

SUCTION DREDGE GOLD MINING . . . CLEANING OUR STREAMS, ONE ROCK AT A TIME.

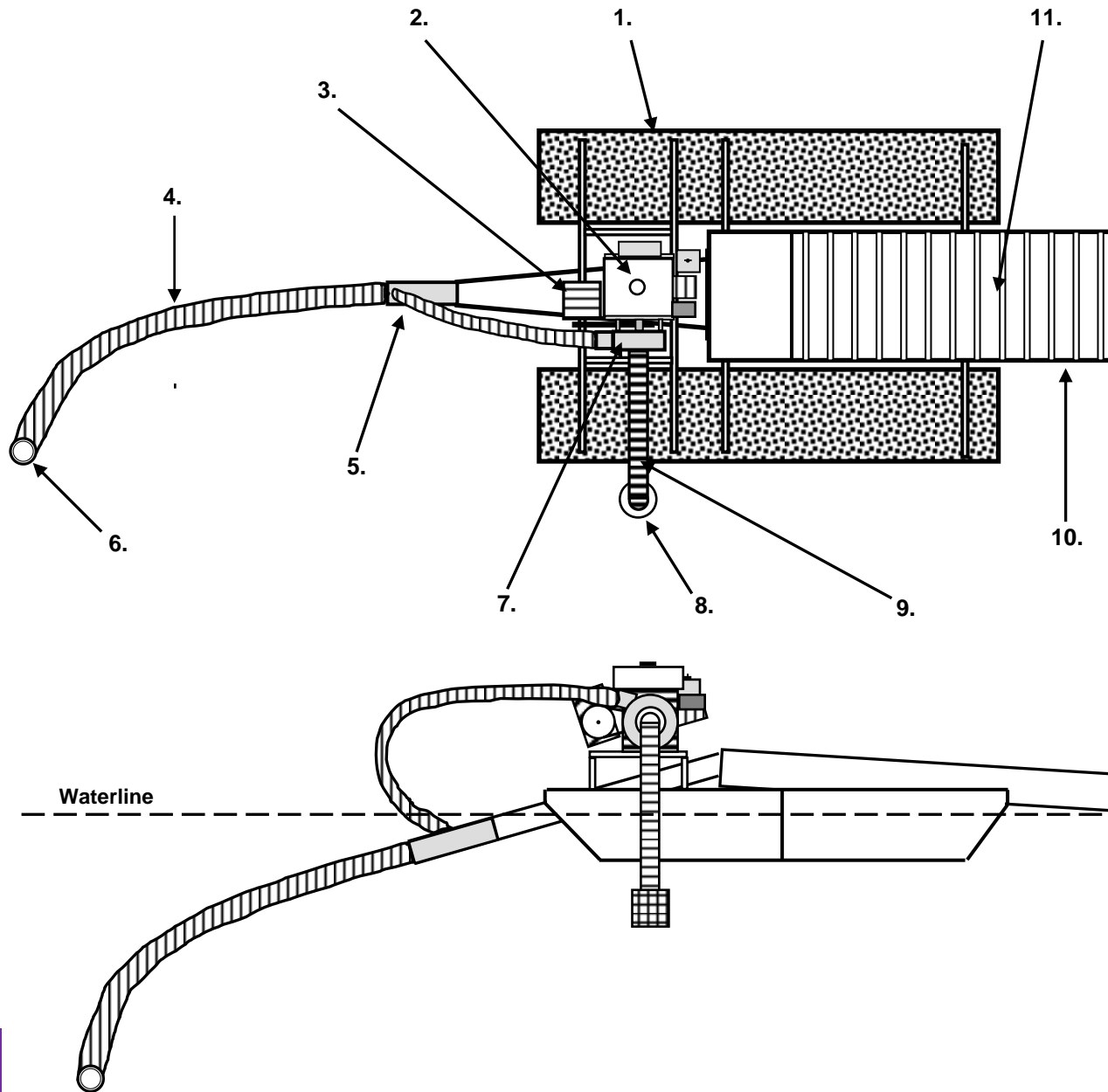


COMPARISON: "DREDGE" vs "4 INCH SUCTION DREDGE"

DREDGE NO. 51



COMPONENTS OF A TYPICAL SUCTION DREDGE



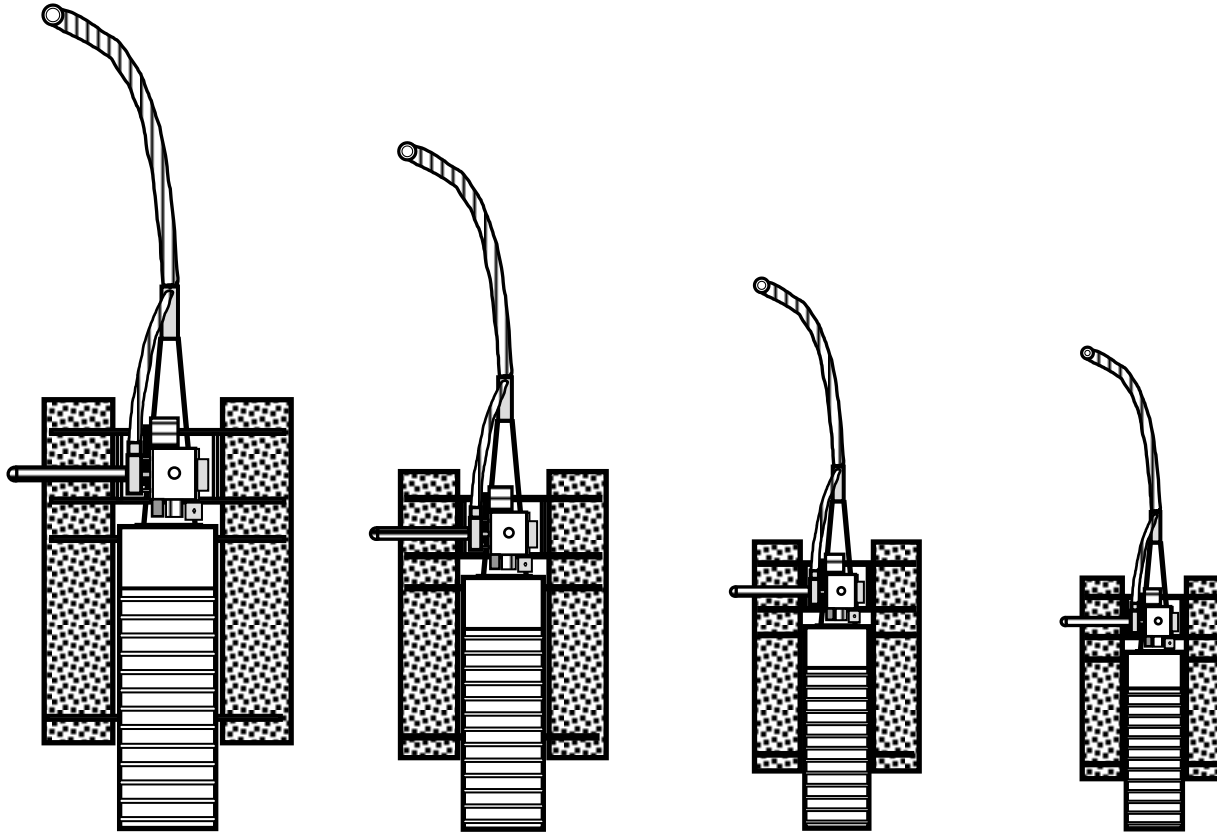
1. FLOAT/S
2. ENGINE
3. AIR COMPRESSOR
4. SUCTION HOSE
5. POWER JET
6. NOZZLE & RESTRICTOR RING
7. PUMP
8. FOOT VALVE & SCREEN
9. PUMP INTAKE HOSE
10. SLUICEBOX
11. RIFFLES

PHYSICAL SIZE COMPARISON OF 3, 4, 5 & 6 INCH SUCTION DREDGES

STREAM
BANK

30 FEET

STREAM
BANK



6" Suction Dredge

15 hp, uses approx.
1,200 gpm water
Production: approx.
0.75 – 1.0 cu/yrd/hr

5" Suction Dredge

8 hp, uses approx.
750 gpm water
Production: approx.
0.50 cu/yrd/hr

4" Suction Dredge

6.5 hp, uses approx.
500 gpm water
Production: approx.
0.33 cu/yrd/hr

3" Suction Dredge

5 hp, uses approx.
300 gpm water
Production: approx.
0.25 cu/yrd/hr

HOSE I.D.
TO SCALE

3" 4" 5" 6"

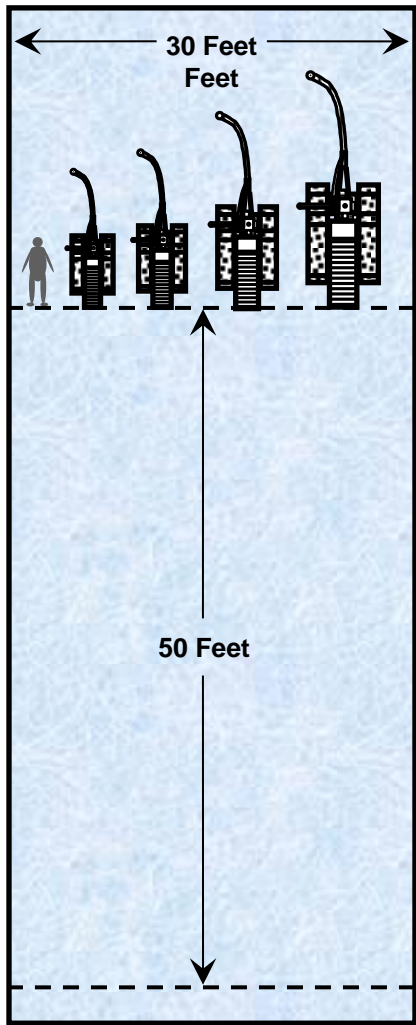


FIGURE 1.

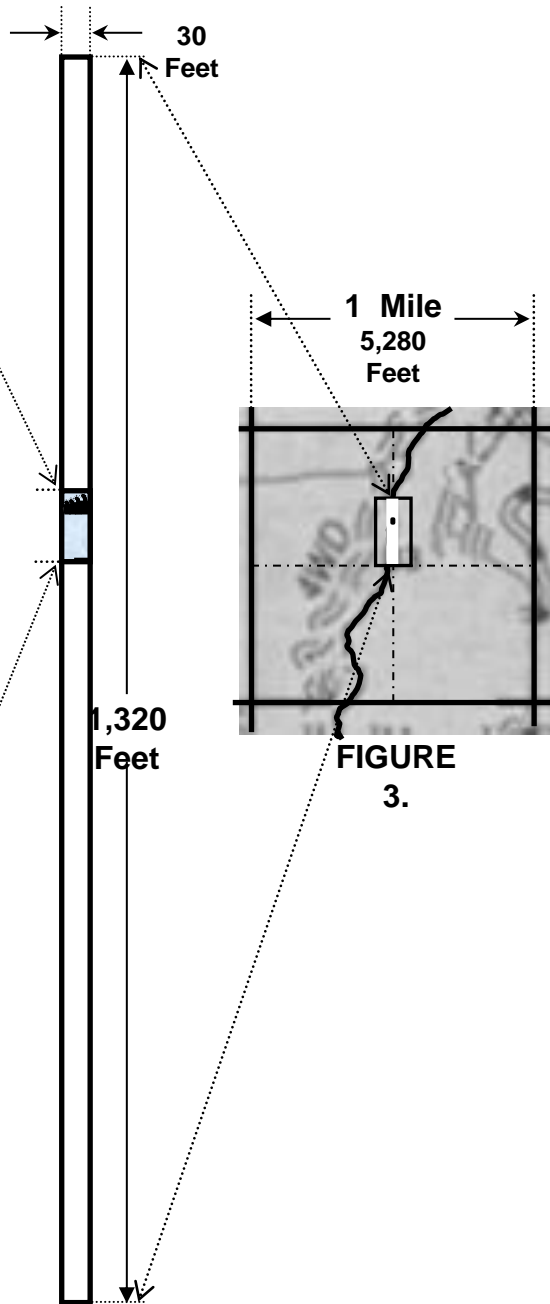


FIGURE 2.

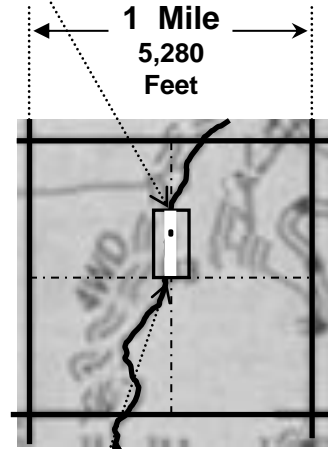


FIGURE 3.

EFFECT OF SCALE
OF A
TYPICAL SUCTION
DREDGE OPERATION
COMPARED TO A
TYPICAL PLACER
MINING CLAIM

FIGURE 1: Four (4) suction dredges (3", 4", 5" & 6") shown to scale in a stream segment 30 feet wide by 75 feet long.

FIGURE 2: Segment shown in Figure 1 in relation to an average placer mining claim, 1/4 mile in length.

FIGURE 3: Typical 20 acre placer mining claim (1/4 mile (1,320 ft) X 1/8 mile (660 ft.)) within a typical "section" (1 sq. mile).

THE ROGUE RIVER AS IT FLOWS PAST THE GRANTS PASS, OREGON, WATER TREATMENT PLANT, MAY 10, 2005.

ACCORDING TO THE GRANTS PASS DAILY COURIER,
TURBIDITY IN THE RIVER DUE TO RECENT RAINS
MEASURED AT APPROXIMATELY 54-61 NTUs.

APPROXIMATE SIZE
OF
A 4" SUCTION
DREDGE

6.



INSIGNIFICANT IMPACTS

- ❖ **SNF STUDY:** A comparison of stream materials moved by mining suction dredge operations to the natural sediment yield rates.

CONCLUSION: “... a movement rate by suction dredge mining that equals about 0.7% of natural rates. 10/16/95

MICHAEL F. COOLEY Recreation, Lands and Minerals Staff Officer, Siskiyou NF

- ❖ **Using data from the Oregon Watershed Enhancement Board:**

2000 SUCTION DREDGES IN OREGON WATERS WOULD AFFECT* LESS THAN 0.0064% OF ALL WATERS ANNUALLY.

2000 DREDGES IN THE UPPER ROGUE BASIN WOULD AFFECT* AN ESTIMATED LESS THAN 0.67% OF THE BASIN.

2003 SNF CUMULATIVE EFFECTS STUDY

Response of fish to cumulative effects of suction dredge and hydraulic mining in the Illinois subbasin, Siskiyou National Forest, Oregon, dated April, 2003 by Peter B. Bayley, Dept. Fisheries & Wildlife, Oregon State University, Corvallis, OR.

Discussion and Conclusions:

The statistical analyses did not indicate that suction dredge mining has no effect on the three responses measured, but rather any effect that may exist could not be detected at the commonly used Type I error rate of 0.05.

The reader is reminded of the effect of scale. Localized, short-term effects of suction dredge mining have been documented in a qualitative sense. However, on the scales occupied by fish populations such local disturbances would need a strong cumulative intensity of many operations to have a measureable effect.

Given that this analysis could not detect an effect averaged over good and bad miners and that a more powerful study would be very expensive, it would seem that public money would be better spent on encouraging compliance with current guidelines than on further study. (Emphasis added)

2004 SALMON RIVER, CA STUDY

53 dredging sites were documented within the Salmon River Basin.

❖ 1,066 linear feet of river bottom was dredged within the entire river system.

❖ The North Fork, South Fork and mainstem Salmon River is approximately 79 miles long (417,120 linear feet).

Suction dredge holes disturbed <0.26% of the river bottom.

2004 Salmon River Study - Conclusions

Refugia are defined in the literature as any hole in a river bottom that is 3 feet in depth or deeper.

This study identified 27 such holes caused by suction dredging.

Therefore, suction dredge holes disturbed only <0.26% of the river bottom, and

51% of the 53 dredged holes had the potential for improving the habitat to support the survival of species in the river.



11.

Dredge hole in the Klamath River, CA with circling salmon, September 2009, Avery Rathburn

THE CALIFORNIA DEPT. OF FISH & GAME FEIR (2012)

While spending approximately \$1.2 Million, the CA DF&G reviewed 60 separate factors of concern including such items as Hydrology/Geomorphology, Water Quality, Biological Resources, Hazardous Wastes, Noise, etc..

OF THE FACTORS REVIEWED:

- ❖ **56 WERE FOUND TO HAVE “LESS THAN SIGNIFICANT” EFFECTS**
- ❖ **4 WERE FOUND TO HAVE SOME (UNDETERMINED) LEVEL OF EFFECT.**

SUCTION DREDGE DEMO FOR DEQ – SEPT. '04

4" DREDGE

6" DREDGE



BEFORE SUCTION DREDGING



**AREA
LATER
DREDGED**

**JUNE
2004**

... AFTER ONE WINTER



**AREA
DREDGED**

**APRIL
2005**

BASED ON DEQ DATA, TURBIDITY LEVELS FROM “WORST CASE SCENERIO” SUCTION DREDGE OPERATIONS FALL TO NEAR 6.0 NTUs WITHIN 100 FEET OF THE DREDGE – FOR A FEW HOURS A DAY, A FEW DAYS A WEEK.

Empirical TSS lethal thresholds presented by Newcombe and Jensen (1996) for the most sensitive juvenile and adult salmonids include the following

Total Suspended Solids (mg/L)	Calculated Turbidity (NTU)	Concentration/Time to Effect
3	3.1	7 weeks to 11 months
7	6.8	2 weeks
<hr style="border-top: 1px dashed red;"/>		
55	57.0	6 days
148	154.5	1 – 2 days
1,097	1138.5	7 hours
2,981	3091.0	3-hours
22,026	22839.1	1 hour

THE PRESUMPTION OF INNOCENCE:

The principle that one is considered innocent until proven guilty.

The burden of proof is thus on the prosecution . . .

MINING ON PUBLIC DOMAIN LANDS PURSUANT TO THE U.S. MINING LAW IS A STATUTORY RIGHT GRANTED BY CONGRESS IN WHICH THE STATE HAS NO AUTHORITY TO PROHIBIT. SB 838 AND SB 401 WOULD:

- DENY THE RIGHTS GRANTED BY CONGRESS,
- VIOLATE THE SUPREMACY CLAUSE OF THE CONSTITUTION,
- BE AN ILLEGAL TAKING OF REAL PROPERTY,
- VIOLATE THE OREGON ADMISSIONS ACT . . .

ALL WITHOUT ANY VERIFYABLE PROOF OF ANY SUBSTANTIALLY DOCUMENTED HARM – and WITHOUT CONSIDERING THE VERY REAL BENEFICIAL EFFECTS.

SB 838 calls for a five year moratorium on motorized placer mining, while at the same time calls for studies on the effects of something that is prohibited . . .

QUESTION: HOW DO YOU STUDY WHAT IS NOT OCCURRING?

BENEFICIAL EFFECTS FROM SUCTION DREDGE MINING

Suction dredge mining:

- **Cleans and loosens compacted sediment, can create good spawning bed material/areas.**
- **Removes (at not cost) hazardous materials such as lead, mercury, other metals, junk, trash, etc..**
- **Creates holes which fish use for cool refugia in summer months.**
- **Creates low levels of turbidity which is protective for young fish.**
- **Directly contributes an estimated \$10 Million plus another \$10 Million indirectly to Oregon's depressed economy.**
- **Preserves the Cultural Heritage of rural Oregon.**
- **And to date, suction dredge mining is the most environmentally friendly method yet devised to recover gold from streambeds; and usually does NOT require any reclamation (i.e.; reclaimed naturally).**



SB 401

SB 401 - 1

**APPROXIMATE NUMBER OF PLACER MINING
CLAIMS WITHIN JOSEPHINE COUNTY THAT WOULD
BE AFFECTED BY SB 401:**

GRAVES CREEK: 53-57

BRIGGS CREEK: 52-61

SILVER CREEK: 29-44

JOSPEHINE CREEK: 58-83

ROUGH & READY CREEK: 24-31

ILLINOIS RIVER (E. FK.): 8-12

ILLINOIS RIVER (W. FK.): 6-11

ILLINOIS RIVER: 25

SUCKER CREEK: 64

TOTAL: 319-388 UNPATENTED MINING CLAIMS

APPROXIMATE NUMBER OF PLACER MINING CLAIMS OUTSIDE JOSEPHINE COUNTY THAT WOULD BE AFFECTED BY SB 401:

ROGUE RIVER (Bear Ck. to Applegate): 4
BRICE CREEK: 24
CHETCO RIVER: 3
EAGLE CREEK: 23
LITTLE APPLGATE RIVER: 5
N. FK. BURNT RIVER: 33
S. UMPQUA RIVER: 6

GRAND RONDE RIVER: 10
CEDAR CREEK: 8
COW CREEK: 33
ELK CREEK: 1
MOLALLA RIVER: 4
QUARTZVILLE CREEK: 15
APPLGATE RIVER: 9

TOTAL: 177 UNPATENTED MINING CLAIMS

JOSEPHINE COUNTY: 319-388 MINING CLAIMS

REST OF OREGON: 177 MINING CLAIMS

TOTAL STATEWIDE: 496-565 MINING CLAIMS