OREGON'S GROUNDFISH FISHERIES AND ASSOCIATED INVESTIGATIONS IN 2002

PREPARED FOR THE MAY 6-7, 2003 MEETING OF THE TECHNICAL SUB-COMMITTEE OF THE CANADA-UNITED STATES GROUNDFISH COMMITTEE

OREGON DEPARTMENT OF FISH AND WILDLIFE

2002 AGENCY REPORT

compiled by

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OREGON DEPARTMENT OF FISH AND WILDLIFE AGENCY REPORT FOR TSC, 2002

A. AGENCY OVERVIEW

Maine Region Program (MRP) is currently under reorganization. Major sections, and the section heads are:

MRP Program Manager	Dr. Patricia M. Burke
Resource Assessment and Analysis	Dave Fox
Management and Monitoring	Rod Kaiser

The Program Manager and two assistant program managers supervise several Supervising Fish and Wildlife Biologists and Natural Resource Specialist-3 project leaders with specific, supervisory, management and/or research and assessment responsibilities. MRP has about 45 full-time permanent staff and 60-70 seasonal employees. The program's headquarters is located at Newport, and field staff are located at offices in Astoria, Tillamook, Corvallis, Newport, Charleston, Gold Beach and Brookings.

The MRP is responsible to assess and manage Oregon's marine stocks of fish, shellfish, marine mammals and their habitats, report on specie status and make policy recommendations as appropriate.

B. MULTISPECIES STUDIES

1. Recreational Fisheries Project:

Sampling of the ocean boat fishery by the Ocean Recreational Boat Survey (ORBS) continued in 2002. Based on the results of year round sampling in 1999-2000, which indicated approximately 5 percent of the annual fishing occurred during the winter period, Oregon plans to continue sampling the March through October period during 2003.

Black rockfish continues to be the dominant species caught in the ocean boat fishery. Lingcod and several rockfish species (blue rockfish, yellowtail rockfish, China rockfish and canary rockfish) are also commonly observed. The fishery for Pacific halibut continues to be very popular.
The ORBS continued its species composition and biological sampling of groundfish species during 2002. Black rockfish and blue rockfish otoliths were gathered, in addition to lingcod fin rays, for ageing ORBS continued collecting of length and weight data from groundfish species.

Other management activities included participation in the RecFIN process, data analysis and sponsoring public hearings to discuss changes to the management of Pacific halibut, lingcod and rockfish fisheries. See the specific section for more details.
Contact: Don Bodenmiller (541) 867-0300, ext 223 don.bodenmiller@oregonstate.edu

2. Submersible & Remotely Operated Vehicle Surveys on Heceta Bank:

a. We joined scientists from National Marine Fisheries Service (NWFSC & SWFSC), Washington State University, and Oregon State University in a cooperative submersible study on Heceta Bank off the Central Oregon coast. Purpose of this study was to return to six original study sites viewed in 1988-1990 with the same submersible, observers and methods that were employed in the earlier surveys. The density of numerically dominant and commercially important fishes within different habitat types was examined for statistical changes between surveys.
Contact: Bill Barss (541) 867-0300 ext 222, William.H.Barss@state.or.us

b. We completed a qualitative analysis of the effects of a remotely operated vehicle (ROV) on fish behavior using a rearward looking camera on the ROPOS ROV. This study was the result of work conducted on Heceta Bank in 2001. This was in collaboration with Waldo Wakefield, NWFSC. Results were presented to the Oregon Chapter of the American Fisheries Society. Fish response to the presence of the ROV varied depending on ecological type. Species associated with the substrate were more likely to be attracted or repelled by the ROV. This influence is potentially problematic for yelloweye rockfish abundance surveys, as yelloweye rockfish are strongly attracted to the ROV.

Contact Steve Parker (541) 867-0300 ext. 256
steve.parker@state.or.us

3. Marine Recreational Fisheries Statistics Survey:

In 2002, samplers continued conducting the federal Marine Recreational Fisheries Statistical Survey (MRFSS) by collecting demographic and creel data fraom boat and shore anglers in the ocean and estuaries. Species composition, length and weight data were collected.

Black rockfish continued to dominate ocean boat groundfish landings, surfperch made up the majority of shore-based catch by wight, and salmon dominated estuary boat landings by weight. Pacific herring made up the majority of both shore-based and estuary boat landings by number of fish. Lingcod releases from ocean boats were up from previous years.

The program continued to collect surfperch age structures and will continue in 2003. Integration with the ODFW Ocean Recreational Boat Survey is planned in 2003.
Contact: Don Bodenmiller or Linda ZumBrunnen (541) 867-0300 ext. 223, & ext. 260
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linda.zumbrunnen@oregonstate.edu

4. Species Composition Sampling:

Species composition sampling of rockfish, thornyheads and other bottomfish continues on commercial trawl landings, commercial fixed gear landings and recreational landings.
Contact Mark Saelens (commercial) or Don Bodenmiller (recreational) for more information (541) 867-0300 ext. 251 & 223 mark.saelens@oregonstate.edu, don.bodenmiller@ oregonstate.edu

5. Groundish Maturity Study:

In 2002, we continued analysis of the maturity data collected in 2000 and 2001, trying to use histology to improve determinations of functional maturity for female rockfish. Data collection continued for a number of less abundant nearshore rockfish including yelloweye, quillback and vermillion rockfishes.
Contact: Bob Hannah at (541) 867-0300 ext. 231, bob.hannah@oregonstate.edu

6. Whiting Bycatch Sampling:

ODFW continued to coordinate a cooperative observation program to monitor bycatch and collect biological samples of unsorted Pacific whiting landings made at shoreside processors. Other cooperators are:

Washington, Oregon and California fishing industry,
California Department of Fish and Game
Washington Department of Fish and Wildlife
National Marine Fisheries Service
Pacific Fishery Management Council
Pacific States Marine Fishery Commission

Observers and staff obtained age samples from 638 yellowtail rockfish, 54 widow rockfish, 415 sablefish, 319 jack mackerel, and 1,580 Pacific whiting. Additional length frequency samples were taken on 2,156 Pacific whiting.
Contact Steve Parker or Brett Wiedoff (541) 867-0300 ext. 256 or 258, steve.parker@oregonstate.edu or brett.wiedoff@oregonstate.edu

7. Nearshore Reef Fixed Gear Survey:

During summer of 2002, Carla Sowell of our Brookings office continued the Nearshore Reef, Fixed Gear Survey using fixed hook and line gear to sample fish on nearshore rocky reefs. The long-term goal of the project is to develop the ability to consistently survey relative fish abundance on nearshore rocky reefs using fixed gear. The primary objective during this third year were to compare fisher chosen fishing sites with randomly chosen rocky reef sites chosen by ODFW to gain an understanding of same reef variability at different sites. Cable gear was used in all of the sampling. Sampling was completed successfully at Orford Reef. Data analysis for the study will be completed during 2003.
For information contact Carla Sowell at (541) 412-7395 odfwbrookings@wave. net.

8. Development and Testing of a Selective Flatfish Trawl:

In 2002, we completed a large scale field test on the continental shelf of a cut-back trawl design developed in the Faroe Islands to target flatfish while minimizing the catch of roundfish. The trawl incorporates an extremely low-rise design with a severely cutback headrope. Results in the shelf flatfish fishery are very promising, with the trawl showing enhanced flatfish catches except for reductions in Pacific halibut. The trawl produced significant reductions in catch of large rockfish, such as canary and redstripe rockfish and some roundfish, such as Pacific hake. This research has been summarized in a paper submitted to the Canadian Journal of Fisheries and Aquatic Sciences and

is to be published shortly. A test of the same trawl in the continental slope fishery for deepwater complex species is scheduled for 2003 under an exempted fishery permit.
Contact: Bob Hannah or Steve Parker at (541) 867-0300 ext.231 or 256, steve.parker@oregonstate.edu bob.hannah@oregonstate.edu

9. Enhanced Groundfish Data Collection Project (EDCP):

Contact Mark Saelens (541) 867-0300, ext. 251. mark.saelens@oregonstate.edu

10. Nearshore Reef Habitat Studies:

Nearshore reef habitat studies continued on subtidal rocky bottom habitats off the Oregon coast. ODFW biologists continued ROV survey work for a third year at Cape Perpetua and conducted habitat mapping and ROV surveys of the reefs off of Siletz and Lincoln City, just north of Newport, OR. The purpose of the Cape Perpetua work was to continue monitoring year-to-year variation in fish abundance on a nearshore reef and to examine fish-habitat relations. The Siletz/Lincoln City reef survey was designed as a study to map and characterize fish populations and habitats on a large, heavily fished nearshore reef complex.

The Cape Perpetua ROV work showed surprising results when staff discovered a hypoxia event during July of 2002. Many organisms seen on the reef were dead, including fish (mostly sculpins) and several invertebrate species. None of the rockfish community seen in previous years was present during the July survey. Subsequent work some by Oregon State University confirmed the hypoxic conditions killed or drove away organisms. ROV surveys in August and October 2002 documented the eventual return of rockfish and other species to the reef. Although most species were back by October 2002, densities were significantly lower than in previous years.

Staff conducted a side-scan sonar survey of the Siletz/Lincoln City reef to map bottom habitat. A stratified random ROV transect survey was performed using depth and habitat characteristics as strata. Staff completed 39 ROV transects on the reef, collecting data on fish species, count, and bottom habitat. The data will be analyzed during spring of 2003 and reported in summer 2003.

a. GIS Description**:**
The Marine Resources Program GIS was summarized in the 1997 TSC report. Additions to the GIS in 2002 are listed below.

b. Base Maps and Baseline Data
<u>Base Maps</u>
Side scan sonar survey of the Siletz/Lincoln City complex.

<u>Baseline Data</u>
1) Fish densities by habitat type at Cape Perpetua Reef..
2) Fish densities by habitat type at Siletz/Lincoln City reef.

c. Software
No additions for 2002.

d. Bathymetric Data Sources

No additions for 2002.
Contact: Dave Fox at (541) 867-0300 ext. 228
David.S.Fox@state.or.us.

11. Pelagic Species:

Refer to section on Pacific sardine
Contact Jean McCrae (541) 867-0300 ext. 245
jean.mccrae@oregonstate.edu

12. Developmental Fisheries Project:

The Developmental Fisheries Program was created to allow for controlled development of new fisheries. Each year, the Developmental Fisheries Board recommends to the Oregon Fish and Wildlife Commission a list of food fish species that are considered to be developmental and a harvest program which may include a limited entry system. The Developmental Fishery Board is made up of members from a broad range of fishing interests (harvesters, processors, and state agencies).

In 2002, a total of 141 permits were issued for all species; 60 permits for a finfish species. The main finfish of interest was sardines, which had all 20 available permits issued. Other species for which we issued permits were hagfish (25), swordfish (6), blue shark (3), slender sole (1) and anchovy/herring (5).

Most developmental species were landed as by-catch in other established fisheries. However, landings of sardines greatly increased in 2002. Seventeen vessels landed 50.1 million pounds (22,711 mt); a 77% increase from 2001. We were unable to hire a seasonal worker to conduct ride-along trips to observe by-catch, but staff made a few observed trips. From observed trips and logbook data, by-catch consisted of sharks, hake, and some salmon. Salmon averaged 0.4 per trip, with 71d% being released alive. Logs (accounting for 98% of the landings) show 90% of the sardine harvest was taken off Oregon and 10% off southern Washington. Incidental landings of mackerel, herring, anchovy, and shad accounted for approximately 0.6% of the catch.

Market samples were collected for length, weight, maturity, and age data. The average length and weight for all samples was 222 mm (standard length) and 184 gm. Size of sardines was much larger in 2002 than in the past two years. Age structures analyzed by California Fish and Game so far (about a 50% completed) show mostly 3-6 year old fish.
Contact Jean McCrae (541) 867-0300 ext. 245 jean.mccrae@oregonstate.edu

13. Cooperative Ageing Unit:

The Ageing unit is a cooperative project between National Marine Fisheries Service- Northwest Fisheries Science Center (NWFSC), Pacific States Fisheries Management Commission, and Oregon Department of Fish and Wildlife and housed in the new NWFSC Berry Fisher building in Newport, Oregon.

Twelve months of in-kind supervision and "lead worker" oversight were provided for the Cooperative Ageing Project (CAP). Four new age reading technicians were hired in June and spent the summer training. The ageing lab moved into new quartaers in the new NOAA Fisheries, Barry Fisher building in Newport. Production ageing was completed to support this cycle of stock assessment for darkblotched rockfish, pacific ocean perch, and pacific hake. The lab presented three posters at the Oregon chapter AFS meeting in Eugene, Oregon. The lab participated in the annual Dover sole workshop in Eureka, California. Ageing work was ongoing on the sablefish back log. Several smaller ageing projects were also completed to support various research projects

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14. Logbooks:

Status of Oregon logbooks is as follows:

Type	Years	Entered	Verified
1) Trawl Log	'76 – '01	Thru '01	'01
2) LE Sable Logs	'79 – '00	None	None
3) H&L Volunteer Logs	'88, '92 & '94 – '00	Thru '99	None

C. BY SPECIES

1. Pacific cod

No work was conducted on Pacific cod. Few fish were found in the trawl landings. Total Oregon Pacific cod landings were down 14% in 2002 at 59,352 pounds (27 mt) compared to about 68,541 pounds (31 mt) in 2001.

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2. Nearshore

Black rockfish:

a. Coastwide sampling continues on recreational catches of black rockfish. Black rockfish are the most frequently caught fish in the ocean boat recreational fishery, and about 250,000 to 350,000 fish have been harvested annually in recent years. Port samplers take market samples from commercial landings. Recreational and commercial sampling includes biological sampling for age, length, sex and maturity. Age determination is done by ODFW.

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b. Total commercial Oregon landings were 280,227 pounds (127 mt) which was down from the 2000 landings of 327,173

pounds (about 148 `mt).
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mark.saelens@oregonstate.edu William.H.Barss@state.or.us

c. Black Rockfish PIT Tagging:
We completed the first year of a multi-year tagging program using PIT tags to evaluate the exploitation rate of black rockfish off Newport, Oregon. We tagged 2,550 fish using a recreational charter vessel and volunteer staff anglers. We then monitored recoveries in the charter fishery, which lands 70% of all black rockfish into Newport. We scanned 48,000 carcasses for tags, recovering 52 tags dockside, yielding an exploitation rate estimate of 2.04%, lower than we expected. Current plans are to repeat the program in spring 2003. Laboratory research ato evaluate tagging related mortality due to barotrauma is ongoing as a part of this project.
Contact Bob Hannah, Steve Parker or Don Bodenmiller (541) 867-0300 ext 256 or 223
bob.hannah@oregonstate.edu steve.parker@oregonstate.edu don.bodenmiller@oregonstate.edu

3. Shelf rockfish

a. Widow rockfish - coastwide sampling continues for age, length and sex. Age determination is done by NMFS, Tiburon. Oregon landings in 2002 were 557,190 pounds (253 mt) which is considerably down from the 3,742,651 pounds (1,698 mt) in 2001. This is about a 85% decrease from 2001.

b. Canary rockfish - coastwide sampling continues for age, length and sex. Age determination is done by ODFW. Oregon landings continued to be very low. In 2002, they were 38,190 pounds (17 mt) which was about a 9% decrease from the 42,139 pounds (19 mt) in 2001.

c. Yellowtail rockfish - coastwide sampling continues for age, length and sex. Age determination is done by WDFW. Oregon landings in 2002 were about 774,214 pounds (351 mt) which was a big 68% decrease from 2,432,942 pounds (1,104 mt) from 2001.
Contact Mark Saelens or Bill Barss (541) 867-0300 ext. 251 or 222
mark.saelens@oregonstate.edu William.H.Barss@state.or.us

4. Slope rockfish

In 2002, most sampling was limited to species composition sampling. Length frequency samples were taken on selected species, and we took age structures on darkblotched rockfish and Pacific ocean perch. Pacific ocean perch landings were 235,660 pounds (107 mt) which was a 45% decrease from 426,836 pounds (194 mt) in 2001. Darkblotched rockfish were 116,158 pounds in 2002 (53 mt) which is a 22% decrease from 148,875 pounds (68 mt) in 2001.
Contact Mark Saelens or Bill Barss (541) 867-0300 ext. 251 or 222
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5. Thornyheads

Sampling included sampling for species composition, length frequency, age and sex. Oregon landings of longspine thornyhead increased to 1,835,958 (833 mt) in 2000, which was about a 35% increase from the 1,362,549 (618 mt) in1999. Oregon landings of shortspine thornyhead were 576,951 pounds (262 mt) in 2002, which was about an 16% increase from 495,351 pounds (225 mt) in 2001.
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6. Sablefish

a. Routine age samples were obtained on sablefish. Otoliths were sent to the NMFS / ODFW Cooperative Ageing Project in Newport, Oregon for age determination. Oregon landings were 3,184,825 pounds (1,445 mt) in 2002, which was down 44% from the 5,697,245 pounds (2,584 mt) in 2001.
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b. We collaborated with NOAA fisheries, NWFSC to develop and utilize the trend of sablefish in the shoreside whiting fishery as an index of sablefish abundance on the shelf (with M.J. Schirripa). We also co-authored a paper with Michael Davis of AFSC on the effects of size in the discard mortality of trawl caught sablefish.
Contact: Steve Parker (541) 867-0300 ext. 256 steve.parker@oregonstate.edu

7. Flatfish

a. Most Oregon nearshore flatfish landings were up in 2002 while landings of flatfish from deep water were generally down. Dover sole were 5,998,433 pounds (2,721 mt) down 27% from 8,241,861 pounds (3,739 mt) in 2001. Landings of English sole were 960,016 pounds (435 mt) up 7% from 895,972 pounds (406 mt) in 2001. Landings of petrale sole were 1,967,961 pounds (893 mt), down 3% from 2,033,638 pounds (922 mt), in 2001. Landings of arrowtooth flounder were down by 51% at 1,116,096 pounds (506 mt) compared to 2,282,934 pounds (1,036 mt) in 2001. Pacific sanddab landings were up 214% at 500,621 pounds (227 mt) compared to at 234,280 pounds (166 mt) in 2001.
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mark.saelens@oregonstate.edu William.H.Barss@state.or.us

b. Pacific halibut
1) Weekly harvest in the recreational and also the commercial fishery were monitored for quota tracking purposes. The majority of recreational caught fish continue to be landed into Newport and Garibaldi. In 2002, the directed recreational fishery was open 16 days, which was drastically down from a decade age when it was open nearly year round. The commercial directed fishery was open for two 10-hour periods. In 2002 as in recent years, the recreational and commercial fisheries received equal allocations.

2) Public meetings were held to discuss 2002 recreational fishery structuring and proposed changes to the 2003 catch sharing plan for Oregon recreational fisheries.

3) In 2002, Oregon commercial fishers landed 432,470 pounds (196 mt) up 90% from 227,126 pounds (103 mt) in 2001.
Contact Don Bodenmiller (541) 867-0300 ext. 223 don.bodenmiller@oregonstate.edu

8. Pacific whiting

In 2002, ODFW continued to coordinate a cooperative observation program to monitor bycatch and collect biological samples of unsorted Pacific whiting landings made at shoreside processors in Washington, Oregon and California. Cooperators are the fishing industry, ODFW, CDFG, WDFW, PSMFC, NMFS, and PFMC. The total allocation was decreased significantly in 2002 to 45,276 mt for the shoreside component, the lowest since 1993. Salmon bycatch was normal. Yellowtail rockfish and widow rockfish bycatch were the lowest ever, and sablefish bycatch was the highest on record. Details of landings and biological information on bycatch samples are available in annual reports on the internet at http://www.hmsc.orst,edu/odfw/reports/whiting.html.

Oregon landings and observations were made at Newport, Astoria and Charleston. Landings and observations were also made Westport, WA through WDFW and at Eureka, CA through CDFG. Overall, 35% of whiting landings were observed over the course of the season. Sampling and observations were conducted from April through the season end on July 17, and this was the shortest season since 1992 or program inception. One Washington, one California and six Oregon processors, and twenty-nine vessels participated in the program. Exempted Fishing Permits (EFPs) were issued by NMFS through CDFG and ODFW to participating vessels to permit the landing of unsorted whiting; participating vessels with EFPs were exempted from prohibitions on landing prohibited species (Pacific halibut and salmon) and groundfish trip limit overages. Prohibited species and the monitory value of trip limit overages were turned over to the state of landing.

Approximately 45,276 mt of Pacific whiting were landed at shoreside processors, compared to approximately 53,376 mt in 2001. Oregon processors received approximately 71% of total landings, Washington processors received approximately 23%, and about 6% was landed in California. The overall salmon bycatch rate was 0.023 salmon per mt whiting; this is lower than in 2001 (0.04 salmon/mt. A total of 1,148 salmon (1,062 Chinook, 14 coho, and 72 chum salmon) were taken as bycatch in this fishery and turned over to state agencies in 2002 - this compares to 2,634 Chinook in 2001. In Oregon, all salmon in acceptable condition are turned over to hunger relief agencies.

Observers and staff obtained age samples from 638 yellowtail rockfish, 54 widow rockfish, 415 sablefish, 319 jack mackerel, and
1,580 Pacific whiting.
Contact: Steve Parker (541) 867-0300 ext. 256
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9. Dogfish

No work was conducted on dogfish. Landings were very small in 2002 and decreased to 33,424 pounds (15 mt), down 29% from to 46,779 pounds (21 mt) in 2001.
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mark.saelens@oregonstate.edu William.H.Barss@state.or.us

10. Lingcod

a. In 2002, Oregon commercial landings were 181,049 pounds (82 mt) which is up 22% from 2001 landings of 148,577 pounds (67 mt).
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mark.saelens@oregonstate.edu William.H.Barss@state.or.us

b. Age samples were collected from the commercial fishery and sent to Washington Department of Fish and Wildlife, Seattle for age determination. ODFW continued collecting age samples from the recreational fishery in 2002. For 2003, staff continued ageing the lingcod fin rays sampled in the 2001-2002 recreational fishery.
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bob.mikus@oregonstate.edu

c. Lingcod Discard Mortality in Trawls:
We wrote up this discard mortality study and submitted it for publication.
Contact: Steve Parker (541) 867-0300 ext. 256
steve.parker@oregonstate.edu

11. Mackerel and Sardines

a. Mackerel
In 2002, landings of Pacific mackerel and jack mackerel combined were considerably down at 298,922 pounds (136 mt), down 74% from 1,141,671 pounds (518 mt), in 2001. Almost all Oregon mackerel landings are landed as bycatch from the Pacific whiting fishery.
Contact Mark Saelens or Bill Barss (541) 867-0300 ext. 251 or 222
mark.saelens@oregonstate.edu William.H.Barss@state.or.us

b. Pacific Sardine
In 2002, landings for sardine continue to increase. Seventeen vessels landed 50.1 million pounds (22,711 mt); a 77% increase from 2001. Most of the sardine catch was by seine gear (99%), and fish were landed into Astoria and processed as bait for the Japanese longline fishery. Incidental landings of mackerel accounted for approximately 0.6% of the catch.

We were unable to hire a seasonal worker to conduct ride-along trips to observe by-catch, but staff made a few observed trips. From observed trips and logbook data, by-catch consisted of sharks, hake, and some salmon. Salmon averaged 0.4 per trip, with 71% being released alive. Market samples were collected for length, weight, maturity, and age data. The average length and weight for all samples was 222 mm (standard length) and 184 gm. Age structures analyzed by California Fish and Game so far (about 50% completed) show mostly 3-6 year old fish.
Contact: Jean McCrae (541) 867-0300 ext. 245 jean.mccrae@oregonstate.edu

12. Other

a. Surfperch
Surfperch activity was limited to biological sampling of carcasses and processing recaptured tagged surfperch. Carcasses and tags were provided by cooperating sport fishers.
Contact: Don Bodenmiller (541) 867-0300 ext. 223 don.bodenmiller@oregonstate.edu

Processors reported receiving only 100 pounds of surfperch in 2002, which is a 97% decrease from 2,876 pounds in 2001. Interest continues for the commercial harvests of surfperch, especially in Oregon's south coast area. In 2002, commercial harvest of surfperch was again prohibited in the months of August and September to protect redtail surfperch during the months that they spawn off Oregon.
Contact: Linda Zumbrunnen (541) 867-0300 ext. 260 linda.zumbrunnen@oregonstate.edu

b. Pacific herring
The Yaquina Bay commercial roe herring seine fishery did not land herring in 2002. Fish spawned before fishers were able start fishing. Overall state commercial landings of herring were only 26,810 pounds (12 mt) which was a 44% decrease over the small landing of 48,096 pounds (22 mt) in 2001.

We conducted a lowere Yaquina Bay hydroachoustic survey of the herring population. Cooperatrors in the study included the Oregon fishing industry and ODFW with Biosonics Inc. contracted to conduct the surbey.
Contact: Keith Matteson (541) 867-0300 ext. 244 keith.matteson@oregonstate.edu.

c. Hagfish
Oregon hagfish commercial industry returned to a significant hagfish fishery in 2002 after low landings the previous year. Landings of Pacific hagfish were up 950% in 2002 at 691,085 pounds (313 mt) compared to at 72,760 pounds (33 mt) in 2001. This was the second highest landing for any year, for in 1992, a record catch of 751,281 pounds (about 341 mt) of hagfish was landed in Oregon ports.
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d. Skates
In 2002, landings of skates were 1,087,592 pounds (493 mt) which was down 17% from 1,310,184 pounds (594 mt) in 2001. Species composition and length frequency samples were taken.
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Publications:

Banta, S.E., R.W. Hannah, S.J.Parker, K.M.Matteson and S.A. Barkeley. (in review at CJFAS) Protecting rockfish through gear design: development of a selective flatfish trawl for the U.S. west coast bottom trawl fishery.

Davis, M.W. and S.J.Parker. Submitted. Fish sensitivity to bycatcy discard stressors is size-related: Implications for saboefish bighgrading and discard mortality rates. North American Journal of Fisheries Management.

Hannah, R.W. and S.A. Jones. 2003. Measuring the height of the fishing line and its effect on shrimp catch and bycatch in an ocean shrimp (Pandalus jordani) trawl. Fish. Res. 60/2-3 pp. 427-430.

Hannah, R.W. In press. Spatial changes in trawl fishing effort in response to footrope diameter restrictions in the U.S. West Coast bottom trawl fishery. North American Journal of Fishery Management.

Hannah, R.W., S.J. Parker and E.L. Fruh. 2002. Length and age at maturity of female petrale sole (Eopsetta jordani) determined from samples collected prior to spawning aggregations. Fish. Bull. 100:711-719.

Weeks, H., and S. Parker. 2002. Scientific and management uncertainty create competing precautionary needs for fishery managers. Fisheries. Vol 27, No. 3. P. 25-27.

Projects planned for year 2003:

1. The selective flatfish trawl study will hopefully be completed with testing in the deepwater trawl fishery.
Contact: Bob Hannah (541) 867-0300 ext. 231 bob.hannah@oregonstate.edu.

2. Maturity data will be collected for several nearshore rockfish species as samples are available.
Contact: Bob Hannah (541) 867-0300 ext. 231 bob.hannah@oregonstate.edu.

3. **A large scale PIT tagging project** aimed at estimating the exploitation rate in the CPFV (charter boat) fishery will be continued with black rockfish. Barotroma studies on black rockfish aimed at estimating tag related mortality and morbidity will continue.
Contact: Bob Hannah (541) 867-0300 ext. 231 bob.hannah@oregonstate.edu.

4. **A field evaluation of some industry-developed modifications to the Nordmore grate system** is also planned for the shrimp fishery.
Contact: Bob Hannah (541) 867-0300 ext. 231 bob.hannah@oregonstate.edu.

5. N**earshore Reef Habitat Studies** in 2003 will include a multibeam sonar survey at the Siletz/Lincoln City reef complex, and continued ROV work at Cape Perpetua to document the recovery of the fish community from the hypoxia event and to continue the time series of fish data.
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6. The Nearshore Reef Fixed Gear Survey project field work will continue in late summer of early fall 2003 using fixed hook and line gear to sample fish on nearshore rocky reefs. The long-term goal of the project is to develop the ability to consistently survey relative fish abundance on nearshore rocky reefs using fixed gear
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