PCWA-L-193

MIDDLE SECTION

USDA-FOREST SERVICE
REGION 5

STREAM SURVEY

ABOVE ELLICOTT

FOREST: Eldorado	DISTRICT: Georgetown
1. NAME OF STREAM: Rubicon River	2. RIVER SYSTEM: American
3. TRIBUTARY TO: American River (Middle Fork)	4. TOTAL LENGTH: 9-1/2 miles
5. STREAM SECTION — FROM: 2 miles below Ellicotts Xing	TO: Hell Hole Res.
6. LOCATION OF MOUTH OR LOWERMOST POINT — TOWNSHIP: 13N	RANGE: 11E SECTION: 3
7. DESCRIPTION OF STREAM: (USE PAGE 4 OR SEPARATE SHEET TO RECORD NOTES MADE DURING SURVEY).	

SECTION DATA

	9/21/73 LOWER	9/20/73 MIDDLE	9/18/73 UPPER
8. LOCATION	TWP 13N RG 11E SEC 2	TWP 13N RG 13E SEC 34	TWP 13N RG 13E SEC 23
9. ALTITUDE RANGE	1160 FT. TO 1280 FT.	3160 FT. TO 3450 FT.	3400 FT. TO 4320 FT.
10. WIDTH OF STREAM	RANGE 6-80 FT. AVE 20 FT	RANGE 6-50 FT. AVE 15 FT	RANGE 0-40 FT. AVE 14 FT
11. DEPTH	RANGE FT. AVE FT	RANGE FT. AVE FT	RANGE FT. AVE FT
12. FLOW	150 (est) c.f.s.	35 (est) c.f.s.	headwtr 34 to 35 c.f.s.
13. VELOCITY	slow to rapid	rapid	slow to rapid
14. AIR TEMPERATURE	65 °F	61 °F	68 °F
15. WATER TEMPERATURE	64 °F	56 °F	60 °F
16. HOUR AND SKY	HOUR 1200 SKY clear	HOUR 1115 SKY clear	HOUR 1100 SKY clear
17. POOLS-ABUNDANCE	common	abundant	abundant
a. Size (diameter)	RANGE 10-50 FT. AVE 15 FT	RANGE 4-35 FT. AVE 15 FT	RANGE 4-40 FT. AVE 10 FT
b. Formed by	rock & bedrock	bedrock & rock	bedrock & rock
c. Shelter	medium	good	good
18. RIFFLES-ABUNDANCE	abundant	abundant	abundant

19. BOTTOM TYPE	Bedrock	Boulders	Rocks	Rubble	Gravel	Sand	Silt	Mud
a. Pools	10	TR	5	20	25	25	10	5
b. Riffles	10	5	10	25	20	15	10	5
MIDDLE								
a. Pools	10	5	15	15	20	25	10	TR
b. Riffles	10	5	15	30	25	15	TR	TR
UPPER								
a. Pools	15	10	10	2 5	20	15	5	TR
b. Riffles	10	10	20	30	25	5	TR	TR

	9/21/73 LOWER	9/20/73 MIDDLE	9/18/73 UPPER
20. SHADE CANOPY	light	light	medium
a. Species	willow & alder	canyonwalls-alder	alder, some willow
21. AQUATIC VEGETATION	brownish algae	some green filament	some plants unident.
a. Species		some plants unident.	locally heavy grn filamer
22. AQUATIC FOOD ORGANISMS			
a. Caddisflies	few to common	common larvae	common larvae
b. Mayflies	none	none seen	few larvae
c. Stoneflies	common	few	common larvae
d. Diptera	few	none seen	few larvae
e. Beetles	few adult	few larvae & adult	few larvae
f. Other Insects	few terrestrials	terrestrials common	none seen
g. Crustacea	none seen	none seen	none seen
h. Others			
23. OVERALL AQUATIC FOODS	common	common-few	common-few
24. FISHES PRESENT			
a. All Species Combined	abundant	common	common
b. Species	rainbow trout	rainbow	rainbow trout
(1) Abundance	common	common	common
(2) Ave. No. per 100 ft.	20	25	20
(3) Length Range	4-12 INCHES	4-24 INCHES	4-16 INCHES
(4) Ave. Length	8 INCHES	10 INCHES	9 INCHES

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c. Species	Squawfish	Brown	Brown Trout
(1) Abundance	common LOWER	v. few MIDDLE	few UPPER
(2) Ave. No. per 100 ft.	25-30	2-4	5
(3) Length range	2-16"	8-10	6-10
(4) Ave. length	8"	8"	8"
d. Species	Western Sucker	NA	NA
(1) Abundance	common		
(2) Ave. No. per 100 ft.	15-20		
(3) Length range	10-16"		
(4) Ave. length	10		
e. Species	NA		
(1) Abundance			
(2) Ave. No. per 100 ft.			
(3) Length range			
(4) Ave. length			
25. REPRODUCTION			
a. Species	RT - Good	RT - Good	RT - Good
b. Species	SQ - Good	BN - Poor	BN - Poor
c. Species	W Sucker - Good		
d. Species			
26. FISH PREDATORS			
a. Birds	Belted Kingfish	None Seen	None Seen
b. Snakes	None Seen	None Seen	None Seen
27. CHARACTER OF WATERSHED	Chapperal Canyon	Wooded Canyon	Wooded Mtn
28. WATERSHED SOIL STABILITY	Moderate	Moderate	Stable
29. STREAM CHANNEL STABILITY	Unstable	Moderate	Unstable
30. STREAM FLOW CONDITION	Low	Low	Low
31. STREAM GRADIENT	Slight	Moderate	Moderate to Slight
32. BARRIERS	Rockfalls not complete	Some low rockfalls probably not complete	Some rockfalls near bridge intermittent flows near Hell Hole.
33. DIVERSIONS	None seen	None seen	None seen
34. SPRINGS	N. Bank at lower end of study section	Several on NW bank 1/8 mi downs. Elicott	None seen
35. TRIBUTARIES	None seen	None observed	Long John Cr-Trickle South Fork-Rubicon 5 cfs (temp 58°@1330
36. WATER QUALITY			
a. Turbidity	Low	Low	Low
b. Nature of Turbidity			
c. Other Pollution	Some sand & silt in pools	Moderate sand & silt in pools	Some sand & silt in pools
37. ACCESSIBILITY	Good trail	Poor-Elicotts Xing	Good Trail (Hunters) Motor bike o.k.
a. Cat of Trail			
38. FISHING USE			
a. Est. Fisherman days	15-25 FD Per Year	10 FD Per Year	10 FD Per Year
	Medium	Light	Light

SUMMARY-ENTIRE STREAM

39. STREAM CLASSIFICATION:	LOWER I d	MIDDLE I a,d	UPPER I a,d

REMARKS:

40. STREAM CHARACTERISTICS AND REMARKS

The Rubicon River is moderately unproductive stream. Fair to good population of trout exist in the study areas. The river channel is in the process of recovering from '64 flood

41. MANAGEMENT RECOMMENDATIONS:

See attached sheet

42. DATE OF SURVEY	43. SURVEY MADE BY
Sept. 18-21, 1973	Larry Week

STREAM MANAGEMENT ANALYSIS (May be filled out at Office)

1. TYPE OF FISHERY	2. PRIMARY SPECIES	
Cold	Rainbow trout - some BN	
3. OVERALL PRESENT FISHERY RATING	a. Size of Stream	b. Fishing Use
Good to Fair	Small stream - small river	Light - locally moderate
c. Other Uses	d. Productivity	e. Habitat Condition
swimming, hiking, camping, aesthetic	Medium to low	Fair to good

4. IMPROVEMENT POTENTIAL

5. FISH MANAGEMENT RECOMMENDATIONS:

a. Chemical Rehabilitation	No
b. Fishery Regulation	No
c. Regulation of Other Activities	Open lower section to spear fishing for rough fish
d. Introduction of Exotic Fish Species	No
e. Maintenance Stocking of Established Fish Species	Possibly near Elicott's & American Bar
f. Others	Investigate higher summer flows from Hell Hole

6. HABITAT MANAGEMENT:

a. Watershed Management	Regulate & monitor logging, road building, etc.
b. Stream Protection Belt Management	none
c. Water Quality Management	possible revegetation of steep exposed banks
d. Physical Corrective Measures	
e. Others	

7. PUBLIC ACCESS AND LAND AQUISITION

8. PUBLIC USE FACILITIES: Fireplaces along hunter's trail - American Bar

Notes on the lower section of the Rubicon River

The lower section of the Rubicon River was surveyed September 21, 1973. The study area extends from the power house to a point about 2 miles upstream.

The Rubicon is a substantial river at this point flowing at an estimated 150 cfs.

The river lies at the foot of a steep canyon. The region is characterized by a chapperal-oak belt climax with some conifers occurring along its higher ridges. The runoff following precipitation is probably rapid and if the ground cover should be removed by fire or man it could be catastrophic.

A large slide area of unstable earth lies on the north bank approximately 3/4 mile upstream from the powerhouse. This area contributes significantly to the silt load in the area.

The bottom type here is primarily rubble, gravel, and sand with moderate siltation evident in slow water areas. Overall fertility appeared to be moderately good. Aquatic insects were common and fish were abundant throughout the section.

A mixed population of rainbow trout, squawfish, and suckers exists in this section. Squawfish were numerically superior followed by sucker and some rainbow trout. In terms of standing crop biomass, squawfish were also dominant.

Identification of the squawfish and sucker is not 100% positive as I did not capture either of these species. Identification is based on observation alone.

Access was gained by a trail on the north bank. Camping, picnicking, hiking and fishing were in evidence.

Limiting factors affecting the trout population were competition with rough fish species and possibly the effects of the moderate sediment load.

Management Recommendations:

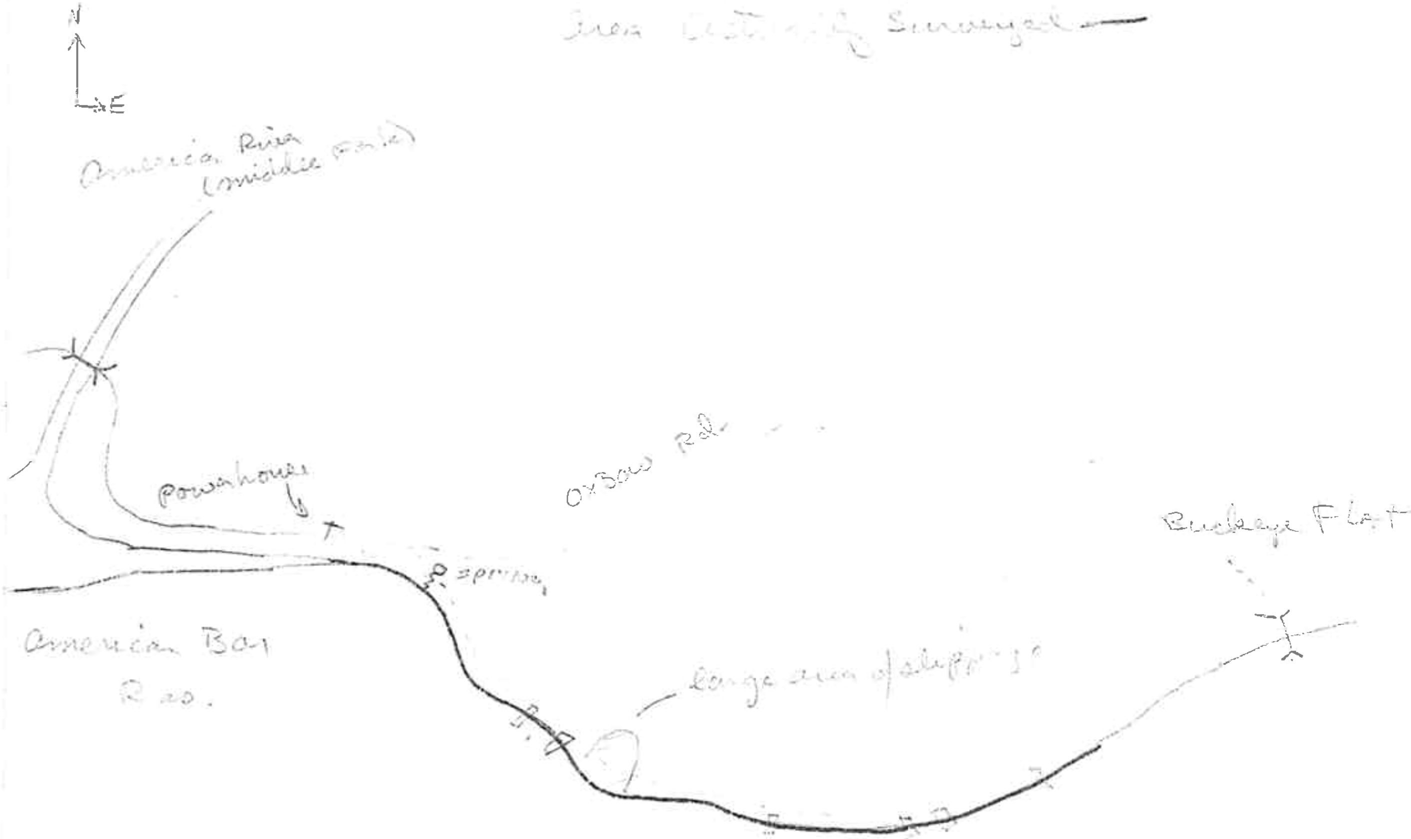
Chemical rehabilitation of this section is not recommended. Reinfestation of rough fish species could not be prevented.

Investigate ways to stop earth slippage area from further damaging the river. However I think it's too steep to revegetate.

Monitor and regulate logging, road building and other activities on the watershed. Contain open fires to the picnic area at the powerhouse.

Map of the lower section of the Rubicon River '73 WEEK

area extensively surveyed —



Scale 1" = 1 mile

▯ = Rock falls

Notes on the Upper and Middle Section of the Rubicon River

The upper portion of the Rubicon River was surveyed on September 18 & 19, 1973. The study section extends from the Hell Hole dam to Elicott's bridge.

The river immediately below the Hell Hole dam is small (3-4 cfs) and is intermittently subterranean as far down as the beginning of Parsley Bar. Small trout exist in the lower potholes. They were not identified as to species and were not significant populations.

The river gradually increases in size until it flows at 35 cfs (est) just below Elicott's Bridge. The water has exceptional transparency, a sign of low fertility, throughout these study sections.

Two live tributaries were recorded in this section. Long John Creek enters from the north bank about 1/2 mile below the Parsley Bar Crossing. It was barely flowing and showed no evidence of fish life. The silt load appeared negligible. The South Fork of the Rubicon enters from the South Bank approximately 1 mile upstream from Elicott's Bridge. The flow was approximately 5 cfs and the temp. was 58°F at 1330. Light amounts of sand and silt were present. Fish, probably brown and raibow trout, were observed near the mouth.

Several springs exist on the northwest bank 1/8 mile below Elicott's bridge.

The river channel consists mostly of rubble, gravel, and sand. The ratio of sand to the other materials increases with downstream distances.

In 1964, during the construction of the Hell Hole dam, heavy storms washed out the structure and the ensuing flood swept down the Rubicon River Canyon with considerable force. The scouring effect of this flood eliminated riparian vegetation and eroded the banks to 50 or 60 feet above the present level of streamflow.

The riparian vegetation is beginning to reestablish itself in the form of alder and willow. Midday insolation is still very high however, and might have a detrimental effect on the trout population. Some locally moderate amounts of green filamentous algae exist where velocities are low and insulation is high. Shade is important for cover and resting areas and for thermal balance during the warm summer period.

A large portion of the steeper banks remain barren and undoubtedly contribute sediments during times of precipitation.

A good population of rainbow trout exist from Parsley Bar downstream. Brown trout are present but not common. Fish from 4 to 16 inches were observed upstream from Elicott's and one 24" rainbow was observed downstream. The stomach contents of a 14 inch male rainbow were examined from this lower section. One small trout-like fish 3" long, two caddis fly cases, and one adult beetle were present.

Access can be gained to this area via the Hunter's trail which follows the north bank from Elicott's bridge to Hell Hole dam. The trail is in good condition and is negotiable by trail bike. The Rubicon Trail, shown as

following the south bank, was partially destroyed by the flood.

Light to moderate use was evident on the trail and several old campsites existed along the way. One couple was camping and fishing at the mouth of the South Fork of the Rubicon.

Bear sign was quite noticeable throughout the section. Tracks or scat were often visible along the trail. Two bear were sighted on September 18, 1973. The first was approximately 1/4 mile above the Elicott Bridge on the south bank. The other was seen crossing the river at Parsley Bar. Both bear were of black coloration and looked like yearlings.

The limiting factors working on the trout population are the basic infertility of the watershed and river channel, the sparsity of canopy, and light to moderate angling pressure localized near Elicott's. The stream channel gravels appeared to be adequately free of silt for suitable spawning use and food production.

Management Recommendations:

A revegetation program of the steeped exposed banks could reduce the siltation problem. This is probably not an economically feasible plan and would produce marginal benefits.

Investigate acquiring higher flow releases from Hell Hole to reestablish the river status of this section. Higher flows might help to flush sand and silt away and could increases primary productivity.

Establish camping areas or at least adequate fireplaces to reduce the fire danger.

Monitor and regulate logging, road construction, grazing, etc., in the watershed.

Possible catchable program feasible at Elicott's.

WEEK '73

Map of the middle Section of the Rubicon River

Area Actually Surveyed —

N
E

Scale 2" = 1 mile

Π = low rock falls

Map of the upper section of the Patrician River
area actually surveyed

N
E

Scale 1" = 1 mile