

MARINE RECREATIONAL INFORMATION PROGRAM

FY 2013 Final Report:

Oregon Ocean Recreational Boat Survey (ORBS): Supplemental Sampling Evaluation of Bottomfish Effort and Catch in Unsampled Ports and Time Periods

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1 Project Description

1.1 Background

The Magnuson Fishery Conservation and Management Act (MFCMA, 16 USC 1801) in 1976 mandated collection of data for both recreational and commercial marine fisheries. The National Marine Fisheries Service (NMFS) initiated the Marine Recreational Fisheries Statistics Survey (MRFSS) in the late 1970s to monitor all modes of marine recreational fishing. The MRFSS was designed to estimate annual fishing effort and catch by species on a regional scale. However, fisheries management and stock assessment practices now require more timely and accurate estimates at finer geographic and temporal scales than those generated by the original program. As a result, a number of regional angler data collection programs and surveys have been developed and integrated into or have replaced the original MRFSS methodology.

On the Pacific coast, a series of state surveys provide data on recreational fishing effort and catch to the Pacific Recreational Fisheries Information Network (Pacific RecFIN). In Oregon, on-site angler interviews and sampling are conducted by the Oregon Department of Fish and Wildlife's Ocean Recreational Boat Survey (ORBS). Because boat access to ocean waters in Oregon is restricted primarily to specific ports where jetties have been built, these limited access-point interception areas enable direct monitoring and estimation of ocean recreational effort and catch. The ORBS collects information on ocean boat recreational fishing effort and catch by species; biological data are also collected for stock assessment and management purposes.

The ORBS program does not have sufficient resources to conduct year-round sampling in most ports, or to sample in all smaller ports. Estimates of effort and catch in these unsampled strata are made using a combination of current data from nearby major ports, data from the last time the port/time of interest was actually sampled, and assumptions about the relationships between these variables. Several of these assumptions have not been tested or have had minimal testing, and the potential for bias due to violations of their premises exists. There is no way to test the assumptions or address the bias using current sampling data. There has been an additional expectation that the ports of Garibaldi, Bandon, and Gold Beach were likely to have a disproportionate decrease in over-winter activity due to the physical nature of their bars and the effects of increased river flow during the winter period coupled with changes in ocean swells.

Similar concerns have also been expressed by the charter boat industry for several of the ports. Industry comments indicated that charter operations in a number of locations simply close down for the "winter period" defined in this report as the months of November, December, January, and February. Industry comments also indicated that many operations were closed during the months of October, March, and/or April (depending on the port).

Motivated in part by the National Research Council's review of recreational fisheries survey methods (2006), the National Marine Fisheries Service's Marine Recreational Information Program (MRIP) has undertaken many efforts to improve recreational fisheries monitoring, including a review of ORBS begun in 2010. Consulting statisticians Jay Breidt and Jean Opsomer made strong recommendations for addressing under-coverage issues at less-

frequented ports and/or in the off-season and winter season by increasing sampling coverage to obtain data for these unsampled ports and times. The MRIP priorities include ensuring that sampling and estimation methodologies are consistent, statistically valid, and unbiased; and assessing the degree of potential bias associated with under-coverage and the impact of potential biases on final catch and effort estimates.

1.2 Project Objectives and Operational Plan

The primary task of the project was to provide additional sampling in five Oregon coastal ports in order to more accurately estimate effort and catch in these ports in fall, winter, and/or spring months. Prior sampling in these ports and time periods has been very limited, and two recent MRIP-supported projects as well as a review of the ORBS survey design, and one year of expanded sampling conducted in 2011-12 suggested that at least one additional season of test sampling would be valuable in verifying current models used in the estimation of effort and catch in these ports and seasons. In addition, the results from this project should help identify ports and/or months that should be prioritized for future sampling, due to higher activity levels and/or variability in effort and catch.

Utilizing existing sampling and estimation protocols within ORBS, full year round sampling would be accomplished in the five most significant ports for bottomfish activity and catch, and sampling in three minor ports - Pacific City, Bandon, and Gold Beach - would be extended from a mid-June through September sampling frame to a May through October frame. Within the five major ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings; only the ports of Garibaldi and Charleston required funding for the months of November through February, the remaining ports were already scheduled to be covered with existing staff and funding.

For the purposes of this project, the Columbia River (ports of Astoria, Warrenton, and Hammond), Florence, and Winchester Bay were not included as these ports have minimal bottomfishing activity due to a lack of readily accessible rocky reef habitat. The bottomfishing activity in these ports during the peak summer months totals 0.35% of the statewide total, with 0.31% coming from the Columbia River ports and 0.04% coming from Florence and Winchester Bay combined.

1.3 Methods - Effort

Effort Assessment: The unit of effort measured by ORBS is a boat trip stratified by boat type (charter/CPFV and private boat). When combined with the interview data, an estimate of the number of angler trips by trip type is generated. A primary duty of ORBS samplers is to collect the effort information. For charter vessels, that information is gathered by contacting all charter offices for the number of boat trips by target species trip type for all days of the week (Note: Some charters do not operate out of fixed charter offices and are included with the private boats in the effort counts, but are labeled as “guide boats” in the interviews).

Only the trip type of “bottomfishing” was used in the effort analysis. There is additional bottomfishing activity that occurs with “combination” trip (salmon plus another target species group) and the “halibut” trip types, but it is not possible to accurately extract the bottomfishing trips out of either of these trip types. In addition, the combination and halibut

trips are limited to the times of year when seasons for salmon or halibut is open; this varies by area of the coast and year but is largely limited to the May through September period. By not including the combination trip effort, it does create a slight bias towards an increased portion of the effort during the winter period. This same bias would not be reflected in the catch.

Two different methods of private boat effort accounting were used during the course of the study. The method chosen for each port/access point has been selected based on the most appropriate and/or accurate method for the site. For days when no count is conducted, an average of the counts within the same strata (week, month, season type, day type) is applied.

Video boat count (VBC) recordings were utilized at Garibaldi, Newport, Charleston, Gold Beach, and Brookings. The VBC typically captures two camera angles: (1) direct across the channel for vessel identification, and (2) at the bar for verification of ocean entrance. Samplers then review the video for the period of 04:15-16:15, counting all outgoing private recreational vessels, and all incoming private recreational vessels. Because VBC recordings are conducted 24 hours a day, 7 days a week and stored to a hard drive, there is no loss of daily effort estimation due to the absence of a sampler on a given day. A twelve hour video count can typically be completed by a sampler in less than two and a half hours. For both the VBC, an expansion is made based on interviews for any trips that cross the bar before or after the count period (details on this method are available on-line at www.dfw.state.or.us/MRP/salmon/docs/ORBS_Design.pdf). In the event of equipment failure, staff may be instructed revert to a live bar crossing count that is typically dawn to 10:15. However no significant equipment failures occurred during the course of this project.

The second effort methodology employed is the alternate effort count. This is a combined trailer and moorage slip count plus any additional departures during the sampling period. This count is combined with a tally of returning trips to estimate the number of private boats that entered the ocean. The tally of returning trips is a filter to remove estuary boats, smaller trailered commercial fishing vessels, and other non-ocean recreational private boats from the trailer/moorage slip/launch count. The alternate effort count method was employed at Pacific City and Bandon.

1.4 Methods - Interviews and Catch

A subset of the fishing trips are met shore side to determine the target trip type, the number of anglers per boat, the total catch by species per boat, the released catch by species per boat, and to collect ancillary biological and fishery management information. Charter boat interviews are scheduled based on needed sampling within strata, and known trip types. Private boat interviews are selected without regard to trip type, size of vessel, or any other visible characteristics. The adopted approach utilizes a “next boat” protocol in which the next private/guide boat entering the sampler’s coverage area is approached and interviewed. Interviews are only conducted for completed trips, and all catch and angler trips for the boat are included in the interview.

1.5 Methods - Evaluation

Estimated bottomfishing angler trips by boat type were summed for a total port/month estimate. Expanded effort for bottomfishing angler trips; and catch estimates for aggregated rockfish (*Sebastes* spp.), and Lingcod (*Ophiodon elongatus*) were summed to statistical month by port and boat type (charter/private). Lingcod were evaluated as this is a common target species for deepwater areas that have been closed except during the winter months, and a separate evaluation of Lingcod was done to help evaluate any potential specific seasonal bias in the catch estimation that might be exacerbated by a simple expansion of catch to the non-sampled effort period. Lingcod also exhibit a winter-spring spawning and nest guarding season when they are more available and susceptible to recreational fishing activity.

Additional evaluations of some rockfish by individual species were made to look at possible seasonal variations in catch. Seasonal differences in catch rates for various species have rarely been examined in detail previously, and may vary greatly. Due to sample size limitations, the rockfish species assessed were restricted to Black Rockfish (*Sebastes melanops*), Blue Rockfish (*Sebastes mystinus*), Yellowtail Rockfish (*Sebastes flavidus*), Quillback Rockfish (*Sebastes maliger*), China Rockfish (*Sebastes nebulosus*), and Copper Rockfish (*Sebastes caurinus*).

Although both Blue Rockfish and Yellowtail Rockfish are available in the nearshore areas, they are generally more common off Oregon in waters outside of the shallow reefs. These areas outside of 30 fathoms are closed by rule except for the period from October through March, and the winter period would be expected to have a greater portion of these typical offshore species in the catch.

2 Results

2.1 Results - Effort: Major Ports

For the major ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings; monthly estimates of angler effort by port and boat type were compared to evaluate the current level of sampling coverage. Tables 1a – 1c show the estimated number of angler trips and the annual percent of bottomfish angler trips by port and month for charter boat trips, private boat trips, and summed trips. Months shaded indicate the standard ORBS sampling periods for each port. In recent years, supplemental winter ORBS sampling has occurred in Depoe Bay, Newport, and Brookings allowing for full year assessment of angling activity in those ports.

Charter boat activity in both Garibaldi and Charleston was essentially absent during the winter months, and was minimal in both Depoe Bay (5%) and at Brookings (4%); however charter bottomfishing during the winter months at Newport during this period accounted for 11% of the annual trips.

Percent of private boat bottomfishing effort during the winter period was higher than expected in all five ports with a range of 13% to 21% of the annual trips occurring during the winter period (Table 1b). Similar work conducted between 2011 and 2012 showed a range of

2% to 8% of the private boat effort during the winter period for the same five ports, and that was consistent with prior evaluations of the winter period.

Table 1a. Estimated annual number and percent of annual bottomfishing only trips taken by month on charter boats from March 2013 - February 2014.

Month	<u>Garibaldi</u>		<u>Depoe Bay</u>		<u>Newport</u>		<u>Charleston</u>		<u>Brookings</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct
March	310	6%	1,328	9%	1,370	9%	411	10%	150	5%
April	188	4%	834	6%	976	7%	305	8%	267	9%
May	434	9%	1,425	10%	1,378	10%	460	12%	459	15%
June	689	14%	2,011	14%	1,460	10%	661	17%	475	16%
July	1,220	26%	2,602	18%	2,481	17%	278	7%	498	16%
August	1,284	27%	4,043	27%	3,237	22%	975	25%	775	26%
September	367	8%	899	6%	981	7%	457	12%	218	7%
October	281	6%	789	5%	989	7%	362	9%	89	3%
November	0	0%	90	1%	585	4%	0	0%	18	1%
December	0	0%	160	1%	332	2%	0	0%	28	1%
January	0	0%	197	1%	384	3%	0	0%	48	2%
February	0	0%	334	2%	251	2%	20	1%	12	0%
Total	4,773		14,712		14,424		3,929		3,037	

Table 1b. Estimated annual number and percent of annual bottomfishing only trips taken by month on private boats from March 2013 - February 2014.

Month	<u>Garibaldi</u>		<u>Depoe Bay</u>		<u>Newport</u>		<u>Charleston</u>		<u>Brookings</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct
March	582	13%	537	16%	1,221	13%	1,039	12%	991	8%
April	366	8%	319	10%	605	6%	663	8%	1,152	9%
May	590	13%	395	12%	939	10%	855	10%	1,939	15%
June	681	15%	360	11%	953	10%	1,124	13%	1,405	11%
July	199	4%	154	5%	455	5%	326	4%	966	8%
August	973	21%	469	14%	2,006	21%	1,658	19%	2,426	19%
September	281	6%	203	6%	613	6%	854	10%	1,079	9%
October	362	8%	303	9%	742	8%	518	6%	731	6%
November	266	6%	122	4%	451	5%	350	4%	401	3%
December	81	2%	48	1%	409	4%	268	3%	590	5%
January	175	4%	231	7%	767	8%	611	7%	636	5%
February	50	1%	180	5%	360	4%	244	3%	361	3%
Total	4,606		3,321		9,521		8,510		12,677	

Table 1c. Estimated annual number and percent of annual bottomfishing only trips taken by month from March 2013 - February 2014.

Month	<u>Garibaldi</u>		<u>Depoe Bay</u>		<u>Newport</u>		<u>Charleston</u>		<u>Brookings</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct	Anglers	Pct
March	892	10%	1,865	10%	2,591	11%	1,450	12%	1,141	7%
April	554	6%	1,153	6%	1,581	7%	968	8%	1,419	9%
May	1,024	11%	1,820	10%	2,317	10%	1,315	11%	2,398	15%
June	1,370	15%	2,371	13%	2,413	10%	1,785	14%	1,880	12%
July	1,419	15%	2,756	15%	2,936	12%	604	5%	1,464	9%
August	2,257	24%	4,512	25%	5,243	22%	2,633	21%	3,201	20%
September	648	7%	1,102	6%	1,594	7%	1,311	11%	1,297	8%
October	643	7%	1,092	6%	1,731	7%	880	7%	820	5%
November	266	3%	212	1%	1,036	4%	350	3%	419	3%
December	81	1%	208	1%	741	3%	268	2%	618	4%
January	175	2%	428	2%	1,151	5%	611	5%	684	4%
February	50	1%	514	3%	611	3%	264	2%	373	2%
Total	9,379		18,033		23,945		12,439		15,714	

2.2 Results - Effort: Minor Ports

The estimated number of bottomfishing angler trips and the annual percent of bottomfishing angler trips from the minor ports of Pacific City, Bandon, and Gold Beach that were estimated during the study period are summarized in tables 2a -2c. The typical sampling and estimation period for these ports runs from roughly June 16 through September 30. In order to more appropriately represent the normal time frame for sampling, June was split into two halves of two weeks each.

Table 2a. Estimated annual number and percent of annual bottomfishing only trips taken by month on charter boats from May 2013 - October 2013.

Month	<u>Pacific City</u>		<u>Bandon</u>		<u>Gold Beach</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct
May	82	13%	168	13%	128	20%
June 1st half	58	9%	104	8%	50	8%
June 2nd half	82	13%	165	12%	91	14%
July	64	10%	104	8%	90	14%
August	319	49%	531	40%	225	36%
September	20	3%	174	13%	48	8%
October	24	4%	79	6%	0	0%
Total	649		1,325		632	

Table 2b. Estimated annual number and percent of annual bottomfishing only trips taken by month on private boats from May 2013 - October 2013.

Month	<u>Pacific City</u>		<u>Bandon</u>		<u>Gold Beach</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct
May	332	14%	231	22%	253	19%
June 1st half	280	12%	70	7%	44	3%
June 2nd half	313	13%	112	11%	148	11%
July	329	14%	41	4%	12	1%
August	885	37%	315	30%	742	55%
September	84	3%	151	14%	67	5%
October	182	8%	146	14%	95	7%
Total	2,405		1,066		1,361	

Table 2c. Estimated annual number and percent of annual bottomfishing only trips taken by month from May 2013 - October 2013.

Month	<u>Pacific City</u>		<u>Bandon</u>		<u>Gold Beach</u>	
	Anglers	Pct	Anglers	Pct	Anglers	Pct
May	414	14%	399	17%	381	19%
June 1st half	338	11%	174	7%	94	5%
June 2nd half	395	13%	277	12%	239	12%
July	393	13%	145	6%	102	5%
August	1,204	39%	846	35%	967	49%
September	104	3%	325	14%	115	6%
October	206	7%	225	9%	95	5%
Total	3,054		2,391		1,993	

2.3 Results - Catch

Estimated catches of all rockfish species (*Sebastes* spp.) (Tables 3a – 3c) and Lingcod (*Ophiodon elongatus*) (Tables 4a – 4c) were summed for each port and month cell by boat type and in total. Additional table series were generated for catch estimates of the individual rockfish species of Black Rockfish (*Sebastes melanops*), Blue Rockfish (*Sebastes mystinus*), and Yellowtail Rockfish (*Sebastes flavidus*). The shaded cells in each of the tables (tables 5a – 7c) indicate the months when ORBS normally conducts sampling. For those ports where June is the first month shaded, only the second half of June is regularly sampled. Cells that are crosshatched for the ports of Pacific City, Bandon, and Gold Beach were periods outside of this study and no sampling occurred during those time periods.

Charter catches largely mirror the bottomfishing effort. Regulations allow for fishing outside of the 30 fathom groundfish management line only between October 1 and March 31 of each year. Some anglers will specifically fish the offshore waters during this period typically to

target Lingcod or Yellowtail Rockfish which are often more common in these deeper waters. Blue Rockfish also are generally more available in deeper waters, but also make up a good portion of the nearshore catch throughout the season.

Table 3a. Charter boat estimated catch of rockfish (*Sebastes spp.*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,774	7%			3,284	6%	5,207	9%	2,435	11%					803	5%	13,503	7%
2013	April	1,240	5%			2,769	5%	3,397	6%	1,227	5%					1,698	10%	10,331	5%
2013	May	2,904	11%	481	13%	4,402	9%	4,778	8%	2,434	11%	627	9%	716	21%	2,630	15%	18,972	10%
2013	June	4,138	16%	745	20%	7,422	14%	5,998	10%	3,912	17%	1,421	21%	716	21%	2,929	17%	27,281	14%
2013	July	6,943	26%	347	9%	6,870	13%	7,954	14%	1,200	5%	379	6%	505	15%	2,750	16%	26,948	14%
2013	August	6,254	24%	1,876	51%	17,133	33%	14,130	24%	6,076	27%	2,629	39%	1,258	37%	4,098	24%	53,454	28%
2013	September	1,830	7%	120	3%	4,335	8%	5,796	10%	2,807	12%	1,178	18%	248	7%	1,296	7%	17,610	9%
2013	October	1,274	5%	137	4%	2,232	4%	5,603	10%	2,368	10%	471	7%		0%	554	3%	12,639	7%
2013	November		0%			60	0%	2,274	4%		0%					117	1%	2,451	1%
2013	December		0%			487	1%	1,065	2%		0%					192	1%	1,744	1%
2014	January		0%			954	2%	1,216	2%		0%					272	2%	2,442	1%
2014	February		0%			1,429	3%	1,074	2%	140	1%					68	0%	2,711	1%
Total		26,357		3,706		51,377		58,492		22,599		6,705		3,443		17,407		190,086	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 3b. Private boat estimated catch of rockfish (*Sebastes spp.*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,342	14%			1,140	13%	1,970	9%	1,645	7%					2,498	8%	8,595	8%
2013	April	705	7%			772	9%	1,118	5%	1,176	5%					2,995	10%	6,766	6%
2013	May	1,346	14%	925	12%	850	10%	1,624	7%	1,886	8%	510	18%	851	16%	4,926	16%	12,918	12%
2013	June	1,703	18%	1,594	21%	1,041	12%	2,172	10%	3,530	16%	455	16%	612	11%	4,823	16%	15,930	15%
2013	July	545	6%	855	11%	173	2%	884	4%	747	3%	110	4%	84	2%	2,325	8%	5,723	5%
2013	August	1,614	17%	3,463	45%	1,451	17%	5,685	26%	6,044	27%	991	36%	3,251	60%	4,743	16%	27,242	25%
2013	September	373	4%	256	3%	735	9%	1,990	9%	3,285	15%	373	13%	276	5%	2,430	8%	9,718	9%
2013	October	648	7%	584	8%	874	10%	2,654	12%	1,077	5%	332	12%	386	7%	1,782	6%	8,337	8%
2013	November	550	6%			376	4%	759	3%	1,003	5%					845	3%	3,533	3%
2013	December	156	2%			103	1%	1,237	6%	442	2%					1,383	5%	3,321	3%
2014	January	442	5%			460	5%	901	4%	1,095	5%					755	3%	3,653	3%
2014	February	32	0%			632	7%	942	4%	325	1%					665	2%	2,596	2%
Total		9,456		7,677		8,607		21,936		22,255		2,771		5,460		30,170		108,332	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 3c. Total estimated catch of rockfish (*Sebastes spp.*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	3,116	9%			4,424	7%	7,177	9%	4,080	9%					3,301	7%	22,098	7%
2013	April	1,945	5%			3,541	6%	4,515	6%	2,403	5%					4,693	10%	17,097	6%
2013	May	4,250	12%	1,406	12%	5,252	9%	6,402	8%	4,320	10%	1,137	12%	1,567	18%	7,556	16%	31,890	11%
2013	June	5,841	16%	2,339	21%	8,463	14%	8,170	10%	7,442	17%	1,876	20%	1,328	15%	7,752	16%	43,211	14%
2013	July	7,488	21%	1,202	11%	7,043	12%	8,838	11%	1,947	4%	489	5%	589	7%	5,075	11%	32,671	11%
2013	August	7,868	22%	5,339	47%	18,584	31%	19,815	25%	12,120	27%	3,620	38%	4,509	51%	8,841	19%	80,696	27%
2013	September	2,203	6%	376	3%	5,070	8%	7,786	10%	6,092	14%	1,551	16%	524	6%	3,726	8%	27,328	9%
2013	October	1,922	5%	721	6%	3,106	5%	8,257	10%	3,445	8%	803	8%	386	4%	2,336	5%	20,976	7%
2013	November	550	2%			436	1%	3,033	4%	1,003	2%					962	2%	5,984	2%
2013	December	156	0%			590	1%	2,302	3%	442	1%					1,575	3%	5,065	2%
2014	January	442	1%			1,414	2%	2,117	3%	1,095	2%					1,027	2%	6,095	2%
2014	February	32	0%			2,061	3%	2,016	3%	465	1%					733	2%	5,307	2%
Total		35,813		11,383		59,984		80,428		44,854		9,476		8,903		47,577		298,418	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 4a. Charter boat estimated catch of Lingcod (*Ophiodon elongatus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	538	16%			2,014	25%	1,504	20%	650	23%					164	10%	4,870	19%
2013	April	92	3%			1,204	15%	1,015	13%	473	17%					196	12%	2,980	11%
2013	May	370	11%	109	20%	957	12%	788	10%	475	17%	188	18%	244	20%	219	14%	3,350	13%
2013	June	514	15%	158	29%	587	7%	578	8%	357	13%	243	24%	274	23%	227	14%	2,938	11%
2013	July	716	21%	54	10%	1,018	12%	849	11%	134	5%	118	12%	162	13%	188	12%	3,239	12%
2013	August	544	16%	196	36%	791	10%	670	9%	243	9%	294	29%	432	36%	327	20%	3,497	13%
2013	September	79	2%	6	1%	106	1%	136	2%	175	6%	57	6%	89	7%	58	4%	706	3%
2013	October	539	16%	29	5%	650	8%	689	9%	278	10%	126	12%	0%		62	4%	2,373	9%
2013	November		0%			100	1%	544	7%		0%					32	2%	676	3%
2013	December		0%			129	2%	145	2%		0%					30	2%	304	1%
2014	January		0%			231	3%	436	6%		0%					80	5%	747	3%
2014	February		0%			382	5%	204	3%	8	0%					20	1%	614	2%
Total		3,392		552		8,169		7,558		2,793		1,026		1,201		1,603		26,294	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 4b. Private boat estimated catch of Lingcod (*Ophiodon elongatus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	791	17%			877	25%	1,823	25%	1,179	18%					840	13%	5,510	17%
2013	April	531	11%			439	12%	740	10%	849	13%					976	15%	3,535	11%
2013	May	718	15%	407	24%	525	15%	556	8%	663	10%	236	33%	395	31%	928	14%	4,428	14%
2013	June	657	14%	453	27%	305	9%	461	6%	681	10%	122	17%	138	11%	774	12%	3,591	11%
2013	July	154	3%	228	13%	102	3%	178	2%	106	2%	17	2%	6	0%	241	4%	1,032	3%
2013	August	722	15%	367	22%	106	3%	666	9%	591	9%	164	23%	602	48%	1,066	16%	4,284	13%
2013	September	81	2%	15	1%	61	2%	98	1%	199	3%	26	4%	20	2%	232	4%	732	2%
2013	October	518	11%	225	13%	365	10%	506	7%	502	8%	156	22%	105	8%	329	5%	2,706	8%
2013	November	317	7%			192	5%	458	6%	488	7%					307	5%	1,762	5%
2013	December	81	2%			55	2%	451	6%	370	6%					347	5%	1,304	4%
2014	January	159	3%			321	9%	1,015	14%	627	10%					300	5%	2,422	7%
2014	February	4	0%			226	6%	377	5%	263	4%					189	3%	1,059	3%
Total		4,733		1,695		3,574		7,329		6,518		721		1,266		6,529		32,365	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 4c. Total estimated catch of Lingcod (*Ophiodon elongatus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,329	16%			2,891	25%	3,327	22%	1,829	20%					1,004	12%	10,380	18%
2013	April	623	8%			1,643	14%	1,755	12%	1,322	14%					1,172	14%	6,515	11%
2013	May	1,088	13%	516	23%	1,482	13%	1,344	9%	1,138	12%	424	24%	639	26%	1,147	14%	7,778	13%
2013	June	1,171	14%	611	27%	892	8%	1,039	7%	1,038	11%	365	21%	412	17%	1,001	12%	6,529	11%
2013	July	870	11%	282	13%	1,120	10%	1,027	7%	240	3%	135	8%	168	7%	429	5%	4,271	7%
2013	August	1,266	16%	563	25%	897	8%	1,336	9%	834	9%	458	26%	1,034	42%	1,393	17%	7,781	13%
2013	September	160	2%	21	1%	167	1%	234	2%	374	4%	83	5%	109	4%	290	4%	1,438	2%
2013	October	1,057	13%	254	11%	1,015	9%	1,195	8%	780	8%	282	16%	105	4%	391	5%	5,079	9%
2013	November	317	4%			292	2%	1,002	7%	488	5%					339	4%	2,438	4%
2013	December	81	1%			184	2%	596	4%	370	4%					377	5%	1,608	3%
2014	January	159	2%			552	5%	1,451	10%	627	7%					380	5%	3,169	5%
2014	February	4	0%			608	5%	581	4%	271	3%					209	3%	1,673	3%
Total		8,125		2,247		11,743		14,887		9,311		1,747		2,467		8,132		58,659	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 5a. Charter boat estimated catch of Black Rockfish (*Sebastes melanops*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	286	1%			2,425	6%	4,335	9%	1,659	12%					748	5%	9,453	6%
2013	April	1,194	6%			2,345	6%	2,830	6%	805	6%					1,624	10%	8,798	6%
2013	May	2,710	13%	435	13%	3,940	10%	3,929	8%	1,984	15%	438	11%	602	23%	2,538	16%	16,576	11%
2013	June	3,221	16%	670	20%	5,919	14%	4,976	10%	2,135	16%	953	23%	516	20%	2,687	17%	21,077	14%
2013	July	6,542	32%	314	10%	5,922	14%	7,072	15%	796	6%	257	6%	432	16%	2,440	16%	23,775	16%
2013	August	4,667	23%	1,678	51%	14,599	35%	12,772	26%	4,569	34%	1,330	32%	910	35%	3,320	21%	43,845	29%
2013	September	1,675	8%	120	4%	3,419	8%	4,815	10%	946	7%	1,035	25%	175	7%	1,074	7%	13,259	9%
2013	October		0%	87	3%	627	2%	3,619	7%	584	4%	153	4%		0%	478	3%	5,548	4%
2013	November		0%			50	0%	1,697	3%		0%					110	1%	1,857	1%
2013	December		0%			307	1%	780	2%		0%					186	1%	1,273	1%
2014	January		0%			714	2%	888	2%		0%					232	1%	1,834	1%
2014	February		0%			963	2%	910	2%	133	1%					58	0%	2,064	1%
Total		20,295		3,304		41,230		48,623		13,611		4,166		2,635		15,495		149,359	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 5b. Private boat estimated catch of Black Rockfish (*Sebastes melanops*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,171	14%			1,069	14%	1,785	9%	981	5%					2,282	8%	7,288	8%
2013	April	608	7%			741	9%	1,034	5%	890	5%					2,816	10%	6,089	6%
2013	May	1,203	15%	874	12%	779	10%	1,529	8%	1,560	9%	378	20%	696	16%	4,689	17%	11,708	12%
2013	June	1,532	19%	1,387	20%	948	12%	1,591	8%	3,010	17%	326	17%	429	10%	4,558	17%	13,781	15%
2013	July	512	6%	798	11%	159	2%	870	4%	657	4%	87	5%	54	1%	2,090	8%	5,227	6%
2013	August	1,330	16%	3,352	48%	1,301	17%	5,397	27%	5,483	31%	669	35%	2,815	65%	3,811	14%	24,158	26%
2013	September	296	4%	178	3%	637	8%	1,847	9%	2,619	15%	214	11%	145	3%	2,097	8%	8,033	9%
2013	October	525	6%	460	7%	715	9%	2,152	11%	697	4%	228	12%	210	5%	1,595	6%	6,582	7%
2013	November	454	6%			347	4%	648	3%	694	4%					774	3%	2,917	3%
2013	December	138	2%			88	1%	1,098	6%	270	2%					1,272	5%	2,866	3%
2014	January	342	4%			414	5%	756	4%	820	5%					610	2%	2,942	3%
2014	February	28	0%			609	8%	919	5%	226	1%					548	2%	2,330	2%
Total		8,139		7,049		7,807		19,626		17,907		1,902		4,349		27,142		93,921	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 5c. Total estimated catch of Black Rockfish (*Sebastes melanops*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,457	5%			3,494	7%	6,120	9%	2,640	8%					3,030	7%	16,741	7%
2013	April	1,802	6%			3,086	6%	3,864	6%	1,695	5%					4,440	10%	14,887	6%
2013	May	3,913	14%	1,309	13%	4,719	10%	5,458	8%	3,544	11%	816	13%	1,298	19%	7,227	17%	28,284	12%
2013	June	4,753	17%	2,057	20%	6,867	14%	6,567	10%	5,145	16%	1,279	21%	945	14%	7,245	17%	34,858	14%
2013	July	7,054	25%	1,112	11%	6,081	12%	7,942	12%	1,453	5%	344	6%	486	7%	4,530	11%	29,002	12%
2013	August	5,997	21%	5,030	49%	15,900	32%	18,169	27%	10,052	32%	1,999	33%	3,725	53%	7,131	17%	68,003	28%
2013	September	1,971	7%	298	3%	4,056	8%	6,662	10%	3,565	11%	1,249	21%	320	5%	3,171	7%	21,292	9%
2013	October	525	2%	547	5%	1,342	3%	5,771	8%	1,281	4%	381	6%	210	3%	2,073	5%	12,130	5%
2013	November	454	2%			397	1%	2,345	3%	694	2%					884	2%	4,774	2%
2013	December	138	0%			395	1%	1,878	3%	270	1%					1,458	3%	4,139	2%
2014	January	342	1%			1,128	2%	1,644	2%	820	3%					842	2%	4,776	2%
2014	February	28	0%			1,572	3%	1,829	3%	359	1%					606	1%	4,394	2%
Total		28,434		10,353		49,037		68,249		31,518		6,068		6,984		42,637		243,280	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 6a. Charter boat estimated catch of Blue Rockfish (*Sebastes mystinus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	3	0%			299	6%	244	5%	398	8%					36	2%	980	5%
2013	April	20	3%			118	3%	296	6%	206	4%					69	4%	709	4%
2013	May	7	1%	26	13%	184	4%	466	9%	147	3%	30	3%	4	2%	65	4%	929	5%
2013	June	361	53%	40	20%	858	18%	764	14%	814	16%	172	17%	69	37%	194	12%	3,272	17%
2013	July	69	10%	21	10%	291	6%	381	7%	214	4%	6	1%	4	2%	258	16%	1,244	7%
2013	August	209	30%	72	35%	701	15%	780	15%	1,074	20%	466	47%	102	55%	654	40%	4,058	21%
2013	September	18	3%			641	14%	676	13%	1,505	29%	122	12%	6	3%	208	13%	3,176	17%
2013	October			45	22%	1,186	25%	1,088	20%	885	17%	200	20%			71	4%	3,475	18%
2013	November					3	0%	245	5%							5	0%	253	1%
2013	December					116	2%	165	3%							6	0%	287	2%
2014	January					64	1%	136	3%							40	2%	240	1%
2014	February					232	5%	135	3%	7	0%					10	1%	384	2%
Total		687		204		4,693		5,376		5,250		996		185		1,616		19,007	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 6b. Private boat estimated catch of Blue Rockfish (*Sebastes mystinus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	4	5%			22	8%	35	2%	26	2%					167	7%	254	4%
2013	April	7	8%			9	3%	28	2%	31	2%					105	5%	180	3%
2013	May		0%	5	2%	12	4%	52	4%	39	2%	5	1%	7	1%	154	7%	274	4%
2013	June	29	33%	120	37%	23	8%	498	34%	163	10%	22	7%	136	19%	177	8%	1,168	16%
2013	July	7	8%	17	5%		0%	7	0%	54	3%	15	4%	30	4%	194	8%	324	5%
2013	August	10	11%	45	14%	21	7%	149	10%	282	17%	140	42%	340	47%	756	33%	1,743	24%
2013	September	17	20%	67	20%	57	20%	120	8%	485	30%	106	32%	99	14%	269	12%	1,220	17%
2013	October	4	5%	74	23%	101	36%	264	18%	91	6%	48	14%	113	16%	142	6%	837	12%
2013	November		0%			10	4%	78	5%	258	16%					47	2%	393	5%
2013	December	9	10%				0%	88	6%	39	2%					80	3%	216	3%
2014	January		0%			9	3%	114	8%	99	6%					132	6%	354	5%
2014	February		0%			17	6%	11	1%	74	5%					103	4%	205	3%
Total		87		328		281		1,444		1,641		336		725		2,326		7,168	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 6c. Total estimated catch of Blue Rockfish (*Sebastes mystinus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	7	1%			321	6%	279	4%	424	6%					203	5%	1,234	5%
2013	April	27	3%			127	3%	324	5%	237	3%					174	4%	889	3%
2013	May	7	1%	31	6%	196	4%	518	8%	186	3%	35	3%	11	1%	219	6%	1,203	5%
2013	June	390	50%	160	30%	881	18%	1,262	19%	977	14%	194	15%	205	23%	371	9%	4,440	17%
2013	July	76	10%	38	7%	291	6%	388	6%	268	4%	21	2%	34	4%	452	11%	1,568	6%
2013	August	219	28%	117	22%	722	15%	929	14%	1,356	20%	606	45%	442	49%	1,410	36%	5,801	22%
2013	September	35	5%	67	13%	698	14%	796	12%	1,990	29%	228	17%	105	12%	477	12%	4,396	17%
2013	October	4	1%	119	22%	1,287	26%	1,352	20%	976	14%	248	19%	113	12%	213	5%	4,312	16%
2013	November	0	0%			13	0%	323	5%	258	4%					52	1%	646	2%
2013	December	9	1%			116	2%	253	4%	39	1%					86	2%	503	2%
2014	January	0	0%			73	1%	250	4%	99	1%					172	4%	594	2%
2014	February	0	0%			249	5%	146	2%	81	1%					113	3%	589	2%
Total		774		532		4,974		6,820		6,891		1,332		910		3,942		26,175	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 7a. Charter boat estimated catch of Yellowtail Rockfish (*Sebastes flavidus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,348	33%			400	11%	455	14%	89	4%					14	15%	2,306	17%
2013	April	24	1%			155	4%	185	6%	51	2%					0	0%	415	3%
2013	May	148	4%	9	9%	136	4%	267	8%	85	4%	36	6%		0%	6	6%	687	5%
2013	June	399	10%	15	15%	450	12%	191	6%	670	32%	74	12%	1	5%	17	18%	1,817	13%
2013	July	220	5%	7	7%	535	15%	399	13%	116	5%	17	3%	2	11%	13	14%	1,309	9%
2013	August	1,020	25%	69	68%	1,083	30%	461	15%	195	9%	444	72%	14	74%	35	37%	3,321	24%
2013	September	110	3%		0%	213	6%	277	9%	179	8%	7	1%	2	11%	6	6%	794	6%
2013	October	845	21%	1	1%	292	8%	481	15%	734	35%	39	6%		0%	1	1%	2,393	17%
2013	November		0%			7	0%	170	5%		0%					2	2%	179	1%
2013	December		0%			44	1%	110	3%		0%						0%	154	1%
2014	January		0%			114	3%	160	5%		0%						0%	274	2%
2014	February		0%			176	5%	20	1%		0%						0%	196	1%
Total		4,114		101		3,605		3,176		2,119		617		19		94		13,845	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 7b. Private boat estimated catch of Yellowtail Rockfish (*Sebastes flavidus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	123	18%			5	4%	79	15%	494	48%					16	7%	717	26%
2013	April	32	5%				0%	19	4%	29	3%					15	7%	95	3%
2013	May	21	3%	5	5%	2	2%	11	2%	7	1%	14	18%	2	10%	14	6%	76	3%
2013	June	41	6%	16	15%	2	2%	43	8%	29	3%	7	9%	3	14%	20	9%	161	6%
2013	July	11	2%	19	18%	11	9%		0%	12	1%	5	7%		0%	9	4%	67	2%
2013	August	127	19%	30	29%	22	18%	80	15%	69	7%	39	51%	11	52%	57	26%	435	16%
2013	September	28	4%	10	10%	39	31%	20	4%	38	4%	4	5%	3	14%	25	11%	167	6%
2013	October	109	16%	25	24%	20	16%	211	40%	149	15%	7	9%	2	10%	23	10%	546	20%
2013	November	81	12%			3	2%	13	2%	15	1%					9	4%	121	4%
2013	December	3	0%			8	6%	10	2%	62	6%					23	10%	106	4%
2014	January	93	14%			9	7%	31	6%	106	10%					7	3%	246	9%
2014	February	4	1%			3	2%	6	1%	11	1%					3	1%	27	1%
Total		673		105		124		523		1,021		76		21		221		2,764	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

Table 7c. Total estimated catch of Yellowtail Rockfish (*Sebastes flavidus*) expressed both as number of fish and in percent of total by port and month, March 2013 - February 2014.

Year	Month	Garibaldi		Pacific City		Depoe Bay		Newport		Charleston		Bandon		Gold Beach		Brookings		Total	
		Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct	Catch	Pct
2013	March	1,471	31%			405	11%	534	14%	583	19%					30	10%	3,023	18%
2013	April	56	1%			155	4%	204	6%	80	3%					15	5%	510	3%
2013	May	169	4%	14	7%	138	4%	278	8%	92	3%	50	7%	2	5%	20	6%	763	5%
2013	June	440	9%	31	15%	452	12%	234	6%	699	22%	81	12%	4	10%	37	12%	1,978	12%
2013	July	231	5%	26	13%	546	15%	399	11%	128	4%	22	3%	2	5%	22	7%	1,376	8%
2013	August	1,147	24%	99	48%	1,105	30%	541	15%	264	8%	483	70%	25	63%	92	29%	3,756	23%
2013	September	138	3%	10	5%	252	7%	297	8%	217	7%	11	2%	5	13%	31	10%	961	6%
2013	October	954	20%	26	13%	312	8%	692	19%	883	28%	46	7%	2	5%	24	8%	2,939	18%
2013	November	81	2%			10	0%	183	5%	15	0%					11	3%	300	2%
2013	December	3	0%			52	1%	120	3%	62	2%					23	7%	260	2%
2014	January	93	2%			123	3%	191	5%	106	3%					7	2%	520	3%
2014	February	4	0%			179	5%	26	1%	11	0%					3	1%	223	1%
Total		4,787		206		3,729		3,699		3,140		693		40		315		16,609	

* Cross-hatched cells indicate periods when no sampling or catch estimation occurred. Shaded cells indicate the historical sampling period for the port. For ports where the first shaded cell is June; sampling and catch estimation normally starts in the week of June 16.

The primary species caught on bottomfishing targeted trips included: Black Rockfish 65.4%; Lingcod 15.9%; Blue Rockfish 7.2%; Yellowtail Rockfish 4.4%; and Kelp Greenling (*Hexagrammos decagrammus*) 2.6%. No other single species accounted for more than one percent of the statewide catch, although at the individual port level Cabezon (*Scorpaenichthys marmoratus*), China Rockfish (*Sebastes nebulosus*), Copper Rockfish (*Sebastes caurinus*), Quillback Rockfish (*Sebastes maliger*), Vermilion Rockfish (*Sebastes miniatus*), and Widow Rockfish (*Sebastes entomelas*) did exceed the one percent level in some ports (Table 8).

Table 8. Estimated annual catch proportion by species and species groups for bottomfish trips by port for the period from March 2013 through February 2014. Note that Pacific City, Bandon, and Gold Beach estimates are only for the period of May through October 2013. Landings of Canary Rockfish and Yelloweye Rockfish were illegal landings, and salmon were incidentally caught while bottomfishing.

	Port of Landing								Total
	Garibaldi	Pacific City	Depoe Bay	Newport	Charleston	Bandon	Gold Beach	Brookings	
<u>Rockfish (Family Scorpaenidae)</u>									
Black-and-Yellow Rockfish (<i>Sebastes chrysomelas</i>)								0.010%	0.002%
Black Rockfish (<i>Sebastes melanops</i>)	62.335%	72.770%	64.426%	69.640%	55.628%	51.572%	59.555%	72.635%	65.375%
Blue Rockfish (<i>Sebastes mystinus</i>)	1.697%	3.739%	6.928%	7.096%	12.162%	11.321%	7.760%	6.864%	7.157%
Bocaccio (<i>Sebastes paucispinis</i>)	0.007%		0.006%		0.041%		0.017%		0.009%
Brown Rockfish (<i>Sebastes auriculatus</i>)				0.011%		0.008%		0.034%	0.009%
Canary Rockfish (<i>Sebastes pinniger</i>)	0.013%		0.006%	0.017%	0.005%	0.017%		0.017%	0.011%
Chillipepper Rockfish (<i>Sebastes goodei</i>)					0.011%				0.002%
China Rockfish (<i>Sebastes nebulosus</i>)	0.324%	0.647%	0.834%	0.336%	0.944%	2.312%	1.893%	0.531%	0.675%
Copper Rockfish (<i>Sebastes caurinus</i>)	0.340%	0.141%	0.332%	0.363%	1.288%	0.935%	1.416%	0.064%	0.485%
Flag Rockfish (<i>Sebastes rubrivinctus</i>)				0.002%					0.001%
Gopher Rockfish (<i>Sebastes camatus</i>)							0.051%	0.042%	0.008%
Grass Rockfish (<i>Sebastes rastrelliger</i>)					0.004%			0.010%	0.002%
Greenstriped Rockfish (<i>Sebastes elongatus</i>)	0.138%				0.021%				0.019%
Olive Rockfish (<i>Sebastes serranoides</i>)		0.112%			0.012%		0.017%	0.020%	0.010%
Pacific Ocean Perch (<i>Sebastes alutus</i>)	0.007%								0.001%
Quillback Rockfish (<i>Sebastes maliger</i>)	1.098%	0.555%	1.316%	0.285%	0.914%	3.187%	1.475%	0.256%	0.813%
Redbanded Rockfish (<i>Sebastes babcocki</i>)					0.007%				0.001%
Redstripe Rockfish (<i>Sebastes proriger</i>)					0.007%				0.001%
Rosethorn Rockfish (<i>Sebastes helvomaculatus</i>)	0.022%				0.259%		0.009%		0.041%
Rosy Rockfish (<i>Sebastes rosaceus</i>)					0.023%	0.110%	0.017%		0.007%
Silvergray Rockfish (<i>Sebastes brevispinis</i>)				0.054%					0.015%
Tiger Rockfish (<i>Sebastes nigrocinctus</i>)	0.726%	0.471%	0.235%	0.024%	0.459%	0.969%	0.392%		0.267%
Vermilion Rockfish (<i>Sebastes miniatus</i>)	0.068%	0.105%	0.149%	0.078%	1.408%	3.884%	2.891%	0.163%	0.503%
Widow Rockfish (<i>Sebastes entomelas</i>)	1.179%	0.021%	0.055%	0.462%	0.392%	0.323%	0.017%		0.349%
Yelloweye Rockfish (<i>Sebastes ruberimus</i>)	0.064%		0.013%		0.037%	0.008%	0.060%	0.010%	0.019%
Yellowtail Rockfish (<i>Sebastes flavidus</i>)	10.494%	1.448%	4.964%	3.788%	5.542%	5.890%	0.341%	0.528%	4.447%
Rockfish Total	78.511%	80.010%	79.266%	82.156%	79.165%	80.537%	75.910%	81.183%	80.228%

Table 8 (continued). Estimated annual catch proportion by species and species groups for bottomfish trips by port for the period from March 2013 through February 2014.

	Port of Landing								Total
	Garibaldi	Pacific City	Depoe Bay	Newport	Charleston	Bandon	Gold Beach	Brookings	
<u>Lingcod (Family Ophiodontidae)</u>									
Lingcod (<i>Ophiodon elongatus</i>)	17.812%	15.794%	16.234%	15.335%	16.433%	14.848%	21.037%	14.014%	15.944%
<u>Sculpins and Misc. Species</u>									
Brown Irish Lord (<i>Hemilepidotus spinosus</i>)					0.002%				0.000%
Buffalo Sculpin (<i>Enophrys bison</i>)				0.008%				0.030%	0.007%
Cabezon (<i>Scorpaenichthys marmoratus</i>)	0.730%	1.293%	1.164%	0.466%	0.552%	0.569%	1.313%	1.178%	0.821%
Jack Mackerel (<i>Trachurus symmetricus</i>)			0.003%	0.002%					0.001%
Kelp Greenling (<i>Hexagrammos decagrammus</i>)	2.490%	2.017%	2.987%	1.822%	3.371%	3.680%	1.705%	3.047%	2.616%
Pacific Staghorn Sculpin (<i>Leptocottus armatus</i>)	0.013%								0.002%
Red Irish Lord (<i>Hemilepidotus hemilepidotus</i>)	0.018%		0.014%	0.007%	0.042%	0.017%		0.022%	0.017%
Rock Greenling (<i>Hexagrammos lagocephalus</i>)	0.184%			0.007%	0.016%			0.003%	0.027%
Sablefish (<i>Anoplopoma fimbria</i>)				0.002%					0.001%
Wolf Eel (<i>Anarrhichthys ocellatus</i>)		0.042%	0.001%	0.005%	0.005%	0.042%		0.007%	0.006%
Misc Total	3.435%	3.353%	4.170%	2.318%	3.989%	4.309%	3.019%	4.287%	3.497%
<u>Flatfish Species (Order Pleuronectiformes)</u>									
<u>Lefteye Flounders (Family Bothidae)</u>									
California Halibut (<i>Paralichthys californicus</i>)								0.003%	0.001%
Pacific Sanddab (<i>Citharichthys sordidus</i>)	0.022%			0.016%	0.004%			0.151%	0.031%
<u>Righteye Flounders (Family Pleurinectidae)</u>									
Arrowtooth Flounder (<i>Atheresthes stomias</i>)	0.007%			0.007%					0.003%
Butter Sole (<i>Iopsetta isolepis</i>)		0.007%	0.003%	0.015%	0.007%			0.052%	0.014%
Dover Sole (<i>Microstomus pacificus</i>)		0.007%							0.000%
Pacific Halibut (<i>Hippoglossus stenolepis</i>)	0.046%	0.021%	0.012%	0.002%		0.017%		0.003%	0.010%
Petrale Sole (<i>Eopsetta jordani</i>)	0.020%		0.030%	0.034%	0.002%	0.017%		0.245%	0.056%
Rock Sole (<i>Lepidosetta bilineata</i>)				0.008%	0.018%				0.005%
Sand Sole (<i>Psetticthys melanostictus</i>)	0.015%		0.030%	0.055%	0.012%	0.017%		0.017%	0.028%
Flatfish Total	0.110%	0.035%	0.073%	0.136%	0.042%	0.051%	0.000%	0.471%	0.148%
<u>Skates (Family Rajidae)</u>									
Big Skate (<i>Raja binoculata</i>)						0.127%		0.003%	0.004%
Longnose Skate (<i>Raja rhina</i>)					0.005%				0.001%
Skate Total	0.000%	0.000%	0.000%	0.000%	0.005%	0.127%	0.000%	0.003%	0.005%

Table 8 (continued). Estimated annual catch proportion by species and species groups for bottomfish trips by port for the period from March 2013 through February 2014.

	Port of Landing								Total	
	Garibaldi	City	Bay	Newport	Charleston	Bandon	Beach	Brookings		
<u>Surfperch (Family Embiotocidae)</u>										
Redtail Surfperch (<i>Amphistichus rhodoterus</i>)								0.013%	0.002%	
Striped Surfperch (<i>Embiotoca lateralis</i>)		0.042%	0.003%		0.005%			0.025%	0.007%	
Surfperch Total	0.000%	0.042%	0.003%	0.000%	0.005%	0.000%	0.000%	0.039%	0.009%	
<u>Salmon (Family Salmonidae)</u>										
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	0.009%	0.056%	0.076%	0.031%	0.021%	0.076%	0.034%	0.003%	0.034%	
Coho Salmon (<i>Oncorhynchus kisutch</i>)	0.028%	0.014%	0.014%						0.007%	
Salmon Total	0.037%	0.070%	0.090%	0.031%	0.021%	0.076%	0.034%	0.003%	0.041%	
<u>Tunas and Mackerels (Family Scombridae)</u>										
Pacific Mackerel (<i>Scomber japonicus</i>)	0.094%	0.696%	0.164%	0.023%	0.339%	0.051%			0.128%	

3 Discussion and Assessment

3.1 Effort

Major Ports: Since 2006, over-winter (full year) sampling has been conducted in the ports of Depoe Bay, Newport, and Brookings in most years (Table 9). This sampling has primarily been conducted by re-tasking three Pacific States Marine Fisheries Commission (PSMFC) recreational samplers to ORBS duties from November through February of each year. The prior MRIP review conducted in 2011 found that the non-winter bottomfishing effort that occurred prior to the coming winter period accounted for 92%-99% of the charter effort and 92%-98% of the private boat effort in these significant ports; however, the most recent two years indicated an increasing percent of the bottomfishing effort occurring outside of the standard sampling frame of March through October (Table 9).

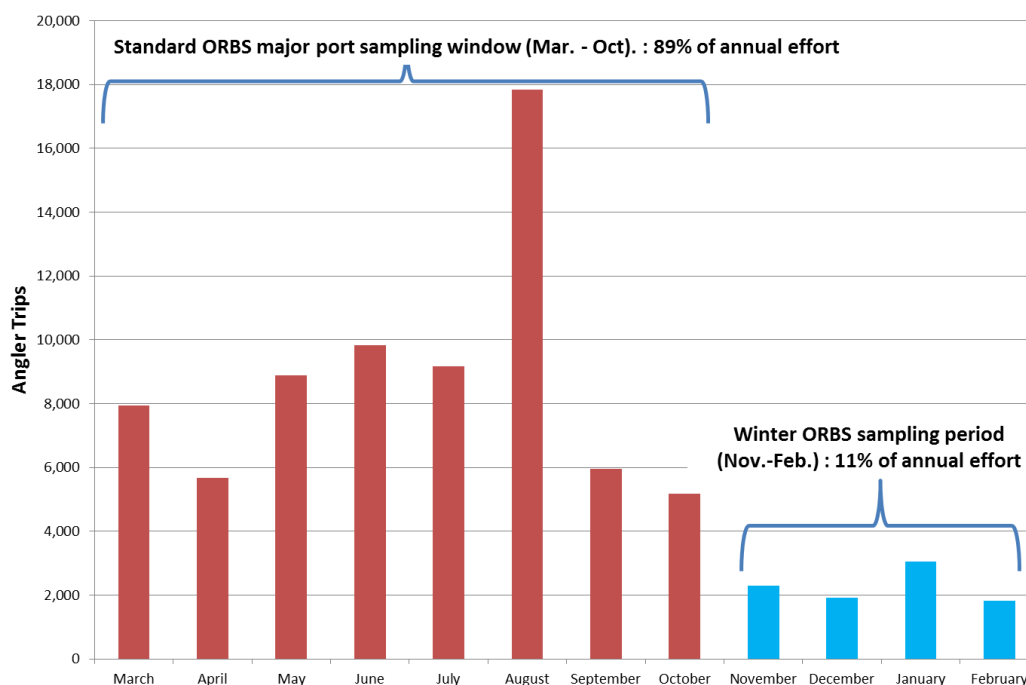
Table 9. Seasonal proportion of ocean recreational bottomfishing angler trips by boat type for Depoe Bay, Newport, and Brookings (Spring-Fall, 2006 through Winter 2013; and Spring-Fall 2013 through Winter 2014).

Season	Charter Boats			Private Boats		
	Depoe Bay	Newport	Brookings	Depoe Bay	Newport	Brookings
2006 Spring-Fall : Following Winter ^{a/}	98%	95%	94%	96%	95%	95%
2007 Spring-Fall : Following Winter ^{a/}	98%	95%	97%	92%	95%	98%
2008 Spring-Fall : Following Winter ^{a/}	NA	93%	96%	NA	92%	93%
2009 Spring-Fall : Following Winter ^{a/}	96%	92%	NA	94%	94%	NA
2010 Spring-Fall : Following Winter ^{a/}	97%	94%	99%	92%	94%	93%
2011 Spring-Fall : Following Winter ^{a/} (MRIP Study)	98%	94%	98%	94%	93%	94%
Range for 2006-2011 Period	96%-98%	92%-95%	94%-99%	92%-96%	92%-95%	93%-98%
2012 Spring-Fall : Following Winter ^{a/}	97%	90%	99%	86%	71%	90%
2013 Spring-Fall : Following Winter ^{a/} (MRIP Study)	95%	89%	97%	83%	80%	85%

a/ Spring - Fall defined as statistical months of Mar. through Oct., and Winter defined as statistical months of Nov. through Feb.

Percentages highlighted in red in Table 9 for 2012-13 are outside of the previously noted range of observations. This increased percentage of winter fishing activity may be due at least in part to favorable weather conditions that have been available during the winter period in the past two winters combined with very poor ocean conditions during most of July (normally a month of high effort). Overall, bottomfishing effort for the five major ports combined during the standard sampling period of March through October accounted for 89% of the annual effort (Figure 1).

Figure 1. Combined bottomfish angler trips for Garibaldi, Depoe Bay, Newport, Charleston, and Brookings (March 2013-February 2014).

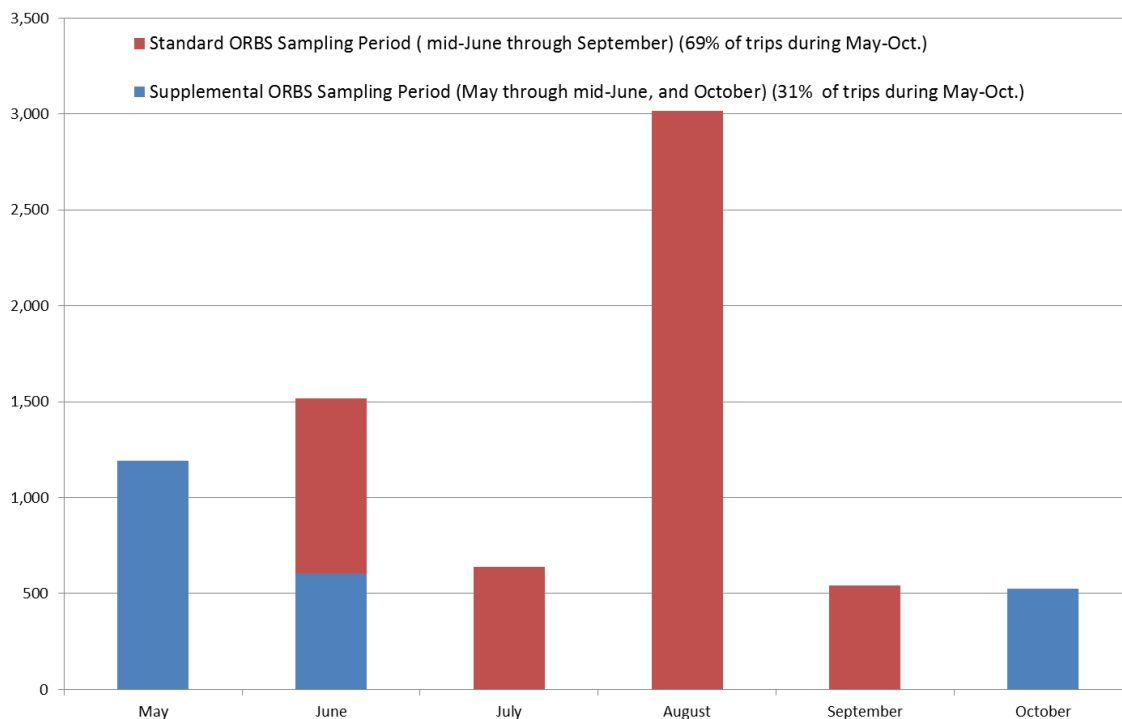


With the single exception of January in Charleston, no month of combined charter and private boat bottomfishing effort between November and February exceeded the effort in any month from March through October (Table 2c).

Minor Ports: In all three ports of Pacific City, Bandon, and Gold Beach; the effort levels in May were substantial and exceeded effort in both July and September (Table 3c; Figure 2). July 2013 effort was severely limited due to persistent and strong Northerly winds throughout almost the entire month. These Northerly winds also tend to be stronger further south along the Oregon Coast, and this is evident in the more reduced effort from the Southern ports of Bandon and Gold Beach.

October effort showed a strong downward trend across the three ports, but still accounted for 5% or more of the estimated May through October effort. The strong dip in effort at Pacific City during the month of September is likely a side effect of the September Coho Salmon season, and that anglers were more focused on salmon during the month (Coho were not available in reasonable numbers out of Bandon, and the season for Coho was not open off of Gold Beach in September).

Figure 2. Combined bottomfish angler trips for Pacific City, Bandon, and Gold Beach during standard sampling period and supplemental sampling period (May-October 2013).



3.2 Catch

It was expected that there would be seasonal variation in the catch for some species. In fact, there is often a seasonal drop in overall bottomfish catch rates in mid to late summer that has been observed to occur; however this was not apparent during the 2013 summer. The reason(s) for this summer drop have not been investigated, but may be related to the ocean upwelling and associated temperature changes and productivity that occurs off the Oregon Coast during the summer.

During the study period at the major ports, catch rates for rockfish generally trended highest during the summer period, but continued high into September with September and October being peak catch rate months for Blue Rockfish (Figure 5). The catch rate for Yellowtail Rockfish (Figure 6) was highest in October and March which were both months when the fishery was open outside the 30 fathom curve. However, it was at much lower levels for the winter period, and all rockfish of the primary rockfish species had a lower catch per angler for the four winter months combined.

Lingcod catch rates were on a steady downward trend from March through September, but jumped up beginning in October – concurrent with the offshore opening – and remained strong through the winter period (Figure 7). Overall the catch rate for Lingcod was higher for the four winter months (0.97 Lingcod per angler-trip) than the remaining eight months of the year (0.68 Lingcod per angler-trip).

Figure 3. Landed catch of combined rockfish species (*Sebastes spp.*) and catch per bottomfishing angler trip for Oregon's major recreational ocean ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings by month (Mar. 2013-Feb. 2014).

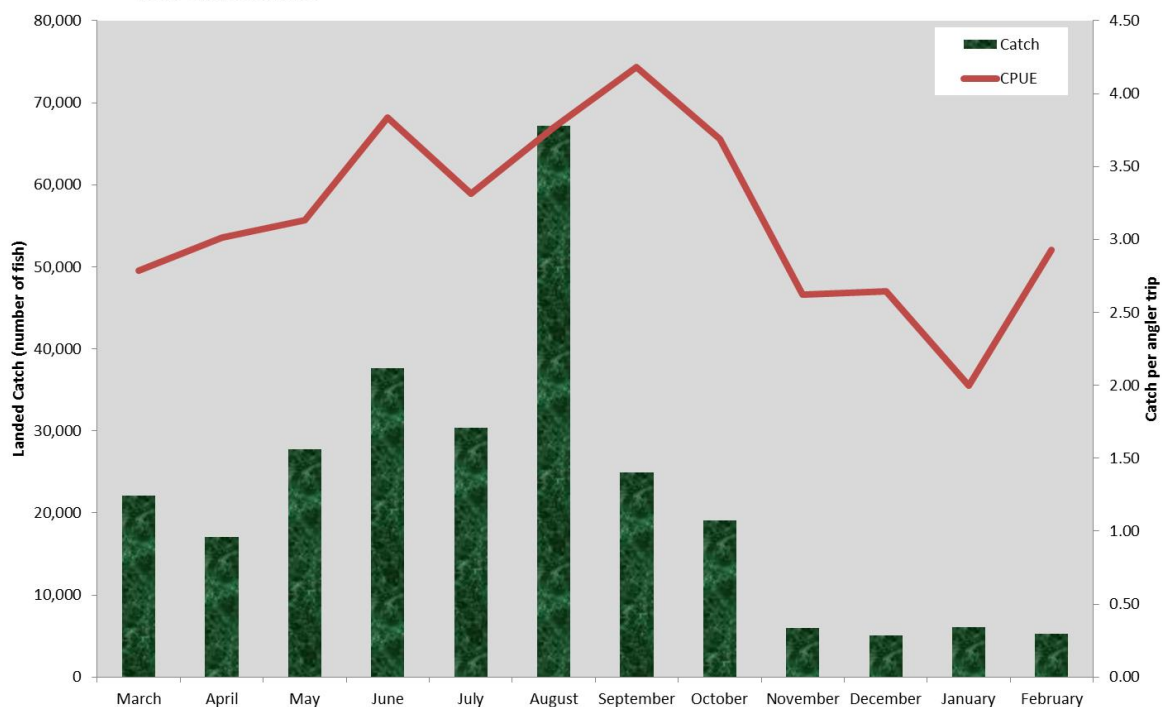


Figure 4. Landed catch of Black Rockfish (*Sebastes melanops*) and catch per bottomfishing angler trip for Oregon's major recreational ocean ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings by month (Mar. 2013-Feb. 2014).

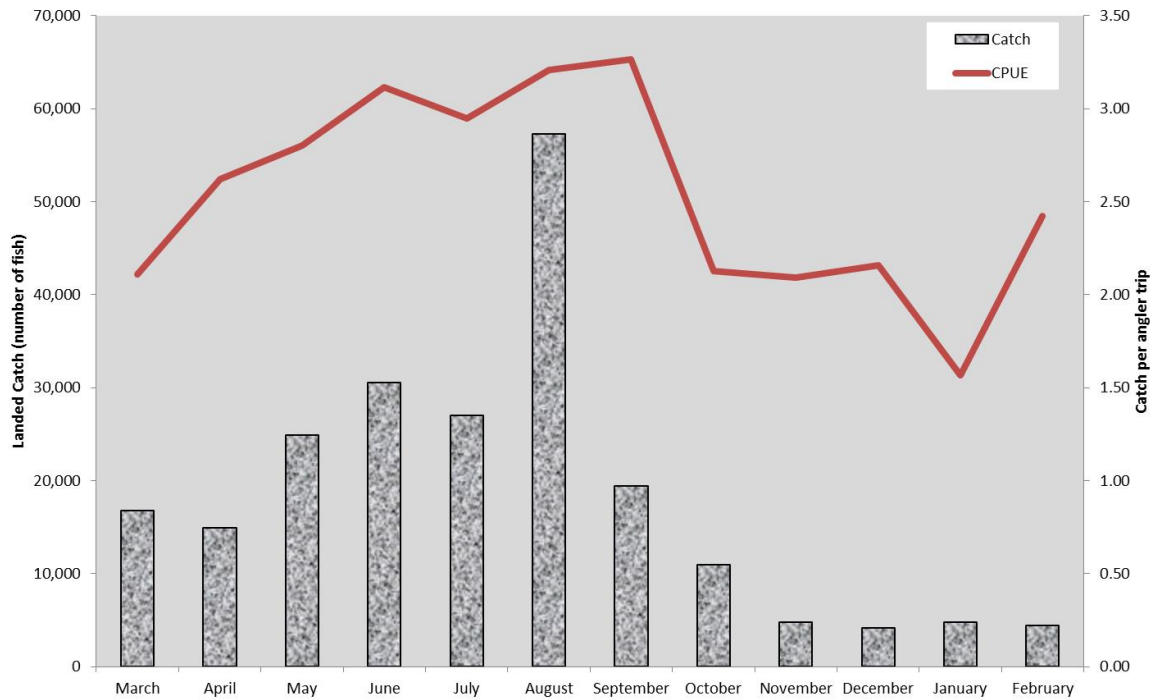


Figure 5. Landed catch of Blue Rockfish (*Sebastes mystinus*) and catch per bottomfishing angler trip for Oregon's major recreational ocean ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings by month (Mar. 2013-Feb. 2014).

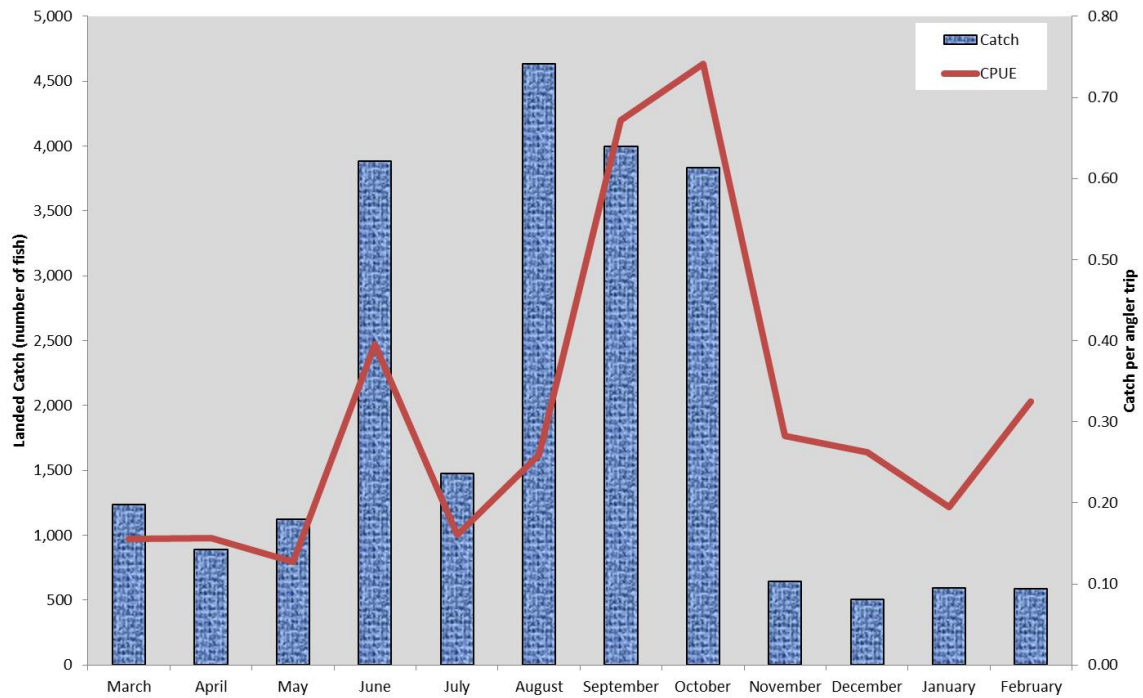


Figure 6. Landed catch of Yellowtail Rockfish (*Sebastes flavidus*) and catch per bottomfishing angler trip for Oregon's major recreational ocean ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings by month (Mar. 2013-Feb. 2014).

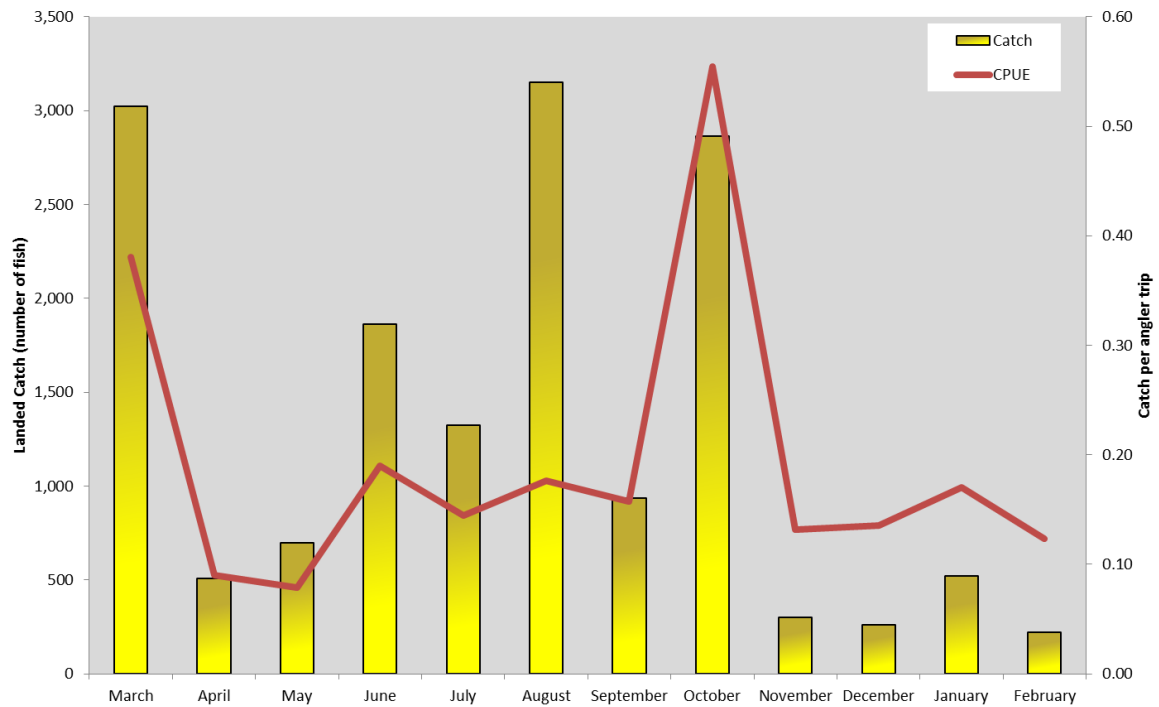
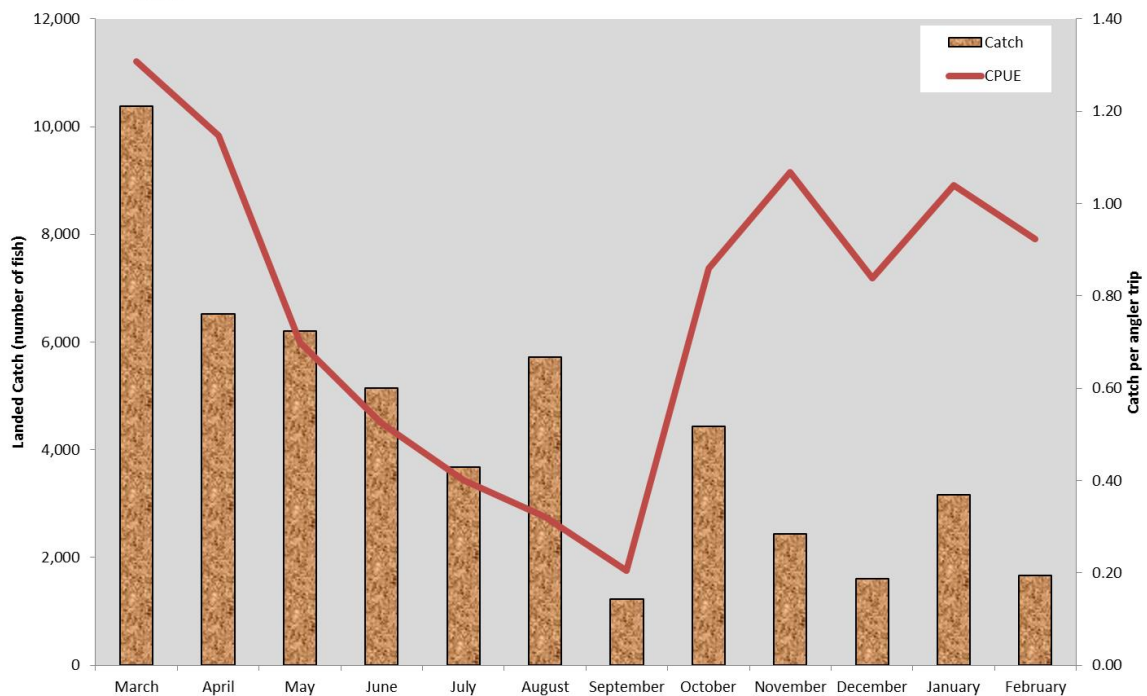


Figure 7. Landed catch of Lingcod (*Ophiodon elongatus*) and catch per bottomfishing angler trip for Oregon's major recreational ocean ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings by month (Mar. 2013-Feb. 2014).



4 Conclusions and Recommendations

The current sampling structure has now shown more variation between the March-October and November-February sampling windows than had previously been noted. It appears that year round sampling needs to be continued in at least some of the major ports to develop a relative annual scalar for other ports.

The mid-June through September sampling frame for the ports of Pacific City, Bandon, and Gold Beach is not adequate to accurately estimate the annual fishing activity in these locations. Based on this study, essentially 30% of the May through October bottomfishing effort is being ignored when sampling only mid-June through September (November through March had minimal effort based on prior work, but April had substantial effort in both Pacific City and Bandon).

The following recommendations should be considered and implemented to the extent possible relative to funding and logistics:

- The current use of PSFMC samplers to provide supplemental November through February sampling and effort estimation in Depoe Bay, Newport, and Brookings should be continued at the monthly strata during the winter period. If PSFMC samplers are not available to provide this support, it is highly advisable to find funding means by which to maintain this sampling. It is possible that a single sampler might be able to provide this winter period sampling for both Depoe Bay and Newport at the monthly strata with the continued use of video boat count technologies.
- Charleston should be funded to provide sampling for the winter period of November through February. Charleston is a major deepwater port that sees less of a change in bar crossing conditions in the winter than any other port on the coast.
- The March through October sampling time frame for standard ORBS sampling should be continued on a weekly strata for the ports of Garibaldi, Depoe Bay, Newport, Charleston, and Brookings. There is no need to add Garibaldi to the winter ORBS sampling regime.
- Sampling in the ports of Pacific City, Bandon, and Gold Beach should be extended to include at a minimum the period of May through September. It is advised to include April and October in Pacific City and Bandon if funding can be secured.