

BAY CRAB MANAGEMENT

INTRODUCTION

The sport/commercial interaction concerning Dungeness crab in our estuaries is heating up again. The shellfish staff has discussed this at length and agrees that the interaction is an indication that our bay crab regulations need to be reviewed. There are currently two issues that need to be resolved: 1) The sport/commercial interaction, and 2) the wise use of available crabs by the sport fishery.

SCOPE

The scope of this report is to briefly describe the basic operation of the Dungeness crab fishery in Oregon's estuaries and to seek direction on management policy and appropriate strategies.

SPORT/COMMERCIAL INTERACTION

Background

So far this year we have received several letters and phone calls concerning user conflicts in Alsea, Coos and Coquille estuaries. The complaints have been from sport crabbers who want commercial crabbing in the estuaries prohibited.

This matter was heard by the Commission February 16, 1984, at which time staff made the following points:

1. There has been sport and commercial crabbing in our bays for many years with regulations implemented in the late '40s.

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2. The catch is split 50-50 between user groups.
3. Only 1 to 2% of the total crab catch comes from estuaries (98% of catch from ocean via commercial fishery).
4. The matter is social in nature as most crabs mate before entering the fishery, females are protected, and all move freely in and out of the estuaries.
5. The commercial fishery takes place mostly during October and November when the ocean fishery is closed and provides some fresh crab for local markets.

In January 1984 staff held a series of meetings along the coast and in Portland and Eugene. Some sport users wanted a total ban on commercial crabbing in estuaries while others cited specific problems: gear, time, area, methods of fishing.

Staff presented the Commission with five options which dealt with the above concerns:

1. Limit each boat to no more than 15 rings.
2. Prohibit use of pots.
3. Prohibit commercial fishing on weekends and all state and federal holidays.
4. Prohibit daytime fishing.
5. Allow commercial fishing only during closed season in the ocean.

The Commission opted for the first three options.

In reality the restrictions had little overall effect. The catch in Tillamook and Netarts took a real nosedive but so did the sport fishery; so the decrease was from crab scarcity not from the regulations.

In Alsea and Coos bays there was little or no change because the commercial fishery was already limited to rings. Also sport crabbing has become a year round affair so there is no open window of time for a commercial fishery to operate without mixing it up with the sport fishery.

One of the complaints we have heard from sport users is the practice by some commercial crabbers to spread their rings over a much broader area than they intend to fish in a given time, thereby reserving a fishing space for themselves later in the day (or night). This was the real basis for the complaints in Alsea Bay. In Coos Bay, with 24 commercial boats in 1985, the effect was the same.

Discussion

Notable changes in the bay crab fishery have taken place since 1971. In Tillamook and Netarts bays legal sized crabs became very scarce (Tables 1 and 2). In Yaquina Bay the sport fishery became dominant (Table 3) while in Alsea Bay both sport and commercial fisheries have increased (Table 4). Coos Bay has been the second leading producer of crabs but has by far the most boats participating (Table 6).

An issue that commercial fishermen brought up at our meetings in 1984 was their contribution to the economy of the local community and to the state. I have appended some tables to this report for your information. For example, in 1985 in Alsea Bay (Table 4), 5 boats landed 81% of the catch and averaged \$3,848 per boat and ten boats landed 19% of the catch and averaged only \$264 per boat. The retail value of the 13,635 pounds was about \$47,600.

In Coos Bay in 1985 (Table 6), 24 boats landed 7,285 pounds worth \$12,748 to the fisherman. Two boats landed 47% of the catch and averaged \$3,001 per boat, while 22 boats landed 53% of the catch and averaged \$281 per boat. The

retail value was about \$25,400. A summary of the dollar value to the fishermen is shown in Table 7. The figures are not impressive except to those very few who made over \$3,000 each and to them it probably was important.

The economic value to the state in terms of licensing and poundage fees is small. Nearly all of the bay crabbers participate in other fisheries so licensing revenues cannot be assigned specifically to crabbing. Poundage fees for 1985 were \$130. The argument that the commercial bay crab fishery supplies a significant tourist demand for fresh crab is very weak. A survey of summer crab dealers revealed that most get crab from any source available, including Alaska frozen crab. The timing of the tourist season (June-mid September) does not coincide with most of bay crab landings either (October-November).

On the other side of the ledger, preliminary figures from Tillamook, Netarts, Yaquina, and Coos bays from a 1977 study show that some 28,000 sport crabbers went fishing. We do not know the economic value of that number of users, only that three-fourths of them were from out of county. Even without dollar value data it seems probable that the sport value far exceeds that of the commercial fishery. Since 98% of the crab are taken by the commercial fleet in the ocean, sport fishermen make a logical claim, "Why do commercial fishermen have to fish our bays as well?"

STAFF POSITION

The shellfish staff concludes that commercial crabbing in all estuaries excluding the Columbia River should be prohibited.

Agency guideline (policy?) according to Oregon's Strategic Plan for Fisheries is to emphasize commercial production in the ocean and recreational crabbing in the state's bays. The term "emphasize" does not necessarily mean a total ban on commercial crabbing in bays, but it would lean that way, all

other considerations being equal. In other words, with a 50-50 split in harvest between sport and commercial users, no biological issues, and a growing conflict between user groups, the recreational users would get the benefit of doubt in choosing among management options.

There are three basic options:

1. Status quo
2. Further restrictions on the commercial fishery:
 - a. Allocate catch by quota (reduce sport bag limit as well)
 - b. Season
 - c. Limit fishing to night time only
 - d. Further gear limits
 - e. Limit fishing to certain bays or areas in bays
 - f. Limited entry
3. Prohibit commercial fishing in all bays except the Columbia River.

Option 1. Status quo. Since further restrictions on the commercial fishery implemented in 1984 have had little affect in reducing interaction between user groups we suspect that something other than physical factors (pots, number of rings, crowding, taking all the large crabs) ignite and feed the conflict. Also, the argument that the commercial bay crab fishery is important in supplying fresh crab to the tourist market is weak. Small economic gains vs. a growing sport fishery and consequently more interaction are perceived by most sport crabbers as way out of balance. To maintain the status quo would only aggravate the conflict.

Option 2. Further restrictions on commercial fishing. Most recreational crabbers perceive the quality of their crabbing experience in terms of how many legal crabs they catch and to a lesser extent the fullness of the crab, their size, and the time spent to catch them. Most sport crabbers also

believe that their lack of success is due directly to the commercial fishery and assume that they (the sports) would catch all of the crab if there was no commercial fishery. Another segment of recreational crabbers object to the very presence of commercial crabbers on more a philosophical basis regardless of how many or how few crabs the commercial crabber takes. In essence, any option that allows a commercial presence in the bays is going to be a source of constant irritation to many sport crabbers and therefore unacceptable.

Staff is aware that in past years the sport/commercial interaction was voiced only from those smaller bays where mostly impassable bars confined all fishing activity to the bay, such as Nehalem, Netarts and Alsea. Prohibiting commercial crabbing would have solved the problem in those bays. However, as the number of recreational users has increased and become an all year activity the problem has now invaded the large bays as well. This has been especially a problem in Coos Bay. Nothing short of a total ban on commercial crabbing in the bays will resolve the interaction.

Option 3. Prohibit commercial crabbing in all but Columbia estuary. This option ends the sport/commercial interaction in the estuaries but has a direct negative impact on those people who relied in part on bay crabs for their income. The impact is extremely small compared to the ocean fishery but may be quite important to a few people. The positive impact of providing more crab to a growing sport fishery seems to outweigh the negatives.

CONCLUSION

In light of agency policy to emphasize recreational activities in the state's bays, continuing and growing conflicts between user groups, and with the ocean available for commercial production, it seems advisable to prohibit commercial crabbing in the state's bays. The Columbia River should be

excluded as its size makes it more a part of the ocean than a bay. Present and anticipated levels of crabbing effort in the river leaves plenty of room for all users.

by J. Damory
about 1925 (late)

Table 1. Tillamook Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) ^{1/}
1971	96,000			
1972	58,600			
1973	42,300			
1974	26,500			
1975				
1976	19,900			
1977	7,210	8	50	5,407 @ \$0.75
1978	22,295	18	148	21,626 @ \$0.97
1979	16,853	9	248	15,167 @ \$0.90
1980	10,466	14	148	10,989 @ \$1.05
1981	8,972	15	160	9,420 @ \$1.05
1982	1,486	4	44	1,188 @ \$0.80
1983	1,044	3	49	1,618 @ \$1.55
1984	27	1	5	48 @ \$1.50
1985	220	2	9	385 @ \$1.75

^{1/} @ price per pound

Table 2. Netarts Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) <u>1/</u>
1971	21,900			
1972	8,500			
1973	200			
1974	900			
1975	-			
1976	-			
1977	2,441	1	30	1,831 @ \$0.75
1978	4,237	2	59	3,038 @ \$0.71
1979	12,244	2	144	11,400 @ \$0.93
1980	9,940	3	97	6,212 @ \$0.62
1981	6,635	2	90	6,966 @ \$1.05
1982	3,071	1	58	2,456 @ \$0.80
1983	823	1	31	946 @ \$1.15
1984	373	1	22	559 @ \$1.50
1985	518	1	18	695 @ \$1.34

1/ @ price per pound

Table 3. Yaquina Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) <u>1/</u>
1971	5,900			
1972	3,900			
1973	3,500			
1974	-			
1975	-			
1976	-			
1977	0	0	0	0
1978	1,442	10	39	1,403 @ \$0.97
1979	100	1	14	104 @ \$1.04
1980	174	2	23	130 @ \$0.77
1981	133	4	14	166 @ \$1.25
1982	0	0	0	0
1983	0	0	0	0
1984	597	2	13	895 @ \$1.50
1985	18	3	3	31 @ \$1.75

1/ @ price per pound

Table 4. Alsea Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) <u>1/</u>
1971	8,300			
1972	1,500			
1973	300			
1974				
1975				
1976				
1977	0	0	0	0
1978	606	1	2	587 @ \$0.97
1979	4,558	4	24	3,874 @ \$0.85
1980	11,718	8	64	9,174 @ \$0.78
1981	4,135	10	37	4,341 @ \$1.05
1982	6,764	23	71	5,411 @ \$0.80
1983	5,360	12	59	6,968 @ \$1.30
1984	1,1825	11	57	2,737 @ \$1.50
1985	13,635	15	89	23,861 @ \$1.75

1/ @ price per pound

Table 5. Siuslaw Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) <u>1/</u>
1971	3,800			
1972	5,200			
1973	600			
1974	50			
1975	0			
1976	1,000			
1977	0			
1978	0			
1979	0			
1980	0			
1981	0			
1982	0			
1983	0			
1984	0			
1985	0			

Note: All or most of the pounds were probably from the ocean fishery as records prior to 1977 reflected only port of landing, not area of catch.

1/ @ price per pound

Table 6. Coos Bay Commercial Crab Catch and Effort

Year	Pounds	Boats	Trips	\$ Value (to fisherman) <u>1/</u>
1971	26,700			
1972	8,100			
1973	6,000			
1974	4,800			
1975	0			
1976	8,200			
1977	13,830	38	155	7,600 @ \$0.55
1978	27,626	51	172	26,797 @ \$0.97
1979	9,701	39	86	8,245 @ \$0.85
1980	7,548	18	77	6,038 @ \$0.80
1981	3,225	16	60	3,386 @ \$1.05
1982	1,211	15	33	1,089 @ \$0.90
1983	3,082	15	63	4,006 @ \$1.30
1984	9,280	17	140	13,920 @ \$1.50
1985	7,285	24	249	12,748 @ \$1.75

1/ @ price per pound

Table 7. Summary, Dollar Value of Bay Crab Harvest to Fishermen 1977-85.

Year	Tillamook	Netarts	Alesea	Coos	Total
1977	\$ 5,407	\$ 1,831	\$ 0	\$ 7,600	\$14,838
1978	21,626	3,038	587	26,797	52,048
1979	15,167	11,400	3,874	8,245	38,686
1980	10,989	6,212	9,174	6,038	32,413
1981	9,420	6,966	4,341	3,386	24,113
1982	1,188	2,456	5,411	1,089	10,144
1983	1,618	946	6,968	4,006	13,538
1984	48	559	2,737	13,920	17,264
1985	385	695	23,861	12,748	37,689

PART II

INTRODUCTION

MANAGEMENT OF THE SPORT CRAB FISHERY

Most of the sport crab regulations were implemented during the 1940s based on what was reasonable. In later years some specific problems developed which prompted corrective regulations.

BACKGROUND

The food fish management policy for Oregon (ORS 506.109) states in part that "...food fish shall be managed to provide the optimum economic, commercial, recreational, and aesthetic benefits..." with six goals which pertain to maintaining species at optimum levels and to optimize production, utilization, and public enjoyment of same through sound fish management practices. The Fish and Wildlife Commission has opted to emphasize sport fisheries in the state's estuaries and to that end the following comments will relate to wise use of the available crab resource by sport users.

We must first realize that the basic philosophy of our crab management is to get the most out of the resource while maintaining the reproductive capability of the species. Since the commercial fishery takes 98% of the total catch our management practice stresses such factors as growth rate, spawning, size, sex, condition, and fishing practices, all of which are directed towards obtaining the maximum meat yield from each crab and the resource. Our sport fishery management compromises some of the above factors by allowing sport users to keep smaller crabs, fish all year, and ignoring condition.

In the strict sense this practice is inconsistent, but for practical purposes it has worked fairly well. Since crabs move in and out of estuaries at will there is a more or less constant supply of them. The fluctuations in harvest reflect crab availability and not overfishing the resource. Allowing sport crabbers to take smaller animals is related to direct competition with the commercial fishery for the same animal and gives the sport crabber a better chance to catch legal sized crab. The sport fishery takes so few of the total number of crabs caught that there is little if any likelihood that a negative impact on the resource would develop.

In summary the commercial fishery set the stage for regulating the harvest of crabs and some of those regulations were softened to accommodate the sport fishery. The following regulation options for the sport fishery will focus on the crabs available to the fishery, and what is reasonable today.

REGULATION OPTIONS

Option 1. Status quo (Present regulations are shown in Table 8)

Most of the present regulations on crab stem from the 1940s and 50s which were reasonable for the time. Little competition for available crab fostered a sense of well being, but as use increased that sense of well being became one of concern, either real or perceived. Too few legal crab, too many females, too much gear, too many boats, too little space, were heard over and over. Even without a commercial fishery in the bays the voice we hear is that the status quo is no longer good enough.

Option 2. Prohibit the taking of crab off the mouths of bays.

This option and the next two will deal with allocation. The first one would allow more crab to enter the bays while the next two would allocate crabs among sport users.

Interviews with many people over the past few years have shown that sport and commercial bay crabbers agree on only two issues: 1) There are too many seals and sea lions in the bays, and (2) commercial crabbing in the ocean near bay mouths should be prohibited.

An early regulation established a triangular closure to crabbing off the entrance to Nehalem and Alsea bays. A buoy marked the seaward apex of each triangle. The regulation was difficult to enforce and bordered on the impossible since the marker buoys would not stay in position for long. The regulation was voided in the 1960s.

New closures could be established and subjective information from both sport and commercial bay crabbers indicates that a lot of pots near the entrance of a bay impacts the number of crab that enter the bay. We have no data on the matter, but believe there is a degree of truth. However, if such action is anticipated it should be done in only one estuary and as an experiment so that impacts could be measured; how many extra crabs would enter the bay and be caught, and how many crabs and how much fishing area would the ocean commercial crabber have to forego, and enforceability.

Option 3. Reduce bag limit to 6.

An allocation matter that may become an issue is the potential interaction among recreational crabbers; between those who catch a lot of crabs and those who catch a few. Data from a 1977 study confirm that most of the crabs are taken by a few crabbers. Although this is not an immediate problem it may emerge in time as crab abundance fluctuates, the number of users continues to increase, and the commercial fishery is no longer around to be accused. A 6-crab bag limit would be more equitable. Our present bag limit of 12 is the

most generous on the west coast and we also have the smallest size limit. The number 12 was picked from the air many years ago as a reasonable amount. There is no doubt that times have changed and with present competition for limited resources 6 crabs would be more reasonable today and more users would have the thrill of "getting a limit".

Option 4. Allow female crabs to be taken

Another factor that would provide more crab to the sport fishery would be to allow female crab that exceeded the size limit for male crabs to be retained. Recent data from California confirms our observations that female crabs over about 150 mm (5 3/4 inches) do not reproduce, yet compete for space and food. Again, we do not have hard data on how many female crabs would be taken, but observations over the years indicate that in some areas at some times large females are very abundant. This option would provide more crabs to the fishery with no risk to the resource. Female crabs over 6 1/4 inches are legal in the California sport fishery.

Option 5. Increase size limit

Among the west coast states Oregon is also the most lenient on size. The Washington limit is 6 inches in Puget Sound and 6 1/4 inches in the ocean. The California limit is 6 1/4 inches.

A 5 3/4 inch crab is quite small and does not utilize the growth rate of a crab well. Another 1/4 inch of growth would yield about 30 percent more meat per crab. Also, the 1977 study showed that 50 percent of the crabs taken by the sport fishery were sublegal so we are getting even less out of the fishery. Our present policy to provide for recreation and compromise on utilization is perhaps not the best in an age where demands for more and better are so common on finite resources.

Option 6. Gear modification

Most crab gear now in use has a rather small mesh that will retain many thousands of small crabs, many of which die from various handling practices. Diving observations have shown that if gear has a proper sized mesh nearly all sublegal crabs will escape before the gear can be lifted from the water. Escape devices are required on commercial pots. Many crabs could be saved and minimum effort would be required to modify present gear while all new gear would be made with the appropriate size mesh. Since less material would be required for the gear, the price should not be higher. Some work has already been done on this so implementation could be done readily.

CONCLUSION

The shellfish staff agree that all of the above options have merit. We also realize that some of them have more impact on users than others and will need to be discussed further. Some may need detailed study. Our purpose here is to relate to the department our considered observations and analysis and direction on which policy to follow.

Submitted 9-2-86 to B.L.