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Idaho Cooperative Fishery Research Unit

Vascular Aquatic Plant Survey

In April 1979 the area of Silver Creek coverered by aquatic macrophytes was measured to determine if any significant changes had occurred since spring 1978. During the summer and fall of 1977, 40 to 68 percent of the area of Silver Creek was covered by aquatic macrophytes (Chara 33-50%, Potamogeton 1-20%, and Veronica 6-10%) (see attached table). During the winter of 1977-78 much of the vegetation in the stream died and by March 17, 1978 only 10 percent of the stream area was covered, mostly by Chara. On April 3, 1979 vegetation covered 23 percent of the stream area with 19 percent being Chara. Chara covered more of the stream area in 1979 than in March of 1978, but the two-weeks later sampling in 1979 may account for some of the difference. If Chara increased during 1978 from the small coverage in March (9%) to the same coverage in summer as in 1977 (50%) then it appears that a large part of the Chara beds died and were washed from the stream in winter 1978-79 the same as they were in winter 1977-78. The vegetation transects should be measured each spring (March) and fall (October) to determine if the beds have other than an annual cycle and if waterfowl are having any impact.

Spring Fish Population Assessment - 1979

The established transects were electrofished in May 1979 to estimate and compare the abundance of fish in The Nature Conservancy section of Silver Creek with estimates made in 1977 at the start of the catch-and-release regulations. In 1979, fish starting their second summer (100 to 220 mm in length) were three times more abundant than in 1977. Age 2 and older fish (longer than 220 mm) were 1.6 times more abundant in 1979 (see table and figure).

Fish Population Estimates-Silver Creek NC Site

	Rai	nbow tr	out	Brook	trout	Whitefish			
May 1977	Age 0	Age 1	Age 2+	Age 0	Age 1+	Age 0	Age 1+		
1st pass	100	46	45	1.2	2	0	76		
2nd pass	_38	19		2	_0_	0	43		
Estimated total	161	78	58	14	2	0	175		
May 1979									
lst pass	148	151	74	10	12	2	1.9		
2nd pass	64	66	14	<u>15</u>	1	97			
Estimated total	261	268	91	25	13	99	30		

The 1979 population estimates and angler reports are evidence that the catch-and-release regulation put into effect in 1977 has reduced the mortality rate and increased the abundance of fish in the NC section of Silver Creek. A comparison of population estimates in September would be valuable to see if the abundance of large fish (400 mm+) has increased. The 1979 population estimate was made in May because thats when flows are the lowest, but many of the larger fish may have been in the tributaries spawning.

If population estimates are made in September of future years, it will be necessary to use block nets at each end of the transects to prevent fish from leaving the sections. In 1977, block nets were not used, but the flows were extremely low because of the drought that year.

Prepared January, 1980 T. C. Bjornn

WABLE 4. -Percentage area covered and oven dry weight (expressed as kg/m²) of aquatic macrophytes found in Silver Creek in The Nature Conservancy site, 1977.

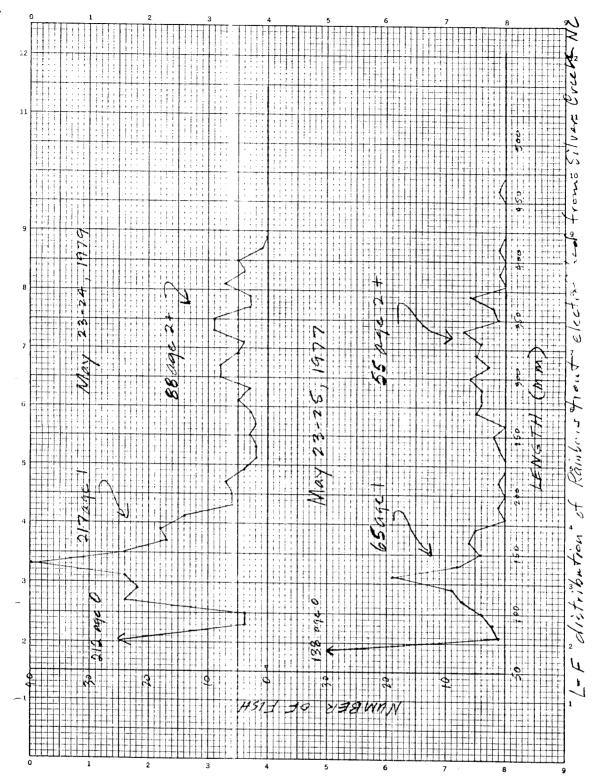
:	+	26	,	. S. S.				7.7	1.07	ં							2, 4	r Ö		0.7	1.0	22.9	
6-26-77 7-18-77 8-8-77 8-30-77 10-4-77 10-24-77 12-12-77 3-17-78 Percentage Weight Percentage Weight Percentage Weight Percentage Weight Percentage Weight	7-78		1	' 0			ı	•	ı	ı	,	•	•	ı	•		ı	44.0	ı	,	ı	0.22	
	3-1	Percentag	,	1 0		•		ı	ŀ	ı	i	1	1	i		1	7.0	o.3	ı	ij	0.5	9.6	
	5-77	Weight	0.01	- 77	7.1.	ı	ı	0.14	1	ı	ı	ı	ı	0.08	1	0.11	,	0.44		0.08	0.24	1.48	
	12-12	Percentage	9.7	ο ς ο ς	,) ,	,	9.0	ı	0.3	i	1	e ^{/s}	ω.	1	4.0	0.5	0.3	ı	2.0	5.6	4.04	
	-77	Weight	0.01	, 0)) !	09.0	,	0.37	0.08	ı	,		ı	0.16	,	0.20	1	0.44	,	0.17	0.17	1.65	
	ercentage	42.0	ო <u>ი</u>	0 0	0.5	, I	0.7	<0.1	0.2	<0.1		1	5.5	√. O.0	9.0	0.7	્ર.	•	4.0	6.7	64.7		
	Weight	40.0		01.7	0.92	,	0.30	0.11	,	1	ı	ı	0.21	i I	0.23	1	1t.0	ı	0.21	0.36	1.62		
	ercentage	36.0	ر س د	0 0	0.3	•	o.8	0.1	0.2	<0.1	•	15	12-4	0.0	6.0	0.7	ં.ં		0.3	6.2	67.8		
	Weight F	0.30	. 0	60·2	0.89	•	0.51	0.15	,	1	•	,	0.33	•	0.26	•	44.0	ι	0.22	0.37	2.05		
	ercentage	14.6	0.0	^ • • • • • • • • • • • • • • • • • • •	0.8	<0.1	9.0	0.2	0.2	^ 0.1	<u>(</u>)	0.1	20.0	6.1	1.0	0.7	ن. ن.	0.1	9.0	8.5 8.5	2.19	-	
	3-77	۱ +۱	0.08	,	3.24	0.81	,	0.41	0.19	ı	ı	ı	•	0.41	,	0.29	ı	77.0	,	0.10	0.31	1.99	
	8-8	ercentage	3.5	0.7	0.0	(T. Q	1	1:0	o.0	0.1	<0.1	ı	^0. 1	17.9	0.8	0.2	0.0	0.3	ı	0.3	8.6	63.8	
	-77	Weight P	60.0	,	2.50	0.72	1	0.29	0.10	1	1	ı	ı	0.39	•	0.35	,	C.44	1	0.12	0.24	1.65	
	7-18	ercentage	1.4)(;	ر د د د	ત		9.0	0.0	0.2	<0.1	ı	ı (i	14.6	6.0	0,3	0.0	0.1	<0.1	0.5	1. 6	61.0	
	Weight F	0.21	1	1.42	29.0	1	0.26	90.0	,	ı	1	,	0.18	ı	0.32	,	0.44	,	0.21	0.10	96.0		
	9-59	Percentage	1.1		ر م م	0.0) •	1.1	0.1		,		1	(1:1)	0.0	P. 0	9.0	d. 0	,	0.2	(J.S)	57.4	
		Garophyte	-lgae	Jarex	Jara	Lodea	guisetum	etabrosa	dppuris	uncus	Juckweeds ^a	yriophyllum	olyganum	otamogeton	enunculus	orippa	cirpus	Gantan	ypha	rula	eronica	11 plants combined cd	

includes the families Lemnaceae and Ricciaceae.

repanceladus, which was 0.15 kg/m², were found in equal abundance. Since peak summer growths were not observed with the mosses, it was assumed that their comass remained relatively constant troughout the year. amblestegium made up about 80% of the total area for all mosses. Its oven dry weight was 0.49 kg/m² on October 4. Fontinalis, which was 0.31 kg/m² and

The area covered by all plants is less than the total of each individual plant species because plants overlapped each other. The oven dry weight of all plants combined is derived from the formula $T = \frac{a(w)}{a(w)}$; where a = percentage area covered by each plant, w = oven dry weight of on plant and p = percentage total area covered by all plants.

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