

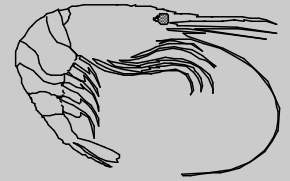


Annual Pink Shrimp Review

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TO: OREGON SHRIMP INDUSTRY
FROM: Bob Hannah and Steve Jones
Subject: Opening of 2010 Commercial Fishery
Date: 1 March 2010

The 2010 pink shrimp (*Pandalus jordani*) season will begin 1 April and extend through 31 October. A summary of the 2009 season is provided for your review, including catch, effort and market sample information. Indicators for the 2010 season, eulachon smelt news, logbook compliance issues and research findings are discussed among other topics.

Notices/Reminders

- Status of Potential Eulachon ESA Listing (pg 10)
- Increased NMFS Observer Coverage in 2010 (pg 6)
- Possible Reg. Changes in 2010, see BRD update pg 7
- CA/OR Shrimp Trawl Mesh Regulations (pg 5)
- Tuna Fishing Not Allowed on Shrimp Trips (pg 5)

2009 Season Summary

Low price, a limited market, phenomenal catch rates: that about sums up the 2009 Oregon pink shrimp season. It was a season in which far more shrimp could have been caught had the shrimp market and price structure been there to support it. Unlike the low-priced years of 2001-2003 when competition with shrimp from distant fisheries kept ex-vessel prices down, the low price this year probably resulted from a depressed world shrimp market.

Just over 22 million pounds of shrimp were landed into Oregon during the 2009 season; above average but about 3.5 million pounds less than in 2008 (Figure 1). The decline wasn't the result of lower shrimp abundance however; it appears to have been general market malaise. Processors appeared reluctant to pay more than a low price and to put large amounts of shrimp into freezer storage. Most processors used a combination of trip limits, vessel rotations or landing schedules to slow the amount of shrimp actually landed.

Shrimping didn't begin in earnest until the second week of May, as shrimpers and processors slowly negotiated prices. Only about 200,000 pounds of shrimp were landed into Oregon during April, which barely supplied the fresh shrimp market. Monthly landings jumped up sharply from May through October with above average landings for each month (Figure 2).

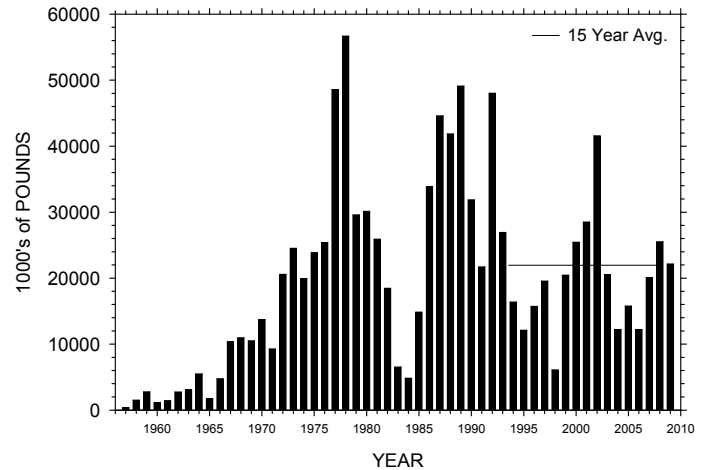


Figure 1. Oregon pink shrimp commercial landings (millions of pounds) 1957-2009. Includes all pink shrimp landed into Oregon ports.

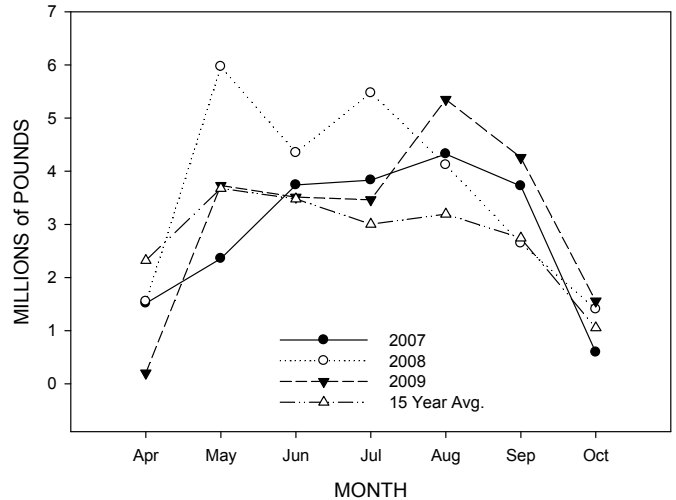


Figure 2. Oregon pink shrimp landings by month during 2007, 2008, 2009 and the 15 year average (1994-2009).

As expected, shrimp production in 2009 was highest on the south coast (Figure 3). Areas below Cape Perpetua produced almost 75% of the total shrimp catch landed in Oregon. The Mudhole Bed, Bandon Bed and Port Orford Beds each produced over 3.4 million pounds, with the Bandon Bed topping out at nearly 5.7 million pounds. The Northern California Bed produced nearly 2.4 million pounds. North of Cape Perpetua, the Tillamook Head Bed was the highest producing area by far at 3.1 million pounds and there was very little harvest off Washington.

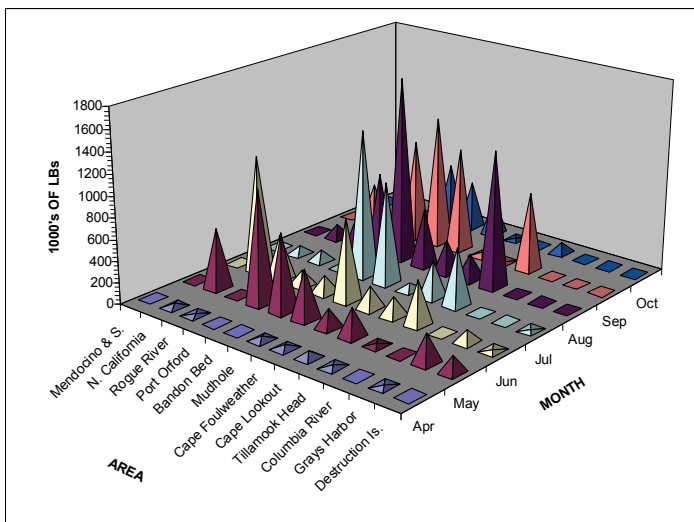


Figure 3. Total 2009 Oregon pink shrimp landings (1000's of pounds) by month and area.

Shrimping effort in terms of hours fished was only about 18,000 SRE hours in 2009. It was the lowest level of “gear-on-the-bottom” time recorded since 1971 (Figure 4). Here again, the total would have been larger under more normal market conditions. Many shrimpers maximized their fishing efficiency by traveling long distances to take advantage of extremely high catch rates in several southern areas. Other measures of fishing effort were down from the level in 2008, but were within the range we’ve seen since the vessel buy-back in 2003. Forty-nine Oregon shrimp vessels made 585 trips during 2009 (Figures 5 and 6).

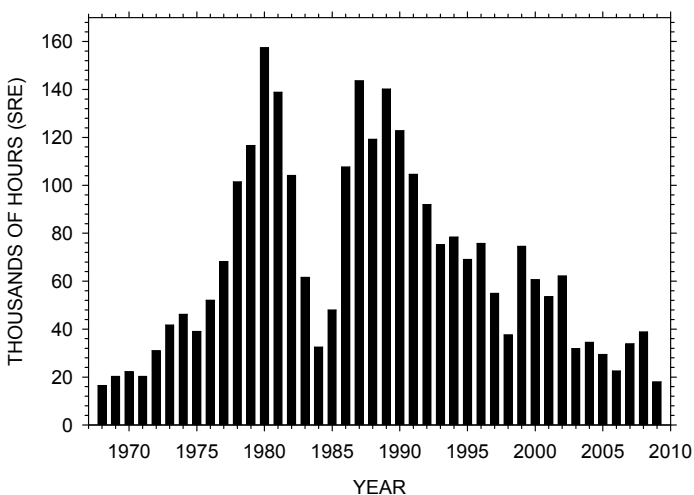


Figure 4. Fishing effort for pink shrimp landed in Oregon, 1968-2009. Note: 1000's of single-rig equivalent hours: 1 SRE = (1 single-rig hour) = (1 double-rig hour X 1.6).

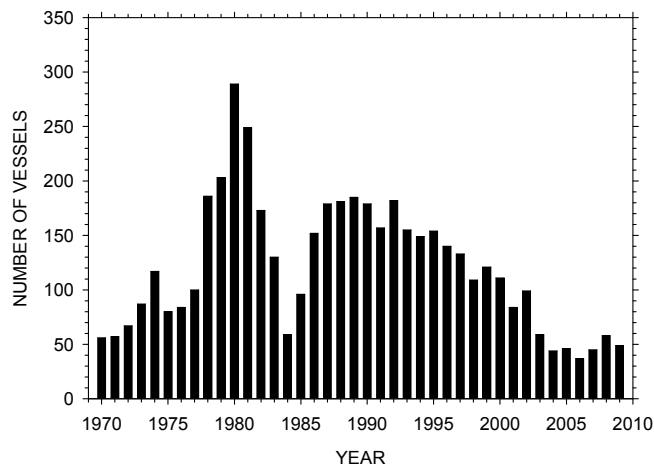


Figure 5. Annual number of vessels landing pink shrimp into Oregon ports: 1970-2009.

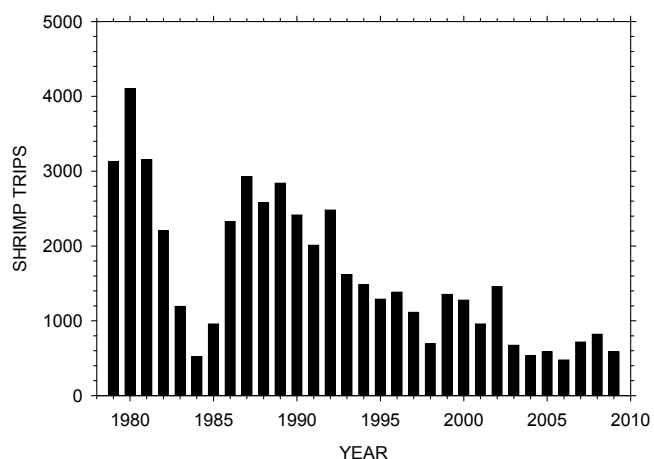


Figure 6. Annual number of trips landing pink shrimp into Oregon ports: 1979-2009.

The above-average landing total and very low hours fished shows dramatically in the 2009 overall catch-per-unit-effort (CPUE) level (Figure 7). The CPUE level was a whopping 1,229 pounds-per-hour, nearly twice the relatively high rate seen in 2008 and an all-time record high for the fishery by far. Monthly CPUE was extremely high throughout the season except during April before the fleet really got going (Figure 8). Monthly CPUE generally increased from May through September when it peaked at about 1,500 lb/hour, then decreased slightly in October.

Catch rates by month and area were sharply higher in south coast areas than in areas north of Cape Perpetua (Figure 9). Monthly CPUE by area from the Cape Foulweather Bed and north were fairly typical of what we’ve seen over the last decade. It was a different story from the Mudhole Bed and south into California, with area-month CPUE’s generally over 1,100 lb/hour, with a high of 4,270 lb/hour (May in the Port Orford Bed). We attribute the large disparity between northern versus southern CPUE’s to a strong recruitment of age-1 shrimp to the south in 2009.

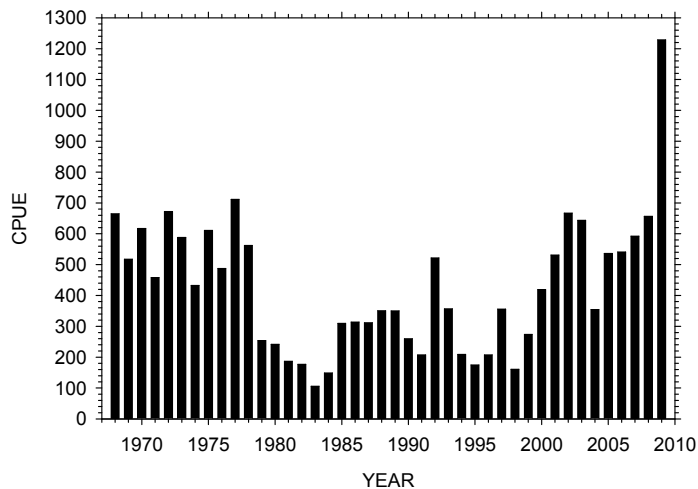


Figure 7. Catch-per-unit-of-effort (CPUE = lbs/SRE hour) for vessels landing pink shrimp into Oregon; 1968-2009.

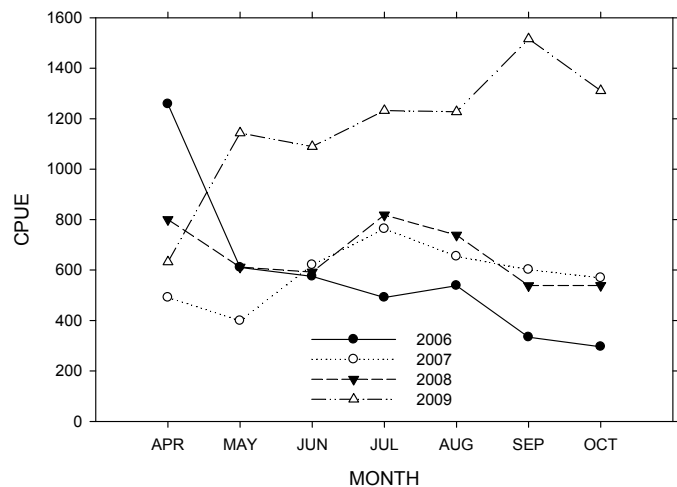


Figure 8. Monthly CPUE (=lbs/SRE hour) for vessels landing pink shrimp into Oregon in 2006, 2007, 2008 and 2009.

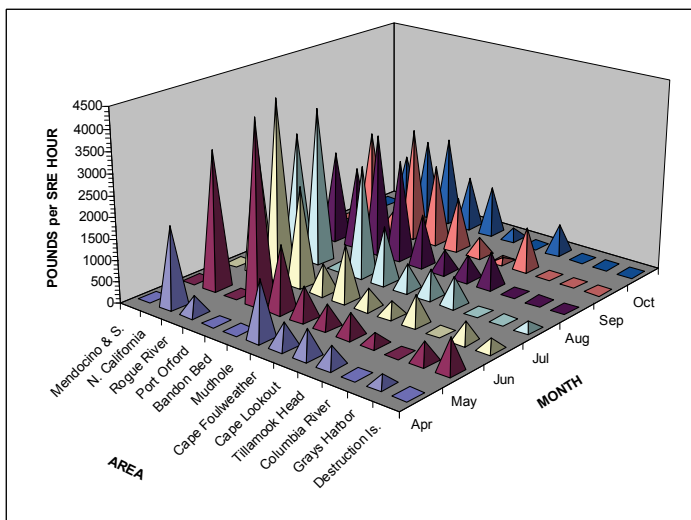


Figure 9. CPUE (=lbs/SRE hour) of Vessels harvesting pink shrimp by month and area during 2009.

The weighted average count-per-pound (count) of shrimp landed into Oregon during 2009 was 123 shrimp/lb (Figure 10). The average count was higher than in 2008 but near the average for the last decade. Shrimp harvested in southern areas generally had higher counts than from areas north of Cape Perpetua due to higher percentages of age-1 shrimp.

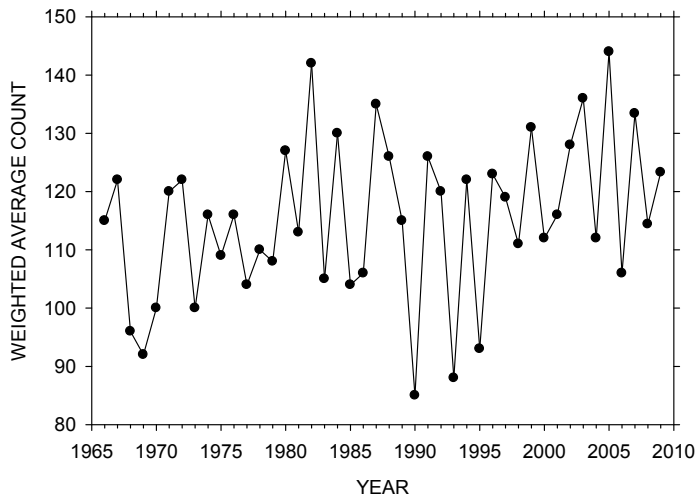


Figure 10. Average (catch weighted) count-per-pound of pink shrimp landed into Oregon; 1966-2009.

Age-1 shrimp (hatched in March 2008) comprised about 76% of the total number of shrimp landed into Oregon in 2009, up substantially from the 2008 level of 40% (Figure 11). One result of the percentage increase was a modestly higher average count; 123/lb in 2009 vs. 114/lb in 2008. We believe that the average count increase was only modest because most age-1 shrimp were harvested in southern areas where growth rates are high compared with growth rates to the north.

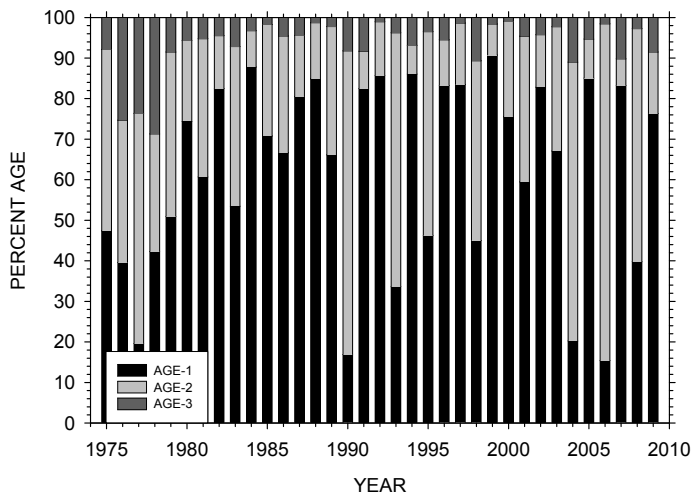


Figure 11. Annual percent age composition of pink shrimp (#'s of shrimp) landed in Oregon, 1975-2009.

The average ex-vessel price paid for Oregon pink shrimp during 2009 was \$.31/lb, down sharply from the \$.55/lb average during 2008 (Figure 12). It was the lowest average price since 2003 when the average was \$.25/lb. The average monthly price remained very flat from May through October, varying no more than \$.01/lb (Figure 13). The April average was higher, due to a very small landing total and a hungry fresh market.

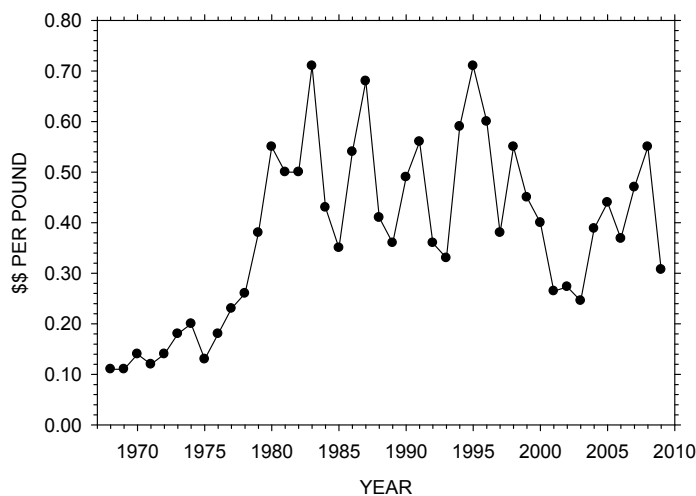


Figure 12. Annual average ex-vessel price per pound paid for pink shrimp landed in Oregon; 1968-2009. Prices not adjusted for inflation.

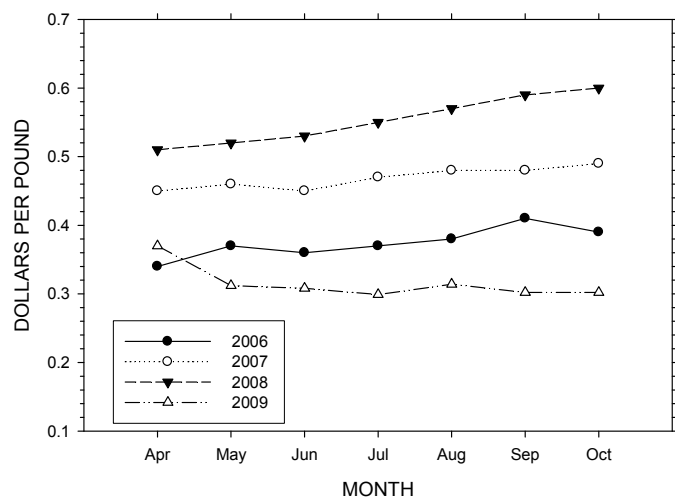


Figure 13. Monthly average ex-vessel price-per-pound paid for pink shrimp landed in Oregon: 2006 through 2009.

Indicators for 2010

Several factors suggest that shrimp availability and distribution in 2010 may be similar to what we experienced during the 2009 season. As indicated by season-end catch rates (CPUE), holdover of age-2 shrimp (age-1 in 2009) may be exceptional in many areas from the Mudhole Bed and south into northern California. Fairly high catch rates also occurred at the Tillamook Head Bed

during September and October, but CPUE was sharply lower than what occurred in southern shrimp beds. Abundant age-2 shrimp should allow shrimpers to locate good grade shrimp early in the 2010 season, especially to the south.

Our recruitment model, which is based on April sea level at Crescent City, strongly indicates that age-1 recruitment will be above average in 2010. The sea level index in April 2009 was 6.74, the lowest in our time series (Figure 14). It was just slightly lower than the April 2008 level of 6.8 that led to high age-1 shrimp abundance in 2009. The index is a measure of general recruitment along the coast, but doesn't indicate specific areas or regions where recruitment may occur.

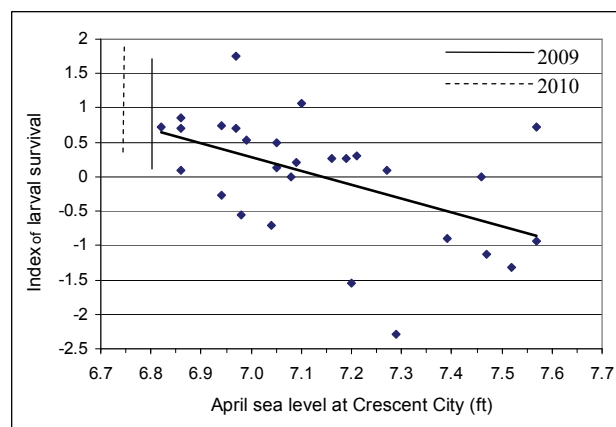


Figure 14. Index of larval survival vs. April sea level on year prior at Crescent City, CA. Points shown indicate year at age-1 catch. The dashed vertical line shows the survival range that might be expected in 2010.

Market sample data collected during September and October 2009 indicates that zero-age shrimp abundance (hatched in March 2009) was relatively high on the south coast, especially in areas from the Port Orford Bed and south into northern California. Shrimpers also reported seeing large numbers of zero's on-deck when trawling in these areas. At least one processor remarked about the unusual number of zero's in these catches. Market samples indicate a different story from the Cape Foulweather Bed and north, with no zero's found in samples from these areas. Barring unforeseen shrimp redistribution (e.g. El Nino affects), it looks like recruitment in 2010 may be strongest further south this year than it was in 2009.

New Logbook Performance/ Issues

Compliance Still Needs Improvement; Overall, ODFW's new logbook (required since 2008) seems to have gained better acceptance in 2009, as skippers became accustomed to the new format and requirements. Most logs were reasonably complete when it came to standard data items such as date, depth, time, location, shrimp hail and BRD type. As in 2008, skipper

compliance when filling out the “Dumped Unsorted” columns of the logbook appears to have been good. Conversations with shrimpers during the season suggested that the number of dumped tows was relatively high in 2009, primarily due to small shrimp. That’s what our logbook analysis shows too, with 4.5% of all tows dumped (either one or two bags). The estimated dumping rate during 2008 was 1.4% and the predominant reason for dumping was fish catch.

We’ve still got a long ways to go though when it comes to filling out the “Estimated Weight of Fish Discarded” column of the log. We’re still getting lots of blanks and zeros (32%, down from 38% in 2008), which weakens any future analysis of fish discards by the fleet. Please fill out discard estimates as accurately as possible; leaving no blanks and only recording zero if there is no fish catch at all in a tow.

We suspect that most of the “zeros” and blanks in logs are meant to indicate that fish catch was low. If so, please realize that this data is still important in any analysis of the data. We have a suggestion for skippers that are reluctant, unwilling or “too busy” to fill out the “Estimated Weight of Fish Discarded” column of the log. If you think that your fish catch from a tow is ten pounds or less, just write a “T” (for Trace) in the column. The most accurate estimate possible is desirable, but a “T” will suffice for low estimates. Please don’t just leave a blank!

Filling out Logbooks with an Observer On-board;

As most shrimpers know, NMFS Observers weigh and document shrimp trawl catches by species or species groups. The data gathered is processed and used by NMFS for a variety of purposes. The shrimp fishery is currently regarded as a lower observer priority than the groundfish fishery. The annual rate of observed shrimp trips has been relatively low in Oregon (i.e. about 6% in 2008), but will increase in 2010 (see Increased NMFS Observer Coverage in 2010, pg 6). ODFW’s new shrimp logbook (required since 2008) is designed to gather less detailed information than observers collect, but on a larger scale (up to 100% of trips instead of just 6%). The approach will allow a much broader spatial and temporal assessment of general discards (i.e. fish and shrimp). Once shrimpers are accustomed to the new logbook and compliance is high, we will compare our general discard information with theirs to see if the logbook data can be used as a proxy for, or as a supplement to, the NMFS data.

Some skippers have tended to record observer data in the “Sorted Catch” columns of the log sheet. We need to remind skippers to disregard any catch information they get from observers and to record their own estimates of shrimp and fish weight. Thank you for your cooperation.

Reminder to Sign Logs;

ODFW occasionally receives a request to obtain copies of logs that were turned in previously. Logbook information is confidential, so copies of logs can only be provided to the person that actually filled out and signed the requested logs. Be sure to sign your logs! It’s required in the instructions and can pay off for you if you ever need copies.

Regulation Information

CA/OR Shrimp Trawl Mesh Regulations;

Many south- and central-coast Oregon shrimpers traveled below the California/Oregon border to harvest abundant good-grade shrimp in 2009. We received several calls inquiring about shrimp gear regulations in waters off California. Oregon shrimpers need to be thoroughly aware of shrimp trawl regulations in both California and Oregon before they shrimp below the border.

California regulations require California permitted pink shrimp trawlers fishing below the Oregon border to use trawls with a mesh size no smaller than 1-3/8” between the knots when shrimp trawling within 3 miles of shore (state waters) and from 3-200 miles offshore. Also, such vessels may not have any mesh smaller than 1-3/8” between the knots anywhere on-board (including extra codends). Oregon permitted pink shrimp trawlers fishing below the Oregon border that don’t have a California permit may not fish in California state waters. Outside of state waters, they must use nets (including codends) with mesh no smaller than 1-3/8” between knots. If there is any smaller mesh in their nets or on-board (i.e. stored codends), such a vessel may not legally transit within California state waters at any time during the trip. Details on pertinent regulations can be found at: <http://www.dfg.ca.gov/licensing/pdffiles/2009CommFishDigest.pdf>, pages 62-64.

Oregon regulations require that shrimp harvested below the California/Oregon border and landed into Oregon be caught with California-legal codends, regardless of the distance from shore. The regulation reads; “It is unlawful to land shrimp taken south of the Oregon-California border with nets having a mesh size of less than 1-3/8 inches between the knots”. The Oregon State Police has verified that this shrimp landing regulation will be enforced. Regulations pertaining to shrimp trawling can be found at: <http://www.dfw.state.or.us/OARs/05.pdf>, pages 15-17.

Albacore Fishing Not Allowed on Shrimp Trips;

Staff received many complaints this year from shrimpers that had heard word-of-mouth that they could not troll for albacore while on a shrimp trip. It’s true. Current federal trip declaration regulations state that vessels using trawl

gear may only declare one gear type on any trip and may not declare non-trawl gear (i.e. troll gear) on the same trip in which trawl gear is declared. The exact language of the regulation can be found in the Federal Register, Vol 72, No. 235/Friday, December 7, 2007, pages 69168 and 16169. You can view these pages at: <http://www.gpoaccess.gov/fr/retrieve.html>.

VMS and Declarations required;

The National Marine Fisheries Service (NMFS) requires shrimp vessels to have an approved and operating Vessel Monitoring System (VMS) on-board during 2010. For VMS-related information, please consult the NMFS “Compliance Guide for the Pacific Coast Groundfish Fishery Vessel Monitoring Program” at the following website: <http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Vessel-Monitoring-System/Index.cfm>, or call NMFS OLE at 206-526-6133.

Additionally, NMFS requires shrimpers to file a declaration report before the vessel is used to fish in any Rockfish Conservation Area (RCA). Shrimpers need to declare before leaving for their first shrimp trip of the season. Only one declaration is required for the season, providing that the vessel doesn’t engage in another fishery during the season. For details about declaration procedures, please visit the NOAA Fisheries Office for Law Enforcement website (http://www.nmfs.noaa.gov/ole/nw_declarationreqs.html). Declarations may be made via phone by calling 1-888-585-5518.

Essential Fish Habitat Trawl Closures;

The Pacific Fisheries Management Council (PFMC) has designated several Essential Fish Habitat (EFH) areas off the Oregon coast as no-trawl zones. The areas are set aside to protect hard-bottom habitats and associated species. Shrimpers are cautioned NOT to trawl within these areas. The NMFS will enforce the EFH no-trawl areas via the Vessel Monitoring System which became required on shrimp vessels during 2008. The area-closure that may affect Oregon shrimpers most is the Nehalem Bank/Shalepile EFH. Other EFH no-trawl areas near commonly shrimped grounds are Daisy Bank, Stonewall Bank, Heceta Bank and Coquille Bank. The coordinates delineating the Nehalem Bank and other EFH areas are listed on the PFMC web page at <http://www.pcouncil.org/groundfish/gffmp/gfa19.html>, under Appendix C #3: Coordinates for EFH Conservation Areas.

Increased NMFS Observer Coverage in 2010;

National Marine Fisheries Service (NMFS) observers will work with the Oregon shrimp fleet again this year, documenting bycatch on selected vessels. Observer coverage of the shrimp fishery remains an important aspect for maintaining MSC certification. The coverage also provides important data on smelt catch by species,

estimates of which will be extremely important for managing the shrimp fishery if eulachon smelt are listed as threatened. Observer bycatch data, plus new ODFW logbook data on discards, will help demonstrate the low bycatch rates that help define the Oregon shrimp fishery.

Observer coverage of shrimp trips in Oregon has been fairly low for the last few years (i.e. 7% in 2007, 6% in 2008, 7% in 2009), partly due to requests from the fleet for NMFS to minimize the inconvenience of having an observer on-board. Also, the prevalence of rigid-grate BRDs helped assure that bycatch rates in the shrimp fishery were low enough for NMFS to devote more observers to the groundfish fishery. Washington-based shrimp trips through 2009 have not been observed, but the Washington Department of Fish and Wildlife (WDFW) plans to require federal observer access in 2010.

Along with initiating observer coverage of Washington-based vessels, NMFS plans to increase coverage rates of Oregon-based shrimp trips in 2010 and beyond. The increase will be accomplished by observing selected vessels on a one month basis. The plan is to observe shrimp vessels from Oregon, California and Washington at equivalent rates during 2010. One major reason for expanding coverage now is the imminent listing of eulachon smelt as threatened under the Endangered Species Act (ESA). Once listed as threatened, an ESA “4(d)” rule will come into play that will prohibit all “take” (defined very broadly in ESA) of eulachon smelt unless an exemption is issued to allow some level of “take” (see Status of Potential Eulachon ESA Listing, pg 10). That’s where increased observer coverage becomes very important to the shrimp fishery. Higher coverage rates will allow far better estimates of eulachon catch that will help ODFW, and agencies from other states, negotiate for a “take” exemption during a consultation process that will take place soon after the official listing in the Federal Register. Without a “take” exemption, the shrimp fishery as we know it can’t proceed!

Observers will be increasing their efforts to identify smelt to species (i.e. eulachon) in 2010 so that better estimates of total take and species composition can be made. The NMFS also hopes to provide frequent in-season smelt catch summaries to ODFW, which may be very helpful for in-season management actions should they become necessary to meet “take” exemption requirements. For those interested in seeing observer data summaries generated during the 2008 shrimp season, the NMFS report titled “Data Report and Summary Analysis of the California and Oregon Pink Shrimp Trawl Fisheries, October 2009” is available at the following website: <http://www.nwfsc.noaa.gov/research/divisions/frame/observer/datareport/index.cfm>. The report also

describes the vessel selection process and other methods used by the Groundfish Observer Program

The ODFW shrimp staff strongly support the NMFS decision to increase observer coverage in the shrimp fishery if eulachon are listed as threatened. We believe that the additional smelt catch data and frequent in-season NMFS data summaries could become critical for maintaining the shrimp fishery. Simply put, it's the best available means for ODFW managers to obtain adequate and timely eulachon ocean catch data that may be needed for possible upcoming regulatory actions in the ESA "4(d)" process.

Groundfish Limits;

The NMFS proposed 2010 groundfish limits for shrimpers are listed below: PLEASE NOTE! Groundfish limits may be changed in-season. Be sure to check on the current regulations frequently again this year! For specific current limits, please refer to the PFMC website at <http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Public-Notices/Index.cfm>. You can also sign up to receive Public Notices, including regulation changes, via-E-Mail at this webiste.

- The groundfish TRIP LIMIT for shrimpers is 1500 lb/trip, not to exceed 500 lb/day.
- The weight of groundfish landed may not exceed the weight of shrimp landed.
- No Canary Rockfish, Thornyheads or Yelloweye Rockfish may be landed.
- Lingcod, 300 lb/month with a 24" minimum size limit.
- Sablefish; 2000 lb/month.
- All other groundfish; Landings of these species count toward the per-day and per-trip groundfish limits and do not have species-specific limits.
- Limited entry groundfish vessels possessing pink shrimp permits and harvesting pink 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.

BRD Use Update

Rigid-grate bycatch reduction device (BRD) use on Oregon shrimp trips reached 99% in 2009, the highest level since BRD's were first required (Figure 15). Only three vessels used soft-panel BRD's, the only other BRD (and far less efficient) approved in Oregon at this time. The fleet deserves a big THUMBS UP! for recognizing the need for and utility of using rigid-grates. Use of the rigid-grate has allowed the Oregon shrimp fishery to persist and thrive through some tumultuous years over the last decade (i.e. Canary caps: RCA restrictions). The

probable listing of eulachon smelt as threatened during 2010 will present another challenge for the shrimp industry that may be minimized by using rigid-grates with narrow bar spacing. With this in mind, shrimpers should note that we anticipate the need in the near future to require the use of rigid-grates only. A maximum bar spacing of 1.0 inch or less may be required as well. Based on past research and input from shrimpers, a ¾ inch bar spacing requirement seems likely but 7/8" may be considered as well. Please keep this in mind if you're purchasing new grates in 2010.

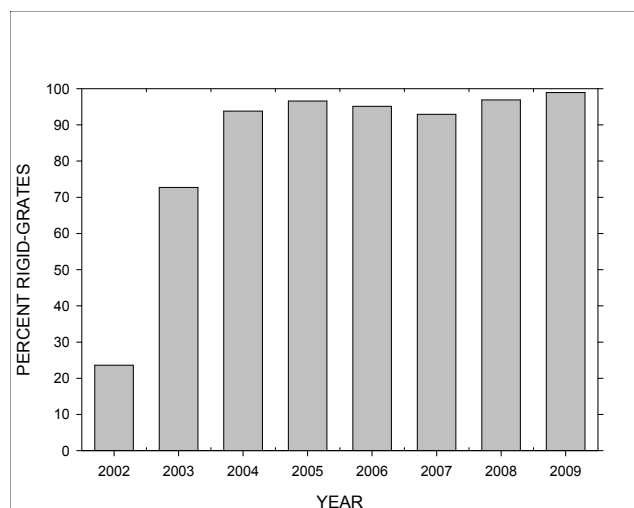


Figure 15. The estimated percentage of shrimp trips landing into Oregon ports that used rigid-grates during the last eight pink shrimp seasons. Note: the 2002 estimate includes only trips from July through October, when BRD's were required.

The shrimp fleet as a whole has been shifting to narrower rigid-grate bar spacing for the last few years (Figure 16). The average bar spacing in 2009 was 1.11 inches, down from 1.18" in 2008 and 1.25" in 2007. Rigid-grates with 1.0 inch or less bar spacing were used on 42% of the shrimp trips during 2009. Many shrimpers are choosing narrow bar spacing as they replace damaged rigid-grates or because they can sharply reduce bycatch like cigar-sized hake and juvenile rockfish while still achieving excellent shrimp catches. The shrimpers still using soft-panels or rigid-grates with wide spacing are generally not full-time shrimpers, often making just a few trips.

Regional differences are apparent from the 2009 BRD logbook data, with north coast vessels using narrow spacing at the highest rate (Figure 17). A rigid-grate bar spacing of 1.0" or less was most commonly used on the north coast in 2009, coming in at about 81% of trips landed in Astoria and Garibaldi. The use rate for central (Newport) and south (Charleston and Brookings) coast ports was 17% and 39% respectively. Rigid-grates with a bar spacing ≥ 1.375 " were used during only 8.5% of trips landed state-wide.

Cape Mendocino, however, this “edge” can shift northwards in some years, as it appears to have done frequently between 2000 and 2005. This project is a good example of how the fishery data that the Oregon fleet has provided to ODFW for the last several decades is helping us to gradually understand the forces that shape shrimp recruitment success.

¾ Inch Grate Revisited;

We chartered the double-rig shrimper F.V. Miss Yvonne during June 2009 in an effort to test the performance of a rigid-grate BRD with ¾” bar spacing versus one with 1¼” spacing. We know reducing bar spacing reduces bycatch in general, but were particularly interested in measuring possible reductions of eulachon smelt catch and went to areas that shrimpers had reported recent catches with smelt.

The interchangeable rigid-grates we tested were each 42” outside diameter. The 1¼” bar spacing version was constructed with 3/8” diameter aluminum round-stock and the ¾” version used ¼” round-stock. The difference in round-stock used was because we wanted water flow through the grates to be the same, simplifying the analysis of relative shrimp loss. No accelerator panels were used in either net, in an attempt to speed the escapement of fish from the trawl.

Our experimental design involved switching the ¾” and 1¼” rigid-grates from side to side between tows in a sequence designed to maximize our ability to statistically detect catch differences caused by the rigid-grates. It’s desirable to have nets that are matched and tuned to fish equally through the experiment. If the nets are not matched, or net adjustments are made mid-experiment, the catch differences become harder to interpret and less powerful statistically.

We started with two very well matched shrimp nets. Unfortunately, the belly of one net was ripped out at the end of the first day. It took another day to tune the available replacement net to a point where the nets were fishing close to equal. As a result, we weren’t able to evaluate enough tows (with “equal” nets) to make a useful statistical comparison of catch differences between the two rigid-grates.

Our observations and overall analysis of data collected during the charter led us to believe that shrimp catches between nets with a ¾” versus a 1¼” rigid-grate were roughly equal. As expected, overall fish bycatch was reduced sharply, especially juvenile hake, juvenile rockfish and flatfish. Differences in smelt exclusion were not apparent however, probably due to several factors. Only two species of smelt were caught during the charter; eulachon (*Thaleichthys pacificus*: 34%) and white bait (*Allosmerus elongatus*: 66%). The vast majority of smelt

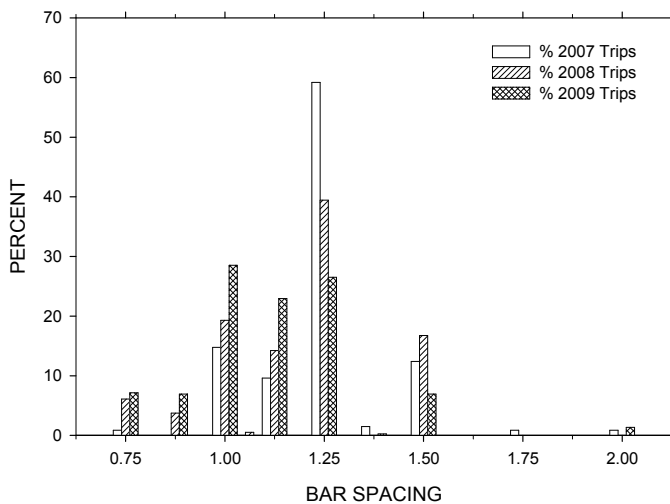


Figure 16. The percentage of shrimp trips versus the rigid-grate bar spacing (inches) used on the trips during 2007, 2008 and 2009.

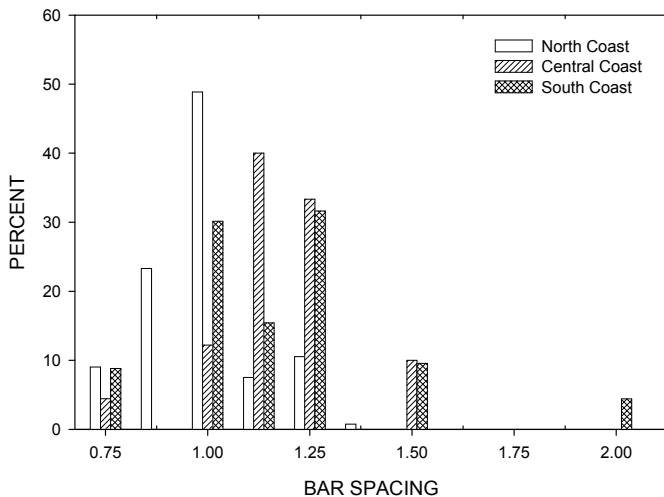


Figure 17. The percentage of shrimp trips by coastal region versus the rigid-grate bar spacing (inches) used on the trips during 2007, 2008 and 2009.

Research Activity

Population Modeling Advances;

We conducted some research this year in an effort to better understand the northward shift in shrimp recruitment observed between 2000 and 2005 as well as the poor prediction accuracy from our April sea level model during this same period. Our research showed that record high spring upwelling off southern Oregon in 1999 and 2002-2004 may have depressed recruitment off southern Oregon in several of these years, probably by transporting shrimp larvae too far offshore. This research led to a better understanding of how the large-scale geographic pattern of strong spring upwelling helps shape the pattern of where successful shrimp recruitment occurs. Large populations of shrimp are found where spring upwelling is normally moderate, generally north of

caught were between 3.5"-5.5" total length, with only four larger eulachon caught (7"-8"). Any enhanced exclusion of the smaller size class due to the 3/4" rigid-grate was not apparent for either species. There were simply too few of the larger size class of eulachon encountered for any determination, though we would expect larger individuals to be excluded at a higher rate by the 3/4" rigid-grate.

Shrimp Trawl Ground-Gear Evaluation;

ODFW shrimp staff teamed up with Northwest Fisheries Science Center (NWFS) scientists in 2009 to attempt a project titled "Testing footrope modifications designed to reduce the bycatch of demersal groundfish and megafaunal invertebrates, and reduce physical impacts on invertebrates in the ocean shrimp (*Pandalus jordani*) trawl fishery" (Whew! :). The two-year project is funded by a grant from the national Bycatch Reduction Engineering Program (BREP) and administered through the Pacific States Marine Fisheries Commission (PSMFC). The team was fully prepared to conduct phase one during September 2009. The project was delayed because a required NOAA scientific research permit (SRP) was not issued in time. The work is now planned for spring or summer 2010.

The first phase of the project will be a three day shrimp charter on the double-rig shrimper F.V. Kylie Lynn to obtain video footage of "typical" shrimp trawl ground-gear (footrope & fishing-line) in action on the bottom. We'll be using a remote camera system mounted on a "hay ladder" designed by ODFW staff to obtain close-up video of ground-gear interacting with the seafloor and associated invertebrates (Figures 18 & 19). The "hay ladder" rests lengthwise in the belly of the trawl, extending out over the fishing-line. The camera and lights are mounted on the forward end of the "hay ladder" looking down and back at the ground-gear. After gathering footage of the "typical" ground-gear, we'll try at least two alternative ground-gear configurations that have the potential to reduce seafloor/macroinvertebrate impacts yet continue to efficiently catch shrimp. Video footage of each configuration will be assessed and we'll select the alternative with the best potential for further testing.

The F.V. Kylie Lynn will continue the charter for five more days during phase two. The "typical" ground-gear used on the Kylie Lynn will be tested against the "best alternative" identified during phase one. Ground-gear will be switched side-to-side each day. Catch from each tow will be kept separate by side using a divided hopper. All catch in the codends will be evaluated for each tow, including invertebrates. After each tow, ground-gear on both sides will be inspected for entrained invertebrates (i.e. sea whips).

Nehalem Bank Trawl Impact Study Published;

During June 2007, we conducted a baseline video survey

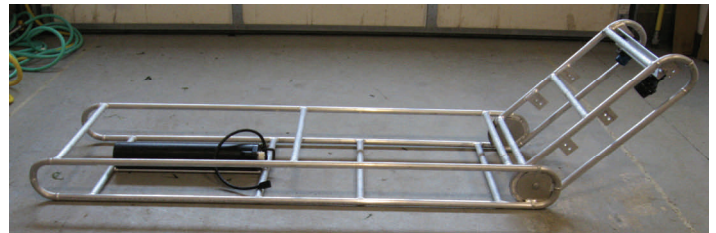


Figure 18. The "Hayladder" shown above will be lashed length-wise inside the belly of the shrimp trawl, with the short hinged section extending out forward of the ground-gear. The camera and light and light are shown pointing back toward the hinge. The black tube containing the video recorder and batteries sits near the rear of the Hayladder.



Figure 19. The forward end of the "Hayladder" with the camera and light attached. Imagine the fishing-line passing below and slightly behind the circular hinge plates. Look for more photos of the device in place in next years' Review!

of mud habitat within and adjacent to the Nehalem Bank Essential Fish habitat (EFH) no-trawl zone using the Marine Program remotely operated vehicle. Our paper titled "Effects of ocean shrimp (*Pandalus jordani*) trawling on macrobenthos and seafloor habitat at four sites near Nehalem Bank, Oregon" was published in the January 2010 issue of Fishery Bulletin. The baseline survey and analysis was a big first-step toward understanding the effects of shrimp trawling in the Pacific Northwest and toward satisfying one of the Marine Stewardship Council (MSC) performance conditions for maintaining certification. We hope to repeat the survey during 2013 or 2014 to document changes that have occurred within the sites evaluated in 2007.

MSC Developments

The Oregon pink shrimp fishery gained Marine Stewardship Council (MSC) certification in 2007. It was the first shrimp fishery certified by the organization. The Oregon pink industry, via the Oregon Trawl Commission, applied for the certification and went through a costly process to gain certification. The recertification process

after five years may cost as much. The Oregon shrimp industry, including shrimpers and processors, clearly has a large financial stake in the certification and now has a reputation to uphold as well.

The ODFW has been able to contribute to the certification process in several ways and will continue to do so as resources allow. One way was to create and require the use of a new logbook in 2008 that is designed to capture tow-by-tow fish and shrimp discard data. Accurate documentation of all discards in the shrimp fishery is an MSC condition for maintaining certification. Unfortunately, skipper compliance when filling out fish discards in the logs accurately has been less than desired so far (see New Logbook Performance, pg. 4).

Shrimpers that don't quite see the need to fill logs out as completely and accurately as possible need to consider a couple of facts. First, useful logbook information, including meaningful estimates of fish discard, will be an important factor when the MSC considers renewal of the Oregon shrimp fishery MSC certification. Filling out complete and accurate logs is one way that each skipper can help Oregon in the renewal process. Please don't leave the Fish Discard column blank. Always write in your own estimate and only record a zero if it's truly zero (a very rare event). Second, the shrimp industry has made a significant financial investment to attain and maintain MSC certification and probably will continue to invest funds. Are skippers willing to step up to do what's necessary to make the investment worthwhile?

On a different note, the MSC annual surveillance audit is now scheduled to occur in late February 2010 at the suggestion of ODFW staff. Last year's audit was held in November 2008, well before much of our annual data analysis was complete. It will be our second surveillance audit and we will describe progress toward fulfilling the performance conditions set by the MSC for maintaining certification.

The Eulachon Smelt Issue

Status of Potential Eulachon ESA Listing;

The southern distinct population segment (DPS) of eulachon smelt (*Thaleichthys pacificus*) was formally proposed for listing as a threatened species on 13 March 2009, by the NOAA Fisheries Service. The southern DPS includes all eulachon south of the U.S./Canada border. Within one year (March 2010), the Fisheries Service must finalize the proposed listing, reject the proposal or extend the deadline for up to six months.

It appears likely that the Fisheries Service will finalize the proposal, thus listing eulachon as threatened. Should this occur, the listing will become final 30 days after publication in the Federal Register. The next step will be for the Fisheries Service to propose and publish a "4(d)" rule which will define protective regulations. During development of the rule, the Fisheries Service "will

contact State, Tribal and Federal resource managers to identify activities that may adversely affect the Southern DPS as well as potential take exemptions". Once a final 4(d) rule is published, all "take" of the threatened species is prohibited without a "take" exemption. Yes, a "take" exemption would be required for any shrimp fishing "take" to occur at all! Agreements forged in the rulemaking process may require states to enact regulation(s) to reduce eulachon impacts. The time-line for developing "take" exemptions is unknown, but will probably be several months.

The Fisheries Service may hold public scoping workshops soon after the 4(d) rule is proposed, "to discuss issues of concern and to gather recommendations for regulations" (i.e. possible exemptions). The workshops could be the best opportunity for members of the shrimp industry to express their views and ideas before regulations are enacted. We encourage your participation!

Impacts on Shrimp Fishery;

So, how will listing eulachon affect the Oregon shrimp trawl fishery? The short answer is that we don't know for sure. We do know that the status review that led to the proposal to list eulachon identified the west-coast shrimp fishery as having a moderate impact on the southern DPS. ODFW MRP staff commented on the status review during the public comment period and identified some aspects regarding the shrimp fishery that we disputed, particularly the potential for post-exclusion fish mortality with BRDs. We won't know how these comments may have been received until the listing is finalized or rejected. Responses to the items we disputed will probably be printed in the Federal Register at a later date.

The bottom line is that new regulations designed to reduce eulachon impacts in the shrimp fishery probably will be enacted should the listing become final and once a "4(d)" plan is developed. We'll try to keep the fleet as informed and involved as possible during this on-going process. We plan to send out in-season newsletters to the fleet this year as important ESA news or dates become apparent. Please feel free to call us for updates as well.

What can be done now?

We believe that the best current technology available for shrimpers to minimize smelt bycatch is a rigid-grate BRD with ¾" bar spacing. The best design we've heard of so far utilizes vertical bars made of ¼" diameter aluminum round-stock. Observations on our research charters testing rigid-grates with ¾" bar spacing have led us to suspect that larger smelt (i.e. 7"+) will be excluded more readily than smaller smelt (i.e. 4-6"). There may also be some benefit from fishing without an accelerator panel. We'll be looking at alternative methods to reduce smelt catch in the future and we welcome any ideas or innovations that the fleet may develop.

Several Oregon shrimpers used ¾” rigid-grates during 2009, with some converting during the last two months of the season. Many shrimpers we talked to reported good success with ¾” bar spacing, although one shrimper thought a 7/8 inch bar spacing was better. If there was shrimp loss, they felt it was generally offset by a sharp reduction in fish bycatch and they were often able to continue shrimping in areas with abundant juvenile hake. We recommend that skippers talk with shrimpers that have used a ¾” rigid-grate to get a first-hand assessment of its performance and to get tips on design.

Eulachon Identification;

Several smelt species occur along the Oregon coast. Probably the most common species that shrimpers will encounter are eulachon smelt and whitebait smelt, but there may be others. Eulachon can attain a larger size (12 inches) than the other species, but of course there are smaller and younger size-classes as well. Several characteristics in combination are often useful when identifying smelt, including coloration, presence of a lateral line, dorsal fin placement, upper jaw length, gill-cover markings and dentition. A good fish identification key can really help. At the beginning of the 2010 season, ODFW staff will be handing out copies of a key to interested skippers and crew. The key is taken from the California Department of Fish and Game publication “Guide to the Coastal Marine Fishes of California”.

Green Sturgeon Critical Habitat Update

The NMFS announced its final green sturgeon critical habitat designation during October 2009. The designated critical habitat for the southern Distinct Population Segment (DPS) basically includes all marine waters out to 60 fathoms. Detailed information on the final designation can be found at: <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr74-52300.pdf>. Apparently, the state-managed Oregon pink shrimp trawl fishery won't be affected, at least for now, under current interpretation.

Industry Concerns about IFQs

During the 2009 season, ODFW staff fielded many questions and heard concerns regarding upcoming groundfish fishery Individual Fishing Quota (IFQ) program proposed by the Pacific Fishery Management Council (PFMC). We heard concerns from both the shrimper and processing sectors, primarily about the perception that IFQ's will increase vessel participation in the pink shrimp fishery at a time when processing capacity is limited and the industry is trying to maintain Marine Stewardship Council certification. The scenario perceived is that multiple groundfish IFQ's will be transferred (stacked) to single groundfish vessels, potentially freeing many vessels to participate in the

shrimp fishery. The scenario is plausible, especially considering that there were approximately 90 unused Oregon shrimp permits (latent) in 2009. It's got some industry participants wondering if the overall number of Oregon shrimp permits needs to be reduced.

The number of Oregon shrimp permits is established by the Oregon Legislature and can only be changed through legislative action. A group of shrimpers worked with an Oregon legislative Representative in early 2009 to develop a means of reducing latent permit numbers, but the effort didn't advance.

The PFMC will make final recommendations about IFQ's to the National Marine Fisheries Service (NMFS) in 2010. If NMFS approves the recommendations, the program could be implemented in 2011. For detailed information on IFQ's, current status and the history behind them, please visit the PFMC website at: <http://www.pcouncil.org/groundfish/gffmp/gfa20.html#background>.

Enforcement Actions

No count-per-pound citations were issued in 2009, although several suspect loads were checked by the Oregon State Police (OSP). Most inspections occurred in Charleston with some in Astoria; ports in fairly close proximity to shrimp beds with good to excellent age-1 shrimp recruitment. Charleston OSP implemented a formal count-per-pound action plan for the 2009 season due to reportedly questionable loads landed during 2008 and anticipated large age-1 recruitment in 2009. The action plan and increased enforcement emphasis on shrimp at the dock appears to have paid off.

One Oregon shrimper was cited by the OSP for repeatedly failing to provide shrimp trawl logs requested by an ODFW employee. He was subsequently tried, convicted and fined \$500.

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Good Luck Shrimping in 2010!



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