

GROUND FISH MANAGEMENT TEAM REPORT ON MANAGEMENT SPECIFICATIONS FOR 2007-2008 FISHERIES

The Groundfish Management Team (GMT) reviewed the materials found in Agenda Item F.1 of the April Council briefing book keeping in mind the Council's direction to 'rebuild as quickly as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction within the marine ecosystem'. This material shows that the seven overfished species have varying levels of depletion, rebuilding times that have varying degrees of sensitivity to changes in the Optimum Yield (OY), and varying impacts to fishing communities.

As Quickly As Possible

For each of the overfished species, Table 2-1 in Agenda Item F.1.a, Attachment 3, shows Alternative 1 Optimum Yields (OYs) as zero harvest. The zero harvest levels for overfished species are intended to provide an alternative for analysis that considers the effects of rebuilding overfished stocks within $T_{F=ZERO}$, which is the time to rebuild if fishing were to cease beginning 2007. Having no harvest of overfished species at all does not take into account the needs of fishing communities; however, the $T_{F=ZERO}$ rebuilding times provide the Council with a reference for "as quickly as possible." Table 3 of this statement also provides $T_{F=ZERO}$ for each overfished species and comparative rebuilding periods under different potential harvest scenarios.

Taking into Account the Status and Biology of the Stock

Depletion. Based on the most recent round of assessments, each overfished species is estimated to be at a different level of depletion relative to its unfished stock biomass. The relative level of depletion, combined with other biological characteristics of the stock, influences the sensitivity of a stock's rebuilding time to changes in OYs.

Sensitivity. The overfished species also have varying degrees of sensitivity to changes in the OYs (in cases where the OY is tied to a constant harvest rate). This means that estimated times to rebuild change to varying degrees as overfished species OYs change. Table 1 ranks the overfished species by sensitivity, with a rank of 1 for the most sensitivity and a rank of 4 for least sensitive to changes in OY. If the Council uses the sensitivity of rebuilding times to changes in the OY to determine which species should have the most focused protection, then cowcod, yelloweye, and canary should be afforded the most protection.

Research. Research projects are typically proposed after the beginning of the fishing year. The anticipated harvest of overfished rockfish that would occur from these research projects must be accounted for within the OY. The past practice of the Council has been to deduct anticipated research catches from Council-adopted OYs; therefore, the GMT has included the anticipated catches in the bycatch scorecard. For the past few years, the amount of overfished species taken in research has been in the 1.0-3.0 mt range for each species (with the exception of cowcod, which has had 0.1 mt of research catch). Therefore, the GMT recommends that overfished species OYs include small amounts (2.0-3.0 mt) to accommodate research on overfished and co-occurring species, and that those amounts be set aside through the end of the fishing year. The GMT believes that rebuilding stocks while taking into account the status and biology of

overfished stocks requires continued research that improves scientific information on those stocks.

Taking into Account the Needs of Fishing Communities

Vulnerability and Resilience. The socioeconomic analysis provided under agenda item F.1 (F.1.a., Attachment 4) shows that overfished species have different impacts on different sectors, communities, and regions. Different communities are more or less resilient to changes in available harvest levels and are more or less dependent on fishing. Each of the rebuilding alternatives has a different distributional impact on ports and communities. Table 1 ranks overfished species according to their breadth of effects on communities, with a rank of 1 indicating effects on the greatest number of sectors and communities, and a rank of 4 indicating effects on the fewest number of sectors and communities.

Table 1 Summarized Comparison of Biological and Socioeconomic Information under Agenda Item F.1 in Briefing Book

Species	Depletion	Year stock is rebuilt with no fishing	Sensitivity of rebuilding year to changes in a constant harvest rate OY (rank)	Impact to Communities of changing OY (rank)
Bocaccio rockfish	0.11	2022	3	2
Canary rockfish	0.09	2048	2	1
Cowcod	0.17	2035	1	2
Darkblotched rockfish	0.17	2009.5	4	3
Pacific Ocean perch	0.23	2014	3	3
Widow rockfish	0.31	2013	3	4
Yelloweye rockfish	0.17	2050	1	2

Recent Harvest Levels. The GMT has provided Table 3, below, so that the Council may compare recent overfished species harvest levels against their OYs. We do not believe that recent harvest levels meet the needs of fishing communities. Table 3 also provides rebuilding period comparisons between the durations of rebuilding periods under zero harvest scenarios and recent harvest scenarios.

Uncertainty and Management Flexibility. For the past several years, the GMT has used an overfished species bycatch scorecard to project pre-season, and then track inseason, the amounts of different overfished species taken in a wide variety of fisheries. As we have stated in the past, information available on the different fisheries varies in both its quality and abundance – both pre-season, and as we proceed through the seasons.

There is some uncertainty in each pre-season projection of overfished species mortality, and in recent years, some projections have proven to be underestimates while other projections have proven to be overestimates. When overfished species estimates of catch have been exceeded in the past for constraining species, there has been enough flexibility in the management system to

allow the fishery to move to areas where other, less constraining overfished species are found. The GMT believes that the groundfish management system must include some management flexibility in order to account for interactions between the different overfished species and between the fisheries that target the more healthy stocks that co-occur with overfished species. Setting overfished species' OYs so that they allow some management flexibility would take into account the needs of fishing communities by providing the opportunity for more management stability inseason.

The GMT recommends that management measures buffer for uncertainty by providing some room between the pre-season projection of what the fisheries are likely to take of a particular species and that species' OY. This means that not every last tenth of a metric ton of overfished species OY will be accounted for in the bycatch scorecard's estimated fisheries' harvest levels. We anticipate that this approach would allow us to use new and developing information that we receive inseason in 2007 and 2008 to improve our ability to protect overfished species' OYs from being exceeded. Properly addressing uncertainty as a part of an overfished species OY aids in addressing both the status and biology of the stock and the needs of fishing communities. Therefore, species-specific recommendations on uncertainty are provided the next section on integrating these two concepts.

Interactions within the Marine Ecosystem: Integrating the Status and Biology of the Stock with the Needs of Fishing Communities

For 2007-2008, the Council is integrating the different overfished species OYs to ensure that management reflects the links between those species and the fisheries that affect them. As shown in Table 1, above, the rebuilding times for cowcod, yelloweye, and canary are generally the most sensitive to shifts in their OY levels. The species with the largest impact to communities have been canary, yelloweye, bocaccio, and cowcod. Thus, the stocks that appear to need the most protection from a biological perspective also appear to have the broadest distribution in their effects on fishing communities.

In some instances, the impact to one overfished species can be traded against an impact to another overfished species without changing total economic impacts to any large degree. The Council could, for example, target a reduction in the catch of canary rockfish (a species with a rebuilding time that is relatively sensitive to changes in OYs) in the trawl sector by crafting management measures that move the trawl fishery offshore and increase the catch of darkblotched rockfish (a species with a rebuilding time that is relatively insensitive to changes in OYs). This could be an effective way of reducing the OY of sensitive overfished species, while mitigating against potential economic losses as a result of decreasing that OY. However, there are likely to be distributional impacts across communities and sectors from using this approach. Given the relative sensitivity of rebuilding times for each overfished species to changes in the OY, the GMT believes that those species that are relatively less sensitive could have higher OYs (be made less constraining) than the more sensitive overfished species. Relatively higher OYs for less sensitive species will have a relatively minor impact on the time to rebuild while providing for management flexibility and practicability for management agencies.

Integrating Uncertainty Issues for Particular Overfished Species The GMT recommends that the Council include a portion of the OY to address uncertainty in stock assessments, catch projections, and catch estimates. The GMT notes that the stock assessments for cowcod and yelloweye are the least informed by data. For example, neither of these assessments contain data from fishery independent surveys. Other factors to consider could include the degrees to which the GMT's preseason catch projections differ from the actual post-season catch estimates, the robustness of observer data available to estimate discards by sector, and the precision of the states' recreational catch estimation methods.

Bocaccio. The bocaccio stock assessment demonstrates that recruitment is highly variable; anecdotal evidence suggests there may be a strong incoming year-class. Should this strong year-class become evident, past experience indicates that young bocaccio are difficult to avoid for most fisheries and, consequently, encounter rates would be expected to increase. Additionally, the commercial trawl bycatch rates for bocaccio were lower than expected by a significant amount (100-200%) in recent years, and fixed gear West Coast Groundfish Observer Program (WCGOP) data, especially for the area south of 40°10'N. lat., is fairly sparse. Also, a new catch sampling program for the California recreational fishery (i.e., California Recreational Fishery Survey, or CRFS) was recently introduced. Therefore, the Council may wish to consider a relatively high amount of yield (e.g., around 15-20 mt) to address uncertainty for bocaccio; the GMT estimates that this would add approximately 2-3 months to the median time to rebuild.

Canary. For canary, the commercial trawl bycatch rates were lower than expected by a factor of 75-100% in recent years, and WCGOP data for fixed gear is fairly sparse. The state recreational fishery estimates, in general, have been more precise for Oregon and Washington; however, the CRFS program in California was recently implemented and precision has not been evaluated. Therefore, the Council may wish to consider including a small to amount of OY (e.g., 2-3 mt) to cover this uncertainty; however, given the sensitivity of canary to changing OYs, adding 2 mt would increase the median time to rebuild by 2 years.

Cowcod. While the cowcod stock assessment is very data poor, the GMT believes that the use of the Cowcod Conservation Areas appropriately keeps the catches of cowcod to an acceptable level, and the GMT-recommended cowcod OY would already account for uncertainty in catch estimates.

Darkblotched. For darkblotched, the commercial trawl preseason bycatch rate projections were lower than expected by as much as 250% as compared to post-season catch estimates in recent years. However, the GMT has significantly increased the precision in its catch estimation methodology over the past year, especially for darkblotched. This species is not subject to catch by fixed gear and recreational fisheries, simplifying catch estimates. The GMT notes that this species that is nearing its rebuilt level, so there would likely be increased encounter rates for darkblotched in 2007 and 2008. Therefore, the Council may wish to consider including a relatively high amount of OY (e.g., around 20 mt) to cover this uncertainty; the GMT estimates that this would add less than a month to the median time to rebuild.

Pacific Ocean Perch. The commercial trawl preseason bycatch rate projections for Pacific Ocean perch (POP) were lower than expected by as much as 100% as compared to post-season catch estimates in recent years. However, the GMT has significantly increased the precision in its catch estimation methodology over the past year, especially for trawl and, like darkblotched,

POP is not subject to catch by fixed gear and recreational fisheries. On the other hand, POP is also nearing its rebuilt level, so there would likely be increased encounter rates for POP in 2007 and 2008. Therefore, the Council may wish to consider including a relatively high amount of OY (e.g., around 20 mt) to cover this uncertainty; the GMT estimates that this would add about three months to the median time to rebuild.

Widow. For widow, the commercial trawl preseason bycatch rate projections were lower than expected by as much as 100% as compared to post-season catch estimates in recent years. However, the GMT has significantly increased the precision in its catch estimation methodology over the past year, especially for trawl, and catches of widow are small in fixed gear and recreational fisheries. On the other hand, this is another species that is also nearing its rebuilt level, so there would likely be increased encounter rates for widow in 2007 and 2008. Therefore, the Council may wish to consider including a relatively high amount of OY (e.g., around 20 mt) to cover this uncertainty; the GMT estimates that this would add about two months to the median time to rebuild.

Yelloweye. The yelloweye assessment data are sparse and there seem to be no further avenues to improve that situation in the historical series. The assessment is tuned to recreational CPUE data with a decreasing period of coverage from south to north, and size and age composition information and fishery independent data are particularly lacking. However, given that the GMT-recommended phase-in approach produces OYs that are already higher than what is suggested under the current rebuilding schedule, the GMT has no recommendation to increase the OY to account for this uncertainty.

GMT Recommendations for Overfished Species

For all overfished species except yelloweye rockfish and cowcod, the GMT recommends that the Council set preferred OYs that include amounts of these species that accommodate projected annual total catch levels (including research,) and account for uncertainty as described above. The GMT requests that the Council give the team latitude –if necessary - to analyze additional alternatives in case analysis shows the preferred OYs result in unexpected changes in rebuilding times, OYs that don't work in concert with one another across fisheries, or dramatic and unintended implications to fishing communities. These additional alternatives would be consistent with the spirit of the Council's preferred suite of OY's adopted at this meeting.

For yelloweye rockfish, the GMT continues to recommend that the Council adopt a phase-in approach whereby the OYs for the next few years be set at incrementally lower levels. This would provide time for: 1) additional data to be collected (through additional research, such as the enhanced International Pacific Halibut Commission (IPHC) survey planned for this year) and used to inform subsequent stock assessments; 2) fishermen, such as fixed gear participants, and processors who will potentially be affected by the yelloweye rebuilding plan to make decisions that could affect their future businesses; and 3) the Council, its advisory bodies, and the states to identify, explore, and develop management tools to manage to the lower OYs that are anticipated over the next few years. During this time, the Council could also move forward on developing a limited entry program for the directed groundfish open access fishery to provide effort control. With regard to the yelloweye phase-in amounts, the GMT explored using linear phase-in values between the current OY (27 mt) and a 2011 OY of 13.5 mt, which would produce an overall OY

in 2007 of 23 mt. So, the Council may wish to consider a total catch OY that is less than this amount (e.g., 20-21 mt).

For cowcod, the shortest time to rebuild if fishing were to cease in 2007 would be 2035. The GMT recommends the status quo OY, 4.2 mt, which would increase rebuilding time over $T_{F=ZERO}$ by 5 years. While the current OY is set at a very low level, recent catches for 2005 and projections for 2006 have been below the OY. The GMT feels that a status quo OY accounts for research needs and incidental cowcod catch.

Table 2 provides an example of how the Council might wish to construct overfished species OYs for species other than yelloweye rockfish and cowcod if it were to use the GMT's recommended approach on research catch and uncertainty allowances coupled with projected 2006 total catch levels:

Table 2: Sample Calculation of 2007-2008 OYs for Overfished Species

Species Name	2006 projected total catch (not including research)	Research catch	Uncertainty allowance	2007-2008 OYs	Median Time to Rebuild
Pacific ocean perch	77 mt	2-3 mt	20 mt	99-100 mt	2015
Widow rockfish	258 mt	2-3 mt	20 mt	280-281 mt	2015
Bocaccio	173 mt	2-3 mt	15-20 mt	190-196 mt	2024
Canary rockfish	44 mt	2-3 mt	2 mt	48-49 mt	2068
Darkblotched rockfish	182 mt	2-3 mt	20 mt	204-205 mt	2010

Table 3: Comparison of Rebuilding Results Portraying Recent Catches as OY (2005, 05-06 avg, 2006)

$T_{F=0}$ ^{a/}	Bocaccio			Canary			Cowcod			Darkblotched			POP			Widow			Yelloweye ^{e/}		
	2022			2048			2035			2009.5			2014			2013			2050		
Year ^{b/}	2005	AVE	2006	2005	AVE	2006	2005	AVE	2006	2005	AVE	2006	2005	AVE	2006	2005	AVE	2006	2005	AVE	2006
Actual/Anticipated Catch (=OY _{actual/anticipated}) ^{c/}	111	142	173	34	39	44	3.4	3.4	3.4	156	169	182	69	73	77	204	231	258	20	21	22
Median Time to Rebuild if OY = Recent Catch ^{d/}	2023	2024	2024	2060	2062	2064	2043	2043	2043	2010	2010	2010	2014.7	2014.7	2014.8	2014	2015	2015	2120	2127	2134
Time Difference (yrs beyond $T_{F=0}$)	1.1	1.5	2	12	14	16	8	8	8	0.5	0.5	0.5	0.7	0.7	0.8	1.3	1.5	1.7	70	77	84
50% Recent Catch (Reduced OY)	55	71	86	17	20	22	1.5	1.7	1.7	78	84	91	34	37	39	102	116	129	10	10	11
Median Time to Rebuild if OY = 50% Recent Catch	2023	2023	2023	2054	2055	2056	2038	2038	2038	2009.7	2009.7	2009.8	2014.4	2014.4	2014.4	2014	2014	2014	2070	2072	2074
Time Difference (yrs beyond $T_{F=0}$)	0.9	0.9	0.9	6	7	8	5	5	5	0.2	0.2	0.3	0.4	0.4	0.4	0.7	0.8	0.9	20	22	24
Time Difference (yrs earlier than time to rebuild under OY _{actual/anticipated})	0.2	0.6	1.1	6	7	8	3	3	3	0.3	0.3	0.2	0.3	0.3	0.4	0.6	0.7	0.8	50	55	60

a/ $T_{F=0}$ represents the estimated year that the stock would be rebuilt if there were no fishing beginning in 2007.

b/ The catches shown for 2005 represent the best estimated total catch for all fisheries for 2005. The catches shown for 2006 represent the projected catch for all fisheries for 2006. The "AVE" catches are calculated as an average between the actual catches in 2005 and the anticipated catches for 2006.

c/ The OY alternatives shown in this table are for discussion purposes only, and are not recommendations from the GMT. OY_{actual/anticipated} portrays an OY level that is equal to the actual/anticipated catches shown in the table.

d/ Values in whole numbers are rounded to the nearest whole number, values to a tenth of a year are rounded to within a tenth of a year. Values not taken directly from rebuilding runs are interpolated, and subject to modest uncertainty.

e/ Note that the yelloweye numbers reflected here do not represent the actual expected rebuilding times, as they assume constant catch rates rather than the phase in approach. The phase in approach would extend the median time to rebuild by approximately 7 months beyond the base case.

Healthy and Precautionary Zone Species (Species not managed under rebuilding plans)

The FMP provides the Council’s guidance and philosophy on setting harvest specifications for groundfish at a variety of stock status levels. Species at lower levels of abundance, particularly those below the proxy B_{MSY} level, B_{40} , are required to be managed with more precautionary harvest rates than those above B_{40} . Species for which there is less or incomplete information are required to be managed with more precautionary harvest rates than those for which information is more complete. In November 2005, the Council reviewed the groundfish stocks that need species or species group harvest levels set for 2007-2008, and provided a single ABC/OY combination for each species or species group that: a) had no new information on its status as of the 2005 stock assessments, and/or b) fell clearly into one of the fishery management plans (FMP’s) management categories with already-articulated harvest strategy guidance.

The GMT recommends that, for the following species, the Council adopt a single ABC/OY alternative for the 2007-2008 management cycle, based on amounts provided in Table 2-1 of Agenda Item F.1.a, Attachment 3 (pages 3-4):

Species	Harvest Policy
Pacific cod	As in 2005-2006, the Pacific cod ABC of 3200 mt is based on historic landings levels, with the 1600 mt OY representing the Council’s precautionary 50% adjustment for unassessed species.
Shortbelly rockfish	Shortbelly rockfish is unexploited, except as infrequent incidental catch. The 13,900 ABC/OY is a continuation of a conservative Council policy for this species based on its last assessment in 1989. Since that assessment, the peak one-year shortbelly landings have been <100 mt.
Splitnose rockfish (south)	As in 2005-2006, the ABC of 615 mt is reduced to an OY of 461 mt, based on the Council’s policy of making a 25% precautionary adjustment for species with less rigorous stock assessments.
Yellowtail rockfish (north)	Yellowtail rockfish is a healthy rockfish stock that had a new stock assessment in 2005. Following the Council’s policy on using an F50% harvest rate for rockfish, the 2007 ABC for this species is 4,585 mt and the 2008 ABC is 4,510 mt. The OYs were set equal to ABC because the stock is above B_{40} , and then averaged to provide OYs for each year of 4,548 mt. The GMT notes that the fisheries have not been attaining yellowtail rockfish harvest levels in recent years because its harvest has been constrained to protect co-occurring overfished species.
Black rockfish	Black rockfish is a healthy rockfish stock that has not been assessed since the prior management cycle, so harvest levels are set applying the Council’s policies to the 2003 assessment. Management is divided at the Washington/Oregon border. The OYs for 2007 and 2008 are set equal to the ABCs off Washington because the stock is above B_{40} , and then averaged to provide OYs for each year of 540 mt, which is 88% of the northern ABC for the assessed stock

	north of Cape Falcon. The ABC off Oregon/California is 725 mt in 2007 and 719 mt in 2008, with the OYs for both years first set equal to ABCs because the stock is above B40%, and then averaged over the two years to get OYs for each year of 722 mt.
Cabazon (South of 42 deg. N. lat.)	The ABC of 94 mt for both 2007 and 2008 is based on the sum of average 2007-2008 ABCs for the northern and southern substocks derived from the 2005 stock assessment. The 2005-2006 precautionary OY of 69 mt was based on a constant harvest level and is carried over to 2007-2008 management. This OY provides for stable management and is consistent with results of the 2005 stock assessment.
English sole	English sole is a healthy stock that had a new stock assessment in 2005. Following the Council's policy on using an F40% harvest rate for flatfish, the 2007 ABC for this species is 6,773 mt and the 2008 ABC is 5,701 mt. The OYs are first set equal to ABCs the stock is above B40%, and then averaged over the two years to get OYs for each year of 6,237 mt.
Arrowtooth flounder	Arrowtooth flounder is a healthy stock that has not been assessed since the prior management cycle, so harvest levels are set applying the Council's policies to the prior assessment. The ABC/OY for 2007 and 2008 is 5,800 mt
Other flatfish	"Other flatfish" includes: butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole. The combined 2007 and 2008 ABCs for these species results in an Other Flatfish ABC of 6,731 mt. The 2007 and 2008 OYs are set at 4,884 mt. To derive OYs, the ABCs for sanddabs and rex sole are reduced by a 25% precautionary adjustment for less rigorously assessed stocks, and the ABCs for the remaining species are reduced by a 50% precautionary adjustment for unassessed stocks. Starry flounder has been removed from this complex because it has a new assessment and a recommendation of a species-specific ABC/OY.
Other fish*	The Other Fish complex includes big skate, California skate, leopard shark, longnose skate, soupfin shark, spiny dogfish, finescale codling, Pacific rattail, ratfish, cabazon north of the Oregon/California border, and kelp greenling. Harvest levels for this species group are set in 2007 and 2008 at a 14,600 mt ABC and a 7,300 mt OY, representing the 50% precautionary adjustment for unassessed stocks.

*The adopted kelp greenling assessment is geographically confined to Oregon. Due to the considerable uncertainty within the kelp greenling assessment, the Council elected to not set an independent ABC/OY, keeping kelp greenling within the "other fish" category, retaining the status quo value assigned to the species within that ABC/OY. The state of Oregon manages kelp greenling using state harvest caps, catch limits, and length restrictions for both the recreational and commercial fisheries. Current Oregon catch levels fall below the OY suggested by the assessment, and the state does not anticipate considering any expansion beyond current catch levels. The two alternatives adopted by

the Council at its November 2005 meeting are either not adopting a federal harvest guideline, with the state retaining management authority of the species, or adopting a federal harvest guideline that is equal to the state harvest cap. The stock assessment indicates that the state is managing at an acceptable level, and at a lower level than is deemed sustainable. Therefore, the GMT recommends *not* adopting a federal harvest guideline for kelp greenling for the 2007-2008 management cycle, with the state of Oregon retaining management authority of this species.

Table 2-1 of Agenda Item F.1.a. Attachment 3 also provides alternative harvest levels for the Council to consider on several additional healthy or precautionary zone species. The GMT recommends that the Council adopt preferred harvest alternatives for these species, in order to better guide GMT and GAP efforts to develop management measures. A description of the OY alternatives are contained in Sections 2.1.2 and 2.1.3, Agenda Item F.1.a, Attachment 3, (pages 12-19).

Species	Harvest Level Issues
Lingcod	<p>The lingcod harvest alternatives include coastwide ABC and OY options, with OYs derived from two stock assessment areas (north and south of the Eureka/Columbia line). The GMT also stratified the OYs to align with the CA/OR border to provide for state-based management. The GMT recommends again specifying separate OYs north and south of the CA/OR border at 42° N latitude.</p> <p>Lingcod is currently estimated to be above 40% of unfished biomass on a coastwide basis; however, the southern portion of the stock is estimated to be just below 25%. Alternative 1 does not apply the 40-10 adjustment for the California portion of the coastwide OY and Alternative 2 does apply the 40-10 adjustment. The GMT also received a proposal from CDFG to maintain the current status quo OY of 612 mt, which is an intermediary value between Alternatives 1 and 2.</p>
Pacific whiting	<p>In anticipation of the ratification of the U.S.-Canada agreement, annual stock assessments are available early each year, and given the small amount of whiting that is typically landed under trip limits prior to the April 1 start of the primary season, the GMT recommends that the Council delay the adoption of final ABC and OY until the March 2007 and 2008 meetings. The ABC range for 2007 and 2008, is 188,682 mt - 350,409 mt, with an OY range of 188,348 mt -349,790 mt, which is $\pm 30\%$ of the 2005 specifications.</p>
Sablefish	<p>All OY alternatives break out the coastwide OY north and south of 36° N latitude using status quo proportions. Alternative methods for apportioning the OY were not considered because the STAR Panel recommended calculating coastwide biomass without including Conception area survey data.</p> <p>The Alternative 1 OY applies the 40-10 adjustment using the low stock/production model ($h=0.26$, $Q=0.37$) and the Alternative 2 OY applies</p>

	the 40-10 adjustment using the base model ($h=0.34$, $Q=0.33$). The GMT recommends that the Council adopt the Alternative 2 OY.
Chilipepper rockfish	The Alternative 1 OY is the status quo OY, which is reduced from the ABC determined in the 1998 assessment. The OY is less than the ABC, despite the stock's healthy status, to reduce mortality on co-occurring bocaccio. The Alternative 2 OY equals the status quo ABC, since the current Rockfish Conservation Areas may provide adequate bocaccio protection.
Shortspine thornyhead	The two shortspine thornyhead OY alternatives provide for a coastwide ABC with area-specific OYs north and south of Pt. Conception to distribute harvest opportunities proportional to the relative abundance of the resource. The GMT notes that the precautionary OYs specified in Alternative 1 are not constraining relative to recent catches. In light of the data-poor nature of this assessment, the GMT recommends Alternative 1.
Longspine thornyhead	The two longspine thornyhead OY alternatives provide for a coastwide ABC with area-specific OYs north and south of Pt. Conception to distribute harvest opportunities proportional to the relative abundance of the resource. The GMT notes that the precautionary OYs specified in Alternative 1 are not constraining relative to recent catches. In light of the data-poor nature of this assessment, the GMT recommends Alternative 1.
Minor rockfish north	<p><u>Minor Nearshore Rockfish North:</u></p> <p>When black rockfish was originally removed from the northern minor nearshore rockfish OY, a ratio of black to blue rockfish catch was used to determine what proportion of that OY was attributable to black rockfish. However, due to the variability of blue rockfish catches, there is some concern that this ratio (92%:8% black to blue rockfish) under represents blue rockfish catch and therefore the resulting OY (without black rockfish). To account for the uncertainty in the proportion of blue rockfish within the blue:black ratio, the Council adopted three OY alternatives for Minor Rockfish North. The GMT recommends OY alternative 2, resulting in an OY of 142 mt (status quo OY + 20 mt). The GMT feels that this alternative sufficiently accounts for the variability in blue rockfish catch and provides for stability in the fisheries, while minimizing additional impacts to the other rockfish species that comprise this category.</p> <p><u>Minor Rockfish North:</u></p> <p>The GMT recommends increasing the OY for the minor rockfish north to accommodate an increase in the Nearshore Rockfish.</p>
Minor rockfish south	<p>In 2005 the Council approved new assessments for two species managed within the minor rockfish south complex. The GMT recommends that California scorpionfish be removed from this complex and be managed with a separate OY, while gopher rockfish remain within the complex and the OY be adjusted to reflect new information from this stock assessment.</p> <p>Gopher rockfish are part of the Minor Nearshore Rockfish South portion of</p>

	<p>this complex. Gopher rockfish co-occur with both shallow and deeper nearshore species and cannot be cleanly targeted. As a result, raising the gopher rockfish portion of the minor nearshore rockfish south OY to the level derived from the stock assessment could result in additional harvest of other data-poor stocks within the complex rather than just harvests of gopher rockfish. While the stock assessment determined the stock to be healthy, the gopher rockfish portion of the OY alternatives provide for the uncertainty around the assessment by including options that take proportional reductions from the ABC/OY of 302 mt. The GMT reviewed options analyzed in Agenda Item F.1.b Supplemental CDFG Report, and recommends a 50% contribution of gopher rockfish to the complex, which relates to Alternative 2 in the ABC/OY options table. Selection of this alternative will result in the overall Minor Nearshore Rockfish South OY of 515 mt. (Alt. 2). When combined with the corresponding shelf and slope OYs of 714 and 626 respectively, the GMT recommends the Minor Rockfish South OY alternative 2 of 1855 mt.</p>
California scorpionfish	<p>The GMT recommends OY Alternative 1 (137 mt) a modified ABC/OY. This approach utilizes the full recreational data in determining the OY and allows California to track catches inseason with the CRFS program. By incorporating the ability to make inseason adjustments, the risk of either not achieving or overshooting the OY is reduced. The GMT refers the Council to “CDFG Draft Report on Background Information for Selection of 2007/2008 OYs for Gopher Rockfish, California Scorpionfish and Minor Nearshore Rockfish” for further explanation of the calculation of this OY Alternative.</p>
Dover sole	<p>The GMT recommends OY Alternative 1, which was derived from the equilibrium MSY at F40% in the base model.</p>
Petrale sole	<p>The GMT notes that the recent assessment shows that both the northern and southern portions of the stock are below $B_{40\%}$ and increasing. If the Council wishes to consider regional management, the GMT notes that management measures designed to achieve the OY specification stratifying the OY north and south of 40°10' N latitude would result in a decrease in bottom trawl exvessel revenues of over \$3 million, and that this amount could be higher or lower depending on the alternative chosen. However, the GMT does not necessarily endorse regional management of petrale sole.</p>
Starry flounder	<p>Starry flounder was assessed for the first time in 2005 and was approved for management decision-making by the SSC. The GMT initially forwarded a recommended ABC and a range of OYs for 2007 and 2008. The ABCs and OYs were calculated by combining the northern and southern base models using the preferred high catch scenario with a 40-10 adjustment for the OY since this stock is near or below $B_{40\%}$. Because this assessment is considered data-poor, the GMT provided an alternative OY that was reduced 25% from the base OY. The GMT continues to support the base model ABCs for 2007 and 2008 and the Alternative 2 OY.</p>

PFMC
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