

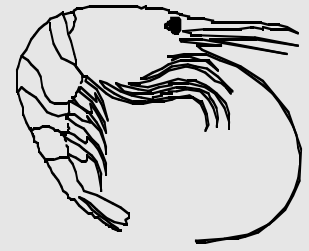


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Annual Pink Shrimp Review

Oregon Department of Fish and Wildlife

ODFW Marine Resources Program, 2040 S.E. Marine Science Dr.
Newport, OR 97365 (541) 867-4741
FAX (541) 867-0311



TO: OREGON SHRIMP INDUSTRY
FROM: Bob Hannah and Steve Jones
Subject: Opening of 2001 Commercial Fishery
Date: 23 February 2001

As usual, the 2001 ocean pink shrimp season will be April 1 through October 31. However, the season promises to be unusually challenging for shrimpers and fishery managers due to the necessity of reducing the harvest of canary rockfish by shrimpers. This newsletter includes a summary of the 2000 season for your review, including catch, effort and market sample information. We also describe important groundfish regulation changes and discuss the rationale for, and implications of, severely restricting canary rockfish harvest. **We strongly recommend that all shrimpers install finfish excluder devices in their nets** for use in areas where canary are known to be. Also, after the short season and market changes experienced last year, it may be a good time for the industry as a whole to think about whether the current management strategy for shrimp is the most effective.

2000 Season Summary

The 2000 shrimp fishery was functionally delayed nearly two months due to price disputes between shrimpers and processors, the longest delay in recent memory. The dispute involved not only the ex-vessel price, but the way that the price was determined. Many processors were only willing to pay according to a "finish count" of processed meats per pound, rather than a price based on whole raw shrimp per pound, as favored by most shrimpers. Once shrimping began, many processors placed their boats on trip limits which further slowed the harvest.

Approximately 25.5 million pounds of pink shrimp were landed into Oregon ports during 2000, an increase of about 5.2 million pounds (Figure 1). The total was slightly less than the 15 year average (26.8 million lb), but was the largest Oregon harvest since 1994. As a result of the price dispute, the catch during April and May was only 1.1 million pounds, most of which was caught during the last week of May. Comparatively, the 15 year average landing

total for April and May is about 9.7 million pounds. Monthly catches were well above average from June through September (Figure 2) despite trip limits in place at many processors. Some processors stopped buying shrimp in Mid-October, contributing to a lower than average October total.

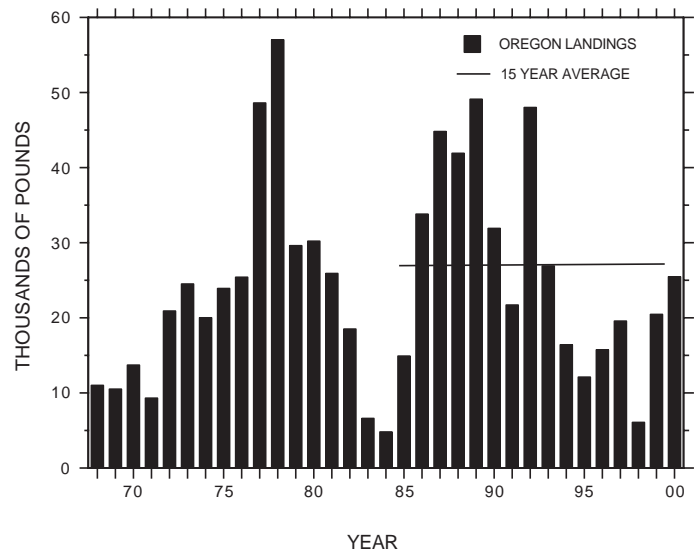


Figure 1. Oregon pink shrimp commercial catch (millions of pounds) 1968-2000. Includes all pink shrimp landed into Oregon ports.

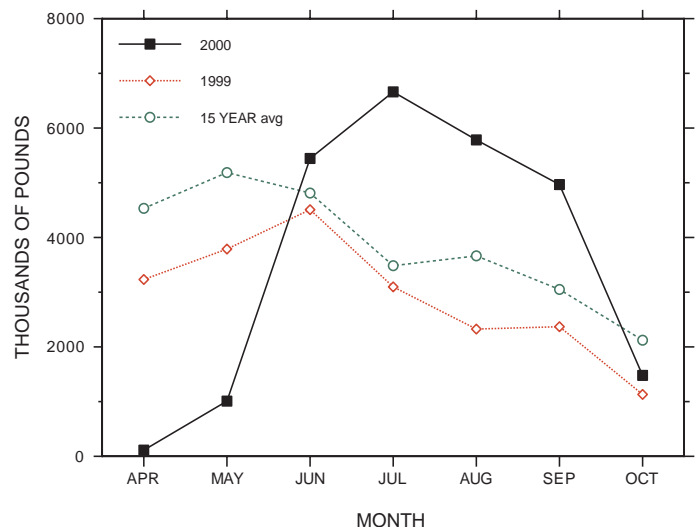


Figure 2. Monthly Oregon pink shrimp landings during 1999, 2000 and the 15 yr average (1985-1999).

Shrimp harvest was focused in central and northern Oregon beds during 2000 (Figure 3), much like the pattern last year. Over 80% of the Oregon landings were harvested in areas from the Mudhole to Tillamook Head, with nearly 35% produced in the Cape Lookout bed alone. The amount of shrimp taken off California and Washington, but landed in Oregon, remained low.

Fishing effort expended harvesting shrimp landed into Oregon declined by about 19% in 2000, with a total of 60,724 single-rig equivalent hours (SRE) spent fishing (Figure 4). The number of vessels making at least one landing into Oregon also declined during 2000, from 121 in 1999 to 108 vessels. Unlike other recent years with declining effort, the decrease was related more to market conditions than to shrimp availability on the grounds.

Catch-per-unit-effort (CPUE) was the highest it's been since 1992, with a season average value of 419 lbs/SRE hour (Figure 5). It was 128 lbs/SRE hour higher than the longterm season average CPUE. Shrimpers spent about 20% less time catching 20% more shrimp during 2000 than they had in 1999. The highest CPUE's were noted from the Rogue River and Port Orford areas in May, but these high catch rates declined quickly to levels comparable to more northerly Oregon areas (Figure 6). The most consistent CPUE's through the season were noted from the Mudhole to Tillamook Head areas.

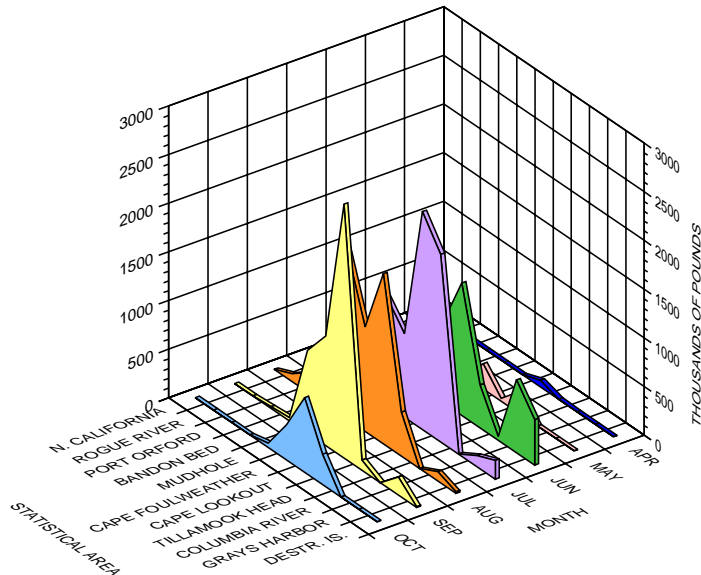


Figure 3. Total Oregon pink shrimp landings (1000's of pounds) by month and area, 2000.

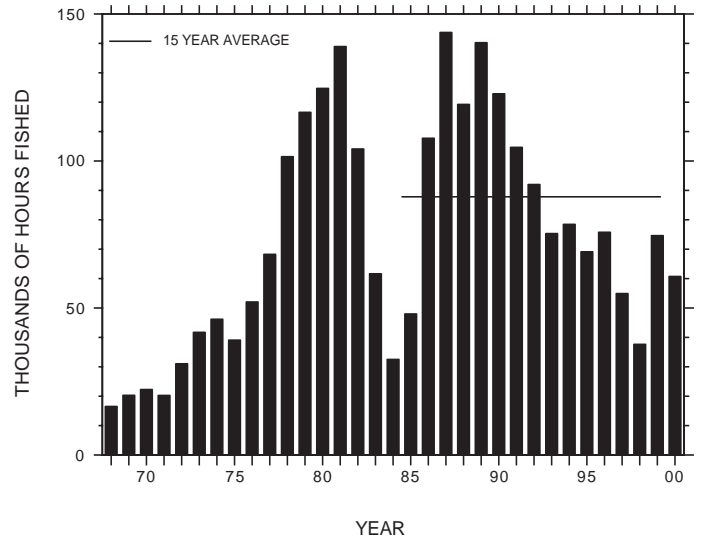


Figure 4. Fishing effort (1000's of single-rig equivalent hours) for pink shrimp landed into Oregon, 1968-2000.

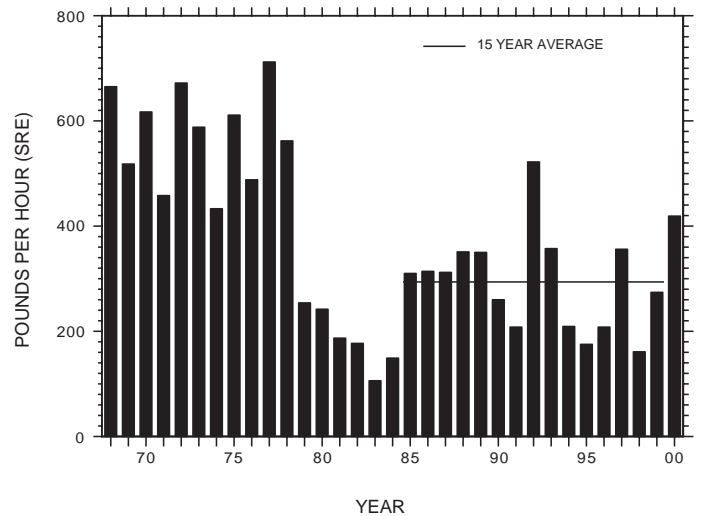


Figure 5. Catch per unit of effort (CPUE=lbs/SRE hr.) for vessels landing shrimp into Oregon, 1968-2000.

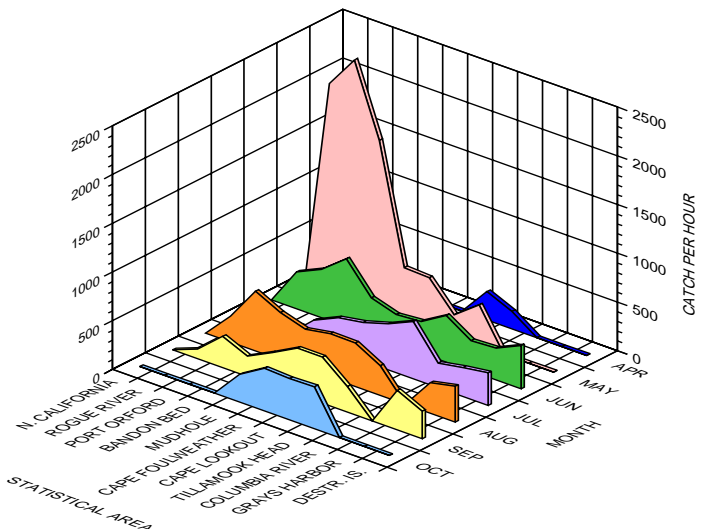


Figure 6. Catch per unit of effort by statistical area and month for the 2000 Oregon pink shrimp fishery.

The weighted average count per pound (count) was 112 shrimp/lb in 2000 (Figure 7). It was slightly lower than the 15 year average count of 114 and sharply lower than the 131 count seen in 1999. The low average count was good news to shrimpers and processors alike, with processors reportedly not wanting shrimp that peeled at more than 500 meats/lb and small shrimp fetching a reduced price. The age-2 percentage of the catch tripled over that seen in the 1999 catch (Figure 8). The good hold-over of age-2 shrimp (1999 age-1's), plus two months of pre-harvest growth of the 2000 age-1's during the tie-up in April and May, probably contributed heavily to the low average count. Such a harvest strategy hasn't been tried deliberately in the West coast shrimp fishery. Would a two month delay of the season benefit the industry as a whole in the future? We're interested in your comments.

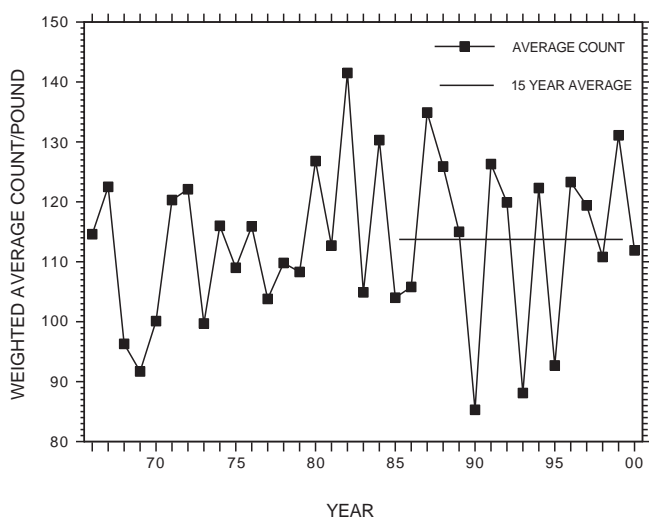


Figure 7. Average (catch weighted) count per pound of pink shrimp landed into Oregon, 1966-2000.

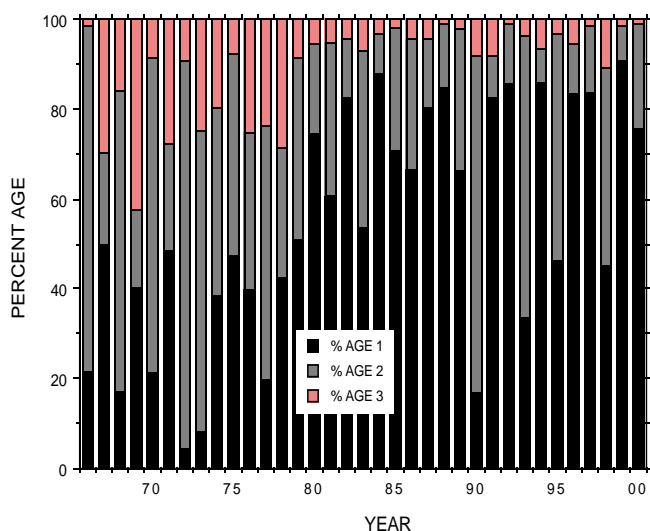


Figure 8. Annual percent age composition of pink shrimp (#'s of shrimp) landed in Oregon, 1966-2000.

The ex-vessel shrimp price structure was more complex than usual during 2000. Many processors offered a multi-tiered price based on the “finish” count of cooked meats, which is a new method to many west coast shrimpers. The system apparently has a long-standing history in other shrimp fisheries worldwide that compete with the West coast fishery. Many shrimpers expressed distrust with this system, preferring the “old” system based on raw shrimp per pound.

Most shrimpers agreed to fish in late May for 41¢/lb to 46¢/lb, lower than the 50¢/lb initially received in 1999. Prices were variable between plants, often with a load being paid for in three price increments. In mid-July a common price structure was 46¢, 41¢ and 30¢/lb, with most shrimp sold for 41¢/lb. By October, most shrimp were sold for 41¢ and 36¢. An average price for the season hasn't been calculated to date, but we guesstimate the average was about 36-38¢/lb.

Indicators For 2001

So what can be expected for shrimp production this year? For starters, we strongly suspect that hold-over of age-1 shrimp from 2000 will be robust. Age-1 shrimp were simply not fished as hard last year as they would have been in a typical season. The season-end CPUE was high (419 lb/hr) and monthly CPUE had remained fairly stable for several months, indicating that shrimp were abundant in October 2000 (Figure 9). In contrast, season-end CPUE was less than 200 lb/hr in October 1999, yet catch of age-2 shrimp in 2000 was excellent. Barring a huge recruitment of age-1 shrimp in 2001, the age-2 component of the catch should be relatively large and should improve shrimpers chances of finding good grade early in the season.

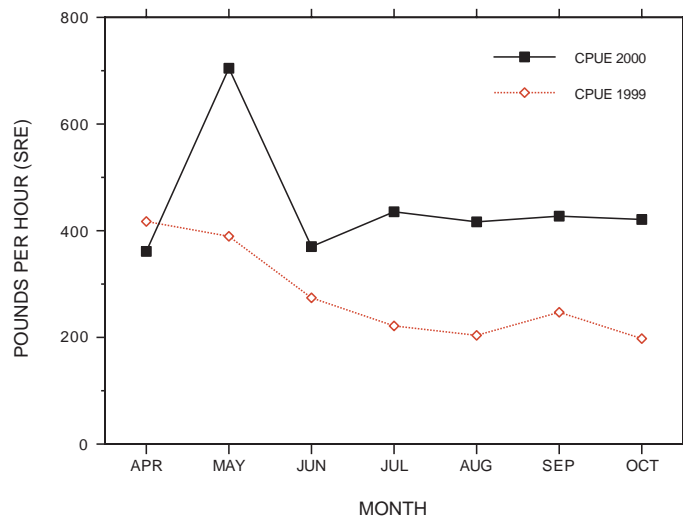
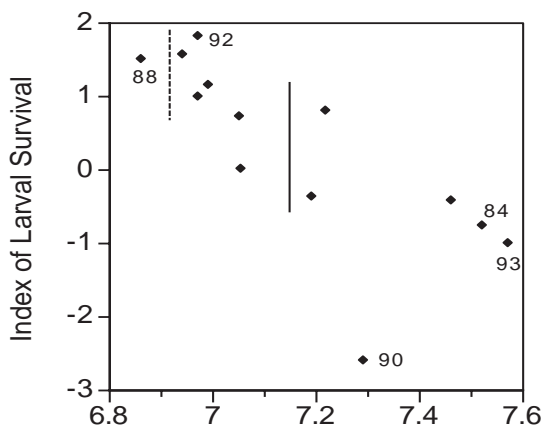


Figure 9. Average monthly catch per unit effort for vessels landing shrimp into Oregon, 1999 and 2000.

Our shrimp recruitment model (still being tested) indicates that ocean conditions were conducive for an average to above average recruitment; probably not a huge event (Figure 10). Our market sample coverage during October 2000 was weak in southern areas. Zero-age shrimp were only seen in samples from the Cape Foulweather area, and represented only 1.3% of those samples (quite low). However, the size of the zero's was relatively small, making them less likely to show up in the catch. Small size may also indicate high abundance, with pink shrimp tending to grow slower in dense populations. Shrimpers reported sporadic but more widespread observations of zero's than we observed in our samples.

Our best guess is that there will be an above average population of shrimp to harvest, with the potential of producing a season total well above average. How much shrimp the fleet will actually harvest is another matter. If market conditions like last years prevail again this year, shrimpers may not be able to harvest as much as they otherwise could.



April Sea Level at Crescent City (ft)

Figure 10. Index of shrimp survival vs. April sea level on year prior at Crescent City, CA. Points shown indicate year of age-1 catch. For example, 1990 (90) refers to the shrimp that recruited to the fishery in 1990 at age-1. The solid vertical line shows the survival range expected for 2001 1-year olds. The dashed vertical line shows the comparable range from 2000.

Regulation Changes & Related Issues

Groundfish Limits:

The National Marine Fisheries Service (NMFS) has **altered groundfish retention limits** in the pink shrimp fishery for 2001. **PLEASE NOTE!** groundfish limits may be changed in season! Be sure to check on the current regulations frequently this year! We strongly encourage fishermen to check the **CURRENT** regulations in late March.

The current groundfish limits for shrimpers as adopted by NMFS are listed below:

- The groundfish **TRIP LIMIT** for shrimpers is **1500 lb/trip**, not to exceed **500 lb/day**.
- For any delivery, the weight of groundfish must not exceed the weight of pink shrimp.
- The **Canary Rockfish** limit is 50 lb/month in April and 200 lb/month from May through October.
- **No Lingcod** may be landed until May; 400 lb/month May through October. **24 inch minimum length.**
- The limit for **Sablefish** is 2000 lb/month.
- **No Thornyheads** may be landed
- **Limited entry groundfish vessels possessing shrimp permits** and harvesting shrimp must stay within the daily/monthly limits established for the shrimp fishery. They must also include any fish catch taken while shrimping toward their monthly species limits for the limited entry groundfish fishery.

If you have questions please call us at (541) 867-4741.

The Canary Problem:



NMFS recently placed canary rockfish on a population rebuilding schedule of about 60 years. Based on this schedule, the total allowable catch of canary rockfish by west coast shrimpers (including California and Washington shrimpers) in the 2001 season was set at 5.5 metric tons (12,125 lb), which translates to about 4,000 three pound canaries. The total number of shrimp trips landed into Oregon during 2000 was 1,275, even with a shortened season. It's easy to see that even a small number of canaries per trip will eat up the allowable catch quickly, even just considering Oregon landings alone! Although not all shrimpers fish in areas where canaries are commonly caught, simply adhering to the monthly limits (see above) for canary may lead to catches well in excess of 5.5 MT.

Simply discarding canary and not landing them **IS NOT THE ANSWER**. Shrimpers will harvest some canary and are currently allowed to do so under the current NMFS regulations. Historically, anywhere from 4.9 MT (1995) to 31.2 MT (1999) have been taken annually in the fishery. NMFS and state agencies will be closely monitoring the fish landings throughout the season. If catches are too high, or the perception develops that shrimpers are discarding canary rockfish to stay below 5.5 MT, NMFS has indicated that it will pursue one of three options: 1) preempt the 2001 shrimp fishery (immediate federal management); 2) reduce limits in the shelf trawl fishery or recreational fishery, or close one of these fisheries to make up for the catch in the shrimp fishery; or 3) move forward

on developing a federal management plan for the shrimp fishery (federal management within a year or two). None of these options seem appealing, but the fishing industry and managers are “up against a wall” on this one. We encourage shrimpers to do what we believe is the “right thing”; keep the canary catch low by moving when some are caught and by using fish excluders.

The Canary Solution?

ODFW staff met with representatives of California Fish and Game (CDFG), Washington Department of Fisheries and Wildlife (WDFW), the Pacific States Marine Fisheries Commission (PSMFC), and NMFS in January specifically to discuss how respective states were going to respond to the need to limit canary harvest in the shrimp fishery. It is apparent that NMFS expects to see progress on excluder programs by all three states, otherwise it probably will pursue one of the three options listed above. The states have agreed in principle to move toward a uniform excluder use requirement, but detailed proposals are still being worked on.

We think that the canary problem can be minimized through the judicious use of finfish excluders in the fishery. Several fishermen’s groups have voiced strong support for this concept, including the Shrimp Producers Marketing Cooperative (Newport), the Coos Bay Trawlers Association (Charleston), and the Fishermen’s Marketing Association (Eureka, CA). We are encouraging **ALL shrimpers** to have finfish excluders in their nets, either fishing them enabled continuously or enabling the devices whenever canary are caught in an area. If followed, this strategy should enable shrimpers to utilize all marketable rockfish caught, while keeping the total coastwide canary catch below 5.5 MT

ODFW recognizes that shrimpers have tried, and experienced varied results with, a variety of excluders since about 1994. Staff have field tested a number of these devices and have documented their performance. There are performance and/or handling problems with each device tested. More field research and innovation is necessary to make the devices perform with acceptable fish exclusion while minimizing shrimp loss. We’re committed to working with shrimpers during the upcoming season in a joint effort to develop new excluders or improve the performance of existing technology. We need your ideas and expertise!

Marine Program Staff will brief the Oregon Fish and Wildlife Commission in April concerning the need to implement an excluder program. Staff will propose an Oregon Administrative Rule change to allow the ODFW director to impose a temporary rule requiring excluder use if deemed necessary, based on projected canary catch. The proposed rule reads as follows:

Proposed Rule Language:The following change to the Oregon Administrative Rules is being proposed (new language in bold):

Fishing Gear

(1) It is unlawful to take pink shrimp for commercial purposes by any means other than trawl net or pots.

(2) Upon a determination by the Department that the regional pink shrimp fishery will meet or exceed any annual groundfish catch allocation established by the Pacific Fishery Management Council, the Fish and Wildlife Director may adopt a temporary rule requiring the use of Bycatch Reduction Devices for the lawful taking of pink shrimp for commercial purposes.

Staff currently believes that the best course to take initially is to support the shrimpers request for a voluntary excluder program, allowing shrimpers to choose from a number of styles. In order to reinforce the need to use the excluders, staff will also propose making approved excluders mandatory (by ODFW temporary rule) for the remainder of the season if and when the coastwide canary catch reaches or is projected to reach a threshold of 2.5 MT by June. An ODFW permit system will also be proposed to allow experimentation with new excluder designs developed by shrimpers, if and when excluders become required. Additionally, we plan to pursue a full retention requirement for rockfish throughout the season in order to improve accounting of the rockfish catch. Full retention will require a federally approved experimental fishing permit (EFP) to land fish in excess of established limits and would make discard of rockfish illegal. If we can make this system work, it should go a long ways toward convincing NMFS that shrimpers can and will stay within their limits and annual canary allocation in the future. Hopefully, the voluntary excluder use system will be adopted as a viable alternative to mandatory use.

Which excluder to use?

Three styles of fish excluder or Bycatch Reduction Device (BRD) have been field tested by ODFW; the Nordmore Grate, the Soft-Panel excluder and the Fisheye excluder. We anticipate designating these three devices as “approved” devices if and when the threshold Canary catch is reached and excluders become mandatory. The status of excluders in the shrimp fishery is a “good news-bad news” situation.

The Good News

1. The devices ODFW has tested are effective at reducing bycatch, especially bycatch of large rockfish, flatfish and hake.
2. These BRD's are moderately effective at reducing unwanted bycatch, not just the large marketable fish.
3. The Nordmore grate has low shrimp loss rates and is the most efficient BRD.

The Bad News

1. All of the "user friendly" devices (fisheye and soft-panel excluders) cause variable and, sometimes high, rates of shrimp loss.
2. The soft-panel devices, as we tested them, can collapse in some nets causing high shrimp loss.
3. The Nordmore grate causes significant operational difficulties for most vessels (doors have to be loaded to steam even short distances or nets get twisted).

The Bottom Line:

Each of the devices will likely need some innovation by fishermen to make them work at their best. For example, if a soft-panel excluder can be developed that maintains its shape in most nets, this style could be very effective in this fishery. Many Oregon shrimpers have used soft-panel excluders in recent years, attempting to reduce hake catch. Some had good success and swore by them, while others experienced unacceptable shrimp loss. Some ideas suggested for improving soft-panel performance include incorporating rib lines to reduce codend/intermediate collapse, using a shorter intermediate, or moving the panel section further forward in the net, ahead of any collapsed area. One shrimper plans to try a rigid aluminum hoop mounted just behind the soft-panel to prevent net collapse.

At least one Oregon shrimper is sold on the Nordmore Grate, after seeing it used in field tests on his vessel. One possible improvement for using this device: an alternatively shaped (circular?) grate may prevent twisting, thus making changing location more practical. Another shrimper swears by the Fisheye which he experimented with on his own. **The game is to find a device that works for you QUICKLY!** In-fleet cooperation is an extremely important factor. If you find something that works well, please pass it on to other shrimpers and to us at ODFW. We'd like to test the device and help pass on the word. In the meantime, Oregon Sea Grant and ODFW have put together a flyer briefly describing the installation, use and field test results of three excluder types that have been used in the west coast shrimp fishery. The flyer has been mailed to all shrimp permit holders and is available on request. We also can provide a detailed report of our field tests of soft-panel devices and the Nordmore Grate (see reports

available). A summary of our excluder test results (including the Fisheye) is listed below showing relative shrimp loss/gain and effectiveness of large fish exclusion we experienced in field tests (Table 1, page 7).

Logbooks:

Over the last few years, ODFW has issued a variety of logbooks asking for basic fishery information and in some versions, specialized information. This year, it's particularly important to document the use of excluders in order to demonstrate the participation level of the fleet in the volunteer excluder program. We will be distributing new copies of a logbook version we used several years ago. The logbook includes space for describing the type of excluder that you have in your net(s) and a checkbox for indicating whether the excluder(s) were enabled during each particular tow. The Oregon fleet as a whole provides very high quality completed logs. Please take the time to accurately complete the excluder use tow-by-tow information: **It's another critical aspect for making the volunteer program work!**

Research

We chartered the F.V. Kylie Lynn in June 2000 to test what we call a "belly of the trawl" finfish excluder. The arrangement tested was simply a cut-away rectangle of web (20 ft wide X 10 ft deep), cut out just behind the footrope extending aft (Figure 11). The edges were reinforced with crab line and 10 ft lengths of crab line were spaced roughly every 15 inches along the leading edge extending aft. After viewing the device with an underwater camera, we reduced the width of the cut-away portion by 30 inches on either side because the excluder hole was encroaching on the throat causing a hole in the fishing circle and heavy shrimp loss. From our prior camera work, we've learned that many fish species tend to dive toward the bottom after crossing the footrope. Shrimp on the other hand tend to be passive swimmers, usually drifting straight back in the net. In theory, the 10 ft section without web would let diving fish escape the net while still retaining the shrimp. Our results were encouraging but inconclusive. Due to a problem with our SIMRAD system, we were unable to tune the nets so that they were fishing equally, which severely limited our confidence in the data. However, we did detect reductions of flatfish (including halbut), lingcod, juvenile rockfish and sablefish, with apparently light shrimp loss.

Count Per Pound Issues

No count per pound citations were issued in Oregon during the 2000 season. Even with the anticipated good hold-over of age-2 and age-3 shrimp, the potential exists for some higher than average counts in 2001. If a good recruitment

Table 1. Percent reduction in catch (lbs), for selected species groups, caused by various finfish excluders in comparative fishing experiments in the ocean pink shrimp trawl fishery, 1994-98.

EXCLUDER	Shrimp	Large Rockfish	Large* Flatfish	Pacific Whiting
Nordmore grate (6/95)	Increase	100.0	97.0	100.0
Nordmore grate (7/95)	10.0	100.0	90.0	99.0
Nordmore grate (9/95)	Increase	95.0	93.0	100.0
Nordmore grate (6/98)	Increase	100.0	78.4	99.5
Nordmore grate (6/98)	5.7	100.0	97.5	99.4
5" Soft-panel	7.0	100.0	89.5	80.0
5" Soft-panel	15.0	97.0	97.5	67.0
8" Soft-panel	6.0	44.0	77.5	41.0
8" Soft-panel	Increase	100.0	93.0	70.0
8" Soft-panel	31.0	100.0	100.0	81.0
8" Soft-panel (modified)	2.0	87.0	—	62.0
3" Soft-panel	7.0	100.0	98.0	97.0
Fisheye at 76 meshes	22.6	72.0	69.5	79.4
Fisheye at 82 meshes	9.6	82.8	51.6	73.2

*Average of estimates for large and medium flatfish from Hannah et al. (1996)

“—” = Insufficient data.

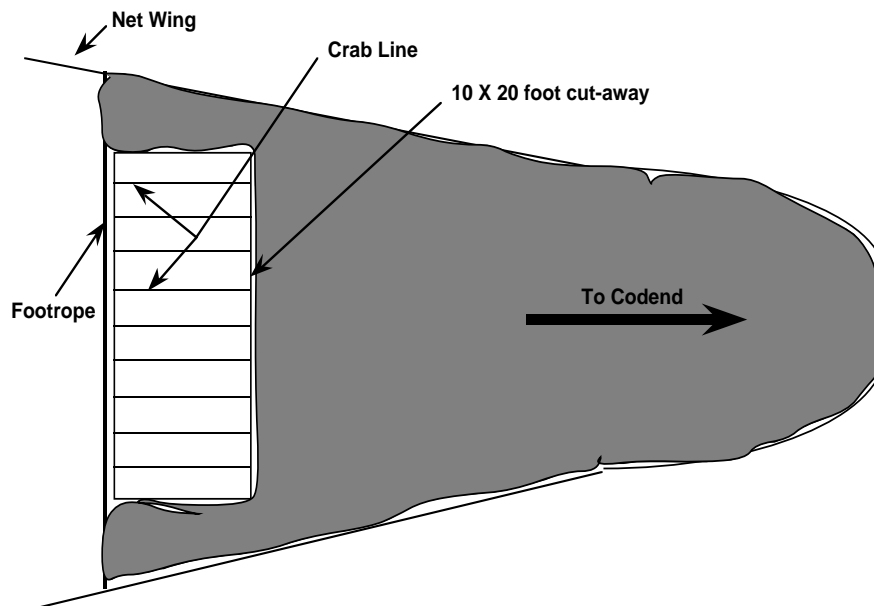


Figure 11. A schematic overview of the bottom of a pink shrimp trawl. The "Belly of the Trawl" excluder is a cut-away portion of web just behind the footrope, with longitudinal "bars" of crabline.

event has occurred, small age-1 shrimp will predominate early in the season. However, due to the good hold-over, shrimpers should be able to locate areas with good grade shrimp. The OSP will be actively monitoring count per pound again in 2001. For anyone who is unsure about which type 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.

Reports Available

- Hannah, R.W. and S. A. Jones. 2001. Bycatch Reduction In An Ocean Shrimp Trawl From a Simple Modification to the Trawl Footrope. *J. Northw. Atl. Fish. Sci.* 27:1-7.
- Hannah, R.W., S. A. Jones and V.J. Hoover. 1996. Evaluation of fish excluder technology to reduce finfish bycatch in the pink shrimp trawl fishery. Oregon Dept. Fish Wildl., Information Rept. Ser., Fish. No. 96-4 46pp.
- Hannah, R.W. and Weeks, H. 2001. Fish Excluders for West Coast Shrimp Trawl Fisheries. Joint Report. Oregon Dept. Fish Wildl. and Oregon State University Extension Sea Grant. 4pp.

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Good Luck Shrimping in 2001!



**Oregon Dept. of Fish & Wildlife
2040 S.E Marine Science Dr.
Newport, OR 97365**