

**COUNTY OF HUMBOLDT EXTRACTION REVIEW TEAM (CHERT)
2008 POST-EXTRACTION REPORT**

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Prepared by:

Randy Klein, Doug Jager, Andre Lehre, Bill Trush

County of Humboldt Extraction Review Team (CHERT)

For the

Humboldt County Board of Supervisors

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No comments were received on the Discussion Draft.
This version represents the Final 2008 CHERT Post-extraction Report.**

INTRODUCTION

This report presents an overview of the Humboldt County 2008 gravel extraction season, providing information on mining volumes, methods, and success of mine operators in meeting approved plans. The County of Humboldt Extraction Review Team (CHERT) provided site-specific recommendations on extraction designs submitted by the operators and their consultants, as did agencies with regulatory and oversight responsibilities (US Army Corps of Engineers (COE), National Marine Fisheries Service (NMFS), California Department of Fish and Game(CDFG)). Recommendations were based on field reviews at each site along with reviews of aerial photos and topographic and hydrologic information provided by the operators as required by the US Army Corps of Engineers 2004 Letter of Permission (LOP), and individual permits obtained by several operators. The LOP 2004 expired in December, 2008. A new LOP (2009) is currently being prepared.

For background, The Humboldt County Board of Supervisors appointed CHERT in 1992 to provide scientific oversight to Mad River gravel extraction, which had arrived at an impasse over environmental concerns. In 1996 the CHERT role was expanded to include most riverine extraction sites in Humboldt County. Additional details on CHERT's role have been presented in earlier post-extraction reports (accessible at <http://co.humboldt.ca.us/planning/smara/default.asp?inc=slm>).

The annual review process consists of visiting sites in the spring with operators and agency staff to observe post-winter conditions, note undesirable effects from the previous season's extraction (if any), and discuss a possible mining plan for the current season. Later, operators submit air photos, topographic and hydrologic information, and a mining proposal, which is typically followed by a second field review. Then, CHERT issues a written recommendation, which may or may not include suggested changes to reflect either CHERT's or an agency's concerns. When all parties accept an iteration of the mining plan, it is approved by the Corps and mining can begin, providing all other agency permits have been obtained. In rare occasions, a field review may be done while mining is taking place due to unexpected circumstances that require an alteration in an approved plan. Post-extraction field reviews are conducted after mining is completed in late summer or fall, Each operator then compiles a post extraction data set, including pre and post-extraction topographic data, volume calculations, aerial photographs and other pertinent data. This data is submitted to CHERT, CDFG, COE, and NMFS.

CHERT bases recommendations on two areas of concern: 1) minimizing cumulative effects by ensuring that reach-scale mining volumes do not exceed that which is sustainable, and 2) ensuring that site-specific methods of extraction (skimming, trenching, etc.) are appropriate for protecting local habitat. The concept of 'sustained yield' gravel extraction requires that gravel extraction volumes not exceed mean annual recruitment (an estimate of the long-term average annual supply of gravel to a specific reach of a river). Site-specific measures are also recommended by CHERT to reduce both cumulative and localized potential effects of mining on riparian and aquatic habitat. These may include, for example, ensuring that skim floor elevations are high enough to maintain low flow channel confinement so that small rises in river stage do not inundate skim surface too readily.

Through time, experience on the rivers, and interaction with regulatory agencies, mine operators, and other stakeholders, the measures taken to protect river habitat and to improve program functioning are continually refined. This feedback process, termed 'adaptive management', is essential to help ensure that gravel mining and management improves with respect to resource protection, the quality of information provided by mine operators, and program efficiency. Problems can occasionally arise, however, when either the river's response to previous mining results in undesirable conditions, or an operator deviated from an approved mining plan. This post-extraction report summarizes information on the 2008 mining season and describes any specific problems encountered and possible solutions.

CHERT Activities in 2008-2009

In addition to routine activities (mining site reviews, extraction recommendations, annual post-extraction report preparation), CHERT has performed several non-routine projects over the past year, and will complete several others within the next few months. This work was or will be completed with the assistance of the gravel operators (or their representatives), who provide data on their operations, and consultants on projects as needed. They are:

- Completed a draft update of the Programmatic Environmental Impact Report (PEIR) on Gravel Mining in the Mad River (public review period ends March 6, 2009),
- Will assist with preparation of final PEIR on Gravel Mining in the Mad River,
- Completed updated analysis of Mad River gravel mining cross sections,
- Completed assessment of Mad River riparian habitat trends and conditions,
- Completed assessment of Mad River aquatic habitat trends and conditions,
- Completed first analysis of Eel River gravel mining cross sections,
- Will prepare assessment of Eel River riparian habitat trends and conditions,

These work products are intended to provide information for both the regulatory agencies and the public to use in evaluating gravel mining effects on Humboldt County rivers. As reports are completed, they can be found at and downloaded from the Humboldt County Community Development Service's website:

<http://co.humboldt.ca.us/planning/smara/default.asp?inc=slm>

The Mad River has historically (since 1992) been the primary focus for quantitative analyses of gravel mining effects using cross sections provided by gravel operators. Assessments of Mad River physical channel conditions, riparian vegetation, and fish habitat listed above were performed to support both the PEIR update and biological assessments required for renewal of federal and state permits.

Although Eel River cross section data (covering mining reaches in the Lower Eel and Van Duzen rivers, the Middle Reach Eel above Scotia, and the South Fork Eel) have accumulated since about 1997 and have been used in the annual mining review process, a quantitative, longer-term analysis of them had not taken place until early 2009. As part of the pending renewal of federal and state permits, this longer-term analysis of cross sections was deemed necessary to support impact evaluation and protection/mitigation strategies. The Eel River cross section report, along with the riparian and aquatic habitat assessments soon to be completed, also provides the essential foundation for updating environmental documentation for Eel River gravel mining.

Humboldt County Instream Mine Sites and Extraction Terminology

Table 1 describes the geographic breakdown of Humboldt County mining reaches used in this report. CHERT classifies extraction techniques into the twelve descriptive categories in Table 2.

Table 1 - Description of river reaches used to sort and report extraction data.

Approximate Length (miles)	River Reaches
7	Mad River: The Mad River Reach extends approximately seven miles downstream from the Blue Lake Fish Hatchery to just below the Highway 299 Bridge near Arcata.
6	Lower Eel River: The Lower Eel River Reach extends approximately six miles downstream from the mouth of the Van Duzen River to near Fernbridge.
5	Lower Van Duzen River: The Lower Van Duzen River Reach extends upstream approximately five miles from the mouth of the Van Duzen River.
26	Middle Reach of Eel River: The Middle Reach of the Eel River extends upstream from Scotia (River mile 20) for approximately 26 miles to River Mile 46.
17	South Fork Eel River: The South Fork Reach extends from Garberville (River mile 33) upstream to Cooks Valley near the Mendocino County line (River mile 50).
15	Trinity River Reach: The Trinity River Reach extends downstream about 15 miles from near Willow Creek into the Hoopa Valley.
	Isolated Sites: Five extraction sites are more or less isolated from the rest of project. These are the <i>Satterlee Bar</i> on the main stem of the Eel river at Fort Seward, the <i>PL Bar</i> on the Van Duzen River, the <i>Branstetter Bar</i> on Bear River, the <i>Charles Bar</i> on Larabee Creek, and the <i>Cook Bar</i> on the North Fork of the Mattole River.

Table 2. - CHERT extraction methodology terminology and descriptions.

Narrow Shoreline Skim	A skim where one edge is close to the low flow channel at or above the 35 % flow elevation with a width no greater than 1/3 that of the unvegetated bar surface.
Wide Shoreline Skim	Same as above but with a width greater than 1/3 that of the unvegetated bar surface.
Narrow Offset Skim	A skim that has a substantial vertical or horizontal offset from the low flow channel and a width no greater than 1/3 that of the unvegetated bar surface.
Wide Offset Skim	Same as above, but has a width greater than 1/3 that of the unvegetated bar surface. Sometimes referred to as a 'horseshoe' skim in the past.
Dry Trench	A relatively long, linear shallow skim that does not intercept the water table at the time of excavation.
Overflow Channel Skim	Same as above, but one that is located within a high flow overflow channel
Wet Trench	A trench that is deep enough to intercept the water table at the time of excavation
Wetland Pit	A strategically located and designed pit simulating a remnant channel feature, such as an oxbow pond; sometimes provided with a small outlet channel.
Deep Alcove	A relatively deep excavation designed to simulate naturally occurring shoreline pools that can provide deep cool water during summer months and/or winter high velocity refuge.
Shallow Alcove	A relatively shallow excavation designed to simulate naturally occurring shoreline pools that can provide winter high velocity refuge
Fish Access Channel	A trench designed to temporarily improve fish access.
Terrace Pit	A pit excavated on a low terrace to a depth above groundwater level with an outlet provided to allow water to freely enter and exit the pit with changes in river stage.

2008 EXTRACTION SUMMARIES

River Reach Extraction Volumes

In 2008, CHERT reviewed 35 extraction areas (some multiple times) distributed among 17 mining sites in Humboldt County (many sites had more than one extraction area). As shown in Table 3, the total volume of gravel approved for extraction in 2008 was 659,022 cubic yards (cy). The total volume actually extracted was 511,440 cy, or about 78% of that approved for extraction.

Table 3. – Humboldt County 2008 gravel extraction summary by river reach.

River Reach	No. of mined areas	No. of mined sites	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Lower Mad River	8	14	142,043	130,613	92%
Lower Eel River	2	6	237,955	192,379	81%
Middle Eel River	0	0	0	0	n/a
Van Duzen River	3	9	209,176	137,850	66%
South Fork Eel River ¹	2	3	32,358	24,833	77%
Trinity River	1	2	12,490	11,701	94%
Isolated Sites	1	1	25,000	14,064	56%
Humboldt County Total =	17	35	659,022	511,440	78%

¹ the South Fork Eel River total includes some volume from Mendocino County (see Table 8)

Tables 4-10 list site-specific extraction information for each designated river reach. Table 11 lists the approved and actual extraction surface areas, in acres, at all extraction areas for 2008. The acreage of extraction provides an easily derived indicator of instream mining impacts. In most cases, the operators provide the surface area (acreage). Occasionally CHERT will calculate the information from operator provided data. Appendix A provides historical gravel extraction volumes from the beginning of the CHERT program in 1992 (Mad River) and the expansion in 1997 (Eel River and isolated sites added).

Performance Issues

To evaluate operator performance and compliance, CHERT conducts field reviews in the fall after completion of operations and reviews post-extraction documentation (cross sections, air photos, and other materials) to ensure approved mining plan design specifications were met. By and large, operator performance in conducting their 2008 operations consistent with approved mining plans was very successful. There were only two sites where operations in 2008 deviated substantially from approved plans and/or regulatory conditions. These are described below. At all other sites, implementation in 2008 met all requirements.

Christie Bar (Eureka Ready Mix, operator): Temporary crossings (including bridges and culverts) are often needed to access gravel mining areas, and operators must meet agency specifications for installation and removal. The California Department of Fish and Game (CDFG) Streambed Alteration Agreement (SAA) requires that at least two feet of clearance between the bridge bottom and the water surface at the time of installation be maintained. A flatcar bridge crossing was installed late in the extraction season at the Christie Bar site (Mad River) in 2008. The left abutment became undermined by scour and sloughed into the channel soon after installation, causing the clearance to be reduced to about one foot according to CDFG observations. The

issue was corrected soon after the operator was notified, and after completion of extraction, the area was graded to pre-bridge configuration. CDFG specified several conditions to prevent this occurrence in the future. CHERT notes that this operator has shown great care and expertise in meeting all permit conditions in the past.

Bess Site (Tom Bess, operator): Two trenches were excavated at this site in 2008. Post-extraction cross sections showed that the top width of both trenches exceeded approved horizontal widths by up to about 50 feet, although widths at depth were within approved limits.

This deviation from the plan occurred, after a post extraction site visit, at the suggestion of CHERT member Doug Jager. For safety reasons, CHERT always recommends that portions of steep trench walls be collapsed into the trench to provide shallow areas along the shoreline to aid egress from the trench. CHERT conducted a second post extraction site visit after the work was completed.

This activity was recorded by the monitoring and extraction cross sections. The collapsed trench walls were located away from the low flow live channel on unvegetated portions of the gravel bar; no significant resource damage occurred. In the future, CHERT will specify that this activity be incorporated in the original plan when trenches are proposed.

Table 4. Lower Mad River extractions, 2008.

Operator	Bar	Site	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
Eureka Ready Mix	O'Neill Bar	1	wide shoreline skim	6,579	6,748	103
Miller Family Trust	Miller Bar	2	wide shoreline skim	1,226	1,343	110
Miller Family Trust	Miller Bar ¹	1	wide shoreline skim	2,604	2,595	100
Eureka Ready Mix	Johnson-Spini Bar	1	wide shoreline skim	28,449	26,590	93
Mercer Fraser Co.	Essex Bar	1	wide shoreline skim	3,325	2,609	78
Granite Construction Co.	Johnson Bar ¹	1	alcove	5,300	5,813	110
Eureka Ready Mix	Christie Bar	3	alcove	5,673	5,873	104
Eureka Ready Mix	Christie Bar	4	wetland pit	12,683	11,919	94
Eureka Ready Mix	Christie Bar	2	narrow shoreline skim	4,842	3,862	80
Eureka Ready Mix	Christie Bar	1	wide shoreline skim	9,695	9,822	101
Granite Construction Co.	Blue Lake Bar		no extraction	0	0	n/a
Granite Construction Co.	Emmerson Bar	2	alcove	17,720	11,277	64
Granite Construction Co.	Emmerson Bar	1	overflow channel skim	11,899	10,362	87
Mad River Sand and Gravel	Guynup Bar	2	terrace pit	11,302	11,368	101
Mad River Sand and Gravel	Guynup Bar	1	narrow shoreline skim	20,746	20,432	98
River Reach Totals				142,043	130,613	92

¹Gravel extracted by Eureka Ready Mix

Table 5. Lower Eel River extractions, 2008.

Operator	Bar	Site	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
Eureka Ready Mix	Singley Bar		no extraction	0	0	n/a
County of Humboldt	Worswick Bar		no extraction	0	0	n/a
Mallard Pond	Drake Bar		no extraction	0	0	n/a
Mercer Fraser Co.	Sandy Prairie: Plant B	1	narrow shoreline skim	10,174	6,410	63
Mercer Fraser Co.	Sandy Prairie: Plant B	3	wet trench	36,021	29,305	81
Mercer Fraser Co.	Sandy Prairie: Plant B	4	wet trench	51,599	41,595	81
Mercer Fraser Co.	Sandy Prairie: Plant A	1	wet trench	26,467	23,381	88
Mercer Fraser Co.	Sandy Prairie: Plant A	6	wet trench	43,384	25,807	59
Hansen Truck Shop	Hansen Bar		no extraction	0	0	n/a
Eureka Ready Mix	Hauck Bar	1	alcove	70,310	65,881	94
River Reach Totals				237,955	192,379	81

Table 6. Van Duzen River extractions, 2008.

Operator	Bar	Site	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
Leland Rock	below 101 bridge	E	fish channel	13,227	11,151	84
Leland Rock	below 101 bridge	D	dry trench	61,296	55,410	90
Leland Rock	above 101 bridge	C	alcove	13,570	11,037	81
Leland Rock	above 101 bridge	B	narrow offset skim	2,167	1,524	70
Leland Rock	above 101 bridge	A	narrow shoreline skim	2,895	2,784	96
Van Duzen River Ranch	Bar 10	2	narrow offset skim ¹	55,640	4,495	8
Van Duzen River Ranch	Bar 8	1	overflow channel skim	43,372	37,881	87
Tom Bess	West Bar	2	wet trench	11,071	9,077	82
Tom Bess	West Bar	1	wet trench	5,938	4,491	76
River Reach Totals				209,176	137,850	66

¹ The original approved plan was a wide shoreline skim.

The actual extraction was much less than approved and resulted in a narrow offset skim.

Table 7. Middle Eel River extractions, 2008.

Operator	Bar	Area	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent of Approved Volume
Humboldt Redwood Co	Scotia Dam Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Lower Truck Shop Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Dinner Creek Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Three Mile Bridge Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Elinor Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Larabee Bar		no extraction	0	0	n/a
Humboldt Redwood Co	South Fork Bar		no extraction	0	0	n/a
County of Humboldt	South Fork Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Bowlby		no extraction	0	0	n/a
Humboldt Redwood Co	Maynard Bar		no extraction	0	0	n/a
Humboldt Redwood Co	Vroman Bar		no extraction	0	0	n/a
River Reach Totals				0	0	n/a

Table 8. South Fork Eel River extractions, 2008.

Operator	Bar¹	Site	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
Wallan and Johnson	Wallan and Johnson Bar	1	wide offset skim	10,000	7,538	75
Randall Sand and Gravel	Home Bar	1	wide shoreline skim	21,376	17,295	81
Randall Sand and Gravel	County Bar	2	narrow offset skim	982	0	0
Mercer Fraser Co.	Cooks Valley: HUM ²		no extraction	0	0	n/a
Mercer Fraser Co.	Cooks Valley: MEN ²		no extraction	0	0	n/a
River Reach Totals				32,358	24,833	77
¹ "HUM" is Humboldt County portion, "MEN" is Mendocino County portion.						
² CHERT recommended approval of operator's plans with revisions; due to insufficient time, approvals were not granted by agencies.						

Table 9. Trinity River extractions, 2008.

Operator	Bar	Site	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
Klamath Trinity Aggregates	Rowland Bar		no extraction	0	0	n/a
Mercer Fraser Co.	Willow Creek Site	2	wide shoreline skim	1,387	0	0
Mercer Fraser Co.	Willow Creek Site	1	wet trench	11,103	11,701	105
Mercer Fraser Co.	McKnight Bar		no extraction	0	0	n/a
River Reach Totals				12,490	11,701	94

Table 10. Isolated sites extraction, 2008.

Operator	River Reach	Bar	Method	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Extraction (Percent of Approved Volume)
County of Humboldt	North Fork Mattole	Cook Bar	no extraction	0	0	n/a
County of Humboldt	Larabee Creek	Charles Bar	dry trench	25,000	14,064	56
County of Humboldt	Bear River	Branstetter Bar	no extraction	0	0	n/a
County of Humboldt	Mid-Van Duzen River	PL Bar	no extraction	0	0	n/a
Fort Seward Ranch	Upper Eel River	Satterlee Bar	no extraction	0	0	n/a
Isolated Sites Totals				25,000	14,064	56

Table 11. Extraction area acreages, 2008

Operator	Bar	Site	Method	Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Lower Mad River						
Eureka Ready Mix	O'Neill Bar	1	wide shoreline skim	2.7	2.7	100
Miller Family Trust	Miller Bar	2	wide shoreline skim	0.8	0.8	100
Miller Family Trust	Miller Bar	1	wide shoreline skim	0.3	0.3	100
Eureka Ready Mix	Johnson-Spini Bar	1	wide shoreline skim	8.9	8.9	100
Mercer Fraser Co.	Essex Bar	1	wide shoreline skim	0.9	9.0	978
Granite Construction Co.	Johnson Bar2	1	alcove	0.8	0.8	107
Eureka Ready Mix	Christie Bar	3	alcove	0.8	2.2	293
Eureka Ready Mix	Christie Bar	4	wet trench	1.4	1.4	100
Eureka Ready Mix	Christie Bar	2	narrow shoreline skim	2.0	1.7	87
Eureka Ready Mix	Christie Bar	1	wide shoreline skim	3.4	4.8	141
Granite Construction Co.	Blue Lake Bar		no extraction	0.0	0.0	n/a
Granite Construction Co.	Emmerson Bar	2	alcove	1.4	1.4	100
Granite Construction Co.	Emmerson Bar	1	overflow channel skim	2.2	2.1	97
Mad River Sand and Gravel	Guynup Bar	2	terrace pit	1.3	1.5	115
Mad River Sand and Gravel	Guynup Bar	1	narrow shoreline skim	6.4	6.5	102
Lower Mad River Totals				33.2	44.1	133
Lower Eel River						
Eureka Ready Mix	Singley Bar		no extraction	0.0	0.0	n/a
County of Humboldt	Worswick Bar		no extraction	0.0	0.0	n/a
Mallard Pond	Drake Bar		no extraction	0.0	0.0	n/a
Mercer Fraser Co.	Sandy Prairie: Plant B	1	narrow shoreline skim	4.0	2.5	63
Mercer Fraser Co.	Sandy Prairie: Plant B	3	wet trench	2.9	2.3	81
Mercer Fraser Co.	Sandy Prairie: Plant B	4	wet trench	2.8	2.2	81
Mercer Fraser Co.	Sandy Prairie: Plant A	1	wet trench	1.6	1.4	88
Mercer Fraser Co.	Sandy Prairie: Plant A	6	wet trench	2.9	3.3	113
Hansen Truck Shop	Hansen Bar	n/a	no extraction	n/a	n/a	n/a
Eureka Ready Mix	Hauck Bar	1	alcove	6.1	6.1	100
Lower Eel River Totals				20.2	17.8	88

Table 11. Extraction area acreages, 2008 (cont.)

Operator	Bar	Site	Method) Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Van Duzen River						
Leland Rock	below 101 bridge	E	fish channel	0.5	0.9	173
Leland Rock	below 101 bridge	D	dry trench	4.5	4.9	108
Leland Rock	above 101 bridge	C	alcove	0.9	0.9	101
Leland Rock	above 101 bridge	B	narrow offset skim	1.6	0.8	48
Leland Rock	above 101 bridge	A	narrow shoreline skim	0.7	0.7	100
Van Duzen River Ranch	Bar #10	2	wide shoreline skim	9.3	2.5	27
Van Duzen River Ranch	Bar #8	1	overflow channel skim	10.0	7.8	78
Tom Bess	West Bar	2	wet trench	0.6	0.5	82
Tom Bess	West Bar	1	wet trench	0.4	0.3	76
Van Duzen Totals				28.5	19.3	68
Middle Eel River						
Humboldt Redwood Co.	Scotia Dam Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Lower Truck Shop Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Dinner Creek Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Three Mile Bridge Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Elinor Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Larabee Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	South Fork Bar		no extraction proposed	0.0	0.0	n/a
County of Humboldt	South Fork Bar		no extraction	0.0	0.0	n/a
Humboldt Redwood Co.	Bowlby Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Maynard Bar		no extraction proposed	0.0	0.0	n/a
Humboldt Redwood Co.	Vroman Bar		no extraction proposed	0.0	0.0	n/a
Middle Eel River Totals				0.0	0.0	n/a
South Fork Eel River						
Wallan and Johnson	Wallan and Johnson	1	wide offset skim	2.6	2.4	93
Randall Sand and Gravel	Home Bar	1	wide shoreline skim	3.3	2.8	86
Randall Sand and Gravel	County Bar	2	narrow offset skim	0.2	0.0	0
Mercer Fraser Co.	Cooks Valley: HUM		no extraction	0.0	0.0	n/a
Mercer Fraser Co.	Cooks Valley: MEN		no extraction	0.0	0.0	n/a
South Fork Eel River Totals				6.0	5.2	87

Table 11. Extraction area acreages, 2008 (cont.')

Operator	Bar	Site	Method	Approved Acreage	Extracted Acreage	Percent of Approved Acreage
Trinity River						
Klamath Trinity Aggregates	Rowland Bar		no extraction	0.0	0.0	n/a
Mercer Fraser Co.	Willow Creek	1	wet trench	0.8	0.8	98
Mercer Fraser Co.	Willow Creek	2	wide shoreline skim	0.6	0.0	0
Mercer Fraser Co.	McKnight Bar		no extraction proposed	0.0	0.0	n/a
Trinity River Totals				1.5	0.8	55
Isolated Sites						
County of Humboldt	Cook Bar		no extraction proposed	0.0	0.0	n/a
County of Humboldt	Charles Bar		dry trench	2.0	2.6	127
County of Humboldt	Branstetter Bar		no extraction proposed	0.0	0.0	n/a
County of Humboldt	PL Bar		no extraction proposed	0.0	0.0	n/a
County of Humboldt	Dyerville Bar		no extraction proposed	0.0	0.0	n/a
Fort Seward Ranch	Satterlee Bar		no extraction proposed	0.0	0.0	n/a
Isolated Sites Totals				2.0	2.6	127

("n/a" means not applicable or no extraction; "n/p" means not provided)

APPENDIX A: HISTORICAL EXTRACTION VOLUME SUMMARIES

Humboldt County Totals ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	-----		---
1993	-----		---
1994	-----		---
1995	-----		---
1996	-----		---
1997	-----		---
1998	1,075,095	820,952	76
1999	1,142,212	860,974	75
2000	987,848	706,234	71
2001	979,515	494,819	51
2002	1,023,866	748,461	73
2003	881,090	581,800	66
2004	692,020	440,710	64
2005	664,565	493,240	74
2006	700,660	561,845	80
2007	784,108	612,132	78
2008	659,022	511,440	78
Totals	9,590,001	6,832,607	71
Years	11	11	---
Averages	871,818	621,146	71

Mad River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	115,000	115,000	100
1993	122,100	138,400	113
1994	134,500	134,898	100
1995	210,637	226,265	107
1996	203,998	189,517	93
1997	252,926	210,976	83
1998	265,795	223,352	84
1999	196,212	174,974	89
2000	204,748	146,534	72
2001	199,215	167,719	84
2002	204,991	171,937	84
2003	150,390	136,790	91
2004	156,540	141,250	90
2005	138,475	127,200	92
2006	174,245	162,360	93
2007	165,504	153,341	93
2008	142,043	130,613	92
Totals	3,037,319	2,751,126	91
Years	17	17	---
Averages	178,666	161,831	91

APPENDIX A (continued)

Lower Eel River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	561,700	326,500	58
1998	399,100	273,000	68
1999	471,400	290,500	62
2000	291,300	208,600	72
2001	389,900	119,300	31
2002	387,300	220,000	57
2003	318,300	163,900	51
2004	188,840	120,305	64
2005	199,370	166,280	83
2006	235,495	208,240	88
2007	243,097	177,334	73
2008	237,955	215,760	91
Totals	3,923,757	2,489,719	63
Years	12	12	---
Averages	326,980	207,477	63

Middle Eel River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	-----		---
1993	-----		---
1994	-----		---
1995	-----		---
1996	-----		---
1997	147,300	84,900	58
1998	157,900	99,400	63
1999	134,900	124,900	93
2000	160,100	131,000	82
2001	116,100	64,000	55
2002	132,767	121,608	92
2003	74,030	54,060	73
2004	0	0	n/a
2005	0	0	n/a
2006	0	0	n/a
2007	89,990	64,424	72
2008	0	0	n/a
Totals	1,013,087	744,292	73
Years	12	12	---
Averages	84,424	62,024	73

APPENDIX A (continued)

South Fork Eel River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	67,700	74,700	110
1998	75,400	70,100	93
1999	85,400	75,900	89
2000	75,700	53,700	71
2001	66,000	43,100	65
2002	58,163	48,122	83
2003	87,060	54,660	63
2004	80,730	50,745	63
2005	82,770	36,480	44
2006	92,000	35,075	38
2007	90,737	73,956	82
2008	32,358	24,833	77
Totals	894,018	641,371	72
Years	12	12	---
Averages	74,502	53,448	72

Van Duzen River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic yards)	Percent
1992	-----		---
1993	-----		---
1994	-----		---
1995	-----		---
1996	-----		---
1997	120,000	81,600	68
1998	119,100	103,700	87
1999	159,900	108,800	68
2000	194,800	121,300	62
2001	161,700	85,600	53
2002	202,500	167,400	83
2003	175,100	123,000	70
2004	179,045	92,610	52
2005	159,090	123,170	77
2006	134,910	104,750	78
2007	152,773	113,184	74
2008	209,176	137,850	66
Totals	1,968,094	1,362,964	69
Years	12	12	---
Averages	164,008	113,580	69

APPENDIX A (continued)

Trinity River ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic)	Percent
1992	---	---	---
1993	---	---	---
1994	---	---	---
1995	---	---	---
1996	---	---	---
1997	47,500	40,000	84
1998	35,000	28,100	80
1999	64,300	66,900	104
2000	18,000	22,200	123
2001	46,600	15,100	32
2002	38,145	19,394	51
2003	76,210	49,390	65
2004	62,075	32,700	53
2005	64,100	30,570	48
2006	64,010	51,420	80
2007	42,007	29,893	71
2008	12,490	11,701	94
Totals	570,437	397,368	70
Years	12	12	---
Averages	47,536	33,114	70

Isolated Sites ("---" means unknown

Year	Approved Volume (cubic yards)	Extracted Volume (cubic)	Percent
1992	-----		---
1993	-----		---
1994	-----		---
1995	-----		---
1996	-----		---
1997	-----		---
1998	22,800	23,300	102
1999	30,100	19,000	63
2000	43,200	22,900	53
2001	0	0	n/a
2002	0	0	n/a
2003	0	0	n/a
2004	24,790	3,100	13
2005	20,760	9,540	46
2006	0	0	n/a
2007	0	0	n/a
2008	25,000	14,064	56
Totals	166,650	91,904	55
Years	11	11	---
Averages	15,150	8,355	55