

State of California

The Resources Agency

Memorandum

To : FILES

Date: July 23, 1987

From : **Department of Fish and Game** — Bill Cox

Subject: Giacomini Dam, Lagunitas Creek, Marin County

On May 27, 1987 John Emig, Ken Aasen, and I surveyed the fish population in the Giacomini summer dam impoundment using the electro-fishing boat. Our major goal was to evaluate the level to which juvenile steelhead trout or coho salmon were using the impoundment or had been trapped in the impoundment interrupting their downstream migration. To ensure that we had the greatest possible success at capturing juvenile salmonids, we operated with the highest possible current settings and tried both the 120 pps and 60 pps frequency settings. We also tried the AC mode as well as the normal pulsed DC mode. The greatest sampling success appeared to be with 120 pps pulsed DC. The boat was launched on the property of Harold Genazzi on the upstream side of the Highway 1 bridge. The weather was warm and clear. Water clarity was such that the bottom could be seen at a depth of about 4 feet.

Eleven species of fish were collected in the impoundment between the dam and approximately the location of the North Marin Water District wells which was as far upstream as the boat could go, a distance of about 1.5 miles. We divided the sampling into two reaches: downstream from Genazzi's to the dam and upstream from Genazzi's. Approximately 2 hours was spent sampling each reach. Each reach was approximately 0.75 miles long, but the downstream reach near the dam was much broader than the upstream reach. One would expect that the depth at the downstream end would be substantially greater than at the upstream end, and on the average that was probably true; there were, however, large areas of shoal at the downstream end and many deep pools at the upstream end.

Of the 11 species of fish collected, 10 were represented in the downstream reach. These included western sucker (SKR), western roach (RCH), carp (CP), goldfish (GF), steelhead rainbow trout (SH), largemouth bass (LMB), bluegill (BG), Staghorn sculpin (SCP-SH), prickly sculpin (SCP-P), and yellowfin goby (YFG). In the upstream reach we found 8 species; RCH, CP, SH, LMB, SCP-SH, SCP-P, YFG, and the three-spined stickleback (STB).

The total number of fish collected and the size distribution of the fish, in fork length in millimeters, is displayed on the attached table. Large numbers of small RCH were seen but no effort was made to capture these after a representative sample was taken. There were also many SCP and STB which were seen but not collected. A few large CP and SKR were seen and not collected because of the dense cover in which they were found.

The major differences between the two reaches was that the downstream reach included all, the SKR, BG, and GF (there were probably many small SKR in the upstream reach that we did not collect), 70% of the CP, and only 20% of the SH. Although the downstream reach included a relatively small percentage of the SH collected, it included the 4 largest SH.

One issue of concern which has been raised in recent years is that downstream migrant SH may be trapped behind the Giacomini dam when it is constructed in the spring. From the results of this survey, I can see no evidence of such entrapment this year. Although conditions were very good for the capture of SH within the survey area, only a small number of SH, 25 fish in 1.5 miles of stream, were captured and these were mostly age 0+ (19 fish) which were probably spawned only a short distance upstream from the upper end of the impoundment. Of the remaining 6 SH, 5 were probably age 1+ and 1 may have been age 2+. These larger fish could have been rearing in the pools in the upper reach of the impoundment area, could have elected not to migrate to the sea, or could have been stopped in their migration by the construction of the Giacomini dam. In any case these larger SH will probably migrate to the sea with the first major storms in the fall.



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FISH LENGTH FREQUENCY DISTRIBUTION

LAGUNITAS CREEK, MARIN COUNTY BEHIND GIACOMINI DAM

Size (mm)	Species								SCP		
	SH	SKR	CP	GF	RCH	LMB	BG	YFG	-SH	-P	STB
30-39								1		1	
40-49	1				4						
50-59	2				4			3			2
60-69	5	1			10			1	1		
70-79	5	2			1			1			
80-89	6	3							4		
90-99		6							4		
100-109		4	1		1				1		
110-119	1	4							1		
120-129	1										
130-139											
140-149							1				
150-159	3										
160-169							1				
170-179	1									1	
180-189											
190-199											
200-209											
210-219											
220-229											
230-239											
240-249											
250-259							1				
260-269				1							
270-279				2							
280-289				1							
290-299				1							
300-309			1								
310-319											
320-329			3								
330-339			1								
340-349			2								
350-359			1								
360-369											
370-379			1								
380-389			3								
390-399		1									
400-409			1								
410-419		1	1								
420-429			1								
430-439											
440-449		1	1								
450-459			1			1					
460-469											
470-479			1								
480-489											
490-499			1								
500+			3								
# measured	25	23	23	5	20	2	2	6	11	2	
# unmeasured	0	16	0	0	14	0	0				
Total Captured	25	39	23	5	34	2	2	6	11	2	