

# Memorandum

To : Fisheries Management  
Region 3

Date: July 25, 1978

From : Department of Fish and Game - Fisheries Management, Menlo Park

Subject: Soula Jule Ranch Reservoir, Marin County; Fish Population  
Sampling, July 1978

Central Fishery District personnel conducted an ichthyofaunal sampling survey of Soula Jule Ranch Reservoir on the evening of July 13, 1978. The Region 3 boat electroshocker was used to sample fish populations in littoral habitats between 2130 and 0100 hours.

Soula Jule Ranch Reservoir is located on Arroyo Sausal Creek about 1.1 miles upstream from confluence with Salmon Creek in north-central Marin County. The dam, completed in 1968, impounds 670 acre feet with a surface area of 63 acres. The reservoir was created for the private use, primarily recreational, of the Soula Jule Ranch. Consumptive use has been minimal and the impoundment maintains a stable water level at capacity.

Marin Municipal Water District (MMWD) recently purchased Soula Jule Ranch Reservoir and is constructing a larger dam immediately downstream from the existing structure. The new MMWD reservoir, impounding 10,560 acre feet with a surface area of 310 acres, will inundate the existing reservoir and is scheduled for completion in late 1978. The MMWD reservoir will be operated for municipal and flow augmentation purposes and will be subject to significant water level fluctuation.

Soula Jule Ranch Reservoir has provided private angling recreation since its creation. Fish populations were sampled on July 8-10, 1975 by MMWD consultants as part of an environmental assessment of potential water supply projects. Sampling by gill nets and seines revealed good populations of largemouth bass and bluegill, and a few rainbow trout and white catfish.

Electroshocking was conducted on July 13, 1978 to document current species composition and relative abundance, recruitment, and to ascertain the reservoir's potential for use as a largemouth bass procurement source. Also, unless the reservoir is drained prior to completion of the new dam, existing fish populations will serve as brood stock for the new reservoir. Therefore, it is of interest to determine current fish species composition. At 2100 hours, surface water temperature was 70° F, air temperature was 64° F. Water conductivity was 235 micromhos/cm; equivalent T.D.S.

calcium carbonate of 95 mg/l.

Water level stability has encouraged the development of dense growths of sago pondweed (Potamogeton pectinatus) along shorelines and in shallow bays. Several dense mats of smartweed (Polygonum coccineum) were present along the south shore.

Summary of Sampling Results

<u>Species</u>	<u>Number</u>	<u>FL Range (in.)</u>	<u>Av. FL (in.)</u>
Largemouth Bass (LMB)	1	--	1.0
	49	4.1 - 7.2	5.4
	20	9.7 - 14.3	12.1
	70	1.0 - 14.3	7.2
Bluegill (BG)	19	1.7 - 3.2	2.6
	63	3.3 - 5.6	4.3
	24	6.0 - 7.8	7.0
	106	1.7 - 7.8	4.6
Green Sunfish (GSF)	2	7.8 - 8.4	8.1
White Catfish (WCF)	6	10.2 - 18.8	14.1
Golden Shiner (GSH)	8	1.0 - 1.8	1.4
	(sample)		
	33	4.6 - 7.8	5.8

Length-frequency tables for LMB and BG are attached.

Sampling Results by Station

Station No. 1: Rock rip-rap along face of dam.

<u>Species</u>	<u>Number</u>	<u>FL Range (in.)</u>	<u>Av. FL (in.)</u>
LMB	28	4.1 - 14.3	7.9
BG	22	2.1 - 7.8	4.8
GSF	1	- -	8.4

Station No. 2: Littoral habitat along west and south shorelines, characterized by dense growths of pondweed and some smartweed. BG were abundant in the aquatic plant cover. Bullfrogs were heard along these shoreline reaches.

Species	Number	FL Range (in.)	Av. FL (in.)
LMB	35	1.0 - 12.9	6.3
BG	72	1.7 - 7.7	4.2
GSH	3	5.0 - 7.5	5.9

Station No. 3: Inlet channel (Arroyo Sausal); long, narrow inundated stream channel with abundant riparian canopy, undercut banks and inundated tree cover. Approximately 20 BG, 2.5 to 4 inches, were observed but not retrieved. Bullfrogs were heard in this area.

Species	Number	FL Range (in.)	Av. FL (in.)
LMB	7	5.0 - 13.4	8.9
BG	12	5.5 - 7.7	6.9
GSF	1	- -	7.8
WCF	6	10.2 - 18.8	14.1
GSH	8 (sample)	1.0 - 1.8	1.4
	30	4.6 - 7.8	5.8

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LENGTH FREQUENCY

SPECIES	LMB			LOCATION			DATE			NAME		
	FL, inches	#1	#2	#3	#1	#2	#3	#1	#2	#3		
0		1.0			6.0			11.0				
1		.1	1				1					
2		.2			2			2				
3		.3			3		1	3	1			
4		.4			4	1		4		1		
5		.5			5			5	2			
6		.6			6			6	1			
7		.7			7			7				
8		.8			8			8				
9		.9			9			9				
10		2.0			7.0	1		12.0	1	1		
11		.1			.1			.1				
12		.2			.2	1		.2				
13		.3			.3			.3	1			
14		.4			.4			.4				
15		.5			.5			.5	1	1		
16		.6			.6			.6	1	1		
17		.7			.7			.7				
18		.8			.8			.8				
19		.9			.9			.9	1	1		
20		3.0			8.0			13.0	1			
21		.1			.1			.1				
22		.2			.2			.2				
23		.3			.3			.3				
24		.4			.4			.4		1		
25		.5			.5			.5				
26		.6			.6			.6				
27		.7			.7			.7				
28		.8			.8			.8				
29		.9			.9			.9				
30		4.0			9.0			14.0				
31		.1			.1			.1				
32		.2			.2			.2				
33		.3			.3			.3	1			
34		.4		1	.4			.4				
35		.5		2	.5			.5				
36		.6		1	.6			.6				
37		.7		2	.7	1		.7				
38		.8	2	1	.8			.8				
39		.9	2	1	.9			.9				
40		5.0	1	6	10.0			15.0				
41		.1			.1			.1				
42		.2			.2			.2				
43		.3	4		.3			.3				
44		.4	1	1	.4			.4				
45		.5	2	5	.5	1		.5				
46		.6	1	2	.6			.6				
47		.7		1	.7			.7				
48		.8		2	.8			.8				
49		.9	1		.9	1		.9				

Σ = 28 35 7

#1, 2, 3 = Stations

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LENGTH FREQUENCY

SPECIES	BG			LOCATION SOULAJULE			RES. DATE 7/13/78	NAME
	FL, inches	#1	#2	#3	#1	#2		
0		1					6	
1		1						1
2		2						
3		3			1	1		
4		4						
5		5					1	
6		6						
7		7		1				
8		8				2		
9		9			2	1	1	
0		2			7			
1		1			1	1	1	
2		2		2	1		1	
3		3		2				
4		4		1			1	
5		5	1	1		1	2	
6		6		1			1	
7		7		1		1	1	
8		8		1	1			
9		9		1				
0		3		4			8	
1		1		1				
2		2		1				
3		3		1				
4		4	1	1				
5		5	1	1				
6		6	1	1				
7		7		2				
8		8	1	3				
9		9	1	5				
0		4	2	5				
1		1		2				
2		2		7				
3		3	1	2				
4		4		2				
5		5	2	4				
6		6	3	1				
7		7						
8		8		1				
9		9		3				
0		5	1	2				
1		1						
2		2		2				
3		3		1				
4		4		1				
5		5				1		
6		6		1				
7		7						
8		8						
9		9						

#1, 2, 3 = Stations

Σ = 22 72 12