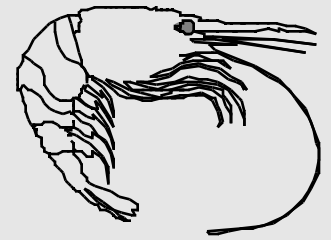




Annual Pink Shrimp Review

Oregon Department of Fish and Wildlife

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TO: OREGON SHRIMP INDUSTRY
FROM: Bob Hannah and Steve Jones
Subject: Opening of 1995 Commercial Fishery
Date: 10 March 1995

The 1995 pink shrimp season begins April 1 and lasts through October. We're all wondering what this season will bring, especially considering the reduced yields that we've experienced for the last two seasons. This newsletter includes a summary of the 1994 season for your review, including catch, effort and market sample information. Updates on some of our ongoing research efforts and future projects are also included.

1994 Season Summary

Approximately 16.4 million pounds of pink shrimp were landed into Oregon ports during the 1994 season, 10.5 million pounds less than in 1993 and 31.6 million pounds less than in 1992 (Figure 1). It was the lowest annual landing total in Oregon since 1985. The 15 year average annual landing is about 28.5 million pounds. The decline over the last two years is due primarily to poor shrimp recruitment, resulting from unfavorable ocean conditions following larval release.

Monthly catches peaked in June, with most of the volume coming from the south coast and waters off California (Figure 2). Volume in other months and areas was sharply lower, with scattered bright spots below the Columbia River from mid to late season. By contrast, in 1993, most of the shrimp volume was harvested early in the season off Washington.

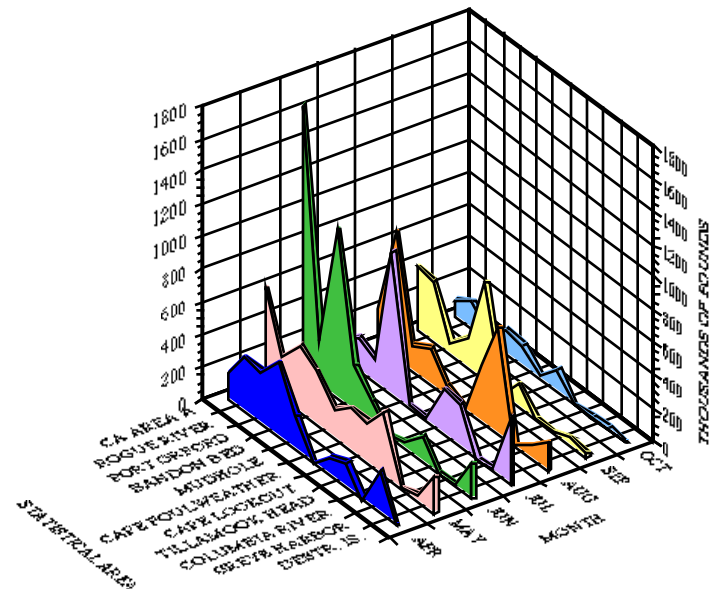


Figure 2. Total Oregon monthly catch (1000's of pounds) of pink shrimp (preliminary), 1994.

Fishermen spent more time catching fewer shrimp in 1994 than they did in 1993. They were probably willing to do so because the shrimp price was sharply higher in 1994. Average price was in the high \$.30's in 1993 but increased to the high \$.50's in 1994. Total fishing effort in 1994 was about 78,400 single-rig-equivalent hours (SRE), a slight increase over the 1993 season total. Overall catch per unit effort (CPUE) was about 210 LB/hour (SRE), well below last year's, and below the 15 year average of about 273 LB/hour (Figure 3). Monthly CPUE was highest on the south coast throughout the season; sharply lower further north (Figure 4). To convert CPUE in single-rig to double-rig equivalents, multiply times 1.6.

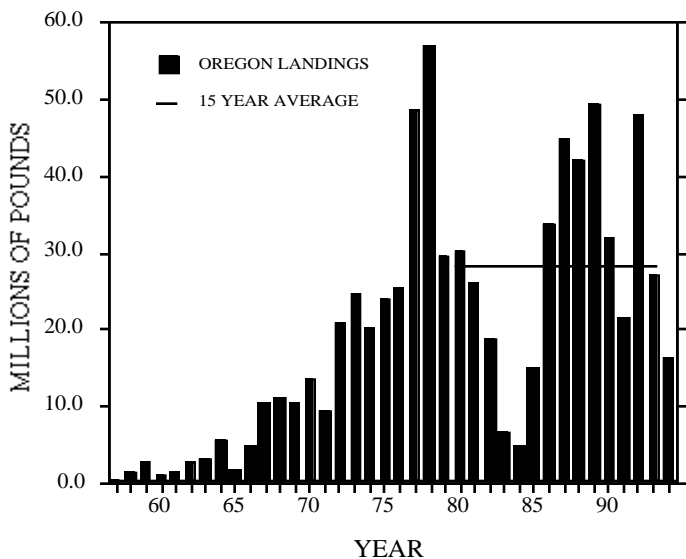


Figure 1. Oregon pink shrimp commercial catch (millions of pounds) 1957-1994. Includes all pink shrimp landed annually onto Oregon ports.

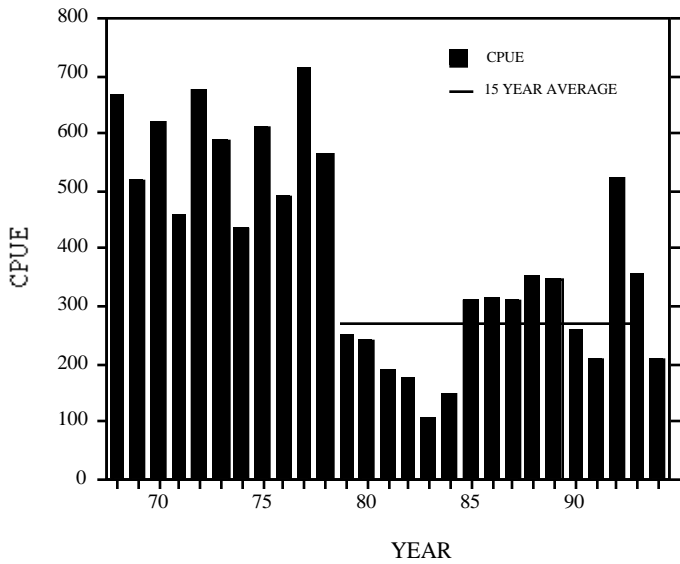


Figure 3. Catch per unit effort (CPUE=pounds/hour) for vessels landing pink shrimp into Oregon ports; 1968-1994.

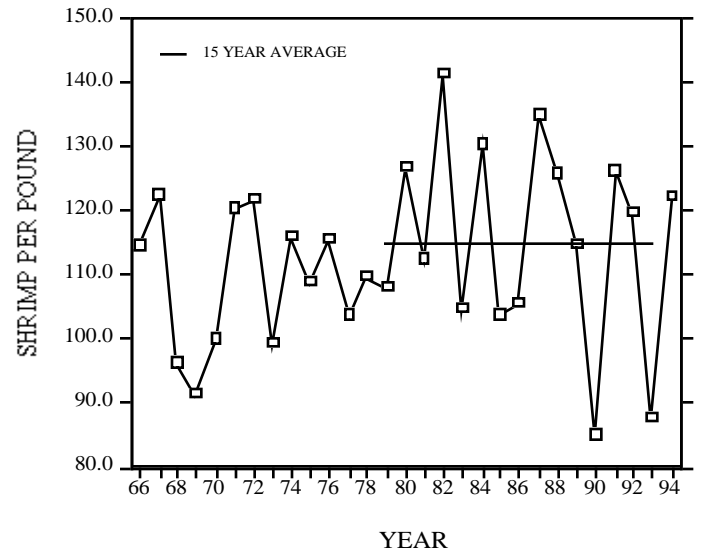


Figure 5. Average (catch weighted) count per pound of pink shrimp landed in Oregon, 1966-1994.

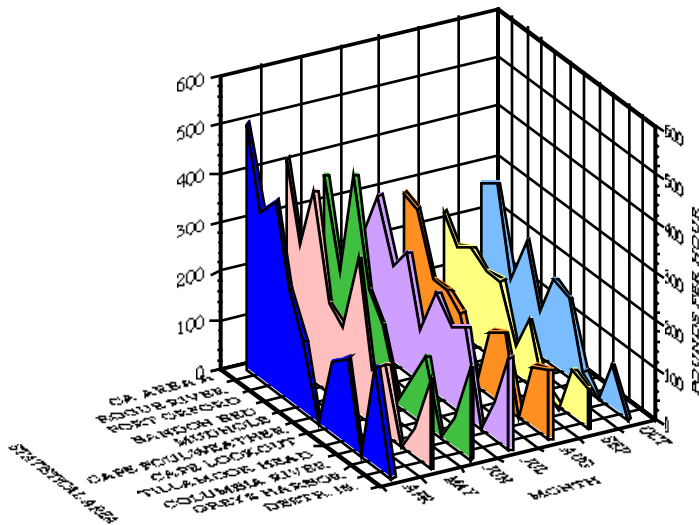


Figure 4. CPUE (preliminary) by area and month for the 1994 pink shrimp fishery.

Coastwide, count-per-pound averaged about 123 shrimp/lb, slightly more than the 15 year average of 115 shrimp/lb (Figure 5). Growth of age-1 and age-2 shrimp was above average this year, which helped to keep the count-per-pound down, despite the dominance of age one shrimp in the catch. The good growth may have been caused, in part, by relatively low shrimp densities on the grounds.

Age-class composition of the catch provides some indication of past recruitment strength and of the future contribution from particular year classes. The 1994 catch was dominated by age one shrimp (Figure 6). Age 2 shrimp contributed poorly, with the percentage of age 2 shrimp in the catch reaching a record low. The low abundance of 2 year olds in 1994 and higher abundance of one year olds, in conjunction with the low landing total, supports the contention that recruitment was poor for the last two years. Further shrimp yield from these age classes is expected to be modest.

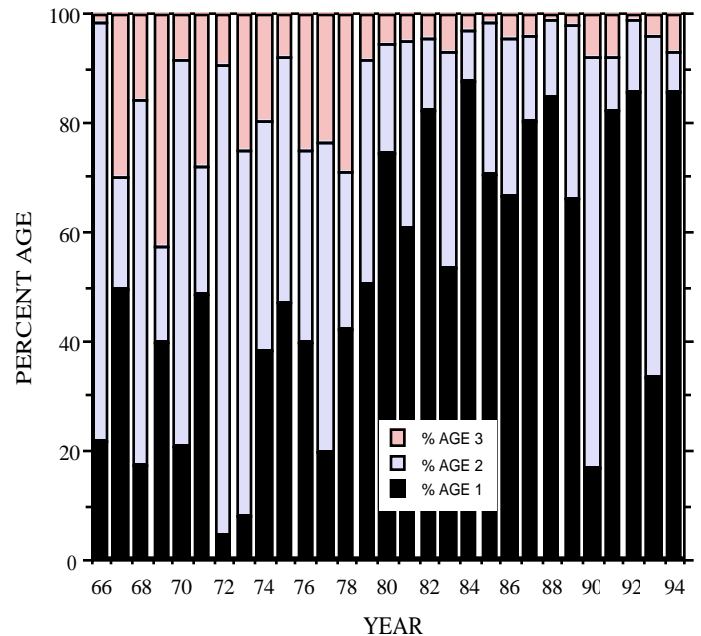


Figure 6. Annual percent age composition of pink shrimp (numbers of shrimp) landed in Oregon; 1966-1994.

So what can we expect for the 1995 season? The strength of the incoming year-class of age-1 shrimp is unknown. Our recruitment model, which is still preliminary (Figure 7), suggests that production from the incoming year class should be about average. However, as you can see from the graph, “average” covers a very wide range of recruitment. Mean April sea level at Crescent City was about 7.0 ft. in 1994, which is about average (Figure 7). However, in the past, a 7.0 ft. sea level has produced anywhere from just over a billion recruits (a below average year class) to nearly 4 billion recruits (a bumper crop). By contrast, April sea level in 1992 and 1993 averaged 7.57 and 7.46 ft. indicative of a poor spring transition. In these two instances, the model successfully predicted poorer than average recruitment. Given the wide spread shown in Figure 7, the only conclusion that can be made with any confidence is that the incoming year class probably won't be a total failure. This is good news; three very poor year classes in a row could be a severe enough reduction in spawning biomass to reduce future recruitment. Considering how weak the age 2 and 3 components are likely to be in 1995, even a good recruitment of age one shrimp may not result in a large season total.

Regulation Changes

Just a reminder; we “tightened up” the wording of our count per pound regulation last year in response to advice from the court system. The language change clearly describes the working definition of the terms “whole” and “whole and unbroken”, as they relate to pink shrimp. Oregon Administrative Rule 635-05-200 section (3) now reads: “For the purpose of determining count per pound, “whole shrimp” and “whole and unbroken shrimp” are defined as shrimp in which the body is substantially intact, including an identifiable carapace, abdomen, and telson (tail). It is not intended to require shrimp to have an unbroken rostrum, complete set of legs, antennae, or other appendages”.

The Washington Department of Fisheries has officially rescinded its codend mesh size regulation. Washington will have no minimum mesh size requirement during the 1995 season. We have asked the Oregon Fish and Wildlife Commission to consider rescinding our reciprocal landing law which requires that Washington shrimp landed in Oregon be caught with Washington-legal nets. Please remember, however, that California continues to enforce its codend mesh size requirement of 1 3/8" between the knots. Oregon's reciprocal landing regulation still stands, requiring that California shrimp landed in Oregon be caught with California-legal nets.

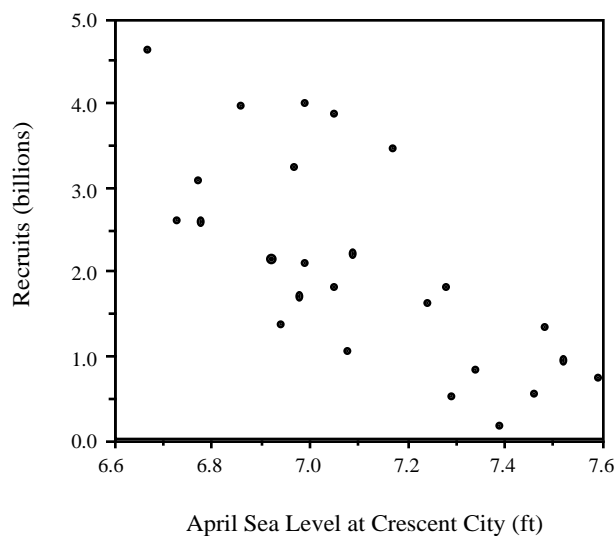


Figure 7. Shrimp recruitment versus sea level in April of the larval year. High sea level indicates a weak or late spring transition during early larval development.

Another indicator, although not always reliable, is the abundance of zero-age shrimp in the October catch. The percentage of zero-age shrimp in our market samples was less than 1.5% in all areas sampled during October, 1994. In recent years, a big recruitment event has never followed such low levels of age zero shrimp. However, low levels of fishing effort in 1994 may have caused us to miss the age zero shrimp in our samples. We heard better reports of zero's in conversations with fishermen than was indicated by our samples. The bottom line is that we have conflicting evidence over the strength of the incoming year-class, with none of the evidence pointing to either a big year class or a failed year class.

Research

Gear Survey

As most of you know, over the last four years, we have surveyed Oregon shrimp trawlers, asking questions about the types of gear being used. The study was initially intended just to establish a baseline “snapshot” of the average gear being fished for the purpose of evaluating changes in gear at a later date. This objective was accomplished in 1993. However, the study was extended to gather data on some recent gear innovations. One of these innovations was the soft mesh finfish excluder (or WeJo), a panel of 3" to 8" trawl web, installed at an angle in the codend. This panel guides finfish out a hole in the top of the trawl, while allowing shrimp to pass through into the codend. Use of the device was apparently increasing since its introduction by a north coast fisherman in 1992. Our survey showed that use of the “WeJo” increased sharply from 1992 to 1994 (Figure 8), with over 30% of the vessels having used some version of the device. One of the main advantages of the “WeJo” is that it can be easily enabled and disabled while fishing. Fishermen can enable the device, at their discretion, to avoid catching unwanted finfish. Our survey showed that most vessels having the device actually fished with it enabled less than 25% of the time (Figure 9). Most of the fishermen indicated that they use the device primarily to avoid catching large amounts of hake.

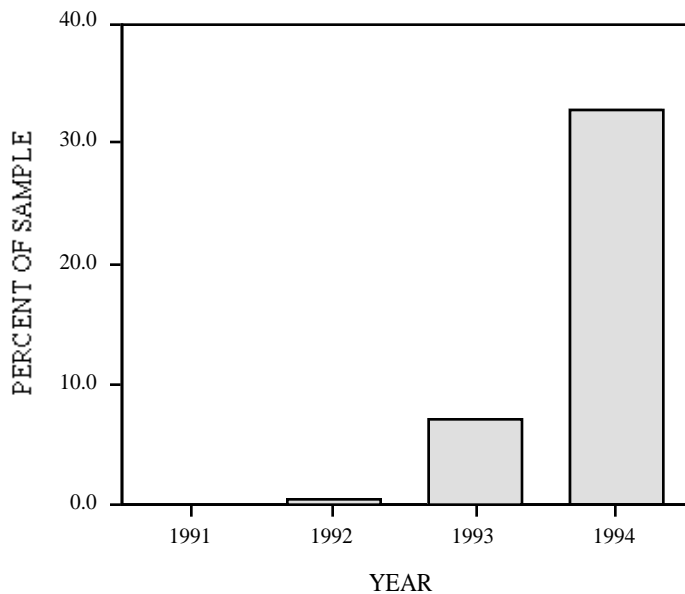


Figure 8. The annual percentage of the Oregon shrimp fleet using the "WeJo" finfish excluder; 1991-1994.

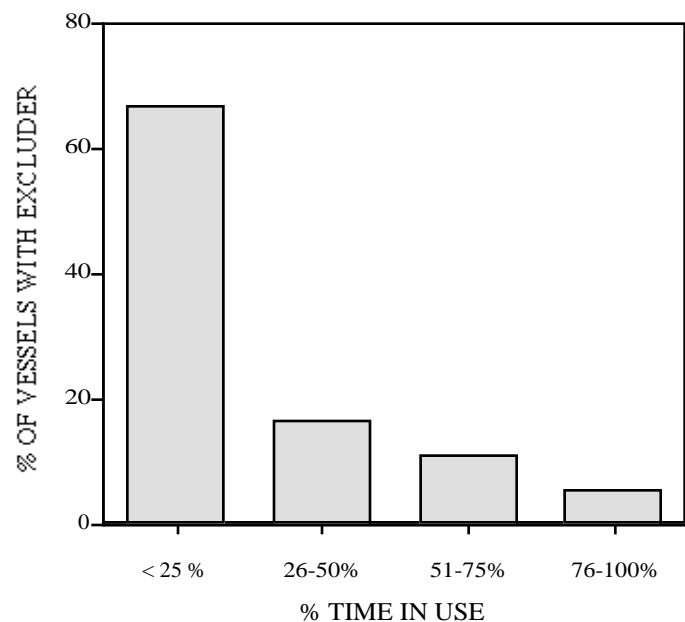


Figure 9. The percentage of fishing time spent with the "WeJo" finfish excluder enabled, of vessels possessing the device during 1994.

Finfish Excluder Study

Our research project evaluating finfish excluders began in October 1994. The study is funded by a federal Saltonstal-Kennedy grant which extends through February 1996. The purpose of the study is to evaluate the efficiency of three excluder designs under actual fishing conditions. The first phase of the study was conducted under charter on the F/V Prospector during October, 1994. Using underwater video equipment borrowed from the National Marine Fisheries Service (and assistance from NMFS personnel), we obtained

footage of the Nordmore grate and the "WeJo" excluders (in 5 and 8 inch designs) in action. The footage enabled us to adjust the angle of the devices so that they fished properly. The camera showed clearly that shrimp loss increased when the devices were installed at too shallow an angle. Short VHS tapes, showing highlights of the video work, are available to borrow from our Astoria, Newport and Charleston offices.

The second phase of the study consists of field trials of the devices, and begins this spring. We will be measuring how well various species are excluded and how much shrimp loss is caused by each device. We hope to start this sea work during May, 1995, and will be soliciting bids for charter work soon. We need to charter double-rigged shrimp vessels for a total of about 24 to 30 days. We will need a relatively large shrimp vessel capable of accommodating 2-3 biologists plus crew. If you're interested in receiving a bid application, please contact Bob Hannah or Steve Jones at our Newport office (503 867-4741).

New Opportunities

Advances in underwater video technology and dropping equipment costs have enabled us to begin putting together an underwater video system suitable for deep water trawl studies. Our experience last fall with NMFS' system showed us just how workable and useful such systems can be. We have applied for a 1996 Saltonstal-Kennedy grant to investigate differences in efficiency and bycatch between roller gear and standard shrimp gear. Video assessment of footrope-catch interactions will be an important part of this study, should the grant be successful. Video work could also take us in a variety of directions in the near future. For example, we'd like to investigate shrimp mortality associated with passing through codend mesh. At what stage in a tow are most smaller shrimp passed through a large mesh codend; while the net is on the bottom, during haulback or at the surface? Are shrimp damaged during pass-through, thus potentially increasing mortality? Answers to these questions may shed new light on the utility of mesh size as a future management tool in the pink shrimp fishery. We also may be able to assist fishermen by providing video footage of target and nontarget species interacting with various parts of trawls.

Proposed Changes in Limited Entry System

Last year, following the guidelines of Senate bill 938, a committee composed mostly of fishermen met and reviewed all of the state's limited entry systems, including the pink shrimp license limitation. This committee developed a number of suggestions for changes in the current systems. Here's a brief summary of the recommendations for pink shrimp:

- 1) The number of permits below which a lottery should be held to issue new permits; drop from 187 to 150.

2) The language of the statute should be changed to make it clear that landing shrimp using a single delivery permit is only lawful for vessels which specifically hold a valid pink shrimp permit from the states of Washington or California.

3) Change the statute so a person who permanently loses the service of a vessel due to capsizing, fire or collision would be allowed two years from the date of loss to replace the vessel with no loss of eligibility for a permit.

4) Allow permit transfer to vessels no more than five feet longer than the vessel currently holding the permit. This provision should not apply when the permit is being transferred to another vessel owned by the same individual, or to a replacement vessel.

5) A permit should not be transferable until a vessel lands 5,000 lbs of shrimp for three consecutive years.

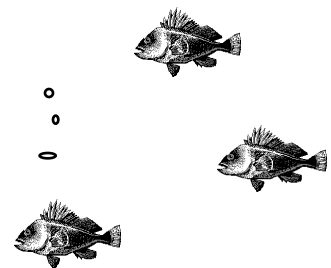
6) The definition of “actively commercial fish”, in the section on renewing a permit by waiver, should be clarified to include tendering activities, running time and time in the shipyard.

The proposed changes are expected to be introduced in a bill in the legislature very soon.

A Final Word About Count per Pound

If recruitment improves in 1995, the potential exists for some higher average counts than in 1994. The Oregon State Police will be actively monitoring count again this year. For anyone who is unsure about which types of scales work best at sea, or how much the average weight of retained shrimp is likely to change, we have two reports available which detail our research in these areas. Just call us for copies, or for any other questions about count per pound. The best way to protect yourself is to get a good scale and monitor your counts frequently. It also helps to leave yourself a little room for error by not “pushing the line”. If you do accidentally get into some small shrimp, remember that loads under 3,000 lbs are exempt from the 160 count limit. It might be better to run to port with a small load and try again, rather than have the load confiscated.

Good luck shrimping in 1995!



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