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CRAB SPORT FISHERIES IN
HUMBOLDT BAY AND CRESCENT CITY HARBOR, CALIFORNIA

by

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MARINE RESOURCES
Administrative Report No. 78-12
September 1978

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ABSTRACT

In December 1964 interviewing of sport crab fishermen was begun in Humboldt Bay. A similar study was initiated in Crescent City in 1965. Fifty-four anglers interviewed at Humboldt Bay in 1964 and 1965 caught 27 Dungeness crabs, *Cancer magister*. The total estimated catch during the sampling period was 400 Dungeness crabs.

Skiff fishermen in Crescent City caught an estimated 6,318 Dungeness crabs during the 1965-66 season; 1,666 Dungeness crabs during the 1966-67 season and 5,054 Dungeness crabs during the 1967-68 season. There is a good potential for increased fishing in Crescent City Harbor, Trinidad Bay and Shelter Cove.

^{1/} Marine Resources, Administrative Report No. 78-12, September 1978

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INTRODUCTION

On the north coast sport fishing for crabs, primarily from skiffs, has been observed at Albion River, Noyo River, Shelter Cove, Eel River Estuary, Humboldt Bay, Trinidad Bay and Crescent City Harbor (Figure 1).

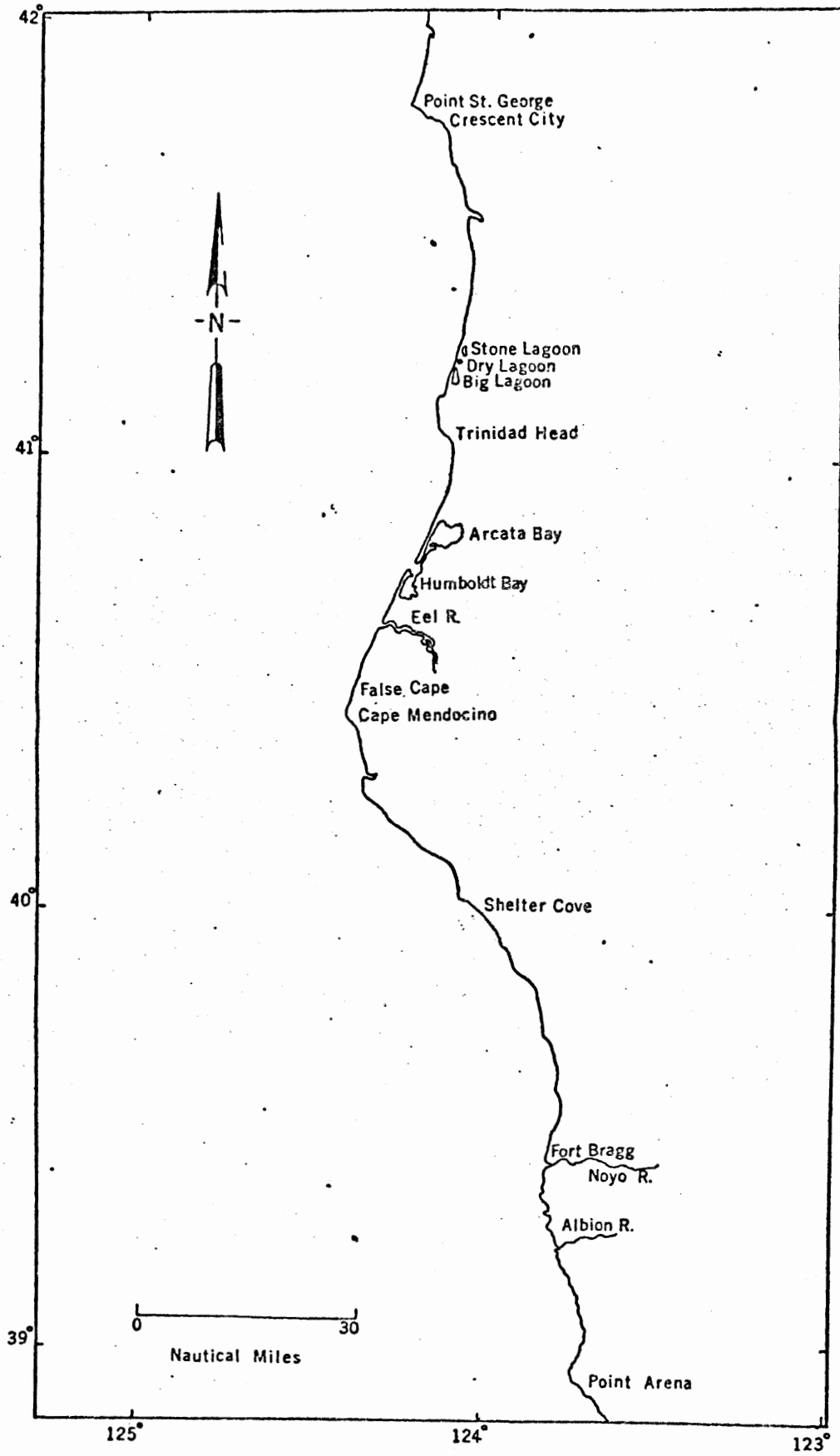
In December 1964, interviewing of sport crab fishermen was begun in Humboldt Bay (Poole and Gotshall, 1965, Gotshall 1966). A similar study of the Crescent City Harbor sport fishery was undertaken in December 1965 (Gotshall and Hardy, 1969). Details of these two studies are presented here to reveal the importance of sport fishing for crab off northern California.

Commercial crab landings data have been available since 1916, but there is little information on the magnitude of the sport catch. The data that does exist consist of infrequent catch information from partyboat logs, field reports from Fish and Game wardens, and occasional observations by marine biologists.

METHODS

Sport crab fishermen were interviewed at the completion of their fishing day. Sampling was conducted whenever time permitted; no attempt was made to randomize sampling days. The interviews were conducted at several skiff launching sites in south Humboldt Bay and at the launching facility in Crescent City Harbor. In addition, fishermen fishing ring nets off the Crescent City dock were interviewed. The records for each interview included number of

FIGURE 1. Northern California Crab Sport Fishing Localities.



anglers in party, number of ring nets fished, total hours, and the number of crabs caught. Whenever feasible, crabs were measured.

On sampling days, hourly turnover counts described by Miller and Gotshall (1965), were made of the number of skiffs and dock fishermen to calculate estimates of total effort.

RESULTS

Humboldt Bay

Most sport crab fishing takes place from skiffs inside the bay. No dock fishing was observed. During periods of calm seas a few fishermen venture outside the bay.

Twelve days were devoted to obtaining interviews from 54 anglers from December 1964 through March 1965. None of these fishermen had fished outside the bay.

The most productive fishing, in terms of crabs per day, occurred during January (Table 1). The total catch for the 54 anglers sampled during the study period included 27 Dungeness crabs, *Cancer magister*, 132 red crabs, *C. productus*, and 18 rock crabs, *C. antennarius*. The Dungeness crabs ranged in size from 152 to 180 mm (6.0 to 7.1 inches) carapace width. From turnover counts, it is estimated that 800 angler days were spent in pursuit of crabs by skiff fishermen during the 1964-65 season. The total catch is estimated at 400 Dungeness crabs and 2,223 other crabs.

Crescent City Harbor

Sport crab fishermen fishing from the Crescent City dock and from skiffs inside and outside the harbor were interviewed during the 1965-66, 1966-67, and 1967-68 seasons. This sampling was conducted by biologists with the Pacific Marine Fisheries Cooperative Port Sampling Project financed by the Bartlett

Bill (P.L. 88-309). Dock and skiff fishermen were interviewed on 25 separate days during the three seasons. The best catches in the skiff fishery were observed during March 1968 when fishermen averaged 9.06 crabs per day (Table 2). Dock fishermen made their best catches during March 1966 (Table 3).

For some unknown reason the catches during the 1966-67 season fell off in both fisheries. This decrease was not reflected in Crescent City commercial landings of 3.9, 4.4, and 5.0 million pounds for the 1965-66, 1966-67, 1967-68 seasons respectively.

Crabs caught by skiff fishermen ranged in size from 153 to 191 mm (6.0 to 7.5 inches) carapace width, while crabs caught off the dock ranged from 160 to 164 mm (6.3 to 6.5 inches) carapace width (measured during 1965-66 season only).

Approximately 900, 700, and 700 angler days were expended by skiff anglers during the 1965-66, 1966-67, and 1967-68 seasons, respectively. These anglers caught an estimated 6,318; 1,666; and 5,054 crabs, respectively, during the three seasons.

The estimated effort and catch for the dock fishermen for the three seasons was 800, 350, and 150 angler days and 624, 116, and 75 crabs, respectively.

DISCUSSION

From the Humboldt Bay and Crescent City Harbor studies, it is apparent that the catches of sportfishermen are insignificant when compared to the commercial catch. For the three seasons sampled, and using a two pound average for each crab caught, the sport catch amounted to .4, .08, and .2 percent of the commercial poundage. The Humboldt Bay study probably does not truly represent catch and effort patterns during the last few seasons; observations by marine wardens indicate fishing success was better, particularly during the 1968-69 and 1969-70 seasons. The wardens also noted that the best catches came from outside the bay.

The sportfisheries for crabs at Trinidad, Eel River Estuary, Shelter Cove, Noyo River, and Albion, probably are not of the same magnitude as the Humboldt Bay and Crescent City Harbor fisheries. From the studies, it appears that the size of the sportfishery depends first on accessibility, i.e., launching ramps, docks; and secondly, on the abundance of legal size crabs. The Crescent City Harbor, both inside and outside, offers both accessibility and a high abundance of crabs, and the total effort in this fishery will probably increase significantly in the future. There is not much potential for an increase in total effort in Humboldt Bay. Any future increase in effort would be directed towards crabs outside the bay.

There is a good potential for fairly large crab sportfisheries at Trinidad and Shelter Cove if breakwaters are constructed to allow safe launching of small boats during the winter.

REFERENCES

- Gotshall, Daniel W. 1966. Marine resources of Humboldt Bay, in A symposium on Humboldt Bay, sponsored by the Center for Community Development, Humboldt State College and University of California Extension; 23-36.
- Gotshall, Daniel W. and Robert Hardy. 1969. Final Report of Port Sampling, January 1966 - November 1968, Pac. Mar. Fish. Comm., 21st Report for the Year 1968; 28-35.
- Miller, Daniel J. and Daniel Gotshall. 1965. Ocean sportfish catch and effort from Oregon to Point Arguello, California, July 1, 1957 - June 30, 1961. Calif. Dept. Fish & Game Fish Bull. 130:1-135.
- Poole, Richard and Dan Gotshall. 1965. Regulations and the market crab fishery. Outdoor Calif., 24(9):7-8.

TABLE 1. Summary of Dungeness Crab Skiff Sport Fishery Sampling, Humboldt Bay, 1964-65

Month	Anglers	Skiffs	Nets	Angler Hours	Dungeness Crabs	Crabs per Angler Day
December	25	12	90	36	9	0.36
January	18	8	75	33	17	0.94
February	9	3	15	12	0	0.00
March	<u>2</u>	<u>1</u>	<u>5</u>	<u>4</u>	<u>1</u>	<u>0.50</u>
TOTALS	54	24	185	85	27	0.50

TABLE 2. Summary of Dungeness Crab Skiff Sport Fishery Sampling, Crescent City Harbor, 1966 - 1968.

1965-66 Season						
Month	Anglers	Skiffs	Nets	Angler Hours	Dungeness Crabs	Crabs per Angler Day
January	5	2	17	15	20	4.00
February	40	16	109	108	275	6.88
March	8	4	31	28	68	8.50
April	<u>7</u>	<u>3</u>	<u>12</u>	<u>33</u>	<u>58</u>	<u>8.28</u>
TOTALS	60	25	169	184	421	7.02
1966-67 Season						
December	15	4	23	89	23	1.53
January	6	3	8	28	11	1.83
February	6	3	14	46	24	4.00
March	<u>2</u>	<u>1</u>	<u>7</u>	<u>4</u>	<u>11</u>	<u>5.50</u>
TOTALS	29	11	52	167	69	2.38
1967-68 Season						
December	9	4	32	30	61	6.78
January	20	7	65	74	128	6.40
February	13	6	28	66	85	6.54
March	<u>16</u>	<u>4</u>	<u>*</u>	<u>39</u>	<u>145</u>	<u>9.06</u>
TOTALS	58	21	125	209	419	7.22

* No data.

TABLE 3. Summary of Dungeness Crab Dock Sport Fishery Sampling, Crescent City Harbor, 1966 - 1968.

Month	1965-66 Season				
	Anglers	Nets	Angler Hours	Dungeness Crabs	Crabs per Angler Day
January	30	68	51	32	1.07
February	20	31	24	5	0.25
March	3	7	7	4	1.33
April	<u>1</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>1.00</u>
TOTALS	54	109	86	42	0.78
Month	1966-67 Season				
	Anglers	Nets	Angler Hours	Dungeness Crabs	Crabs per Angler Day
December	21	43	38	12	0.57
January	2	6	8	0	0.00
February	10	15	16	0	0.00
March	<u>6</u>	<u>10</u>	<u>11</u>	<u>1</u>	<u>0.17</u>
TOTALS	39	74	73	13	0.33
Month	1967-68 Season				
	Anglers	Nets	Angler Hours	Dungeness Crabs	Crabs per Angler Day
December	1	2	6	0	0.00
January	3	4	10	2	0.67
February	<u>6</u>	<u>8</u>	<u>22</u>	<u>3</u>	<u>0.50</u>
TOTALS	10	14	38	5	0.50