

GROUND FISH MANAGEMENT TEAM REPORT ON PACIFIC WHITING HARVEST SPECIFICATIONS AND MANAGEMENT MEASURES FOR 2008

The Groundfish Management Team (GMT) reviewed the Pacific Hake (Whiting) stock assessments and Stock Assessment Review (STAR) Panel report. The joint Canada-U.S. Pacific Hake (Whiting) Stock Assessment Review (STAR) Panel reviewed three stock assessment documents: a SS2 model by Helser *et al.*, an ADAPT/VPA model by Sinclair and Grandin, and Martell's TINSS model. GMT analyses focuses on the STAR Panel and Science and Statistical Committee (SSC) preferred model (SS2); the alternative models (TINSS and VPA) were not preferred by either group.

Unlike the last two whiting STAR panels, where two equally plausible models were put forth based on uncertainty surrounding acoustic survey catchability (q), this panel recommended a single base model taken from a particular SS2 model scenario. This approach estimates a broad range of uncertainty in q and propagates that uncertainty into estimates of productivity and relative depletion level of the stock. The base model also estimated the acoustic survey selectivity parameters, the acoustic survey catchability and the natural mortality rate for ages 14 and 15+ and incorporates uncertainty in these parameters into estimates of productivity and depletion.

Whiting Stock Depletion and Risk Assessment

The GMT's analysis focuses on the SSC-preferred model for the 2008 whiting assessment (Helser *et al.*, 2008). The base model suggests the stock is at 42.6% of unfished biomass in 2008 (Agenda Item F.3.a Attachment 1, Table f), with a reported range of 29.3% to 63.2%.

The STAR panel reported that recent catches in the U.S. and Canadian fisheries continue to be dominated by the 1999 year-class. Data from the fishery and acoustic survey suggest a pulse in the 2005 year-class; however, the assessment warns that the size of this cohort is very uncertain as it is based on only one year of data (2007). Fishing mortality rates are increasing and higher than in most recent years, and spawning stock biomass has been in decline since 2003. These factors suggest to the GMT that a precautionary approach to setting the OY for 2008 may be warranted.

In an attempt to narrow the range of coastwide catches presented in the executive summary, the GMT chose the coastwide catches in Table 1. These five coastwide OY values bracket the 2007 status quo (coastwide: 328,358 mt, US: 242,591 mt) with lower and higher coastwide OYs (250,000 mt and 546, 297 mt).

Table 1. Coastwide and US OY values with the associated rationale for analyses.

Coastwide Catch (MT)	US OY (MT)	Rationale
546,297	403,604	Highest harvest allowed within the SPEX analysis
400,000	295,520	Intermediate value
328,358 (SQ)	242,591	2007 Status quo OY
300,000	221,640	Intermediate value
259,775	191,922	Constrained by current widow bycatch limit in the scorecard for the non-tribal whiting fishery (275 mt)
250,000	184,700	Lowest value in Table F of Stock Assessment Executive Summary

For each of the six coastwide catch values, the GMT compiled forecasts of spawning depletion ranging from pessimistic (5th percentile) to optimistic (75th percentile) (Table 2). Estimates based on catches not presented in Table f of the assessment's executive summary were interpolated.

Table 2. Estimated Percent of Unfished Biomass Based on Catch Level, Year, and Degree of Assessment Uncertainty (the posterior intervals)

Year	Coastwide Catch	Pessimistic ←————→ Optimistic Percentiles of Spawning Depletion			
		5 th	25 th	50 th	75 th
2008	546,297	0.293	0.359	0.426	0.499
2009	546,297	0.281	0.359	0.448	0.543
2010	546,297	0.253	0.362	0.482	0.638
2011		0.237	0.377	0.525	0.744
2008	400,000	0.293	0.359	0.426	0.499
2009	400,000	0.280	0.370	0.471	0.573
2010	400,000	0.251	0.379	0.518	0.680
2011		0.235	0.401	0.569	0.812
2008	328,358 (SQ)	0.293	0.359	0.426	0.499
2009	328,358	0.292	0.381	0.481	0.582
2010	328,358	0.274	0.401	0.536	0.701
2011		0.267	0.430	0.598	0.842
2008	300,000	0.293	0.359	0.426	0.499
2009	300,000	0.297	0.385	0.485	0.586
2010	300,000	0.283	0.410	0.543	0.710
2011		0.280	0.441	0.609	0.854
2008	259,775	0.293	0.359	0.426	0.499
2009	259,775	0.340	0.434	0.543	0.692
2010	259,775	0.361	0.495	0.645	0.860
2011		0.386	0.563	0.745	1.001

2008	250,000	0.293	0.359	0.426	0.499
2009	250,000	0.351	0.446	0.557	0.718
2010	250,000	0.380	0.516	0.670	0.897
2011		0.412	0.593	0.778	1.037

Helser *et al.* provide risk profiles associated with different coastwide catch levels (Figure 58 of Helser *et al.*). The GMT used these risk profiles to create Figure 1 which shows the relationship between coastwide catch and the probability of: (1) the fishing mortality rate in 2009 being higher than $F_{40\%}$; (2) 2009 spawning biomass being less than 2008 spawning biomass; (3) spawning biomass being less than 40% of B_0 ; and (4) spawning biomass being less than 25% of B_0 . In Table 3, the probabilities associated with these events are given for alternative catch levels.

Table 3. Risk profiles based on alternative coastwide catch levels (logistic curves refit from raw data provided by T. Helser, pers. comm.). Values are given in percent probability.

Event	Coastwide Catch (mt)					
	250,000	259,775	300,000	328,358	400,00	546,297
Probability of 2009 SPR < $SPR_{40\%}$	4.2	4.5	6.1	7.5	12.4	30.7
Probability of 2009 spawning biomass < 2008 spawning biomass (SPB)	15.5	16.2	19.4	21.9	29.0	45.6
Probability that 2009 spawning biomass < 40% B_0	27.0	27.2	28.4	29.3	31.7	37.5
Probability that 2009 spawning biomass < 25% B_0	1.4	1.4	1.7	1.9	2.5	4.3

The GMT notes that management of the whiting fishery is in transition from the Groundfish Fishery Management Plan (FMP) to the Pacific Whiting Treaty legislation. Under the FMP, the minimum stock size rule (overfished threshold) is 25% of unfished biomass, or $B_{25\%}$. The GMT notes that since the fishery is in transition, the legal implications of $B_{25\%}$ are unclear. The 2006 Groundfish Harvest Policy Evaluation Workshop Report raised questions regarding the effectiveness of the FMP's minimum stock size rule for short-lived species with highly variable recruitment such as whiting. In short, the workshop report concluded that the whiting stock would be expected to drop below the overfished threshold even if fishing mortality is kept under the current MSY-proxy harvest rate ($F_{40\%}$).¹ The GMT notes that the STAR panel recommended

¹ The workshop report concluded that "[a]pplication of the Council's harvest control rule was predicted to lead to frequent cases in which the stock drops below the overfished threshold of $B_{25\%}$ even if $F_{40\%}$ is the

conducting a Management Strategy Evaluation to identify robust combinations of data collection, applied stock assessment, and harvest control rules.

Estimated Bycatch of Overfished Species

Canary, darkblotched, POP, and yelloweye rockfish bycatch estimates for the 2008 whiting season were developed using a weighted average approach, similar to that used from 2004-2007. For the at-sea sectors, a linear interpolation was used to estimate the widow rockfish bycatch impacts because the widow rockfish bycatch rate shows an increasing trend. Linear interpolation is more appropriate than a weighted average approach because future increases in the bycatch rate should be expected given the increasing widow biomass. This methodology was first implemented for the at-sea sectors in 2007 and was used again in 2008. The GMT also used the linear interpolation methodology for estimating bycatch impacts in the shoreside sector for the first time in 2008 because the increasing widow biomass was apparent in the 2007 data. Bycatch rates from 2003 through 2007 are found in Figures 2-4.

Projecting 2008 rockfish bycatch rates proved somewhat problematic given the difficulty in comparing the 2007 fishery to prior years. In 2007, the GMT used annual bycatch rate data from 2003 – 2006 in projecting bycatch for the year. In 2008, the GMT discussed the problem of comparing the 2007 fishery to prior years because of the premature fishery closure and the bycatch impact implications of the stop-and-start season. To overcome the difficulties in comparing 2007 to prior years, the team compared those days prior to July 26 (the date of the first 2007 closure) from 2004 through 2007. This comparison was used to investigate bycatch rate patterns from year to year and to project rates for 2008. From this information, slightly higher bycatch rates are estimated than if the annual aggregate bycatch rate in 2007 is used.

Bycatch Limit Management

Since 2004, the Council has included bycatch limits as a management tool for use in the whiting fishery. The Council may wish to consider establishing bycatch limits for the 2008 fishery. A summary of bycatch limits from previous years is presented in Table 4. Guidance from NOAA General Counsel indicates that if bycatch limit management is chosen for 2008, the limits should be set at levels that can reasonably accommodate the OY. The Council may make an adjustment in June (after the California early season and a few weeks of the at-sea fishery) or September based on inseason information, if needed. However, the intent, under NMFS guidance, should be to sustain the fishery with the first limit that is set.

appropriate harvest rate on average (i.e., F40% equals the true FMSY).” (Agenda Item E.1, Situation Summary, March 2007 Briefing Book).

Table 4. Previous range of bycatch limits set by the Council for the nontribal whiting fishery.

Species	2004	2005	2006	2007	2008^a
Canary	6.2 – 7.3	4.7	4.0 -4.7	4.7	4.7
Darkblotched	9.5	n/a	25	25	25
Widow	n/a	200 - 212	200 - 220	200 - 275	275 ^b

^aYear 2008 values represent the numbers currently outlined in the Federal Regulations, which can be modified by the Council.

^bIn September 2007, the Council increased the widow bycatch limit from 220 to 275 mt for the remainder of 2007. A mistake was made when publishing the regulatory text and the 275 mt limit did not sunset at the end of 2007, thus 275 mt is the limit currently specified in regulation.

The GMT analyzed bycatch limit management techniques that could reasonably accommodate the 2008 non-tribal whiting fishery. Historically, the Council has adopted the ABC/OY of Pacific whiting while taking into account bycatch projections, in order to promote harvesting of the whiting OY relative to overfished species constraints. Appendix A contains coastwide and US catches presented in Table 2 and their associated bycatch impacts assuming status quo fleet distributions. This performance standard approach has worked well, however in recent years it appears that the combined suite of bycatch limits may be overly limiting flexibility in whiting fishing strategies. The GMT recommends that the Council consider changes to the bycatch limits that encourage changes in the distribution of fishing effort, which will potentially result in redistribution of bycatch impacts. Particularly, the GMT believes that the Council could consider adjusting the darkblotched rockfish limit in order to encourage fishing distributions that is different from last years, and therefore possibly avoiding the events of 2007. This change is expected to result in more fishing effort occurring in deeper depths, potentially avoiding canary and widow rockfish to a greater degree than last year.

Interactions Among Darkblotched, Widow, and Canary Rockfish

Evidence indicates that the darkblotched rockfish limit is restricting fishing flexibility for both the CP and Mothership fleets, resulting in increased widow and canary rockfish impacts. In recent years, higher darkblotched rockfish encounter rates have resulted in pressure on the at-sea sectors to avoid darkblotched, coming from within and between the two at-sea sectors as well as from the shoreside fleet. The response of the at-sea sectors has been to move away from areas of high darkblotched catch to shallower areas where widow and canary are more abundant.

Data from the 2007 at-sea sector demonstrates the interactions between darkblotched and widow rockfish under a restrictive darkblotched limit (Table 5). From May 15 to May 28 the mothership fleet caught 4.6 mt of darkblotched and 23 mt of widow. During this same time period, the CP fleet caught 5.1 mt of darkblotched and 41.5 mt of widow. In total, after only 13 days of the season, approximately 9.7 mt of darkblotched (76% of limit) and 64.5 mt of widow (29% of bycatch limit) had been caught. Discussions were

held between members of the whiting industry to discuss fishing strategies to reduce darkblotched impacts. In response, it appears the at-sea fleet moved away from areas of high darkblotched catch to other areas in an effort to prevent a whiting season closure as a result of attainment of the darkblotched limit prior to the start of the shoreside season. Following this shift in effort, bycatch impacts were noticeably redistributed such that more widow and less darkblotched was caught from May 29 to July 26. On July 26, the fishery was closed when the widow bycatch limit of 220 mt was reached.

Table 5. Darkblotched and Widow Rockfish Bycatch Distributions By Season Dates

Sector	Date	Darkblotched	Widow
Mothership	May 15 – May 28	4.6 mt (88% of total)	23 mt (32% of total)
	May 29 – July 26	0.6 mt (12% of total)	48 mt (68% of total)
Catcher Processor	May 15 – May 28	5.1 mt (76% of total)	41.5 mt (57% of total)
	May 29 – July 26	1.6 mt (24% of total)	31.2 mt (42% of total)

The team continues to recommend that if the Council chooses bycatch limit management, a darkblotched limit should be placed on the whiting fishery in order to provide added certainty to non-whiting sectors. However, in light of recent data the limit should be structured in a manner that allows flexibility in whiting fishing strategies. The 2008 darkblotched OY increased from 270 to 330 mt and current scorecard estimates show a balance of 91.7 mt. The Council could consider using some of this balance to increase fishing strategy flexibility to allow for deeper effort distributions resulting in fewer canary and widow rockfish impacts. The Council will need to consider this recommendation while also considering opportunities the increased darkblotched OY may provide to the non-whiting trawl fishery. The GMT is currently exploring inseason action that would increase opportunities seaward of the RCA north of 40° 10' to allow for additional slope opportunities while reducing effort on the shelf and reducing canary impacts.

The GMT analyzed catch rates of whiting and the three bycatch limit species in the 2007 fishery in an attempt to provide an order of magnitude estimate for darkblotched, widow, and canary bycatch limits under the bycatch limit strategy noted above. According to available information, a darkblotched catch of 13 mt within a bycatch limit of 25 mt (approximately 52% of the bycatch limit) appears to influence fishing behavior in the at-sea sectors. Based on catch information from early 2007, over 81% of the darkblotched, 45% of widow, and 34% of the canary rockfish bycatch were caught by the at-sea sectors prior to the 2007 industry meeting over darkblotched bycatch. At the same time, approximately half of the whiting allocation had been taken by the at-sea sectors. This information can be used to interpolate an order of magnitude total catch amount for all sectors in the 2007 fishery if behavior had not changed because of darkblotched concerns. From those interpolated total catch amounts, an order of magnitude for proposed bycatch limits in 2008 can be established. It should be noted that this approach is not being applied to the shoreside whiting fishery because the team does not believe the shoreside

sector would choose to fish over the slope if presented the incentive of a higher darkblotched bycatch limit.

The approach described above yields an interpolated overall darkblotched catch level of approximately 19 mt for all sectors combined based on 2007 fishery data and a status quo whiting OY. Maintaining the 52% difference between the interpolated darkblotched catch level and the bycatch limit (which represents the amount under which behavior changes in the fishery) yields a darkblotched bycatch limit of 35 to 40 mt in the whiting fishery (under a status quo whiting OY). The projected widow bycatch amount using the above approach yields 265 to 275 mt, and the projected canary amount yields a projected bycatch of 2 to 2.5 mt. These numbers were estimated based on the 2007 whiting OY. It is logical to assume that these bycatch amounts would increase if the 2008 whiting OY is higher than status quo.

The current balance of canary rockfish in the scorecard is -10.1 mt as a result of higher than anticipated 2006 observer bycatch rates in the non-whiting trawl fishery and the open access nearshore fishery. Additionally, impacts higher than the harvest guideline are predicted for the California recreational fishery under status quo management measures. The team is currently reviewing proposals for the trawl fishery which would reduce the canary impacts from 16.3 mt to 9.1 mt. The GAP has requested that the GMT investigate changes to the open access nearshore fishery which would change impacts from 3.0 to 1.7 mt (the projected impact in 2007). For the California recreational fishery, it may be reasonable to assume that current impacts of 11.5 mt will be reduced to 9.0 which is the California harvest guideline.

For widow rockfish, the current balance in the scorecard is 26.0 mt.

For yelloweye rockfish, the current balance in the scorecard is -5.0 mt as a result of higher than anticipated 2006 observer bycatch rates in the limited entry fixed gear fishery and the open access nearshore fishery. Additionally, impacts higher than the harvest guideline are predicted for the California recreational fishery under status quo management measures. Currently, there is no projected impact of yelloweye rockfish in the whiting fishery, however the GMT notes that if fleet distributions are the same in 2008 as they were in 2007 and the Council chooses the 546,297 coastwide OY, then yelloweye rockfish impacts of 0.1 mt are anticipated and would need to be accounted in the scorecard (Appendix 1).

The GMT notes that inseason analyses are ongoing and balances in the scorecard are subject to change prior to the inseason session on Thursday.

Other Management Considerations

Amendment 15

At this time Amendment 15, the whiting limited entry program, is not in place. Information from the Northwest Region suggests that the earliest Amendment 15 could be in place is in 90 days. Interest in the whiting fishery from new Alaska participants may

be expected given the significantly lower Alaskan pollock total allowable catch and the relatively high exvessel price expected for whiting. Such increased participation could result in an accelerated race for fish.

Amendment 10

Amendment 10 will not be in place for the start of the 2008 California early season or the start of the primary whiting season. Discussions with staff at the Northwest Region have indicated that the season will start as a Federal Exempted Fishing Permit (EFP) and then could transition to Amendment 10 when the rulemaking goes into effect. The provisions of Amendment 10 could become effective sometime during the season, a minimum of 90 days from now, but currently the timing of implementation is unknown.

The GMT has concerns with consistency in management if the primary whiting season transitions from an EFP to regulations that are implemented under Amendment 10 in the middle of the season. For example, discussions with the Region staff indicate that the whiting season can be closed upon projected attainment of a bycatch limit under EFP regulations. However, under Amendment 10 a bycatch cap must be reached before the season can be closed. If the fishery is closed upon attainment of the bycatch limit it is reasonable to assume that the fishery will take in excess of that limit because of lags in data reporting. To avoid jeopardizing the OY, the Council may wish to establish a residual between projected catch and the OY. Based on events that occurred in 2007, a residual of 20 mt may need to be established for widow rockfish. However, it is important to note that establishing a residual is only necessary if the Council expects the fishery to be closed as a result of a bycatch limit being reached instead of attainment of the whiting OY. Analysis indicates that if the Council raises the darkblotched limit that the fleet may be able to successfully avoid bycatch limit species while prosecuting the whiting fishery.

The GMT also notes that implementing Amendment 10 in the middle of the whiting season eliminates the possible use of management lines to reduce impacts on overfished stocks. Depth restrictions used to reduce canary and widow bycatch in the shoreside fishery (e.g. 150 fm line) are only available inseason under an EFP. This provision does not appear to be available if Amendment 10 is implemented this year. For the at-sea sectors voluntary compliance with a depth closure is needed whether or not the shoreside fishery operates under Amendment 10 or an EFP.

Because of the above factors, the GMT recommends that the shoreside fishery be operated under the federal EFP for the entire year, effectively delaying the implementation of Amendment 10 until the 2009 fishing season. The GMT is analyzing a range of whiting management measures for inclusion within the 2009/2010 SPEX EIS which will allow for better management of the whiting fishery in 2009.

Summary

The GMT would like to draw the Council's attention to several considerations when determining harvest specifications and management measures for the 2008 Pacific whiting fishery:

- 1) The Council should first pick the appropriate ABC for the coastwide stock based on the most recent stock assessment and the risk associated with estimated depletion levels (Table 2). The values in Table 2 reflect a range of estimated depletion (resulting from uncertainty in the assessment model) associated with various constant catch levels.
- 2) Next the Council should select coastwide and U.S. OYs that reflect their best estimate of the current status of the stock and future biomass projections while taking into account the management measures needed to prosecute the fishery (including bycatch concerns for overfished species). With respect to the latter point, the GMT has identified two potential strategies for bycatch limit management:
 - a) The first is to assume fleet distributions and overfished species catch patterns similar to last season (Appendix 1). If the fleet behavior last season is repeated this year, and they are constrained by widow in similar manner, the resultant coastwide and U.S. OYs are projected to be 259,775 mt and 191,922 mt respectively. The Council could set the OY at this level in an attempt to prevent meeting or exceeding the 2008 widow rockfish bycatch limit of 275 mt.
 - b) The second is to increase the darkblotched limit to encourage deeper fishing by the CP and Mothership sectors, which reduces impacts on widow and canary. This could also potentially result in increased flexibility in bycatch avoidance strategies for all sectors throughout the season. Under this scenario, the Council could set the OYs based on the current understanding of stock status and then set commensurate bycatch limits that would reasonably accommodate the U.S. OY at the outset of the season.

Under the status quo whiting OY, a darkblotched bycatch limit of 35 to 40 mt may provide a large enough limit to provide fishing strategy flexibility. The projected widow bycatch amount using the above approach yields 265 to 275 metric tons, and the projected canary amount yields a projected bycatch of 2 to 2.5 metric tons.

Under either bycatch management scenario, the GMT recommends accounting for the ability to close the fishery upon attainment of bycatch limits when those limits are set.

GMT Recommendations:

1. Consider using minimum whiting stock size ($B_{25\%}$) as a precautionary reference point but not the overfished threshold.
2. Adopt a coastwide ABC.
3. Adopt a coastwide and U.S. whiting OY.
4. Consider continued use of non-tribal fleetwide bycatch limits as a management tool.
5. Consider operating the shoreside fishery under the federal EFP for the entire year, effectively delaying the implementation of Amendment 10 until the 2009 fishing season.

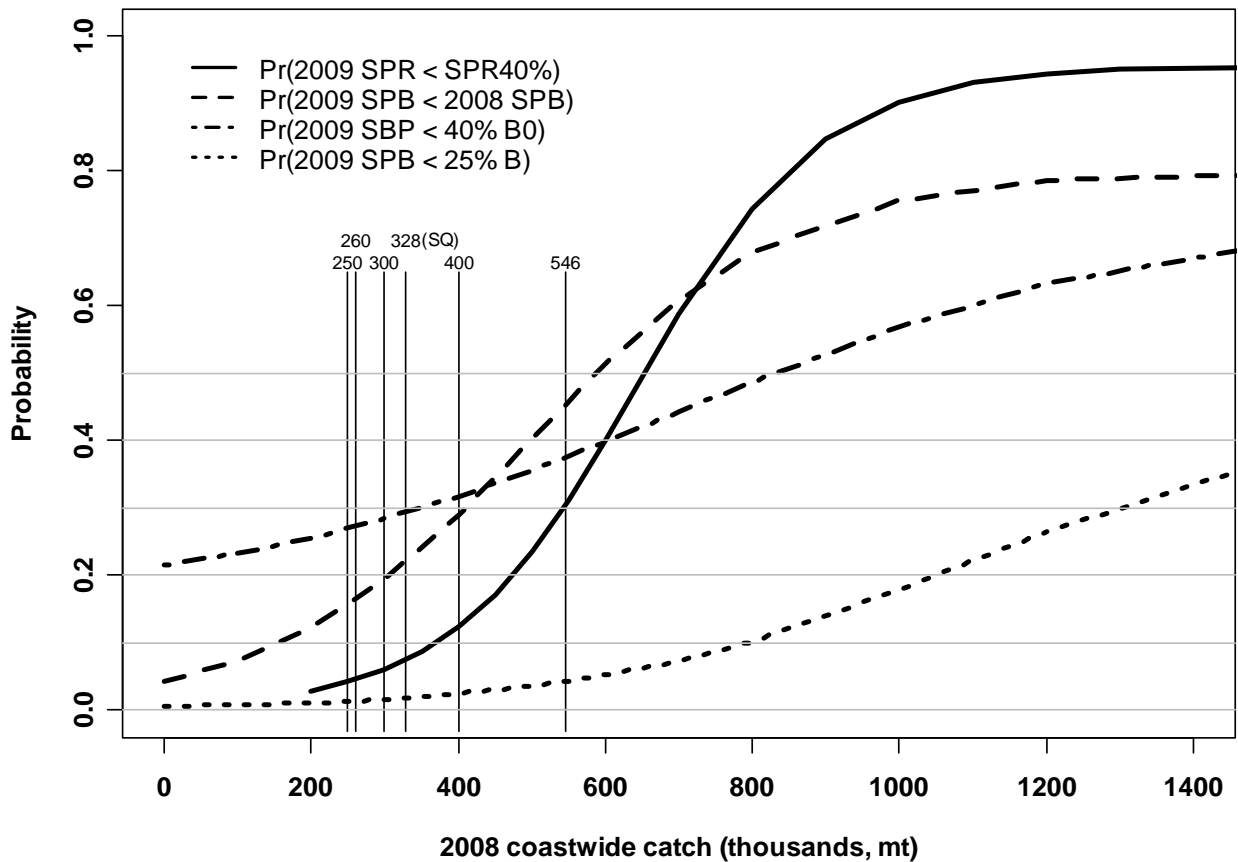


Figure 1. Risk profiles from Fig. 58 (logistic curves refit from raw data provided by T. Helser, pers. comm.) The probabilities show the 2009 SPR rate being less than the $\text{SPR}_{40\%}$, 2009 spawning biomass being less than 2008 spawning biomass, and spawning biomass being less than 40% and 25% of B_0 .

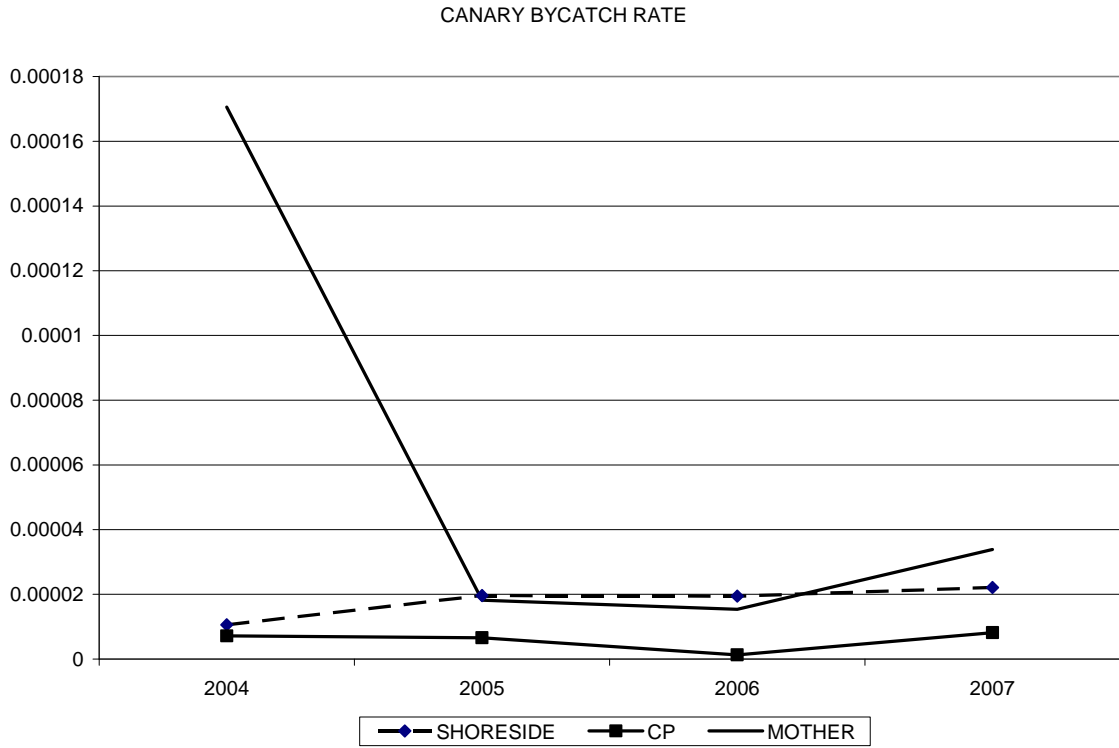


Figure 2. Canary rockfish bycatch rate by year (prior to July 26).

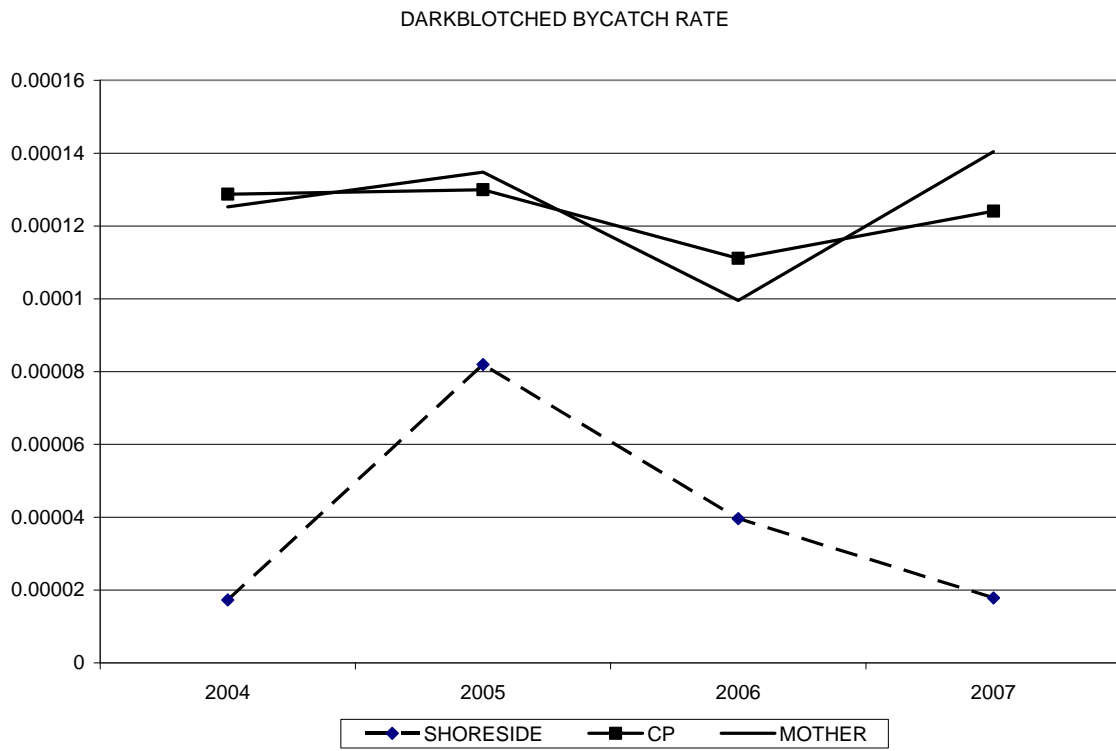


Figure 3. Darkblotched rockfish bycatch rate by year (prior to July 26).

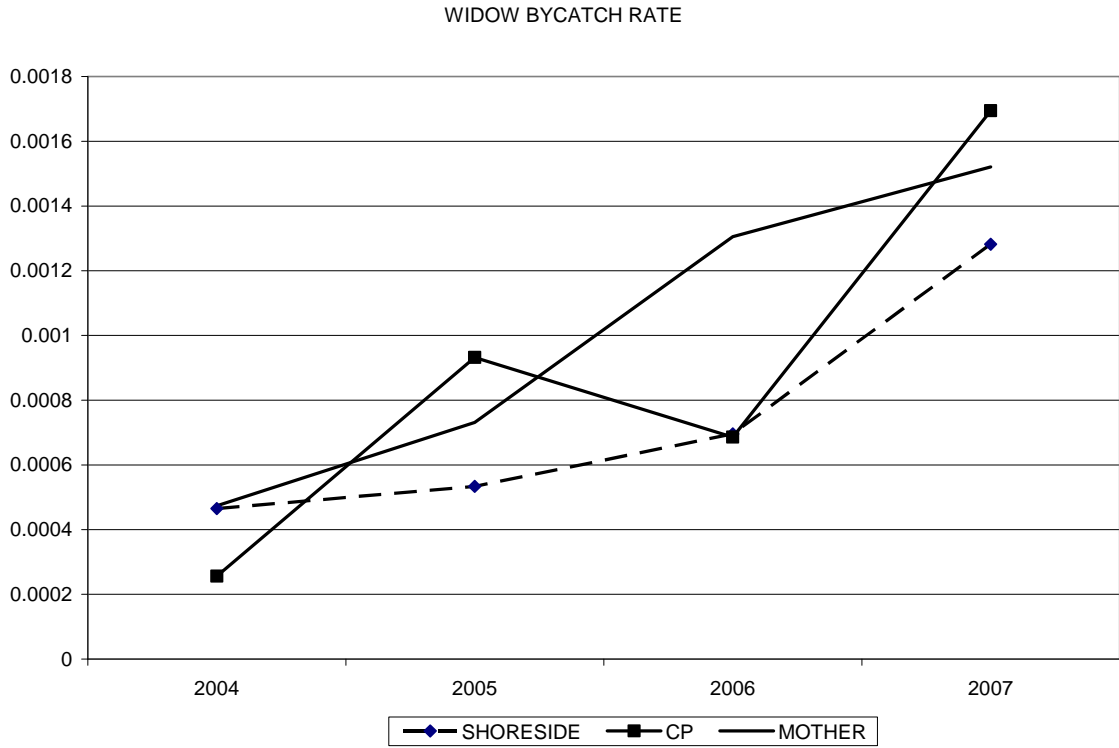


Figure 4. Widow rockfish bycatch rate rockfish bycatch rate by year (prior to July 26).

Appendix 1. Projected overfished species mortality, assuming no changes to darkblotched rockfish bycatch limit.

Coastwide	US							
OY (MT)	OY (MT)			Canary	Darkblotched	POP	Widow	Yelloweye
546,297	403,604	Tribal	35,000	1.1	0.0	0.5	2.7	0.00
		Mothership	87,985	3.4	9.9	1.8	168.9	0.01
		CP	124,645	0.4	9.7	1.8	205.4	0.01
		Shoreside	153,974	2.6	4.6	0.6	200.2	0.04
		Non-tribal total	366,604	6.3	24.3	4.2	574.5	0.06
		Grand total		7.4	24.3	4.7	577.2	0.06
400,000	295,520	Tribal	35,000	1.06	0.00	0.55	2.69	0.00
		Mothership	62,045	2.37	6.99	1.25	119.13	0.01
		CP	87,897	0.29	6.87	1.29	144.85	0.01
		Shoreside	108,578	1.81	3.26	0.39	141.15	0.03
		Non-tribal total	258,520	4.5	17.1	2.9	405.1	0.0
		Grand total		5.53	17.13	3.48	407.82	0.04
328,104	242,403	Tribal	32,500	1.0	0.0	0.5	2.5	0.00
		Mothership	49,897	1.9	5.6	1.0	96.3	0.01
		CP	70,687	0.2	5.5	1.0	117.0	0.01
		Shoreside	87,319	1.5	2.6	0.3	114.1	0.02
		Non-tribal total	207,903	3.6	13.8	2.4	327.4	0.04
		Grand total		4.6	13.8	2.9	328.3	0.04
300,000	221,640	Tribal	30,000	0.9	0.0	0.5	2.3	0.0
		Mothership	45,514	1.7	5.1	0.9	87.4	0.0
		CP	64,478	0.2	5.0	0.9	106.3	0.0
		Shoreside	79,649	1.3	2.4	0.3	103.5	0.0
		Non-tribal total	189,640	3.3	12.6	2.2	297.2	0.0
		Grand total		4.2	12.6	2.6	299.5	0.0
281,238	207,778	Tribal	30,000	0.9	0.0	0.5	2.3	-
		Mothership	42,667	1.6	4.8	0.9	81.0	0.0
		CP	60,445	0.2	4.7	0.9	98.5	0.0
		Shoreside	74,667	1.2	2.2	0.3	96.0	0.0
		Non-Tribal Total	177,778	3.1	11.7	2.0	275.5	0.0
		Grand total		4.0	11.7	2.5	277.8	0.0
259,775	191,922	Tribal	27,500	0.83	0.00	0.43	2.11	0.00
		Mothership	38,981	1.49	4.39	0.79	74.84	0.01
		CP	55,223	0.18	4.32	0.81	91.01	0.00
		Shoreside	68,217	1.14	2.05	0.24	88.68	0.02
		Non-tribal total	162,422	2.8	10.8	1.8	254.5	0.0
		Grand total		3.64	10.76	2.27	256.65	0.03
257,068	189,922	Tribal	27,500	0.8	0.0	0.4	2.1	-
		Mothership	38,981	1.5	4.3	0.8	73.9	0.0
		CP	55,223	0.2	4.3	0.8	89.9	0.0
		Shoreside	68,217	1.1	2.0	0.2	87.6	0.0
		Non-Tribal Total	162,422	2.8	10.6	1.8	251.4	0.0
		Grand total		3.6	10.6	2.3	253.5	0.0
250,000	184,700	Tribal	27,500	0.83	0.00	0.43	2.11	0.00

		Mothership	37,248	1.42	4.20	0.75	71.52	0.01
		CP	52,768	0.17	4.12	0.78	86.96	0.00
		Shoreside	65,184	1.09	1.96	0.23	84.74	0.02
		Non-tribal total	155,200	2.7	10.3	1.8	243.2	0.0
		Grand total		3.51	10.28	2.19	245.33	0.03

PFMC
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