

South of Cascade Head
 July 31 - August 6, 1948

Introduction

Following a public hearing held July 22, 1948 the Fish Commission of Oregon promulgated a revised set of regulations for the crab fishery of the State. One of these regulations declared a closed season on off shore crab fishing during soft-shell season, the time of closing and opening for such to be determined for the time being at least as the condition of the crabs changed rather than by fixed seasons. Tentatively the Oregon coast was divided into two areas : Area I - from Cascade Head north; and, Area II - from Cascade Head south. Since data gathered in 1947 showed that the southern areas reached soft-shell earlier than those in the north, the emphasis to date has been in the south to insure proper closing time in that area. Accordingly this report deals entirely with Area II, Area I to remain open until further notice.

At the public hearing it was stated by the Commission that the criteria for regulating the season was to be 10 % soft for closing and 90 % hard for reopening. Since a two weeks notice is to be given the actual season is that much later than the time of arrival at each of these figures.

Discussion

For the proper determination of 10 % soft crabs (or any other figure as well) it was first necessary to set up certain basic rules or procedures to obtain standard results comparable from year to year. To start with the following points might be presented as demonstrated basic assumptions in the behavior of the crabs:

1. There is a differential time of shedding along the coast, in general becoming progressively earlier as one moves south.
2. There is great variation between small "sub-areas", these tending to consistently run earlier or later as the case may be than other adjoining areas.
3. There may be great variations between individual pots or between strings of gear even within these sub-areas.
4. Pot catches are not truly representative of the crabs on the grounds during the start of soft-shell season. At this time they are selective to newly shed crabs which are much more active feeders than those just before shedding.

Because of the first point, to prevent working an undue hardship on any one group, it is necessary to split the coast into geographic areas as far as may be practical so that in general the crabs change condition uniformly over each entire area. This is being approached this year by splitting the coast into Areas I and II. It should be emphasized that these are tentative areas and that further data may well show the need and feasibility of further division.

It will not be possible to ever regulate the "sub-area" variation described in the second point by the foregoing area type regulations or closures because of their extremely small and localized character. It will rather be necessary to consider them solely in the method of deriving the 10 % soft figure. The same is true of the third point, or the variation existing between pots and between strings of gear.

The fourth point or matter of apparent selectivity of pots is believed simply answered. Since the commercial fishery is carried out by means of pots, it is the condition here that counts rather than what the true biological condition may be for the stocks as a whole on the grounds. Also then, before any other method ~~is~~ may be used for determination of condition for purposes of regulation of seasons, it must first be proven comparable to pot catches. To carry this a step further we may arrive at the principle for determining proper closing time under the present system. It is not the condition of the crabs within an average pot of an average area that counts but rather the condition of the crabs weighted according to every pot that is out in the entire area to be affected. Any other method of sampling or weighting would run

the risk of discriminating against an area because of geographic location rather than discriminating only in the preferred terms of total fishing damage or wastage of stock

Accordingly the following procedure for determination of proper closing time has been set up and is being followed:

1. - A determination as far as possible of every pot out in the entire area, and the exact location of these pots.
2. - The pots should then be grouped into whatever, and as many, local areas as they may naturally fall into.
- 3-A. - The condition of the crabs within each of as many of these local areas as ~~is~~ possible should be determined by counts on the boats at the time the pots are lifted. Due to the magnitude of variation and extent of the survey required it will be impossible to oversample an area. Samples should be taken as rapidly and continuously as is possible until the area is actually closed.
- 3-B. - To minimize the variation between individual pots or strings of gear and to prevent undue weighting of the figures by extreme areas, the total of all soft male crabs seen in ~~in~~ all pots and strings of each local area should be calculated against the total number of all ~~total~~ male crabs found, hard and soft; rather than calculating the percentage in each string examined and then taking any sort of plain average between strings of gear. The latter procedure would be valid if all strings had an equal number of pots but that is very seldom the case.
- 3-C. - Since it is impossible to sample all areas on any one day, it will be necessary to combine results over a period of stated time and ~~to~~ express condition of the crabs as of that period. This time period should be as short as possible, with the maximum time over which any set of results may be considered valid being not greater than the average length of time the pots are left out between lifts. This would still be as accurate as the individual results since the catches themselves do not represent the condition for the date lifted only, but rather the cumulative condition over the entire time since last fished.
- 4-A. - As a method of calculation, a "soft-pot" factor is introduced. This is the same percentage of the total pots present in any local area as the percentage of soft-shell crabs in that area. That is, a local area running 10 % soft-shell crabs may as well be expressed as 10 % "soft-pots" assumed to be catching soft-shelled crabs only with the other 90 % catching hard-shelled crabs only.
- 4-B. - The total number of "soft-pots" for all local sub-areas as against the total number of pots out will then give the percentage of soft-shell crabs for the entire affected area, weighted according to the number of pots present in each sub-area.

Extent of soft-shell crabs - Area II

Time period July 31 - August 6, 1948

I. - Crab boats operating and respective number of pots being fished.

<u>Newport</u>			
J. & M. Fogarty	-----" Anna - E" -----	120	pots
Erickson	-----" Ethel - G" -----	90	"
E. Fogarty	-----" Sea Lanes" -----	90	"
Reaves	-----" Margaret - T" -----	90	"
Sullivan	-----" R - Own" -----	40	"
			<u>430 pots</u>
<u>Winchester Bay</u>			
	-----" Christina - J" -----	200	pots *
			<u>200 pots</u>
<u>Coos Bay</u>			
Taylor	-----" Intrepid" -----	159	pots
Burns	-----" Yukon" -----	100	"
	-----" Neil - I" -----	65	"
	-----" Rambler" -----	40	"
			<u>364 pots</u>
<u>Port Orford</u>			
Gearin	-----	150	pots
Esterbrook	-----	25	"
Hoffsess	-----	25	"
Strahan	-----	25	"
J. Johnson	-----	20	"
Mills	-----	20	"
Smith	-----	20	"
			<u>285 pots</u>
	TOTAL -----		<u>1279 pots</u>

(* - Subject to some question)

Almost all of these boats are bringing their gear in due to poor fishing and, or, desire to fish either tuna or salmon. Contacting the men has led to the estimate that in the magnitude of 500 additional pots will be brought in in the forthcoming week, irregardless of season, then leaving a total of about 750 pots out. Only two boats involving a total of somewhat over 100 pots have expressed desire to leave gear out throughout the summer if they were to be permitted to do so.

II. - Crab pots out, according to area where fishing.

Alsea Area (north of river)	-----	243	pots
Alsea Area (south of river)	-----	103	"
Cape Perpetua (north of Cape)	-----	44	"
Hecata Head	-----	40	"
Umpqua Area (around mouth of river)	-----	309	"
Coos Bay Area (off Bay proper)	-----	255	"
Cape Blanco (north of Cape)	-----	75	"
- Elk River	-----	60	"
Rogue and Euchre Rivers	-----	150	"

TOTAL ----- 1279 pots

III. - Percent soft-shell crabs occurring per local areas.

	<u>No. pots observed</u>	<u>Total M per pot</u>	<u>% soft M per string</u>	<u>Total no. Males</u>	<u>No. soft Males</u>	<u>% soft in area</u>
<u>North of Alsea</u>						
"Margaret-T" - July 31 -	23	7.8	10.6 %	179	19	
"Margaret-T" - July 31 -	20	4.9	20.4 %	98	20	
TOTALS	43			277	39	14.1 %
<u>South of Alsea</u>						
"Margaret-T" - July 31 -	57	10.4	5.1 %	593	29	
"Ethel-G" - Aug. 3 -	15	4.0	18.3 %	60	11	
"Ethel - G" - Aug. 3 -	29	4.8	30.4 %	138	42	
TOTALS	101			791	82	10.4 %
<u>Cape Perpetua</u>						
"Ethel-G" - Aug. 3 -	44	4.2	10.3 %	184	19	
TOTALS	44			184	19	10.3 %
<u>Umpqua</u>						
"Intrepid" - Aug. 5 -	105	15.3	10.3 %	1603	167	
TOTALS	105			1603	167	10.4 %
<u>Coos Bay</u>						
"Intrepid" - Aug. 3 -	23	14.5	59.4 %	288	171	
"Intrepid" - Aug. 5 -	8	11.0	35.2 %	88	31	
TOTALS	31			376	202	53.7 %

IV.- Percent soft-shell crabs - overall for Area II - weighted according to number and location of pots fishing July 31 - Aug. 6, 1948

	Total pots out	% soft-shell crabs	"soft-pots"
North of Alsea -----	243 -----	14.1 % -----	34 -----
South of Alsea -----	103 -----	10.4 % -----	11 -----
Cape Perpetua -----	44 -----	10.3 % -----	6 -----
Umpqua -----	309 -----	10.4 % -----	32 -----
COOs Bay -----	255 -----	53.7 % -----	137 -----
TOTALS -----	954 -----		220 -----

Area II overall condition -- 23.1 % soft-shell.

It will be seen that the sampling covered 954 of the 1279 pots out or 74.6 % of that total.

All areas sampled were found to be at least 10 % soft-shell.

All reports from the fishermen themselves have born out the magnitude of the foregoing percentages. Further- reports indicate those areas not sampled to be also running the same magnitude soft as those that were sampled. However, even if all these other areas ran 100 % hard shell crabs (a virtual impossibility) the overall area condition would still exceed 10 % soft : 220 soft pots per 1279 - 17.2%.

Accordingly it is requested that the Commission declare closed season for crab fishing in Area II, effective two weeks from date of notice.

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