel River King salmon alone to our local economy, in excess of $22 million dollars. Add in the steelhead sport angler's costs, and this figure would go up considerably.

For many reasons, the anadromous salmonid fishery has recently experienced serious declines. We no longer have the luxury or "cushion" of sheer numbers of fish when assessing adverse impacts. It's come to a point when any number of "straws" can break the camel's back. It is with this in mind that we offer our comments.

I. PROJECT DESCRIPTION.

An accurate project description is the "sine qua non of an informative and legally sufficient EIR." (County of Inyo v. City of Los Angeles, 71 C.A. 3d. 185, 193) The DEIR description of the project lists eleven gravel operations as the components of the project and the volumes of extracted material from each site. We question the accuracy of the stated volumes. For site "2", the DEIR lists 200K cubic yards, however, we are aware that the County

165

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has recommended approving extraction of volumes of up to 350K cubic yard for this site. Similarly, we understand that Mr. Hansen, at site "8", has requested a vested right for extraction of 100K cubic yards. We question the validity of the volume for site "4". In light of the fact that this site is being operated without any county or state use or SMARA permits, we have reservations as to the stated amount. 166

Further, the DEIR fails to include Arcata ReadiMix's proposed extraction on Singley Bar for the amount of 150K cubic yards. These projects alone account for additional extraction volumes in excess of 300K cubic yards of the volume stated in the DEIR. 167

The project description and related impact assessments should also account for reasonably foreseeable future phases of proposed projects. (Laurel Heights Improvement Association of San Francisco v. Regents of the University of California., 47 Cal. 3d. 376) As indicated by the recent application by Arcata ReadiMix, which has had to seek new sources of river gravel due to the conditions on the Mad River, it is reasonable to assume that there will be more gravel projects planned for the Eel and Van Duzen River systems. Only four years ago, Eureka Southern applied for a permit to extract 1 million cubic yards of gravel from the Eel River. Most recently the County entertained bids to lease the Worswick Bar for extraction of gravel which required that it be sold and transported out of the County. We feel that the DEIR is deficient in addressing these reasonable developments. 168

The project description is unclear as to the amount of water that the processing operations utilize. In one section the DEIR states such plants will use 200 gallons per hour and at another, 200 gallons per minute. This should be clarified as the discrepancy has significant environmental repercussions. 169

We feel that the DEIR is silent as to what the lifetime of this project is. We realize that the lifetime is linked to the hydraulic dynamics of the river, but essentially, there is no discussion about the time parameters of this project. 170

We also feel that haul routes and associated truck and equipment transportation has the potential to adversely impact access to the river and the recreational benefits of the river. In this regard we feel that the DEIR has inadequately assessed the magnitude of traffic impacts (particularly in the riverine environment). Page 65 of the DEIR estimates 200 trucks per day for site "6" alone. Arcata ReadiMix's proposal estimates 75 trips a day. Thus, from only 2 components of the project, almost 300 trips per day are generated. This amount is substantial and requires further assessment. 171

II. ENVIRONMENTAL SETTING.

Of critical importance to this project is a valid assessment of gravel recruitment in the project area. The project extraction volumes are all based on certain assumptions of what the river will yield. Overestimating the river's potential could result in significant adverse impacts. Further, the Humboldt County General Plan specifically requires that instream gravel extraction be undertaken on a sustained yield basis. While the term "sustained yield" is not further defined by the General Plan, the plain meaning of the term would require extraction volumes equal to what is recruited to the harvest areas. As stated by the Department of Conservation's Division of Mines and Geology..."Given the present state-of-the-science of river gravel management, avoidance of significant impacts can best be attained through a sustained yield approach to aggraded gravel...". (Letter to Don Tuttle, 3-27-92.)

Despite the County's General Plan mandate, the DEIR appears inadequate in addressing the issue of "sustained yield". The DEIR relies on criteria from a Dames and Moore study which was used to assess "scour" potentialities regarding the ARCO gas pipeline. It was never intended that this criteria would serve as a formula for determining bedload supply and gravel replenishment amounts. Nevertheless, this study seems to be the primary substantive basis for the DEIR's description of the river's potential to deliver harvestable gravel to the project area. We feel that your reliance on this report has the potential to result in adverse impacts. Much more definite studies are necessary to establish what is actually happening as far as recruitment of harvestable material. We are particularly concerned that other existing studies are not consistent with the apparent conclusions of the DEIR. While Harvey Kelsey's study of 1977 is cited, its substantive findings are not discussed. Dr. Kelsey concluded that..."Destructive storms such as December 1964 are infrequent events. The peak runoff of 1964 flood has a recurrence interval of approximately 100 years (Helley and La March, 1973) but the slope and channel changes caused by the 1964 storm and flood recur less frequently...Hence it appears that major landslide-triggering and sediment transporting storms on the north coast have a recurrence interval of approximately 200 to 600 years...(p. 335, Landsliding, Channel Changes, Sediment Yield and Land Use in the Van Duzen River Basin, North Coastal California, 1941-1975, Harvey M. Kelsey, 1977). This conclusion, that sediment transport occurs very infrequently, is further reiterated in a study by Robert H. Hawkins, (1982) wherein the author states, "...The result of this study indicate a large portion of geomorphic work in northern California coastal streams is accomplished by relatively infrequent flows." 172

The DEIR needs to assess with much more specificity the potential of infrequent gravel recruitment. Based on the final EIR, and other documentation, the operators will be granted permits entitling them to extract what appears to be definitive amounts of 173

gravel. The economics of the gravel business will make it very difficult for operators, three or four years from now, to substantially cut back in their operations, should the river fail to provide sufficient recruitment. Therefore, the DEIR needs to expand it's technical assessment and discussion of "sustainability". The CEQA Guidelines at 15125 subd.(b), state that if a particular project is inconsistent with a county's general plans, its impacts would normally be considered significant. Because the DEIR does not provide adequate information to support a finding that the component projects are harvesting at a "sustainable" level, the associated impacts must be considered "significant". 174

III. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS.

A DEIR must describe those significant adverse environmental impacts for which either no mitigation or only partial mitigation is feasible. Where the only means of avoiding such impacts would be to impose an alternative design on a proposed project, but the lead agency nevertheless decides not to require such design changes, the DEIR must describe the implicatioans of impacts involved and the agency's reasons for choosing to tolerate them rather than requiring the alternative design. (CEQA Guidelines, Section 15126 subd. (b)).

The DEIR identifies as an effect which cannot be avoided "...the potential for long term lowering of the bed of the river...". While the DEIR only assesses this effect in terms of man-made structures, there is documentation which substantiates that bed degradation can impact the water quality and fisheries of a river. 175

The DEIR fails to discuss any meaningful mitigation for bed degradation and/or the County's reasons for choosing to tolerate "bed degradation" rather than requiring an alternative design. This failure of the DEIR, again stems from the failure of an adequate assessment of whether the proposed extraction volumes are in harmony with recruitment rates. 176

In essence, what the County is implicating, is that current information is either non-existent or inadequate to assess the impacts of the project and that further (after approval) studies are necessary. The deferral of environmental assessment until after project approval violates CEQA's policy that impacts must be identified before project momentum reduces or eliminates the agency's flexibility to subsequently change its course of action. (Sundstrom v. County of Mendocino, 202 Cal. App. 3d. 296) Given the precarious condition of the Eel River anadromous fishery, it would seem prudent that all potential adverse impacts should be assessed now. 177

IV. FISHERY HABITAT AND THE FISHERY OF THE EEL RIVER.

The Heritage Conservation and Recreation Service, in its 1980 evaluation report on the eligibility of five California rivers, commented that..."the Eel River is an outstandingly remarkable anadromous fishery...The main Eel is especially important for providing the migration route to the middle fork of the Eel for the largest spring-run of steelhead in California." (P. II-27) "...The Eel River estuary and adjacent lands are especially noted to be excellent wildlife habitat...". (P. II-28)

It was primarily for its value as an anadromous fishery that the Eel River was included in both the state and federal Wild and Scenic River Systems. However, since its inclusion, the anadromous runs have precipitously declined. The AFS report of 1991 (Nehlsen, et. al.) lists all species of anadromous salmonids of the Eel as "stocks of concern", with the Van Duzen and the North Fork Eel summer run steelhead listed at a "high risk of extinction". Given these conditions, and the unique status of the Eel and Van Duzen Rivers (Wild and Scenic designation) we feel that potential adverse impacts to the fishery must be thoroughly assessed. We do not feel the DEIR has presented a thorough assessment. | 178

The DEIR states that Chinook runs are estimated at 103,000 fish and Coho at 42,000. Are these figures historical estimates? What is the current estimate of these fish populations? | 179

The U.S. Forest Service has deemed the summer run Middle Fork Eel steelhead as a "species of concern". The California Department of Fish and Game has enacted special regulations to protect these fish. The DEIR devotes all of one sentence to this critical stock. | 180

I know from personal experience and discussion with other anglers, that summer steelhead are caught in the area between the mouth of the Van Duzen and 12th Street hole, as late as July. Thus, these fish are moving though the project site during the period of peak operation. What potential impacts are there in this regard? | 181

We feel that the DEIR's statement that the lower Eel is of "little significance for spawning..." (P. 29) is without substantiation. Where is the authority for this conclusion? Despite current fishery conditions, did the lower Eel historically provide spawning habitat? This question needs to be assessed as it is the policy of our state to enhance all our anadromous fisheries. Also, the project area includes two projects, #10 and #11, which by California statute are deemed to exist in a "spawning area". (Fish and Game Code Section 1505 includes those areas above Yager Creek on the Van Duzen River as salmon spawning areas.) Thus, the DEIR's conclusions are erroneous with respect to these areas. | 182 | 183

Recent field assessments on the Smith River indicate that spawning takes place in the main Smith River below Dr. Fine Bridge and down to the mouth of Rowdy Creek (Pers. Com. with Dr. Bill Trush and Dr. Terry Roelofs). For a long time the general consensus was that the lower Smith was also nothing but a "migratory route". But these recent findings challenge this assumption. More evidence is necessary to document the DEIR's conclusion that no significant spawning occurs in the lower Eel River. 18'

We also have serious reservations regarding the DEIR's treatment of downstream smolts and their utilization of the river in the project area. Studies contradict the DEIR's conclusion that smolts, like adults, only utilize the project area as a migration route. Steelhead have been found throughout the summer in the riverine habitat at the top of the tide water on the Eel (Puckett, 1977). Murphy and DeWitt (1951) found that steelhead remained in residence in pools and riffles below the Van Duzen. Chinook showed a peak in abundance in the riverine subsystem in June and July (Puckett, 1977) during outmigration. Murphy and DeWitt (1951) describe schools of 50-100 chinook feeding in Singley and Dungan pools throughout the summer.

This information would indicate that the project area may serve as an important component in smolt rearing. It may therefore be important to provide suitable habitat and food sources in these areas. The DEIR fails to assess this matter. Particularly in light of recent extraction by trenching and the future prospect of "pitting", an accurate assessment of smolt utilization of this project area is critical. 18.

It is our understanding that squawfish have been found as low as tidewater in the Eel River. Thus, it's very likely they would utilize the project area in suitable habitat areas. We are concerned that trenching or pitting extraction would result in creating still/warm water habitat which is preferred by the squawfish and remove riffles and runs. We think this potential impact needs more assessment. 18(

V. WILD AND SCENIC RIVER STATUS.

In 1980, the Eel River was included in the Federal Wild and Scenic Rivers System. At the time of inclusion it was mandated that "the values which cause the river to be qualified for the National System must be assured of permanent protection and management by or pursuant to the state statute...the state must adopt a program of action which will provide permanent protection for the natural and cultural qualities of the river...". (DEIS for Inclusion of Five Northcoast Rivers, U.S. Dept. of Interior, 1980). Specifically, the state statute requires that..."no department or agency of the state shall assist or cooperate, whether by loan, grant, license or otherwise with any department or agency of the

federal, state or local government, in the planning or construction of any dam, reservoir, diversion, or other water impoundment facility that could have an adverse effect on the free-flowing condition and natural character of the river segments designated in 5093.54 as included in the system." (Public Resources Code Section 5093.56)

It is clear from the project description and the various extraction methods used by the gravel operators, that trenching, pitting and even skimming result in a man-made diversion and to some extent impoundment of the river. Certainly these operations alter the free flowing and natural character of the Eel River. 187

Particularly in permitting trenching and pitting, we feel the County, as a state agency, is violating the provisions of the Wild and Scenic Rivers statutes. 188

Clearly, trenches over 1,000 feet long, to which the river flow is intentionally diverted constitutes a man-made diversion. The active/natural river channel is left high and dry. The flora and fauna of the active channel die off and the river is funneled through a sterile trench. This activity seems to strike at the heart of Wild and Scenic River law and policy. The DEIR fails to assess in a meaningful way this issue. It can be argued that the mere preparation of the DEIR which contemplates the permitting of trenching and river diversion is illegal under Wild and Scenic River law. 189

In this same vein, the State Constitution grants the public a constitutional right to fish in all the waters of the state and a corresponding right of access over state lands to get to the water (State v. San Luis Obispo Sportsman Ass'n., 22 Cal. 3d. 440). California Trout has long been an advocate of the public's right to fish. We feel that under various scenarios, in which all the component operations of the project were operating at full capacity and utilizing trenching and/or pitting operations, that such operations in themselves would impede the public's implied right of access to the river. The public has a right to fish the natural river. By diverting the river into trenches and/or pits, this right is significantly impaired. The DEIR needs to assess this. 190

Thank you for your consideration in reviewing these comments.

Sincerely,

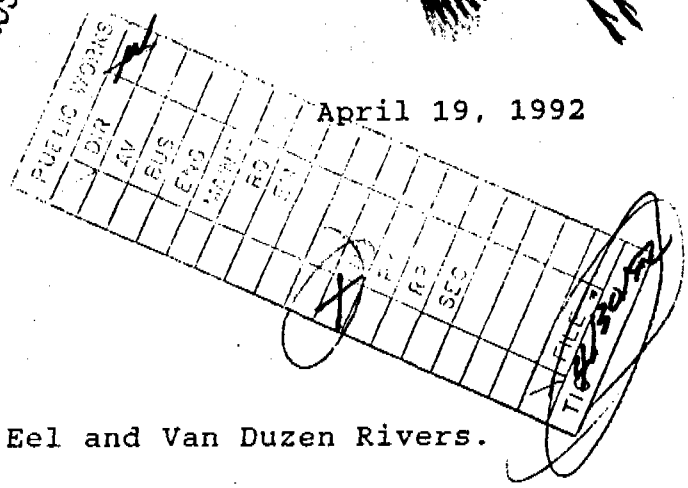
Fred Neighbor

Fred Neighbor
California Trout

(14)

REDWOOD REGION AUDUBON SOCIETY

P.O. BOX 1054, EUREKA, CALIFORNIA 95502



April 19, 1992

Mr. Don Tuttle
Natural Resources Division
Humboldt County Public Works Department
1106 Second Street
Eureka, CA 95501

RE: DRAFT EIR, Gravel Removal from the Eel and Van Duzen Rivers.

Dear Mr. Tuttle,

Thank you for providing the RRAS with copies of the program DEIR for Commercial Gravel Removal Operations on the Lower Eel River. We are cognizant and appreciative of the amount of work that went into this project, and the information that was assembled, given the imposed constraints of time and money. Our remarks are loosely organized under the following topics: 1. Adequacy of scope; 2. Data analyses, Inconsistencies & Assumptions; 3. Mitigation Measures; 4. Alternative Projects; 5. Signficant & Nonsignificant Impacts.

1. ADEQUACY OF SCOPE

One of the primary purposes of a Program EIR as contrasted with an individual project EIR is supposed to be its ability to concentrate on a project's "long-term cumulative impacts." Towards this end it should try to avoid minimizing the cumulative impacts and minimizing the number and intensity of projects likely to occur under its purview. This DEIR significantly understates the potential amount of gravel mining on the Eel River in the near future. | 19

First, it fails to include a major project currently being considered for approval by the Planning Department (Arcata ReadiMix) for an estimated 150,000 cubic yards annually. Secondly, the high bid for the lease at the County's Worswick Lease site that was proposed for acceptance on 11/22/91 was for 325,500 cubic yards, not 200,000. Two hundred thousand cubic yards was the advertised minimum bid acceptable, a maximum amount was not specified. In the not too distant past, the County has contemplated even greater extraction amounts than 325,000 cubic at this particular site, and even now reserves the right in their bid contracts to mine quantities in addition to whatever figure the lessee removes. | 19

Some additional small discrepancies have been noted which in combination with others that have undoubtedly been overlooked may add up to significant amounts. For example, Charlie Hansen is requestin a vested right determination for an annual 100,000 cubic yards rather than the 75,000 cubic yards indicated on page 15 of the DEIR, and Pacific Lumber is requesting an exemption from SMARA and a County Use Permit for extraction of an unspecified amount of gravel from sites on the Eel near Scotia.

2. DATA ANALYSES, INCONSISTENCIES & ASSUMPTIONS

On page i. of the summary it is stated that "If all seven of the gravel processing plants were operating at once, this would require 0.052 cfs, which is equal to about 0.05% of the low summer flow occurring in this particular stretch of the Eel River." while on page 10 it is stated that "The water demand can reach 200 gallons per minute which equals 0.4456 cubic feet per second. ...this would equal 3.12 cubic feet per second which represents about three percent of the low summer flow volume in that portion of the Eel. River. In addition to the sizeable discrepancy in numbers, the important topic of potential effects of the water withdrawals on the fisheries is not addressed at all, either with original collected data or citeable references.

page ii. There are no assessments of how many years extraction can occur at the projected levels of 1,220.000, or the more realistic projections of 1,500.000 to 2.000.000, at current conditions before the integrity of the bridge piers would be endangered. This is a serious omission, as it would be an important safeguard and ingredient in determining the extent and duration of any County issued extraction permits or contracts. To admit that the problem is foreseeable, yet suggest that the only feasible or best mitigation measure is to study and monitor it further, is inadequate.

page ii. The potential impacts on fishery habitat from skimming operations is seriously understated. Continued skimming operations are likely to have a significant effect on channel morphology and flow depth. And although it may not have a direct impact on that particular season's low flow channel, it is highly likely to be affecting the low flow channels of subsequent years. I would think that potential effects of this nature had been reasonably well documented in Collins, Brian and Dunne (1990) and elsewhere

The possibility that deeper pools, and enhanced habitat in the gravel operating areas would or would not improve the overall fisheries of the Eel is a topic that is unfortunately given scant treatment in this DEIR, although at several points it is noted that the Calif. Dept. of Fish & Game think that it might have an enhancing effect. Is there no extant data which weigh the probabilities in one direction more so than another in your estimation?

Is there a possibility that the channel through this stretch of the river would be more highly used if in fact it were better habita and what contribution are or could the gravel operations be making to either degrade or enhance this possibility? Throughout this DEIR,

this important question (given project objective #5) is avoided. Perhaps the data bearing directly on the question is poor and sketchy, but then its deficiencies should at least have been addressed and remedial suggestions for data collection bearing directly on habitat values noted. Addressing the question directly, and with supporting data would appear to me to be essential. For example, the DEIR proposes no informed guesses or estimates of whether gravel extraction by trenches will enhance or impact fishery habitat, suggesting that until a significant storm comes along it will be impossible to say even if gravel recruitment occurs or not. Sadly, unless a proposal for measuring impact on habitat values independent of simple gravel recruitment is proposed in this EIR and subsequently used, it will prove to be impossible to estimate impact values on habitat even after the expected significant storm and large flow event. Gravel recruitment figures are not a simple one-on-one correlate for habitat value, but throughout this report they seem to be treated as if they are.

In addition, data from sources not cited in the DEIR indicate that the habitat value of this section of the Eel River was not always simply a passageway to somewhere else for anadromous fish. Higgins (1991) indicates that Murphy and DeWitt (1951) described schools of 50-100 juvenile Chinook feeding in Singley pool throughout the summer. Steelhead were reported as resident throughout the summer in the stretch between the estuary and the mouth of the Van Duzen. By 1977, however, schooling and feeding yearling Chinook were no longer reported to be using these pools after downstream migration in early summer. And early outmigration of salmon juveniles is known to have a very substantial and deleterious effect on anadromous fish survival in the ocean.

Higgins also reports that Eulachon may have used the lower reaches of the Eel river for spawning when clean pea gravel substrates were more extensive or abundant in the area. Is there no possible or potential linkages between gravel extraction in the lower reaches of the Eel and the presence of clean pea gravel substrates in the lower reaches of the Eel River for Eulachon? Impacts on possible, potential, or historical sturgeon spawning are also totally ignored in this DEIR.

Inconsistency ---- pg. iii. "Each year ....various types of annual plants grow sporadically on the gravel bars. There are about 2,700 acres of dry gravel bar with this type of vegetation between the mouth of the Van Duzen and mouth of the Eel River. Seven out of the nine operations on the Lower Eel River could conceivably disturb up to 105 acres of this type of vegetational community. This represents about 4% of the existing."

First we believe that the characterization of this habitat as merely places where annual plants grow sporadically is to misunderstand the dynamics of succession and natural changes in the morphology of rivers. Second the figures do not square with the facts. For example, on page 27 of the DEIR it is indicated that some 200 acres are likely to be disturbed in a skimming operation in a single year by just one of the proposed operations (Worswick Bar). By itself this is double the acreage figure quoted above.

Semantics --- At times this DEIR seems to be bending over backwards to avoid describing and labeling a significant impact in a neutral and easily understandable fashion. A good example occurs in the summary (iii). In that section, noise levels generated by gravel operating plants are described as "not enhanc(ing) the riparian area adjacent to them ...". The issue of enhancement is clearly not appropriate in this context, the issue of a significant negative impacts are. 20.

Overall gross gravel recruitment seems to have been placed in a pronounced central position in this DEIR. Although it is an issue of importance, it's central position may be somewhat overemphasized, because at best it only defines the parameter of absolute maximum amounts available for extraction. It says nothing about where gravel and sand could best be taken out of the riverbed, nothing about the best or least damaging and disturbing methods of extraction, and certainly relates only in the most minimal and indirect way with specific effects on habitat values, groundwater discharge, flood damage control, agricultural soil replenishment, etc..... Yet despite its spotlighted and elevated status in this DEIR, the topic of overall gravel recruitment seems to have eluded both satisfactory analysis or qualified even tentative conclusions. 2(

The Dames & Moore model is described in considerable detail. Its relevance, given a very unusual set of assumptions, is not all that clear except to indicate that bedload transport of gravel in sufficient quantities to result in aggradation does not ordinarily occur at significant levels except when very large storm events occur (the 80 to 100 year storm event). This *in*appropriate model, developed to estimate maximum scour, seems to be being used in this DEIR to suggest that great quantities of gravel may still be available for extraction. The facts seem to belie that possibility. Actual measurements at points that have been monitored, e.g. at the bridges appear to show minor degradation of the river, i.e. more gravel either transported past or excavated than has deposited over the last 50 years despite the occurrence of the unusual storm events of 1964, 1972 and 1974. The discussion of this matter in the DEIR could be clearer, and the actual cross section data taken at Fernbridge should have been provided for the reader to be able to assess the situation first hand. But it remains unclear to me what exactly the description of Dames & More model has added of relevance to the discussion of whether the proposed gravel mining program will result in aggradation or degradation of the Eel River, and whether that will mean an enhancement or impairment of environmental values. 2(2(

In contrast, the best estimate of annual average bedload described in this DEIR are far lower than the projected excavation levels of 1.25 million cubic yards and even further below the more realistic projection of 1.5 million cubic yards. The estimate of approximately 234,400 cubic yards of annual bedload derived from Appendix #1 of the cited 1970 USDA publication is some 20% of the projected extraction levels. And the annual bedload estimate of 1,994,241 cubic yards on page 27 of the DEIR which is very much large seems to be based on a simple arithmetic error. The multiplication is 2(

faulty. One percent of 19,942,412 cubic yards equals 199,424 cubic yards of annual bedload transport.

In sum, the sounder estimates of bedload sediment indicate that continuing gravel extractions anywhere near the scale contemplated in this DEIR is unsustainable, and may result in potentially serious damage and degradation in the not too distant future. Indeed the DEIR seems to admit as much on page 78. Consequently, the prudent approach would seem to be to both limit the amount extracted and establish a comprehensive monitoring and analytic program. Only if the results of a monitoring plan indicate unambiguously that gravel replenishment was occurring at greater rates than extraction should amounts greater than the historic averages, not the historic maximums, be permitted. At least that would be the conclusions I would draw from the existing, but admittedly, inconclusive data presented in the DEIR.

3. MITIGATION MEASURES.

Monitoring is not mitigation. It is clear that a monitoring program is required for this gravel extraction program. But discovering that a problem is greater or smaller than was believed, does nothing to rectify or prevent the problem either in the first place or after it is discovered. Mitigation measures should at least specify the steps that will be taken after the problems become more apparent, if the assessment is made that they are not at that stage already. If that is not done, the major purpose of an EIR would be nullified. For example, if monitoring should discover that gravel replenishment to Worswick Bar was insufficient to replenish the amount extracted in the first year a meaningful mitigation measure would be that the contract would automatically be cancelled. A provision could then be written into the contract at a time when it would be binding and the lessee would be forewarned. The same would hold for designing conditions of project approval for other gravel operations. Mitigation measures of this type would make monitoring meaningful rather than simply an exercise in data and salary collection. Realistically, as proposed in this DEIR, that is all your mitigation-monitoring measures amount to. 208

For some acknowledged significant impacts no mitigation measures appear to have been proposed. For example, pg. iv. ....it was determined that long-term (130-years) cumulative impacts on riparian vegetation along the eastern side of the Eel River from Fernbridge to the mouth of the Van Duzen river is significant. Of interest, the amount of riparian vegetation remaining along the west side of the river in 1991 is greater than that which existed in 1940." No mitigation measures are proposed to deal with the cumulative impacts of lost riparian habitat on the eastern side of the river. Considering that one of the most recent losses of significant riparian habitat appears to have occurred on the County's property which it proposes to lease for gravel extraction it is difficult to see why more positive mitigation measures for riparian losses are not proposed in this DEIR. Presumably even small measures might mitigate for small losses and relieve the obviously large cumulative effects somewhat. 209

Nor is it clear why no significant mitigation measures have been proposed for the significant impacts on recreational use as the result of increased noise levels, changing aesthetics of the river bed, and decrease in the accessibility to some parts of the river channel etc. The assumption that putting standard mufflers on the trucks and extraction equipment would reduce the noise impacts to insignificance is unsupported by any data including data that would indicate that the trucks are currently operating without mufflers. If your observations lead you to believe that they are operating without mufflers, perhaps the imposition of significant fines or loss of operating permits would actually have a significant effect on the noise level and might qualify as a mitigation measure if formulated in an enforceable manner. 21

The issue of safety impacts on fisherman and recreational boaters by trenching, extraction equipment and trucks, summer bridges etc. seems to have been given at best only superficial attention. Responsibility seems to have been relegated to other agencies.

4. ALTERNATIVE PROJECTS

The list of project alternatives seems to be particularly skimpy in this DEIR. Proposed are regulating overall amounts of gravel extracted based on unspecified and undescribed analyses of annual monitoring of gravel recruitment. This hardly seems to qualify as an alternative to the proposed project. Perhaps it is better characterized as a minimal monitoring arrangement required under AB 3180,if the project as proposed could be approved. It would seem to be that a non-monitoring alternative might be illegal if it were true as stated in the DEIR that bridge structures could be affected by excessive gravel extraction. Moreover, as the County General Plan requires that "extraction of instream sand and gravel is not to exceed the average annual replenishment level (annual bedload)" [Section 2553(9)] it would seem that a monitoring plan ought to have been legally required, and in place since at least 1985. To claim that monitoring would be either a mitigation measure or a project alternative is stretching these CEQA concepts beyond permissible bounds. 21

Decreasing allowable amounts of gravel extraction volumes without monitoring, seems to be the chief alternative presented in the DEIR. It would appear that unless the overall reduction in quantities extracted would be very drastic, a possibility not discussed in this DEIR, proceeding even with a reduced overall extraction quantity, without monitoring, is likely to be illegal so its feasibility is nil. Moreover given the status of enforcement and current lack of monitoring on the river, it is probably not realistic to expect that a reduced quantity policy could be effectively implemented without a monitoring program. 21

Since one of primary advantages of a Program EIR is supposed to be the opportunity it provides for a more exhaustive consideration of alternatives than would be practical in an individual project EIR, th short list of constrained alternatives is disappointing in another sense. At least one of the alternatives should have explored a