

## PART I OF MANAGEMENT MEASURES FOR 2007-2008 FISHERIES

The Council is scheduled to adopt a refined range of 2007-2008 management measure alternatives and, if possible, a tentative preferred alternative for formal analysis and public review under this agenda item and Agenda Item F.6. Management measure alternatives are intended to meet, but not exceed the preferred optimum yields (OYs) adopted under Agenda Item F.1. The range of management measure alternatives should also attempt to explore the key management issues in 2007 and 2008 as described in section 1.3.4 of the preliminary Draft Environmental Impact Statement (DEIS) being developed to analyze 2007-2008 groundfish harvest specifications, management measures, and Amendment 16-4 rebuilding plans (see Agenda Item F.1.a, Attachment 1). A refined range of management measure alternatives should include catch sharing options for depleted groundfish species and any other constraining groundfish species without a fixed allocation, and include alternative strategies that meet the overarching objectives of providing fishing opportunities equitably across sectors while meeting the conservation needs of depleted and prohibited species (i.e., alternative seasons, size and bag limits, specific areas closed or open to fishing, trip limits, gear restrictions, and other management measures).

Proposed management measure alternatives for recreational and nearshore commercial fisheries in Washington (note: nearshore commercial fisheries are not allowed in Washington state waters), Oregon, and California are included in Agenda Item(s) F.5.b, WDFW Report, ODFW Report, CDFG Report, and CDFG Report 2. Alternative Cowcod Conservation Area boundaries, one of the key management issues described in Section 1.3.4 of the preliminary DEIS, are described in Agenda Item F.5.b, CDFG Report 3. Analysis of bycatch of canary rockfish, yelloweye rockfish, and lingcod in the northern salmon troll fishery, another key management issue described in Section 1.3.4, is included in Agenda Item F.5.b, WDFW Report 2. The Groundfish Management Team (GMT) also analyzed impacts of alternative limited entry trawl (bottom trawl and whiting fisheries) and limited entry and open access fixed gear management measures. These analyses are included in Agenda Item F.5.c, GMT Report.

The Council should consider these proposals and analyses, as well as advice from advisory bodies and the public before adopting a preliminary range of management measures for further analysis. The Council may want to request additional analysis by the GMT and Groundfish Advisory Subpanel (GAP) under this agenda item. Results for any requested analyses can be provided on Friday under Agenda Item F.6, when the Council is scheduled to adopt a final refined range of 2007-2008 management measure alternatives for analysis in the DEIS. If possible, the Council should adopt a tentative preferred alternative then as well, so as to allow intensified analysis between the April and June Council meetings. Final Council action on a preferred 2007-2008 management measure alternative is scheduled for June.

### **Council Action:**

- 1. Adopt a Preliminary Range of Refined Management Measures For 2007-2008.**
- 2. Provide Guidance to the GMT and GAP for Further Analysis of Management Measure Alternatives (if Necessary).**

Reference Materials:

1. Agenda Item F.5.b, WDFW Report: Washington Department of Fish And Wildlife Report on Preliminary Management Measure Alternatives for 2007-08 Groundfish Fisheries.
2. Agenda Item F.5.b, WDFW Report 2: Estimation of Bycatch in the Northern Salmon Troll Fishery.
3. Agenda Item F.5.b, ODFW Report: Proposed Management Measures for the 2007-08 Oregon Recreational Groundfish Fishery.
4. Agenda Item F.5.b, CDFG Report: Proposed Management Measures for the 2007-08 California Recreational Groundfish Fishery.
5. Agenda Item F.5.b, CDFG Report 2: Preliminary Practical Range of Management Specification Options for California's 2007-2008 Commercial and Recreational Groundfish Fisheries.
6. Agenda Item F.5.b, CDFG Report 3: Cowcod Conservation Area (CCA) Management Alternatives for 2007-2008 Groundfish Management.
7. Agenda Item F.5.c, GMT Report: Analysis of Preliminary Commercial Groundfish Management Measure Alternatives.

Agenda Order:

- a. Agenda Item Overview
  - b. State, Tribal, and Federal Agency Recommendations
  - c. Reports and Comments of Advisory Bodies
  - d. Public Comments
  - e. **Council Action:** Adopt a Preliminary Range of Refined Management Measures
- John DeVore

PFMC  
03/20/06

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE REPORT ON  
PRELIMINARY MANAGEMENT MEASURE ALTERNATIVES  
FOR 2007-08 GROUND FISH FISHERIES

The Washington Department of Fish and Wildlife (WDFW) supports the following preliminary management measure alternatives to be approved for public review at the Pacific Fishery Management Council's April meeting.

***RECREATIONAL***

WDFW held public meetings on December 8, 2005, January 11, 2006, and February 23, 2006, to develop and discuss recreational bottomfish proposals for 2007 and 2008. Based on the input provided, we are not proposing any changes to the bottomfish bag limit or lingcod season dates, which are listed below.

The intent of the proposed preliminary alternatives is to reduce incidental catch of overfished rockfish, primarily yelloweye, while anglers are targeting halibut and lingcod. Based on research by Albin and Karpov (1995), there is expected to be higher survivability of rockfish released from shallower depths (i.e., 20 fathoms or less). There is also expected to be a reduced encounter rate of yelloweye rockfish in shallower depths (i.e., 30 fathoms or less).

Bottomfish Bag Limits

All Areas: 15 bottomfish aggregate bag limit, which includes a sublimit of 10 rockfish, and 2 lingcod with a 24-inch minimum size limit, but does not include halibut (which has a daily bag limit of 1). Retention of canary and yelloweye rockfish is prohibited, regardless of area caught.

Lingcod Seasons

Marine Areas 1-3: Open the Saturday closest to March 15 (which is March 17 in 2007 and March 15 in 2008) through the Saturday closest to October 15 (which is October 13 in 2007 and October 18 in 2008).

Marine Area 4: Open April 16 through October 13 in 2007 and open April 16 through October 15 in 2008.

Area Closures

For all options, the "C-shaped" yelloweye rockfish conservation area in the north coast would remain in effect.

The proposed preliminary range of 2007-2008 management measure alternatives that WDFW supports for public review include:

## **Statewide – Lingcod Minimum Size Limit**

Status quo (2006 season) – There is a minimum size limit of 24 inches for lingcod.

### Option 1

Reduce the minimum size limit for lingcod to 20 inches in Marine Areas 1-4.

## **North Coast (Washington Marine Areas 3 and 4)**

Status quo (2006 season) – Prohibit retention of rockfish and lingcod seaward of a line approximating 20 fathoms from May 22 through September 30, except on days that halibut fishing is open (e.g., June 22 and 24). The retention of canary and yelloweye rockfish is prohibited. It is prohibited to fish for, retain, or possess bottomfish and halibut in the “C-shaped” yelloweye rockfish conservation area.

### Option 1

Prohibit retention of rockfish and lingcod seaward of a line approximating 20 fathoms from May 1 through June 30, except on days that halibut fishing is open, and from August 1 through September 30; prohibit retention of rockfish and lingcod seaward of a line approximating 10 fathoms during the month of July.

### Option 2

Prohibit retention of rockfish and lingcod seaward of a line approximating 10 fathoms during the months of May and September; close the North Coast to halibut fishing, except in Area 4B; prohibit retention of rockfish and lingcod seaward of a line approximating 20 fathoms from June 1 through August 31.

### Option 3

Prohibit retention of rockfish and lingcod seaward of a line approximating 10 fathoms during the months of May, August and September; close the North Coast to halibut fishing, except in Area 4B; prohibit retention of rockfish and lingcod seaward of a line approximating 20 fathoms from June 1 through July 31.

### Option 4

Add another yelloweye rockfish conservation area off the northern coast, which would be closed to recreational bottomfish and halibut fishing, as defined by the following coordinates:

Beginning at 48°11.7’N. lat., 125°13.03’W. long.,

Then to 48°16.43’N. lat., 125°07.55’W. long.,

Then to 48°14.72’N. lat., 125°01.84’W. long.,

Then to 48°09.07’N. lat., 125°07.51’W. long., then back to the point of origin.

Note: Options 2, 3, and 4 would require changes to the Pacific Halibut Catch Sharing Plan as well as the bottomfish regulations.

## **South Coast (Washington Marine Area 2)**

Status quo (2006 season) – Prohibit retention of rockfish and lingcod seaward of a line approximating 30 fathoms from lingcod opening day (March 18 in 2006) through June 15. The retention of canary and yelloweye rockfish is prohibited.

### Option 1

Prohibit retention of rockfish and lingcod seaward of a line approximating 30 fathoms from lingcod opening day through July 31.

### Option 2

Prohibit retention of rockfish and lingcod seaward of a line approximating 30 fathoms from lingcod opening day through August 31.

### Option 3

Prohibit retention of rockfish and lingcod seaward of a line approximating 30 fathoms from lingcod opening day through July 31; prohibit retention of rockfish and lingcod seaward of a line approximating 20 fathoms from August 1 through September 30.

## **Columbia Area (Washington Marine Area 1)**

There is very little yelloweye and canary rockfish (0.03 mt and 0.02 mt, respectively, in 2005) caught in Marine Area 1; therefore, WDFW proposes to keep the status quo bottomfish fishing regulations in place through 2007 and 2008. These are: Prohibit retention of bottomfish, except sablefish and Pacific cod, with halibut onboard from May 1 through September 30. The retention of canary and yelloweye rockfish is prohibited.

## ***COMMERCIAL***

WDFW reviewed data available from the International Pacific Halibut Commission survey, the Washington submersible survey, a state charter boat ride along program, a state salmon troll observer program, and longline logbook data (provided voluntarily) to develop management tools to reduce the impacts to yelloweye from commercial fixed gear fisheries, and would support the following management measures for public review, as placeholders. We plan to solicit feedback from the Groundfish Advisory Subpanel and key constituents at the April meeting and between April and June.

### **Limited Entry and Open Access Fixed Gear – North of 40°10' N. lat.**

Status quo – “C-shaped” yelloweye rockfish conservation area closed to recreational bottomfish and halibut fishing; portions of the area are closed via the federal non-trawl rockfish conservation area (RCA) boundaries; area seaward of the non-trawl RCA is a voluntary area to be avoided for limited entry and open access fixed gear; entire “C-shaped” area is a voluntary area to be avoided for other fisheries (e.g., salmon troll).

### Option 1

Apply “C-shaped” yelloweye rockfish conservation area closure to all limited entry and open access fixed gear fisheries and the salmon troll fishery.

### Option 2

Add another yelloweye rockfish conservation area off the northern Washington coast, which would be closed to limited entry and open access fixed gear fisheries and the salmon troll fishery, as defined by the following coordinates:

Beginning at 48°11.7’N. lat., 125°13.03’W. long.,

Then to 48°16.43’N. lat., 125°07.55’W. long.,

Then to 48°14.72’N. lat., 125°01.84’W. long.,

Then to 48°09.07’N. lat., 125°07.51’W. long., then back to the point of origin.

Note: Options 1 and 2 would require changes to the Pacific Halibut Catch Sharing Plan as well as the groundfish regulations.

### Option 3

Consistent with the salmon troll regulations off Oregon, allow the retention of lingcod in the salmon troll fishery when fishing shoreward of a line approximating 30 fathoms north of 40°10’N. lat.

### Option 4

Prohibit the retention of lingcod in the salmon troll fishery shoreward of the non-trawl RCA seaward boundary (i.e., shoreward of 100 fathoms north of 40°10’ N. lat. under status quo).

## Preliminary WDFW Proposed Management Measure Alternatives

(Updated: 3/15/06)

BF = Bottomfish fishery; Hal = Halibut fishery; Non-hal = Fisheries other than halibut

| North Coast | 2006  | 2007-2008                                   |               |               |
|-------------|---|---|---------------|---------------|
|             |   | Option 1                                    | Option 2      | Option 3      |
| Jan         | BF Open                                     | Closed                                      | Closed        | Closed        |
| Feb         | BF Open                                     | Closed                                      | Closed        | Closed        |
| Mar         | BF Open                                     | BF Open                                     | BF Open       | BF Open       |
| Apr         | BF Open                                     | BF Open                                     | BF Open       | BF Open       |
| May         | 1-21: BF Open<br>22-31: Open < 20 fms       | Hal days: BF Open<br>Non-hal: Open < 20 fms | Closed        | Closed        |
| Jun         | Hal days: BF Open<br>Non-hal: Open < 20 fms | Hal days: BF Open<br>Non-hal: Open < 20 fms | Open < 20 fms | Open < 20 fms |
| Jul         | Open < 20 fms                               | Closed                                      | Open < 20 fms | Open < 20 fms |
| Aug         | Open < 20 fms                               | Open < 20 fms                               | Open < 20 fms | Closed        |
| Sep         | Open < 20 fms                               | Open < 20 fms                               | Closed        | Closed        |
| Oct-Dec     | Closed                                      | Closed                                      | Closed        | Closed        |

| South Coast | 2006                                  | 2007-2008                             |                                       |                                       |
|-------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
|             |                                       | Option 1                              | Option 2                              | Option 3                              |
| Jan         | BF Open                               | Closed                                | Closed                                | Closed                                |
| Feb         | BF Open                               | Closed                                | Closed                                | Closed                                |
| Mar         | 1-17: BF Open<br>18-31: Open < 30 fms | 1-15: BF Open<br>16-31: Open < 30 fms | 1-15: BF Open<br>16-31: Open < 30 fms | 1-15: BF Open<br>16-31: Open < 30 fms |
| Apr         | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         |
| May         | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         |
| Jun         | 1-15: Open < 30 fms<br>16-30: BF Open | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         |
| Jul         | BF Open                               | Open < 30 fms                         | Open < 30 fms                         | Open < 30 fms                         |
| Aug         | BF Open                               | BF Open                               | Open < 30 fms                         | Open < 20 fms                         |
| Sep         | BF Open                               | BF Open                               | BF Open                               | Open < 20 fms                         |
| Oct-Dec     | Closed                                | Closed                                | Closed                                | Closed                                |

| Columbia River | 2006   | 2007-2008 |          |          |
|----------------|--|-----------|----------|----------|
|                |  | Option 1  | Option 2 | Option 3 |
| Jan            | BF Open  |           |          |          |
| Feb            | BF Open  |           |          |          |
| Mar            | BF Open  |           |          |          |
| Apr            | BF Open  |           |          |          |
| May            | No bottomfish, except sablefish & P. cod w/halibut onboard; Otherwise, BF Open |           |          |          |
| Jun            |  |           |          |          |
| Jul            |  |           |          |          |
| Aug            | BF Open  |           |          |          |
| Sep            | BF Open  |           |          |          |
| Oct-Dec        | Closed   |           |          |          |

**Preliminary WDFW Proposed Management Measure Alternatives  
Estimated Canary Rockfish Impacts  
(Updated: 3/15/06)**

Hal = Halibut trips; BFO = Bottomfish-only trips (no halibut and/or no salmon onboard)  
(% reduction in discard mortality assumed as a result of depth restriction)  
Assumes 100% discard mortality on halibut trips and a 66% mortality on non-halibut trips

| North Coast | 2006                         | 2007-2008                    |                                    |            |
|-------------|------------------------------|------------------------------|------------------------------------|------------|
|             |                              | Option 1                     | Option 2                           | Option 3   |
| Jan         | 0                            | 0                            | 0                                  | 0          |
| Feb         | 0                            | 0                            | 0                                  | 0          |
| Mar         | 0                            | 0                            | 0                                  | 0          |
| Apr         | 0.05                         | 0.05                         | 0.05                               | 0.05       |
| May         | Hal: 0.22<br>BFO: 0.16 (25%) | Hal: 0.22<br>BFO: 0.11 (50%) | 0                                  | 0          |
| Jun         | Hal: 0.10<br>BFO: 0.14 (50%) | Hal: 0.10<br>BFO: 0.14 (50%) | Hal: 0.17 (25%)<br>BFO: 0.14 (50%) | 0.38       |
| Jul         | 0.16 (50%)                   | 0                            | 0.16 (50%)                         | 0.16 (50%) |
| Aug         | 0.10 (50%)                   | 0.10 (50%)                   | 0.10 (50%)                         | 0          |
| Sep         | 0.03 (50%)                   | 0.03 (50%)                   | 0                                  | 0          |
| Oct-Dec     | 0                            | 0                            | 0                                  | 0          |
| Total       | 0.96                         | 0.75                         | 0.62                               | 0.59       |

| South Coast | 2006 | 2007-2008 |          |            |
|-------------|------|-----------|----------|------------|
|             |      | Option 1  | Option 2 | Option 3   |
| Jan         | 0    | 0         | 0        | 0          |
| Feb         | 0    | 0         | 0        | 0          |
| Mar         | 0    | 0         | 0        | 0          |
| Apr         | 0.01 | 0.01      | 0.01     | 0.01       |
| May         | 0.11 | 0.11      | 0.11     | 0.11       |
| Jun         | 0.03 | 0.03      | 0.03     | 0.03       |
| Jul         | 0.06 | 0.06      | 0.06     | 0.06       |
| Aug         | 0    | 0         | 0        | 0 (50%)    |
| Sep         | 0.01 | 0.01      | 0.01     | 0.01 (50%) |
| Oct-Dec     | 0    | 0         | 0        | 0          |
| Total       | 0.23 | 0.23      | 0.23     | 0.23       |

**Cumulative Impacts**

|             | 2006 | 2007-2008 |          |          |
|-------------|------|-----------|----------|----------|
|             |      | Option 1  | Option 2 | Option 3 |
| North Coast | 0.96 | 0.75      | 0.62     | 0.59     |
| South Coast | 0.23 | 0.23      | 0.23     | 0.23     |
| Columbia    | 0.02 | 0.02      | 0.02     | 0.02     |
| Total       | 1.21 | 1         | 0.87     | 0.84     |

## Preliminary WDFW Proposed Management Measure Alternatives Estimated Yelloweye Rockfish Impacts

(Updated: 3/15/06)

Hal = Halibut trips; BFO = Bottomfish-only trips (no halibut and/or no salmon onboard)

Assumes 100% discard mortality across all trip types > 20 fms

Open < 20 fms = 50% mortality and 25% lower encounter rate

| North Coast | 2006                   | 2007-2008              |                        |                        |
|-------------|------------------------|------------------------|------------------------|------------------------|
|             |                        | Option 1               | Option 2               | Option 3               |
| Jan         | 0                      | 0                      | 0                      | 0                      |
| Feb         | 0                      | 0                      | 0                      | 0                      |
| Mar         | 0                      | 0                      | 0                      | 0                      |
| Apr         | 0.06                   | 0.06                   | 0.06                   | 0.06                   |
| May         | Hal: 0.85<br>BFO: 0.23 | Hal: 0.85<br>BFO: 0.16 | 0                      | 0                      |
| Jun         | Hal: 0.51<br>BFO: 0.21 | Hal: 0.51<br>BFO: 0.21 | Hal: 0.38<br>BFO: 0.21 | Hal: 0.38<br>BFO: 0.21 |
| Jul         | 0.46                   | 0                      | 0.46                   | 0.46                   |
| Aug         | 0.29                   | 0.29                   | 0.29                   | 0                      |
| Sep         | 0.11                   | 0.11                   | 0                      | 0                      |
| Oct-Dec     | 0                      | 0                      | 0                      | 0                      |
| Total       | 2.72                   | 2.19                   | 1.4                    | 1.11                   |

| South Coast | 2006 | 2007-2008 |          |          |
|-------------|------|-----------|----------|----------|
|             |      | Option 1  | Option 2 | Option 3 |
| Jan         | 0    | 0         | 0        | 0        |
| Feb         | 0    | 0         | 0        | 0        |
| Mar         | 0.02 | 0.02      | 0.02     | 0.02     |
| Apr         | 0.05 | 0.05      | 0.05     | 0.05     |
| May         | 0.21 | 0.21      | 0.21     | 0.21     |
| Jun         | 0.01 | 0.01      | 0.01     | 0.01     |
| Jul         | 0.21 | 0.21      | 0.21     | 0.21     |
| Aug         | 0.02 | 0.02      | 0.02     | 0.005    |
| Sep         | 0.01 | 0.01      | 0.01     | 0.003    |
| Oct-Dec     | 0    | 0         | 0        | 0        |
| Total       | 0.52 | 0.52      | 0.52     | 0.51     |

### Cumulative Impacts

|             | 2006 | 2007-2008 |          |          |
|-------------|------|-----------|----------|----------|
|             |      | Option 1  | Option 2 | Option 3 |
| North Coast | 2.72 | 2.19      | 1.4      | 1.11     |
| South Coast | 0.52 | 0.52      | 0.52     | 0.51     |
| Columbia    | 0.03 | 0.03      | 0.03     | 0.03     |
| Total       | 3.27 | 2.74      | 1.95     | 1.65     |

### Estimation of Bycatch in the Northern Salmon Troll Fishery

Washington Department of Fish and Wildlife (WDFW) deployed observers on the commercial salmon troll fleet during the 2003, 2004 and 2005 seasons. This effort resulted in a total of 165 observed vessel days aboard 12 different vessels over the 3 seasons (Table 1). The observed troll effort occurred along the entire Washington coast.

**Table 1. Troll vessel days observed**

|              | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Total</u> |
|--------------|------------|-------------|-------------|---------------|------------------|--------------|
| <b>2003</b>  | 15         | 6           | 21          | 13            | 2                | 57           |
| <b>2004</b>  | 10         | 3           | 6           | 10            | 0                | 29           |
| <b>2005</b>  | 39         | 8           | 16          | 16            | 0                | 79           |
| <b>Total</b> | 64         | 17          | 43          | 39            | 2                | 165          |

While the primary focus of this effort was to collect salmon genetic samples, determine mark rates, and measure legal to sub-legal salmon encounter rates; observers also documented encounters with all species. Therefore, these data are also informative with respect to the catch of groundfish species that might be expected from the salmon troll fishery. Total observed catch for selected species across all three years is listed in Table 2.

**Table 2. 2003 through 2005 Observed Catch Summary**

|                            | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>Total</u> |
|----------------------------|-------------|-------------|-------------|--------------|
| <b>Yelloweye rockfish</b>  | 5           | 16          | 0           | 21           |
| <b>Canary rockfish</b>     | 68          | 55          | 72          | 195          |
| <b>Yellowtail rockfish</b> | 299         | 219         | 280         | 798          |
| <b>All Rockfish</b>        | 425         | 296         | 423         | 1,144        |
| <b>Lingcod</b>             | 85          | 51          | 232         | 368          |
| <b>Chinook (retained)</b>  | 2,072       | 735         | 1,724       | 4,531        |
| <b>Coho (retained)</b>     | 341         | 72          | 44          | 457          |

These catch data can be used to infer catches incidental to the northern salmon troll fishery as a whole, given certain caveats and assumptions. First, is that there has been an adequate level of sampling and that catches observed off the Washington coast are sufficiently representative of the broader troll fishery across Washington and Oregon to enable such inferences. Also, there is an assumption that fishing practices are not influenced by the presence of an observer. However, even given these assumptions, it is useful to explore these data since current bycatch estimates for the salmon troll fishery are largely based upon the best professional judgment of the Groundfish Management Team and are supported by little empirical data.

One approach to estimating total incidental catch is to assume that the ratio of bycatch to retained Chinook salmon landings in the observed data remains constant for all landed Chinook. Estimates can then be based directly on salmon landings. Any groundfish targeting in the troll

fishery could compromise this approach. Chinook salmon catches for the Washington and Oregon troll fisheries (excluding tribal catches) are presented in Table 3.

**Table 3. Oregon and Washington Chinook Salmon Troll Catch\* (excluding treaty troll catch)**

|                     | <u>OR</u> | <u>WA</u> | <u>TOTAL</u> |
|---------------------|-----------|-----------|--------------|
| <b>1997</b>         | 149,759   | 6,418     | 156,177      |
| <b>1998</b>         | 124,211   | 5,929     | 130,140      |
| <b>1999</b>         | 62,533    | 17,456    | 79,989       |
| <b>2000</b>         | 135,903   | 10,269    | 146,172      |
| <b>2001</b>         | 274,963   | 21,229    | 296,192      |
| <b>2002</b>         | 304,189   | 53,819    | 358,008      |
| <b>2003</b>         | 329,678   | 56,202    | 385,880      |
| <b>2004</b>         | 252,709   | 35,372    | 288,081      |
| <b>2005</b>         | 250,730   | 35,066    | 285,796      |
| <b>9-yr average</b> | 209,408   | 26,862    | 236,271      |

\*Review of 2005 Salmon Fisheries - PFMC

Applying the observed catch ratios of species of concern to retained Chinook across the 3 years of the study, and converting catch in numbers to total catch weight using information from the WDFW Biological Data System (BDS), produces the estimates listed in Table 4.

**Table 4. Estimated Bycatch in the OR/WA Salmon Fishery Applying Observed 2003-05 Catch Ratios to Total Chinook Salmon Landings (mt)**

(Numbers expanded to weight using the most recent 50 fish sampled in the WDFW BDS; Canary = 1.2 kg; Yelloweye = 2.6 kg, lingcod = 3.13 kg)

| <u>Year</u>         | <u>Canary</u> | <u>Yelloweye</u> | <u>Lingcod</u> |
|---------------------|---------------|------------------|----------------|
| <b>1997</b>         | 2.8           | 0.9              | 18.0           |
| <b>1998</b>         | 2.3           | 0.7              | 15.0           |
| <b>1999</b>         | 1.4           | 0.4              | 9.2            |
| <b>2000</b>         | 2.6           | 0.8              | 16.9           |
| <b>2001</b>         | 5.3           | 1.6              | 34.2           |
| <b>2002</b>         | 6.4           | 2.0              | 41.3           |
| <b>2003</b>         | 6.9           | 2.1              | 44.5           |
| <b>2004</b>         | 5.1           | 1.6              | 33.2           |
| <b>2005</b>         | 5.1           | 1.6              | 33.0           |
| <b>9-yr average</b> | 4.2           | 1.3              | 27.2           |
|                     |               |                  | 1.4            |

5% Mortality

Although prohibited from retaining groundfish in the non-trawl Rockfish Conservation Area (RCA), salmon trollers are allowed to retain yellowtail rockfish taken incidentally while trolling for salmon. Landed yellowtail provide another comparison point with respect to observed co-occurring catch by species in the salmon troll fishery. The ratio of incidental canary rockfish to yellowtail rockfish was very consistent across the three years of the study. Applying this ratio to the landed troll yellowtail catch in Oregon and results in the estimated catch values listed in Table 5. Since canary and yellowtail rockfish are almost exactly of equal weight in the most recent WDFW BDS data, the canary/yellowtail ratio can be applied directly to the total weight of

yellowtail landings. It should be noted, however, that some salmon trollers choose not to retain and land their yellowtail, which would make these values a minimal estimate. Additionally, yellowtail landings are constrained by a landing ratio (1 yellowtail for each 2 salmon).

**Table 5. Canary Rockfish Landings (mt) in the Salmon Troll Fishery Esitimated by Applying the Observed Ratio of Canary to Landed Yellowtail Rockfish**

|                               | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>3-yr Avg.</b> |
|-------------------------------|-------------|-------------|-------------|------------------|
| <b>Canary</b>                 | 68          | 55          | 72          | 65               |
| <b>Yellowtail</b>             | 299         | 219         | 280         | 266              |
| <b>Canary/Yellowtail</b>      | 0.227       | 0.251       | 0.257       | 0.244            |
| <b>Total Troll Yellowtail</b> | 29.3        | 7.8         | 6.9         | 14.7             |
| <b>Estimated Canary</b>       | 6.7         | 2.0         | 1.8         | 3.6              |

Additional at-sea observations of the salmon troll fishery across a broader area would be useful in refining estimates of bycatch. Further explorations of the existing data set with respect to time and area could also prove useful.

## **Proposed Management Measures for the 2007-08 Oregon Recreational Groundfish Fishery**

The Oregon Department of Fish and Wildlife proposes the following regulatory options be considered for its recreational fishery in 2007 and 2008. The options vary based on the allowable impact of overfished species. The season duration and expected impacts on yelloweye rockfish and canary rockfish, the two most constraining species, are detailed in Figure 1.

### **Option 1 – Status Quo**

**Season:** Open all year at all-depths except open only shoreward of the 40-fathom line from June 1 through September 30. (New – Stonewall Bank RCA closed to retention of groundfish)

**Daily Bag Limit:**

Marine fish\*: 6  
Lingcod: 2  
Sanddab: 25

**Minimum length limits:**

Lingcod: 24-inches  
Cabezon: 16-inches  
Greenling spp: 10-inches

### **Option 2**

**Season:** Open all year but open only shoreward of 40-fathom line.

**Daily Bag Limit:**

Marine fish (all flat fish species excluded)\*\*: 5  
Lingcod: 3  
Flat fish spp: 25

**Minimum length limits:**

Lingcod: 24-inches  
Cabezon: 16-inches  
Greenling spp: 10-inches

### **Option 3**

**Season:** Open all year but open only shoreward of 40-fathom line January 1 through May 30 and Sept. 1 through December 31 and shoreward of 25-fathom line June 1 through August 31.

**Daily Bag Limit:**

Marine fish\*: 5  
Lingcod: 3  
Sanddab: 25

**Minimum length limits:**

Lingcod: 24-inches  
Cabezon: 16-inches  
Greenling spp: 10-inches

### **Option 4**

**Season:** Open all year but open only shoreward of 20-fathom line.

**Daily Bag Limit:**

Marine fish\*: 5  
Lingcod: 3  
Sanddab: 25

**Minimum length limits:**

Lingcod: 24-inches  
Cabezon: 16-inches  
Greenling spp: 10-inches

## **Option 5**

**Season:** Open July 1 though Labor Day but only shoreward of 20-fathom line.  
Stonewall Bank closure area expanded in Pacific halibut fishery.

**Daily Bag Limit:**

Marine fish\*: 10  
Lingcod: 2  
Sanddab: 25

**Minimum length limits:**

Lingcod: 22-inches  
Cabezon: 16-inches  
Greenling spp: 10-inches

\* marine bag includes rockfish, greenling, cabezon and other species excluding lingcod, sanddab, Pacific halibut, salmon species, perch species, sturgeon, striped bass, offshore pelagic species, and bait fish (herring, smelt anchovies and sardines). No retention of yelloweye rockfish and canary rockfish.

\*\*marine bag includes rockfish, greenling, cabezon and other species excluding lingcod, flat fish, Pacific halibut, salmon species, perch species, sturgeon, striped bass, offshore pelagic species, and bait fish (herring, smelt anchovies and sardines). No retention of yelloweye rockfish and canary rockfish.

## **Potential Inseason Changes**

The following are suggested management measures that could be implemented inseason if the 2007 (or 2008) fishery does not proceed as expected.

Reduce the duration of offshore closure periods if the total season length is reduced due to management of nearshore species. Impacts not to exceed harvest guidelines on overfished species.

Although retention of canary and yelloweye rockfishes in recreational fisheries is prohibited, bycatch mortality of released fish is still large enough to constrain the fishery for other groundfish species. The large offshore RCA closure is an example of how these recreational fisheries are affected by bycatch of overfished species, especially yelloweye and canary rockfish. To help alleviate this constraint without increasing bycatch mortality, perhaps the large offshore RCA closures can be modified to close areas of known canary rockfish and yelloweye concentrations OR open areas known to have no or low concentrations of canary rockfish and yelloweye rockfish. Identification of these potential areas depends on adequate information about the distribution and abundance of these species. Review of NOAA Fisheries historical triennial surveys, International Pacific Halibut Commission surveys, and other data sources may provide such information.

Similarly, other means to reduce bycatch mortality, especially of overfished species, may include gear restrictions and/or release techniques. For example, the Oregon Department of Fish & Wildlife is presently studying the effects of sub-surface release on survival of rockfish. If successful techniques are developed and accepted, their use may alleviate the current constraints from bycatch mortality on recreational fisheries. Other examples could include modifications of terminal gear, perhaps hook size or shape, to avoid or reduce capture of overfished species.

Management measures:

Oregon has a responsive port based monitoring program through their Ocean Sampling Recreational Boat Survey (ORBS) and regulatory processes in place to track harvest and take actions inseason if necessary. Inseason actions include changes to size limits, bag limits (including non retention), seasons, depths and area closures.

Depth management will be the main inseason tool for controlling canary rockfish and yelloweye rockfish harvest as retention is prohibited. Offshore closures may be implemented inseason at 30, 25, or 20 fathoms as the presence of these two species is reduced nearshore and release survival increases. Other options include area closures (for federally managed species they would be based on established management lines for salmon and Pacific halibut fisheries). Bag limit changes may be implemented to adjust expected catch to achieve season duration goals. Non-retention and size restrictions are the likely inseason tool to use for lingcod, cabezon and greenling as release survival is very high. They may also be used to reduce harvest on nearshore species, such as black rockfish. In addition to inseason options, total closure of the groundfish recreational fishery may be implemented to stay within harvest limits.

Figure 1. Season structure along with expected yelloweye rockfish and canary rockfish impacts for various 2007-08 Oregon recreational fishery options

| Option | Month             |   |   |   |                |                |   |   |                |   |                   |   |   | Yelloweye       | Canary          |
|--------|-------------------|---|---|---|----------------|----------------|---|---|----------------|---|-------------------|---|---|-----------------|-----------------|
|        | J                 | F | M | A | M              | J              | J | A | LDay           | S | O                 | N | D | EST OR Rec (mt) | EST OR Rec (mt) |
| 1      | GF open all depth |   |   |   |                | GF open <40 fm |   |   |                |   | GF open all depth |   |   | 4.3             | 5.5             |
| 2      | GF open <40 fm    |   |   |   |                |                |   |   |                |   |                   |   |   | 3.6             | 4.2             |
| 3      | GF open <40 fm    |   |   |   | GF open <25 fm |                |   |   | GF open <40 fm |   |                   |   |   | 3.2             | 3.8             |
| 4      | GF open <20 fm    |   |   |   |                |                |   |   |                |   |                   |   |   | 2.4             | 2.8             |
| 5      | CLOSED            |   |   |   | GF open <20 fm |                |   |   | CLOSED         |   |                   |   |   | 1.9             | 1.7             |

## **PROPOSED MANAGEMENT MEASURES FOR THE 2007-08 CALIFORNIA RECREATIONAL GROUND FISH FISHERY**

The California Department of Fish and Game (CDFG) developed recreational management options to accompany six vertically-integrated rebuilding alternatives that were developed by the Groundfish Management Team (GMT) and Groundfish Allocation Committee (GAC) at their February 2006 meeting ("status quo" harvest plus Rebuilding Alternatives 1-5). For reference, these are reproduced in Table 1, with shading to denote species of particular importance in the California recreational fishery.

In Table 2, the vertically integrated rebuilding alternatives are combined with options for commercial: recreational catch sharing for yelloweye rockfish and canary rockfish, which were provided to the GMT by the GAC for initial analysis, and provides the corresponding California recreational Harvest Guidelines (HGs) resulting from those catch sharing options. A list of the key constraints for available management options are provided for each alternative.

Table 3 rearranges the order of rebuilding alternatives according to relative impact, which the CDFG used to develop season options for 2007-08. The management option suites are ordered from lowest to highest opportunity relative to California recreational fisheries. Proposed season structures under Options A-F are summarized in Table 4, and provide associated impacts to key overfished species. Key differences between the management options consider changing allowable fishing depths (shallower or deeper) or closing or opening months. The projected impacts for canary and yelloweye rockfish may also inform the Council relative to which catch sharing options between the commercial and recreational fishing sector would best provide for the alternatives presented.

**Table 1: Draft Amendment 16-4 Rebuilding Alternatives Developed by the Groundfish Management Team and the Groundfish Allocation Committee in February 2006**

| Stock        | 2007-2008 OYs (mt) |             |             |             |             |             | 2006 CA Rec Take |          |                  |
|--------------|--------------------|-------------|-------------|-------------|-------------|-------------|------------------|----------|------------------|
|              | "SQ" Reb. Alt.     | Reb. Alt. 1 | Reb. Alt. 2 | Reb. Alt. 3 | Reb. Alt. 4 | Reb. Alt. 5 | SQ (2006)        | CA REC   | 2005 CA rec take |
| Yelloweye    | 27                 | 21          | 17          | 21          | 12          | 12          | 27               | 3.7      | 0.9              |
| Canary       |                    | 24          | 44          | 68          | 24          | 24          | 47               | 9.3      | 2                |
| Cowcod a/    | 8                  | 8           | 18          | 22          | 14          | 4           | 4                | rec est. | 0.2              |
| Bocaccio     | 149                | 149         | 218         | 424         | 315         | 40          | 309              | rec est. | 37.3             |
| Darkblotched | 229                | 330         | 229         | 472         | 472         | 130         |                  |          |                  |
| POP          | 87                 | 405         | 87          | 749         | 405         | 44          |                  |          |                  |
| Widow        | 329                | 456         | 329         | 917         | 329         | 120         | 289              | rec est. | 1.6              |

NOTE: Shaded cells denote species important to recreational fisheries in California

**Table 2: Vertically Integrated Rebuilding Alternatives for 2007-2008 OY Options (in metric tons) and and Options for California Recreational Harvest Targets derived from Commercial:Recreational Catch Sharing Options for Yelloweye and Canary Rockfish**

| Stock  | Options for Catch Sharing Ratios (Com:Rec) | Reb. Alt. "Status Quo" Harvest |                | Reb. Alt. 1          |                | Reb. Alt. 2          |                | Reb. Alt. 3 |                | Reb. Alt. 4             |                | Reb. Alt. 5   |                | SQ OY (2006) |           |  |  |
|--|--|--------------------------------|----------------|----------------------|----------------|----------------------|----------------|-------------|----------------|-------------------------|----------------|---------------|----------------|--------------|-----------|--|--|
|  |  | OY                             | HG opts CA REC | OY                   | HG opts CA REC | OY                   | HG opts CA REC | OY          | HG opts CA REC | OY                      | HG opts CA REC | OY            | HG opts CA REC | OY           | CA REC HG |  |  |
| Yelloweye  | 60:40                                      |                                | 3.8            | 21                   | 3.0            | 17                   | 2.4            | 21          | 3.0            | 12                      | 1.7            | 12            | 1.7            | 27           | 3.7       |  |  |
|  | (SQ) 50:50                                 |                                | 4.8            |                      | 3.7            |                      | 3.0            |             | 3.7            |                         | 2.1            |               | 2.1            |              |           |  |  |
|  | 40:60                                      |                                | 5.8            |                      | 4.5            |                      | 3.6            |             | 4.5            |                         | 2.6            |               | 2.6            |              |           |  |  |
| Canary   | (SQ) 60:40                                 | 44                             | 9.0            | 24                   | 5.0            | 44                   | 9.0            | 68          | 14.0           | 24                      | 5.0            | 24            | 5.0            | 47           | 9.3       |  |  |
|  | 50:50                                      |                                | 11.2           |                      | 6.3            |                      | 11.2           |             | 17.5           |                         | 6.3            |               | 6.3            |              |           |  |  |
|  | 40:60                                      |                                | 13.5           |                      | 7.5            |                      | 13.5           |             | 21.0           |                         | 7.5            |               | 7.5            |              |           |  |  |
| Cowcod   | N/A  | 8                              | rec est.       | 8                    | rec est.       | 18                   | rec est.       | 22          | rec est.       | 14                      | rec est.       | 4             | rec est.       | 4            | rec est.  |  |  |
| Bocaccio   | N/A  | 149                            | rec est.       | 149                  | rec est.       | 218                  | rec est.       | 424         | rec est.       | 315                     | rec est.       | 40            | rec est.       | 309          | rec est.  |  |  |
| Widow  | N/A  | 329                            | rec est.       | 456                  | rec est.       | 329                  | rec est.       | 917         | rec est.       | 329                     | rec est.       | 120           | rec est.       | 289          | rec est.  |  |  |
| Description of Alternative and Constraining OYs: |  | Scorecard B; SQ OYs YE,C,W     |                | Lower C; Scorecard B |                | Lower YE; Lower B OY |                | Highest C,B |                | Lower YE,C; SQ OYs B, W |                | Lowest YE,C,B |                |              |           |  |  |
| Constraints                                      |  | Time: NS RF                    |                | Time: Canary         |                | Time: NS RF          |                | Time: NS RF |                | Time: Canary            |                | Time: NS RF   |                |              |           |  |  |
|  |  | Depth: Boc                     |                | Depth: Canary, Boc   |                | Depth: Boc           |                |             |                | Depth: YE, Canary       |                |               |                |              |           |  |  |

Note: No recreational HG options are proposed for cowcod, bocaccio, or widow; therefore, projected recreational catch under the season option would be

**Table 3: Rebuilding Alternatives Sorted from lowest opportunity to highest opportunity relative to California recreational fisheries and CDFG-assigned Option names described in attached documents.**

| Sorted Rebuilding Alternatives CDFG- assigned Season Options for Each Reb Alternative | Reb. Alt. 5 | Reb. Alt. 1 | Reb. Alt. 4 | SQ Reb. Alt. | Reb. Alt. 2 | Reb. Alt. 3 |
|---|-------------|-------------|-------------|--------------|-------------|-------------|
|   | Option A    | Option B    | Option C    | Option D     | Option E    | Option F    |



PART 2: Options for California Recreational Fishing Seasons under 2007-08 Rebuilding Alternatives. Season options derived from changes to the months and/or depths in the 2006 expected season are specified within the table.

| CA REC OPTION FOR 2007-08                | Changes to the 2006 Expected Season (Status Quo)   |   |  | Impact Estimates (mt) |           |
|--|--|---|--|-----------------------|-----------|
|  | Depths   | Months  | Other  | Yelloweye             | Canary    |
| OPTION A (=Rebuilding Alt. 5)            | North area - <i>all open months to 0-20fm</i> ; South area - <i>all open months 0-30fm</i>   | North Central area - <i>Close October</i>   |  | 1.2                   | 5.0       |
| OPTION B (=Rebuilding Alt. 1)            | North area - <i>all open months to 0-20 fm</i>   | North Central area - <i>close October</i>   |  | 1.2                   | 5.0       |
| OPTION C (=Rebuilding Alt. 4)            | South area - <i>0-60 fm in September-October</i>   | No change   | S of 40° 10' N. lat - <i>Bocaccio bag limit increase to 2 fish</i> | 1.5                   | 6.0       |
| OPTION D (=Rebuilding Alt. "Status Quo") | North, North Central, and Monterey South Central areas - <i>open 0-40 fm</i>   | No change; or, Consider one or more of following:<br>North Central area - open June;<br>Monterey South Central area - open June;<br>Morro Bay South Central area - open April & October |  | 1.2 - 1.3             | 7.6 - 9.0 |
| OPTION E (=Rebuilding Alt. 2)            | North - 0-40 fm; North Central area - 0-40 fm; Monterey South Central area - 0-40 fm; South area - 0-60 fm for September-October                     | No change; or, Consider one or more of following:<br>North Central area - open June;<br>Monterey South Central area - open June;<br>Morro Bay South Central area - open April & October |  | 1.2 - 1.3             | 7.6 - 9.0 |
| OPTION F (=Rebuilding Alt. 3)            | North, North Central, and Monterey South Central areas - 0-40 fm; Morro Bay South-Central area - 0-60 fm; South area - 0-60 fm for September-October | North Central area - open June;<br>Monterey South Central area - open June;<br>Morro Bay South Central area - open April & October  | Bocaccio bag limit increase to 2 fish for south of 40° 10' N. lat  | 1.4 - 1.5             | 8.0 - 9.5 |

## **Preliminary Practical Range of Management Specification Options for California's 2007-2008 Commercial and Recreational Groundfish Fisheries**

### **COMMERCIAL AND RECREATIONAL**

#### Specific Fishing Area Prohibitions

Proposals for changing the Cowcod Conservation Areas boundaries and for incorporating hot spots into the management specifications are still being developed.

### **COMMERCIAL**

Most commercial groundfish fishery options will be covered under the general range of federal commercial options. For the nearshore fishery and cabezon, greenling and sheephead, regional allocation or setting of regional TACs will not be considered for 2007-08. Commercial management options will implement regional needs where possible and include the following considerations:

#### Cabezon, Greenlings, and California Sheephead:

- Cabezon: Prioritize even distribution of trip limits throughout season.
- Greenling, and Sheephead: Status quo trip limits

#### Nearshore Rockfish and Lingcod:

##### *Coastwide:*

- Consider reduced RCA closure (i.e., allow access to deeper water) between OR/CA border and Pt. Conception (34°27' N latitude)
- Lingcod:
  - Status quo spawning closure is Nov-Apr.
  - Consider shortening duration of nesting closure when nearshore is open (i.e., allow lingcod retention in Nov, Dec, Jan or Feb)
  - Consider incidental take allowance during part or all of nesting closure (e.g., 100 lb/ 2 mo)

##### *North of 40°10' N latitude:*

##### Minor nearshore rockfish options:

- Near-status quo trip limit options
- Consider lower limits at late summer period (there are currently lower limits Mar-June; extend to July-Aug)
- Consider differential trip limits for federal LE vs OA vessels (lower OA limits due to higher OA effort)

##### *South of 40°10' N latitude:*

- Keep status quo 10-month season with Mar-Apr closure
- Shallow nearshore rockfish options:
  - Consider lowering highest limits to avoid early attainment (i.e., set trip limits between 300 lb and 500 lb per two months depending on seasonal priorities)

- Deeper nearshore rockfish options:
- Near-status quo options with different limits seasonally north and south of Pt. Conception (34°27' N latitude) due to regional preferences in seasonal opportunities.
- California scorpionfish:
  - Increase trip limits all open months due to higher OY in 2007-08
- Consider revising outer boundaries of the Cowcod Conservation Area to provide blackgill fishing opportunities

## **RECREATIONAL**

The California Department of Fish and Game is proposing a range of options for structuring the 2007-2008 recreational groundfish fisheries with the intent of remaining within harvest guidelines (HGs), particularly for species under rebuilding plans. This range of options includes the following:

- I. Continued non-retention of cowcod, canary and yelloweye rockfish statewide
- II. Management specifications which are structured around constituent's preferred fishing season while still providing as much fishing opportunity as possible.
- III. Alternatives that allow for more access to deeper waters paired with bycatch reduction tools (hot spots, gear restrictions)
- IV. Use of closed seasons, depth restrictions, bag limits, and size limits in combination to manage recreational catch to specified harvest limits. Range of possible options listed below.

### Management Specifications to Consider Changing for 2007-2008 *Seasons and Depth Restrictions*

#### North Coast Region

Seasons: 7 - 9 months open for groundfish fishing  
 Depth restrictions: 0-20 fm, 0-30 fm, or 0-40 fm  
 Status Quo: 8 months at 0-30 fm

#### North-Central Coast Region

Seasons: 5 - 7 months open for groundfish fishing  
 Depth restrictions: 0-20 fm, 0-30 fm, or 0-40 fm  
 Status Quo: for the area between 40° 10' N. lat. and 37° 11' N. lat., 6 months at 0-20 fm

#### Monterey South-Central Coast Region

Seasons: 5 - 7 months open for groundfish fishing  
 Depth restrictions: 0-20 fm, 0-30 fm, or 0-40 fm  
 Status Quo: for the area between 37° 11' N. lat. and 36° 00' N. lat., 6 months at 0-20 fm

#### Morro Bay South-Central Coast Region

Seasons: 5 - 7 months open for groundfish fishing  
 Depth restrictions: 0-30 fm, 0-40 fm, or 0-60 fm  
 Status Quo: for area between 36° 00' N. lat. and 34° 27' N. lat., 5 months at 0-40 fm;  
 Scorpionfish retention during all months when rockfish open

#### South Coast Region

Seasons: 9-11 months open for groundfish fishing; status quo 10 months; 9-12 months open for CA scorpionfish

Depth restrictions: 0-30 fm and 0-60 fm; status quo 0-30 fm and 0-60 fm

Status Quo: 2 months at 0-30 fm and 8 months at 0-60 fm

In 2005, CA scorpionfish retention for 1 month at 30 fm and 2 months at 60 fm (not open for all months that rockfish open); in 2006, retention during months that rockfish open

North, Central and South RLMA

- Lingcod nesting closure: 3-4 months (for spawning period within January, February, March and December)

### *Bag limits*

Within 20 finfish bag limit, the following ranges would be analyzed with the option for differential bag limits for boat and shore anglers (with diver limits set to those of shore anglers):

- Lingcod 2-3; status quo 2 fish
- Bocaccio south of 40° 10' N. lat. 1 – 2; status quo 1 fish

### *Size limits*

Lingcod 22 -26 inches TL; status quo of 24 inches TL

### *Filet size limits*

Lingcod filet size changed if size limit changed; status quo: 16 inches and must bear an intact 1 inch square patch of skin

## Management Specifications to Consider Keeping Status Quo for 2007-2008

### *Bag limits*

- RCG (all rockfish, cabezon, kelp greenling, and rock greenling) keep as 10 per bag with following sub-bag limits:
  - Bocaccio north of 40° 10' N. lat. status quo 2 fish
  - Cabezon status quo 1 fish
  - Greenlings (all species of the genus *Hexagrammos*) status quo 1 fish
  - Black Rockfish status quo 10 fish
  - Blue Rockfish status quo 10 fish
- Scorpionfish status quo 5 fish
- "Other flatfish" status quo: 20 fish except for Pacific sanddab and starry flounder which have no bag limit

### *Size limits*

Bocaccio status quo: 10 inches TL

Cabezon status quo: 15 inches TL

Kelp greenling (and other species of the genus *Hexagrammos*) status quo: 12 inches TL

California scorpionfish status quo: 10 inches TL

*Filet size limits*

All others (except lingcod): status quo

*Gear restrictions*

Rockfish status quo: limit of 2 hooks and 1 line

Lingcod status quo: limit of 2 hooks and 1 line

“Other flatfish” status quo: limit of up to 12 hooks, “Number 2” or smaller, which measure no more than 11 mm point to shank, and up to 2 pounds of weight per line

*Specific Fishing Area Prohibitions*

Farallon Islands: Status Quo

Recreational fishing for groundfish prohibited between the shoreline and the 10-fm (18-m) depth contour around the Farallon Islands except that recreational fishing for “other flatfish” is permitted given the restrictions described above

Cordell Banks: Status Quo

Recreational fishing for groundfish prohibited in waters less than 100 fm (183 m) around the Cordell Banks as defined by specific latitude and longitude coordinates except that recreational fishing for “other flatfish” is permitted given the restrictions described above

## **Cowcod Conservation Area (CCA) Management Alternatives for 2007-2008 Groundfish Management**

### **Options for Consideration**

The California Department of Fish and Game (CDFG) has received requests from both commercial and recreational fishermen to modify the boundaries of the Cowcod Conservation Area (CCA) for 2007-2008. Commercial fishermen have requested access to deeper waters within the current CCA boundaries through modification of the outer perimeter coordinates of the CCA, and recreational fishermen have requested a modification to the inner perimeter to allow access to additional fishing areas in shallow water.

### **Background**

The Cowcod Conservation Area (CCA) closures were established in 2001 in response to an overfished determination for the cowcod rockfish stock, and a federal requirement to restore the population to a healthy status. The intent of the CCAs is to reduce the cowcod catch so that the rebuilding Optimum Yield/Total Allowable Catch (OY/TAC) will not be exceeded. Rebuilding analyses suggest that recovery would be jeopardized if rebuilding OY/TACs are exceeded by any significant amount. The stock was reassessed in 2005, which indicates that cowcod biomass size is in slightly better shape than the last assessment (18% versus 7% of unfished biomass), although results of rebuilding analysis suggest that the previous analysis was not incorrect to suggest that rebuilding of cowcod may take several decades. A new series of annual rebuilding OY/TACs have been calculated for implementation beginning in 2007-2008.

The CCA closures are primarily located far offshore where cowcod catches and catch rates remained historically high, but where total groundfish effort has been much lower than for fishing grounds closer to the mainland shore. Therefore, the CCA closures were initially adopted because they were less disruptive to southern California fisheries than alternative measures that would have been applied across the board to all shelf fishing grounds.

When the CCAs were first established, enforcement concerns dictated the outer boundaries to be long, straight lines so that enforcement by aircraft could be effective. This resulted in inclusion of some deep water (slope) habitat in the closure, where cowcod are not found, and thus access to associated target species was prevented. Since then, an electronic Vessel Monitoring System (VMS) has been adopted by the Pacific Fishery Management Council (PFMC) for commercial groundfish vessels, which is intended to provide effective enforcement without the need for long straight boundaries for offshore area closures.

### **Outer Perimeter Alternatives**

For the 2007-2008 management cycle, alternative outer boundaries for the CCAs may be considered, that still preserve the original intent of maintaining cowcod fishing mortality levels within the rebuilding OY/TAC. Three alternatives are presented for consideration.

- Alternative 1. For all vessels except those carrying VMS, the current boundaries and restrictions for the CCAs would be maintained. For vessels that employ VMS, the CCA closure areas would be limited to the depth range that is utilized by cowcod, which would remove current bottom fishing restrictions from a large area of fishing grounds that are too deep to be considered cowcod habitat. Available information suggests that the normal depth limit for cowcod in the southern California Bight is within the range of 150-200+ fathoms. Alternative 1 redefines the outer perimeters as a series of waypoints that

fall within (or beyond) that depth range, centering on the 175 fathom contour. Some additional considerations would be necessary to provide effective enforcement for this alternative:

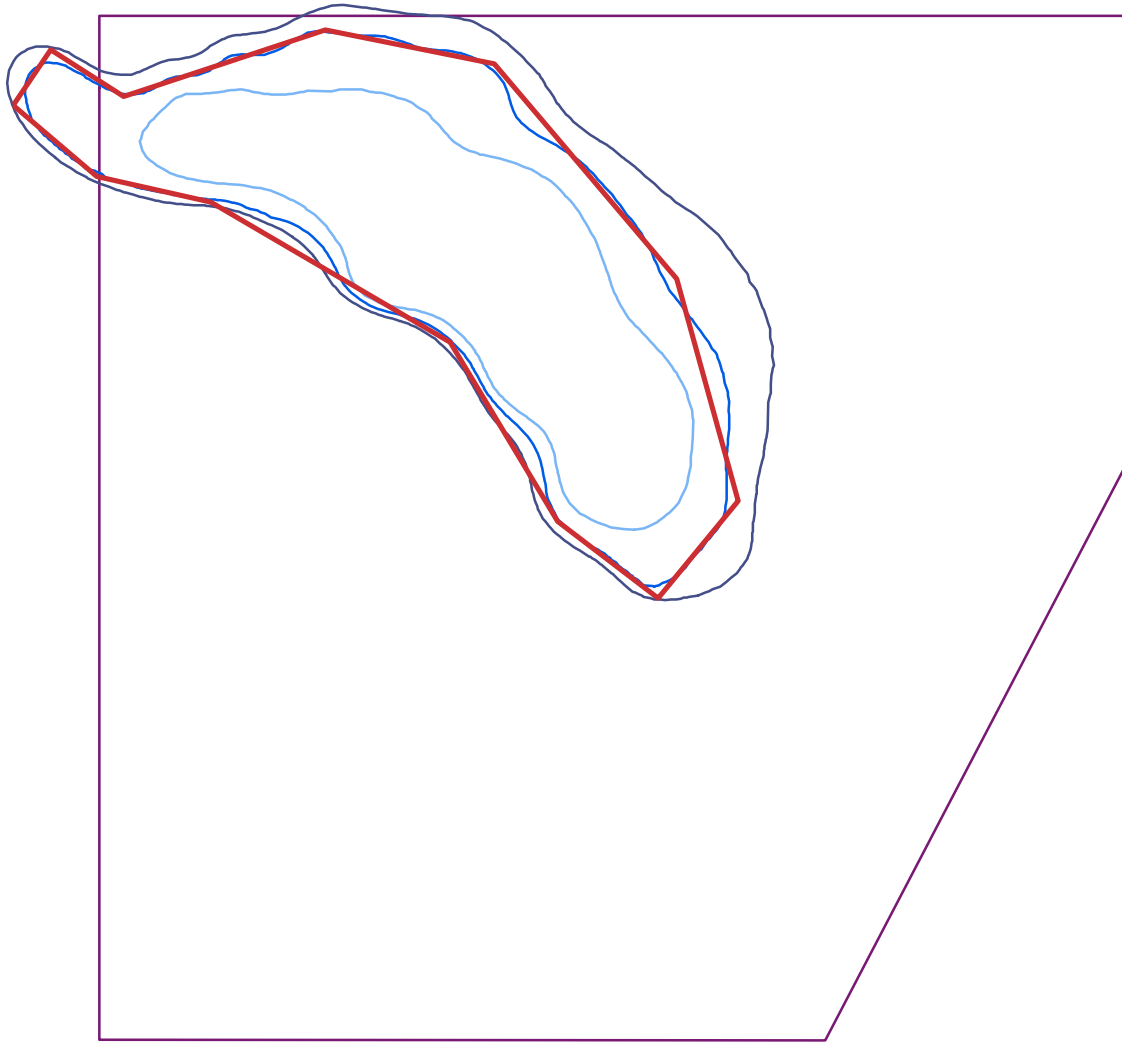
- Only vessels with VMS would be eligible to fish between the current CCA boundaries and the new outer perimeter lines.
- CDFG enforcement of the new Alternative 1 waypoints would rely on timely access to VMS information, and the ability to use that information in state court to prosecute violations.
- Vessels intending to fish using the new Alternative 1 boundaries would be required to declare their intent prior to departure from port for each trip.
- End buoys for longline sets would be required to employ radar reflectors and strobe lights. Also, the practicality of employing transponders (or other technologies) similar to VMS for the end buoys would be considered as a regulatory requirement.
- Alternative 2. Eliminate the CCAs. This alternative would provide for management of the CCA areas as part of the routine groundfish management process. Any depth and area restrictions would be developed and adopted under the Rockfish Conservation Area (RCA) regulations.
- Alternative 3. Status quo (no action). Maintain the current boundaries and restrictions for the CCAs. This alternative provides boundaries that have been shown to be easily understandable to fishers and enforcement. Conservation for cowcod and other overfished groundfish that are found within the area is achieved. However, potential fishing opportunities for target slope species are not realized.

#### **Inner Perimeter Alternatives**

The current 0-20 fathom shallow fishing opportunity within the CCA is limited to nearshore species which are typically only found in the 0-20 fathom depth zone. This eliminates any incentive to fish deeper than in very shallow water, so that cowcod are not expected to be encountered. If a 0-30 fathom (or deeper) opportunity were to be allowed, the newly open area between 20-30 fathoms (or deeper) would be expected to encounter shelf species. Consequently, fishing in that depth zone would create significant discards if no provision was made to allow retention of shelf species. If such an allowance was made, it would be difficult to have confidence that some fishing was not occurring deeper than 30 fathoms by recreational vessels that do not carry VMS, thus posing a potential for increased take of cowcod and other overfished shelf groundfish.

The CDFG will be conducting analysis relative to potential impacts to cowcod resulting from the alternatives described in this report before final action is taken by the Council.

# Cowcod East, Alternative 1, Maximum Waypoints



- cowcod east alt 1
- 150fm\_contour
- 175 fm contour
- 200fm\_contour
- existing cowcod east

0 1 2 Nautical Miles

# Cowcod West, Alternative 1, Maximum Waypoints

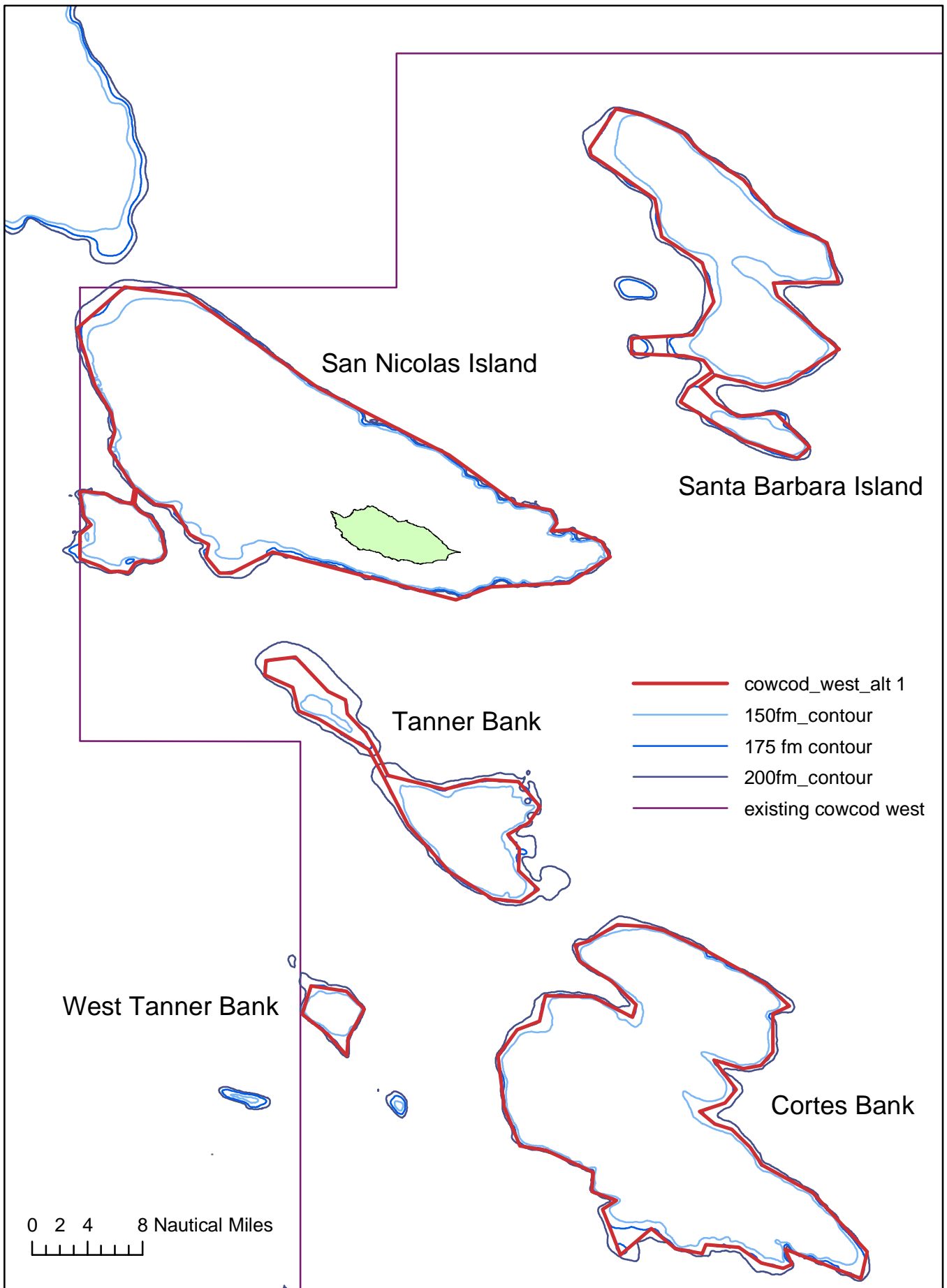


Table 1. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries designed to accomplish a regional management strategy for targeting petrale sole.

**RCA Boundaries and Trip Limits to accomplish Petrale Regional Management**

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 75             | 200*    | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 40,000  | 80,000      | 4,000      |
|                 | 2      | 75             | 200     | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|                 | 3      | 75             | 200     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|                 | 4      | 75             | 200     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|                 | 5      | 75             | 200     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|                 | 6      | 75             | 200*    | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 40,000  | 80,000      | 4,000      |
| N 40 10<br>SFFT | 1      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|                 | 2      | 75             | 200     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|                 | 3      | 75             | 200     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|                 | 4      | 75             | 200     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|                 | 5      | 75             | 200     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|                 | 6      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
| 38 40 10        | 1      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 120,000 | 10,000      | 8,000      |
|                 | 2      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 42,000  | 10,000      | 8,000      |
|                 | 3      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 42,000  | 10,000      | 8,000      |
|                 | 4      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 42,000  | 10,000      | 8,000      |
|                 | 5      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 42,000  | 10,000      | 8,000      |
|                 | 6      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 120,000 | 10,000      | 8,000      |
| S 38            | 1      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 120,000 | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 42,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 42,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 42,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 42,000  | 10,000      | 40,000     |
|                 | 6      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 120,000 | 10,000      | 40,000     |

\*includes petrale sole areas

**Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)**

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 3.6    | 3.2    | 6.8     |
|                    | POP          | 104.1  | 0.0    | 104.1   |
|                    | Darkblotched | 182.8  | 42.3   | 225.1   |
|                    | Widow        | 1.0    | 0.1    | 1.1     |
|                    | Bocaccio     | 0.0    | 52.3   | 52.3    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
|                    | Cowcod       | 0.0    | 3.0    | 3.0     |
| Target Species     | Sablefish    | 1571.7 | 464.1  | 2035.9  |
|                    | Longspine    | 308.4  | 584.5  | 892.9   |
|                    | Shortspine   | 801.9  | 366.7  | 1168.6  |
|                    | Dover        | 7709.8 | 2569.8 | 10279.6 |
|                    | Arrowtooth   | 4765.6 | 51.3   | 4816.9  |
|                    | Petrale      | 1601.9 | 397.4  | 1999.3  |
|                    | Other Flat   | 447.9  | 702.7  | 1150.7  |
| Slope Rock         | 243.8        | 265.0  | 508.9  |         |

Table 2. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 1 and OY Alternative 1 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 1 & Target Species OY Alternative 1

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 75             | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 110,000    | 60,000  | 100,000     | 8,000      |
|                 | 2      | 50             | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 110,000    | 18,000  | 100,000     | 8,000      |
|                 | 3      | 50             | 150     | 13,000            | 24,000     | 7,000       | 50,000 | 110,000    | 18,000  | 100,000     | 8,000      |
|                 | 4      | 60             | 150     | 13,000            | 24,000     | 7,000       | 50,000 | 110,000    | 18,000  | 100,000     | 8,000      |
|                 | 5      | 50             | 150     | 13,000            | 24,000     | 7,000       | 50,000 | 110,000    | 18,000  | 100,000     | 8,000      |
|                 | 6      | 75             | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 110,000    | 60,000  | 100,000     | 8,000      |
| N 40 10<br>SFFT | 1      | 75             | 150     | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 16,000  | 50,000      | 8,000      |
|                 | 2      | 50             | 150     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 18,000  | 50,000      | 8,000      |
|                 | 3      | 50             | 150     | 11,000            | 3,000      | 3,000       | 20,000 | 60,000     | 18,000  | 50,000      | 8,000      |
|                 | 4      | 60             | 150     | 11,000            | 3,000      | 3,000       | 20,000 | 60,000     | 18,000  | 50,000      | 8,000      |
|                 | 5      | 50             | 150     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 18,000  | 50,000      | 8,000      |
|                 | 6      | 75             | 150     | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 16,000  | 50,000      | 8,000      |
| 38 40 10        | 1      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 60,000  | 10,000      | 15,000     |
|                 | 2      | 60             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 18,000  | 10,000      | 15,000     |
|                 | 3      | 75             | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 15,000     |
|                 | 4      | 100            | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 15,000     |
|                 | 5      | 60             | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 15,000     |
|                 | 6      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 60,000  | 10,000      | 15,000     |
| S 38            | 1      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 60,000  | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 18,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 12,000            | 22,000     | 7,000       | 50,000 | 110,000    | 18,000  | 10,000      | 40,000     |
|                 | 6      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 110,000    | 60,000  | 10,000      | 40,000     |

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 2.2    | 2.2    | 4.5     |
|                    | POP          | 160.1  | 0.0    | 160.1   |
|                    | Darkblotched | 268.9  | 41.5   | 310.4   |
|                    | Widow        | 1.9    | 0.1    | 2.0     |
|                    | Bocaccio     | 0.0    | 28.3   | 28.3    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
|                    | Cowcod       | 0.0    | 1.2    | 1.2     |
| Target Species     | Sablefish    | 1598.3 | 437.1  | 2035.4  |
|                    | Longspine    | 310.6  | 584.5  | 895.2   |
|                    | Shortspine   | 847.9  | 320.8  | 1168.7  |
|                    | Dover        | 8014.5 | 2366.1 | 10380.7 |
|                    | Arrowtooth   | 3578.8 | 27.1   | 3605.9  |
|                    | Petrale      | 1586.7 | 272.9  | 1859.6  |
|                    | Other Flat   | 559.0  | 685.1  | 1244.1  |
|                    | Slope Rock   | 501.7  | 350.7  | 852.4   |

Table 3. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 2 and OY Alternative 1 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 2 & Target Species OY Alternative 1

| SUBAREA      | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|--------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|              |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10      | 1      | 75             | 200*    | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 40,000  | 80,000      | 4,000      |
|              | 2      | 75             | 250     | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|              | 3      | 75             | 250     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|              | 4      | 100            | 200     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|              | 5      | 75             | 250     | 14,000            | 24,000     | 7,000       | 50,000 | 80,000     | 15,000  | 80,000      | 4,000      |
|              | 6      | 75             | 200*    | 11,000            | 20,000     | 7,000       | 65,000 | 80,000     | 40,000  | 80,000      | 4,000      |
| N 40 10 SFFT | 1      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|              | 2      | 75             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|              | 3      | 75             | 250     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|              | 4      | 100            | 200     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|              | 5      | 75             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
|              | 6      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 15,000  | 50,000      | 4,000      |
| 38 40 10     | 1      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 40,000  | 10,000      | 8,000      |
|              | 2      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 15,000  | 10,000      | 8,000      |
|              | 3      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 15,000  | 10,000      | 8,000      |
|              | 4      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 15,000  | 10,000      | 8,000      |
|              | 5      | 100            | 150     | 12,500            | 22,000     | 8,000       | 50,000 | 110,000    | 15,000  | 10,000      | 8,000      |
|              | 6      | 100            | 150     | 12,500            | 22,000     | 8,000       | 65,000 | 110,000    | 40,000  | 10,000      | 8,000      |
| S 38         | 1      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 40,000  | 10,000      | 40,000     |
|              | 2      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 3      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 4      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 5      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 6      | 100            | 150     | 12,500            | 22,000     | 8,000       | 75,000 | 130,000    | 40,000  | 10,000      | 40,000     |

\*includes petrale sole areas

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total  |
|--------------------|--------------|--------|--------|--------|
| Rebuilding Species | Canary       | 4.0    | 2.9    | 6.9    |
|                    | POP          | 78.3   | 0.0    | 78.3   |
|                    | Darkblotched | 141.5  | 42.2   | 183.7  |
|                    | Widow        | 0.9    | 0.1    | 1.0    |
|                    | Bocaccio     | 0.0    | 48.2   | 48.2   |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2    |
|                    | Cowcod       | 0.0    | 2.8    | 2.8    |
| Target Species     | Sablefish    | 1510.6 | 464.1  | 1974.8 |
|                    | Longspine    | 298.9  | 584.5  | 883.5  |
|                    | Shortspine   | 761.0  | 366.7  | 1127.7 |
|                    | Dover        | 7364.9 | 2569.8 | 9934.7 |
|                    | Arrowtooth   | 4538.5 | 51.3   | 4589.8 |
|                    | Petrale      | 1585.7 | 269.4  | 1855.1 |
|                    | Other Flat   | 444.6  | 730.5  | 1175.2 |
|                    | Slope Rock   | 185.8  | 265.0  | 450.9  |

Table 4. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 3 and OY Alternative 1 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 3 & Target Species OY Alternative 1

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 100            | 150     | 10,000            | 20,000     | 7,000       | 65,000 | 110,000    | 40,000  | 115,000     | 12,000     |
|                 | 2      | 100            | 150     | 10,000            | 20,000     | 7,000       | 65,000 | 110,000    | 13,000  | 115,000     | 12,000     |
|                 | 3      | 100            | 150     | 12,000            | 24,000     | 7,000       | 50,000 | 110,000    | 13,000  | 115,000     | 12,000     |
|                 | 4      | 100            | 150     | 12,000            | 24,000     | 7,000       | 50,000 | 110,000    | 13,000  | 115,000     | 12,000     |
|                 | 5      | 100            | 150     | 12,000            | 24,000     | 7,000       | 50,000 | 110,000    | 13,000  | 115,000     | 12,000     |
|                 | 6      | 100            | 150     | 10,000            | 20,000     | 7,000       | 65,000 | 110,000    | 40,000  | 115,000     | 12,000     |
| N 40 10<br>SFFT | 1      | 100            | 150     | 5,000             | 3,000      | 3,000       | 25,000 | 100,000    | 16,000  | 75,000      | 12,000     |
|                 | 2      | 100            | 150     | 7,000             | 3,000      | 3,000       | 25,000 | 100,000    | 13,000  | 75,000      | 12,000     |
|                 | 3      | 100            | 150     | 10,000            | 3,000      | 3,000       | 25,000 | 100,000    | 13,000  | 75,000      | 12,000     |
|                 | 4      | 100            | 150     | 10,000            | 3,000      | 3,000       | 25,000 | 100,000    | 13,000  | 75,000      | 12,000     |
|                 | 5      | 100            | 150     | 7,000             | 3,000      | 3,000       | 25,000 | 100,000    | 13,000  | 75,000      | 12,000     |
|                 | 6      | 100            | 150     | 5,000             | 3,000      | 3,000       | 25,000 | 100,000    | 16,000  | 75,000      | 12,000     |
| 38 40 10        | 1      | 100            | 150     | 11,000            | 22,000     | 7,000       | 65,000 | 110,000    | 40,000  | 10,000      | 20,000     |
|                 | 2      | 100            | 150     | 11,000            | 22,000     | 7,000       | 65,000 | 110,000    | 13,000  | 10,000      | 20,000     |
|                 | 3      | 100            | 150     | 11,000            | 22,000     | 7,000       | 50,000 | 110,000    | 13,000  | 10,000      | 20,000     |
|                 | 4      | 100            | 150     | 11,000            | 22,000     | 7,000       | 50,000 | 110,000    | 13,000  | 10,000      | 20,000     |
|                 | 5      | 100            | 150     | 11,000            | 22,000     | 7,000       | 50,000 | 110,000    | 13,000  | 10,000      | 20,000     |
|                 | 6      | 100            | 150     | 11,000            | 22,000     | 7,000       | 65,000 | 110,000    | 40,000  | 10,000      | 20,000     |
| S 38            | 1      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 40,000  | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 13,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 13,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 13,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 13,000  | 10,000      | 40,000     |
|                 | 6      | 100            | 150     | 11,000            | 22,000     | 7,000       | 75,000 | 130,000    | 40,000  | 10,000      | 40,000     |

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 9.1    | 2.9    | 12.0    |
|                    | POP          | 145.1  | 0.0    | 145.1   |
|                    | Darkblotched | 242.5  | 43.4   | 286.0   |
|                    | Widow        | 1.8    | 0.1    | 1.9     |
|                    | Bocaccio     | 0.0    | 47.6   | 47.6    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
| Target Species     | Cowcod       | 0.0    | 2.7    | 2.7     |
|                    | Sablefish    | 1512.1 | 420.4  | 1932.5  |
|                    | Longspine    | 304.8  | 584.5  | 889.3   |
|                    | Shortspine   | 829.7  | 320.8  | 1150.5  |
|                    | Dover        | 7866.3 | 2569.8 | 10436.2 |
|                    | Arrowtooth   | 5571.6 | 51.3   | 5622.8  |
|                    | Petrale      | 1600.6 | 255.3  | 1855.8  |
|                    | Other Flat   | 647.2  | 732.5  | 1379.8  |
| Slope Rock         | 752.6        | 424.5  | 1177.1 |         |

<--- note for this alternative, consider a midwater yellowtail/widow fishery with the following impacts:

|              | mortality (mt) | retained | revenue      | retained | revenue      |
|--------------|----------------|----------|--------------|----------|--------------|
| Yellowtail   | 1000           | 904.2    | \$ 1,020,631 | 904.2    | \$ 1,020,631 |
| Canary       | 9.6            | 6.1      | \$ 6,131     | 6.1      | \$ 6,131     |
| Darkblotched | 0.9            | 0.9      | \$ 868       | 0.9      | \$ 868       |
| POP          | 0.0            | 0.0      | \$ 45        | 0.0      | \$ 45        |
| Widow        | 146.1          | 83.9     | \$ 81,194    | 83.9     | \$ 81,194    |
|              |                |          | \$ 1,108,869 |          | \$ 1,108,869 |

Table 5. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 4 and OY Alternative 1 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 4 & Target Species OY Alternative 1

| SUBAREA      | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|--------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|              |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10      | 1      | 0              | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 130,000    | 70,000  | 130,000     | 12,000     |
|              | 2      | 50             | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 130,000    | 15,000  | 130,000     | 12,000     |
|              | 3      | 60             | 150     | 13,000            | 24,000     | 7,000       | 65,000 | 130,000    | 15,000  | 130,000     | 12,000     |
|              | 4      | 60             | 150     | 13,000            | 24,000     | 7,000       | 65,000 | 130,000    | 15,000  | 130,000     | 12,000     |
|              | 5      | 50             | 150     | 13,000            | 24,000     | 7,000       | 65,000 | 130,000    | 15,000  | 130,000     | 12,000     |
|              | 6      | 0              | 150     | 11,000            | 20,000     | 7,000       | 65,000 | 130,000    | 70,000  | 130,000     | 12,000     |
| N 40 10 SFFT | 1      | 0              | 150     | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
|              | 2      | 50             | 150     | 7,000             | 3,000      | 3,000       | 20,000 | 40,000     | 15,000  | 20,000      | 12,000     |
|              | 3      | 60             | 150     | 11,000            | 3,000      | 3,000       | 20,000 | 40,000     | 15,000  | 20,000      | 12,000     |
|              | 4      | 60             | 150     | 11,000            | 3,000      | 3,000       | 20,000 | 40,000     | 15,000  | 20,000      | 12,000     |
|              | 5      | 50             | 150     | 7,000             | 3,000      | 3,000       | 20,000 | 40,000     | 15,000  | 20,000      | 12,000     |
|              | 6      | 0              | 150     | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
| 38 40 10     | 1      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 70,000  | 10,000      | 20,000     |
|              | 2      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 20,000     |
|              | 3      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 20,000     |
|              | 4      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 20,000     |
|              | 5      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 20,000     |
|              | 6      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 70,000  | 10,000      | 20,000     |
| S 38         | 1      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 70,000  | 10,000      | 40,000     |
|              | 2      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 3      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 4      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 5      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 15,000  | 10,000      | 40,000     |
|              | 6      | 100            | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 130,000    | 70,000  | 10,000      | 40,000     |

Mortality of Rebuilding and Target Species in the LE Btlw Fishery (mt)

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 1.9    | 2.4    | 4.3     |
|                    | POP          | 177.4  | 0.0    | 177.4   |
|                    | Darkblotched | 304.2  | 48.5   | 352.7   |
|                    | Widow        | 2.0    | 0.1    | 2.1     |
|                    | Bocaccio     | 0.0    | 25.6   | 25.6    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
|                    | Cowcod       | 0.0    | 0.7    | 0.7     |
| Target Species     | Sablefish    | 1584.7 | 434.2  | 2018.9  |
|                    | Longspine    | 310.2  | 584.5  | 894.7   |
|                    | Shortspine   | 839.8  | 320.8  | 1160.6  |
|                    | Dover        | 8980.6 | 2826.6 | 11807.1 |
|                    | Arrowtooth   | 3617.5 | 26.6   | 3644.2  |
|                    | Petrale      | 1555.8 | 258.7  | 1814.5  |
|                    | Other Flat   | 618.2  | 819.9  | 1438.1  |
|                    | Slope Rock   | 752.6  | 424.5  | 1177.1  |

Table 6. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 5 and OY Alternatives 1 and 2 for target species<sup>1</sup>.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 5 & Target Species OY Alternative 1 & 2

| SUBAREA      | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|--------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|              |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10      | 1      | 75             | 200*    | 11,000            | 7,000      | 3,000       | 65,000 | 70,000     | 50,000  | 30,000      | 2,000      |
|              | 2      | 50             | 250     | 11,000            | 7,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 3      | 60             | 250     | 13,000            | 7,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 4      | 60             | 250     | 13,000            | 7,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 5      | 50             | 250     | 13,000            | 7,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 6      | 75             | 200*    | 11,000            | 7,000      | 3,000       | 65,000 | 70,000     | 50,000  | 30,000      | 2,000      |
| N 40 10 SFFT | 1      | 75             | 200*    | 7,000             | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 2      | 50             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 3      | 60             | 250     | 11,000            | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 4      | 60             | 250     | 11,000            | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 5      | 50             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
|              | 6      | 75             | 200*    | 7,000             | 3,000      | 3,000       | 20,000 | 30,000     | 15,000  | 30,000      | 2,000      |
| 38 40 10     | 1      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 50,000  | 10,000      | 4,000      |
|              | 2      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 4,000      |
|              | 3      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 4,000      |
|              | 4      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 4,000      |
|              | 5      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 4,000      |
|              | 6      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 70,000     | 50,000  | 10,000      | 4,000      |
| S 38         | 1      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 70,000     | 50,000  | 10,000      | 40,000     |
|              | 2      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 40,000     |
|              | 3      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 40,000     |
|              | 4      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 40,000     |
|              | 5      | 75             | 150     | 12,000            | 22,000     | 7,000       | 20,000 | 70,000     | 15,000  | 10,000      | 40,000     |
|              | 6      | 75             | 150     | 12,000            | 22,000     | 7,000       | 65,000 | 70,000     | 50,000  | 10,000      | 40,000     |

\*includes petrale sole areas

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total  |
|--------------------|--------------|--------|--------|--------|
| Rebuilding Species | Canary       | 1.2    | 1.7    | 2.8    |
|                    | POP          | 61.7   | 0.0    | 61.7   |
|                    | Darkblotched | 94.6   | 28.9   | 123.5  |
|                    | Widow        | 0.8    | 0.0    | 0.8    |
|                    | Bocaccio     | 0.0    | 16.2   | 16.2   |
|                    | Yelloweye    | 0.1    | 0.1    | 0.1    |
|                    | Cowcod       | 0.0    | 0.4    | 0.4    |
| Target Species     | Sablefish    | 1468.2 | 432.9  | 1901.0 |
|                    | Longspine    | 177.3  | 584.5  | 761.8  |
|                    | Shortspine   | 345.1  | 320.8  | 665.9  |
|                    | Dover        | 4868.5 | 1395.9 | 6264.4 |
|                    | Arrowtooth   | 2934.6 | 26.7   | 2961.2 |
|                    | Petrale      | 1428.6 | 251.9  | 1680.4 |
|                    | Other Flat   | 315.1  | 420.8  | 735.8  |
|                    | Slope Rock   | 139.4  | 222.5  | 361.8  |

<sup>1</sup> None of the target species OYs under OY Alternative 2 and only some of the target species OYs under OY Alternative 1 could be attained under Rebuilding Alternative 5.

Table 7. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 1 and OY Alternative 2 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 1 & Target Species OY Alternative 2

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 0              | 200*    | 14,000            | 22,000     | 8,000       | 75,000 | 110,000    | 120,000 | 120,000     | 8,000      |
|                 | 2      | 50             | 180     | 14,000            | 22,000     | 8,000       | 75,000 | 110,000    | 35,000  | 120,000     | 8,000      |
|                 | 3      | 50             | 180     | 17,000            | 24,000     | 8,000       | 70,000 | 110,000    | 35,000  | 120,000     | 8,000      |
|                 | 4      | 60             | 180     | 17,000            | 24,000     | 8,000       | 70,000 | 110,000    | 35,000  | 120,000     | 8,000      |
|                 | 5      | 50             | 180     | 17,000            | 24,000     | 8,000       | 70,000 | 110,000    | 35,000  | 120,000     | 8,000      |
|                 | 6      | 0              | 200*    | 14,000            | 22,000     | 8,000       | 75,000 | 110,000    | 120,000 | 120,000     | 8,000      |
| N 40 10<br>SFFT | 1      | 0              | 200*    | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
|                 | 2      | 50             | 180     | 9,000             | 3,000      | 3,000       | 24,000 | 40,000     | 25,000  | 40,000      | 8,000      |
|                 | 3      | 50             | 180     | 11,000            | 3,000      | 3,000       | 24,000 | 40,000     | 25,000  | 40,000      | 8,000      |
|                 | 4      | 60             | 180     | 11,000            | 3,000      | 3,000       | 24,000 | 40,000     | 25,000  | 40,000      | 8,000      |
|                 | 5      | 50             | 180     | 9,000             | 3,000      | 3,000       | 24,000 | 40,000     | 25,000  | 40,000      | 8,000      |
|                 | 6      | 0              | 200*    | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
| 38 40 10        | 1      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 15,000     |
|                 | 2      | 60             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 35,000  | 10,000      | 15,000     |
|                 | 3      | 75             | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 15,000     |
|                 | 4      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 15,000     |
|                 | 5      | 60             | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 15,000     |
|                 | 6      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 15,000     |
| S 38            | 1      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 35,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 40,000     |
|                 | 6      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 40,000     |

\*includes petrale sole areas

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 1.4    | 2.4    | 3.8     |
|                    | POP          | 146.7  | 0.0    | 146.7   |
|                    | Darkblotched | 268.8  | 50.9   | 319.8   |
|                    | Widow        | 1.8    | 0.1    | 1.9     |
|                    | Bocaccio     | 0.0    | 30.6   | 30.6    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
|                    | Cowcod       | 0.0    | 1.3    | 1.3     |
| Target Species     | Sablefish    | 2013.9 | 560.4  | 2574.3  |
|                    | Longspine    | 324.4  | 611.1  | 935.5   |
|                    | Shortspine   | 934.4  | 366.7  | 1301.1  |
|                    | Dover        | 9961.9 | 3103.5 | 13065.4 |
|                    | Arrowtooth   | 3278.4 | 27.1   | 3305.5  |
|                    | Petrale      | 1765.8 | 337.6  | 2103.3  |
|                    | Other Flat   | 503.0  | 672.9  | 1175.9  |
|                    | Slope Rock   | 463.2  | 350.7  | 813.9   |

Table 8. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 2 and OY Alternative 2 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 2 & Target Species OY Alternative 2

| SUBAREA      | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|--------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|              |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10      | 1      | 75             | 200*    | 14,000            | 22,000     | 8,000       | 65,000 | 30,000     | 120,000 | 30,000      | 4,000      |
|              | 2      | 75             | 250     | 14,000            | 22,000     | 8,000       | 65,000 | 30,000     | 35,000  | 30,000      | 4,000      |
|              | 3      | 75             | 250     | 17,000            | 24,000     | 8,000       | 65,000 | 30,000     | 35,000  | 30,000      | 4,000      |
|              | 4      | 100            | 200     | 17,000            | 24,000     | 8,000       | 65,000 | 30,000     | 35,000  | 30,000      | 4,000      |
|              | 5      | 75             | 250     | 17,000            | 24,000     | 8,000       | 65,000 | 30,000     | 35,000  | 30,000      | 4,000      |
|              | 6      | 75             | 200*    | 14,000            | 22,000     | 8,000       | 65,000 | 30,000     | 120,000 | 30,000      | 4,000      |
| N 40 10 SFFT | 1      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 16,000  | 40,000      | 4,000      |
|              | 2      | 75             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 25,000  | 40,000      | 4,000      |
|              | 3      | 75             | 250     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 25,000  | 40,000      | 4,000      |
|              | 4      | 100            | 200     | 11,000            | 3,000      | 3,000       | 22,000 | 60,000     | 25,000  | 40,000      | 4,000      |
|              | 5      | 75             | 250     | 7,000             | 3,000      | 3,000       | 20,000 | 60,000     | 25,000  | 40,000      | 4,000      |
|              | 6      | 75             | 200*    | 5,000             | 3,000      | 3,000       | 20,000 | 60,000     | 16,000  | 40,000      | 4,000      |
| 38 40 10     | 1      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 8,000      |
|              | 2      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 35,000  | 10,000      | 8,000      |
|              | 3      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 8,000      |
|              | 4      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 8,000      |
|              | 5      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 110,000    | 35,000  | 10,000      | 8,000      |
|              | 6      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 110,000    | 120,000 | 10,000      | 8,000      |
| S 38         | 1      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 120,000 | 10,000      | 40,000     |
|              | 2      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|              | 3      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|              | 4      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|              | 5      | 100            | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|              | 6      | 100            | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 120,000 | 10,000      | 40,000     |

\*includes petrale sole areas

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North  | South  | Total   |
|--------------------|--------------|--------|--------|---------|
| Rebuilding Species | Canary       | 4.1    | 3.2    | 7.2     |
|                    | POP          | 78.2   | 0.0    | 78.2    |
|                    | Darkblotched | 147.9  | 49.9   | 197.9   |
|                    | Widow        | 0.9    | 0.1    | 0.9     |
|                    | Bocaccio     | 0.0    | 52.2   | 52.2    |
|                    | Yelloweye    | 0.1    | 0.1    | 0.2     |
|                    | Cowcod       | 0.0    | 3.0    | 3.0     |
| Target Species     | Sablefish    | 1853.1 | 575.5  | 2428.7  |
|                    | Longspine    | 313.2  | 611.1  | 924.3   |
|                    | Shortspine   | 865.8  | 366.7  | 1232.5  |
|                    | Dover        | 8268.1 | 2934.6 | 11202.7 |
|                    | Arrowtooth   | 3912.6 | 51.3   | 3963.9  |
|                    | Petrale      | 2087.3 | 380.9  | 2468.3  |
|                    | Other Flat   | 166.8  | 707.9  | 874.7   |
|                    | Slope Rock   | 185.8  | 265.0  | 450.9   |

Table 9. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 3 and OY Alternative 2 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 3 & Target Species OY Alternative 2

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 75             | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 65,000  | 80,000      | 12,000     |
|                 | 2      | 100            | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 3      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 4      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 5      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 6      | 75             | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 65,000  | 80,000      | 12,000     |
| N 40 10<br>SFFT | 1      | 75             | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 65,000  | 80,000      | 12,000     |
|                 | 2      | 100            | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 3      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 4      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 5      | 100            | 150     | 16,000            | 24,000     | 9,000       | 70,000 | 110,000    | 26,000  | 80,000      | 12,000     |
|                 | 6      | 75             | 150     | 14,000            | 22,000     | 9,000       | 75,000 | 110,000    | 65,000  | 80,000      | 12,000     |
| 38 40 10        | 1      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 110,000    | 65,000  | 10,000      | 20,000     |
|                 | 2      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 110,000    | 26,000  | 10,000      | 20,000     |
|                 | 3      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 110,000    | 26,000  | 10,000      | 20,000     |
|                 | 4      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 110,000    | 26,000  | 10,000      | 20,000     |
|                 | 5      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 110,000    | 26,000  | 10,000      | 20,000     |
|                 | 6      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 110,000    | 65,000  | 10,000      | 20,000     |
| S 38            | 1      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 130,000    | 65,000  | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 130,000    | 26,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 130,000    | 26,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 130,000    | 26,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 15,000            | 23,000     | 9,000       | 70,000 | 130,000    | 26,000  | 10,000      | 40,000     |
|                 | 6      | 100            | 150     | 15,000            | 23,000     | 9,000       | 75,000 | 130,000    | 65,000  | 10,000      | 40,000     |

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

| Rebuilding Species |            | North   | South  | Total   |
|--------------------|------------|---------|--------|---------|
|                    |            | Canary  | 10.2   | 3.1     |
| POP                |            | 172.3   | 0.0    | 172.3   |
| Darkblotched       |            | 290.0   | 52.1   | 342.1   |
| Widow              |            | 2.1     | 0.1    | 2.2     |
| Bocaccio           |            | 0.0     | 51.0   | 51.0    |
| Yelloweye          |            | 0.1     | 0.1    | 0.2     |
| Cowcod             |            | 0.0     | 2.9    | 2.9     |
| Target Species     | Sablefish  | 2026.3  | 557.0  | 2583.3  |
|                    | Longspine  | 321.5   | 611.1  | 932.6   |
|                    | Shortspine | 1076.9  | 412.5  | 1489.4  |
|                    | Dover      | 11117.9 | 2934.6 | 14052.5 |
|                    | Arrowtooth | 5686.5  | 51.3   | 5737.7  |
|                    | Petrale    | 2133.7  | 343.9  | 2477.5  |
|                    | Other Flat | 643.0   | 717.0  | 1359.9  |
|                    | Slope Rock | 752.6   | 424.5  | 1177.1  |

<--- note for this alternative, consider a midwater yellowtail/widow fishery with the following impacts:

|              | mortality (mt) | retained | revenue      |
|--------------|----------------|----------|--------------|
| Yellowtail   | 1000           | 904.2    | \$ 1,020,631 |
| Canary       | 9.6            | 6.1      | \$ 6,131     |
| Darkblotched | 0.9            | 0.9      | \$ 868       |
| POP          | 0.0            | 0.0      | \$ 45        |
| Widow        | 146.1          | 83.9     | \$ 81,194    |
|              |                |          | \$ 1,108,869 |

Table 10. Management measures and predicted impacts for 2007-2008 limited entry bottom trawl fisheries under Rebuilding Alternative 4 and OY Alternative 2 for target species.

RCA Boundaries and Trip Limits to accomplish Rebuilding Species OY Alternative 4 & Target Species OY Alternative 2

| SUBAREA         | PERIOD | RCA BOUNDARIES |         | CUMULATIVE LIMITS |            |             |        |            |         |             |            |
|-----------------|--------|----------------|---------|-------------------|------------|-------------|--------|------------|---------|-------------|------------|
|                 |        | INLINE         | OUTLINE | SABLE-FISH        | LONG-SPINE | SHORT-SPINE | DOVER  | OTHER FLAT | PETRALE | ARROW-TOOTH | SLOPE ROCK |
| N 40 10         | 1      | 0              | 150     | 14,000            | 22,000     | 8,000       | 75,000 | 130,000    | 140,000 | 120,000     | 12,000     |
|                 | 2      | 50             | 150     | 14,000            | 22,000     | 8,000       | 75,000 | 130,000    | 35,000  | 120,000     | 12,000     |
|                 | 3      | 60             | 150     | 17,000            | 24,000     | 8,000       | 70,000 | 130,000    | 35,000  | 120,000     | 12,000     |
|                 | 4      | 60             | 150     | 17,000            | 24,000     | 8,000       | 70,000 | 130,000    | 35,000  | 120,000     | 12,000     |
|                 | 5      | 50             | 150     | 17,000            | 24,000     | 8,000       | 70,000 | 130,000    | 35,000  | 120,000     | 12,000     |
|                 | 6      | 0              | 150     | 14,000            | 22,000     | 8,000       | 75,000 | 130,000    | 140,000 | 120,000     | 12,000     |
| N 40 10<br>SFFT | 1      | 0              | 150     | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
|                 | 2      | 50             | 150     | 9,000             | 3,000      | 3,000       | 24,000 | 40,000     | 30,000  | 40,000      | 12,000     |
|                 | 3      | 60             | 150     | 11,000            | 3,000      | 3,000       | 24,000 | 40,000     | 30,000  | 40,000      | 12,000     |
|                 | 4      | 60             | 150     | 11,000            | 3,000      | 3,000       | 24,000 | 40,000     | 30,000  | 40,000      | 12,000     |
|                 | 5      | 50             | 150     | 9,000             | 3,000      | 3,000       | 24,000 | 40,000     | 30,000  | 40,000      | 12,000     |
|                 | 6      | 0              | 150     | 0                 | 0          | 0           | 0      | 0          | 0       | 0           | 0          |
| 38 40 10        | 1      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 140,000 | 10,000      | 20,000     |
|                 | 2      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 35,000  | 10,000      | 20,000     |
|                 | 3      | 75             | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 20,000     |
|                 | 4      | 75             | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 20,000     |
|                 | 5      | 75             | 150     | 15,500            | 23,000     | 8,000       | 70,000 | 130,000    | 35,000  | 10,000      | 20,000     |
|                 | 6      | 75             | 150     | 15,500            | 23,000     | 8,000       | 75,000 | 130,000    | 140,000 | 10,000      | 20,000     |
| S 38            | 1      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 140,000 | 10,000      | 40,000     |
|                 | 2      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|                 | 3      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|                 | 4      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|                 | 5      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 35,000  | 10,000      | 40,000     |
|                 | 6      | 100            | 150     | 15,500            | 23,000     | 8,000       | 80,000 | 130,000    | 140,000 | 10,000      | 40,000     |

Mortality of Rebuilding and Target Species in the LE Btwl Fishery (mt)

|                    |              | North   | South  | Total   |
|--------------------|--------------|---------|--------|---------|
| Rebuilding Species | Canary       | 2.1     | 2.6    | 4.7     |
|                    | POP          | 194.3   | 0.0    | 194.3   |
|                    | Darkblotched | 331.5   | 53.2   | 384.7   |
|                    | Widow        | 2.3     | 0.1    | 2.3     |
|                    | Bocaccio     | 0.0     | 27.3   | 27.3    |
|                    | Yelloweye    | 0.1     | 0.1    | 0.2     |
|                    | Cowcod       | 0.0     | 0.8    | 0.8     |
| Target Species     | Sablefish    | 2060.5  | 556.7  | 2617.1  |
|                    | Longspine    | 324.6   | 611.1  | 935.7   |
|                    | Shortspine   | 964.2   | 366.7  | 1330.8  |
|                    | Dover        | 10079.5 | 3255.6 | 13335.0 |
|                    | Arrowtooth   | 3800.2  | 26.6   | 3826.9  |
|                    | Petrale      | 1869.5  | 334.2  | 2203.8  |
|                    | Other Flat   | 610.6   | 807.1  | 1417.7  |
|                    | Slope Rock   | 752.6   | 424.5  | 1177.1  |

Table 11. Predicted impacts (mt) and exvessel revenues (\$) for 2007-2008 limited entry whiting trawl fisheries by whiting trawl sector and a range of possible U.S. whiting OYs with no depth restrictions.

**2007-2008 Pacific Whiting Alternatives**

**Estimated bycatch with no fm line restriction (mt)**

| U.S. Whiting OY (mt) | Sector     | Allocations | Exvessel Rev | Canary | Darkblotched | POP | Widow | Yelloweye |
|----------------------|------------|-------------|--------------|--------|--------------|-----|-------|-----------|
| 349,790              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 75,070      | 8,771,497    | 4.5    | 6.3          | 1.3 | 38.8  | 0.0       |
|                      | CP         | 106,349     | 12,426,287   | 1.0    | 8.4          | 4.0 | 67.4  | 0.0       |
|                      | Shoreside  | 131,372     | 15,350,120   | 1.9    | 7.0          | 2.4 | 57.5  | 0.0       |
|                      | Total      | 347,790     | 40,637,474   | 8.9    | 21.8         | 8.3 | 169.8 | 0.0       |
| 300,000              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 63,120      | 7,375,248    | 3.8    | 5.3          | 1.1 | 32.6  | 0.0       |
|                      | CP         | 89,420      | 10,448,267   | 0.8    | 7.1          | 3.3 | 56.7  | 0.0       |
|                      | Shoreside  | 110,460     | 12,906,683   | 1.6    | 5.9          | 2.0 | 48.3  | 0.0       |
|                      | Total      | 298,000     | 34,819,768   | 7.8    | 18.3         | 7.1 | 143.7 | 0.0       |
| 250,000              | Tribal     | 32,500      | 3,797,458    | 1.5    | 0.0          | 0.6 | 5.6   | -         |
|                      | Mothership | 51,720      | 6,043,216    | 3.1    | 4.3          | 0.9 | 26.7  | 0.0       |
|                      | CP         | 73,270      | 8,561,223    | 0.7    | 5.8          | 2.7 | 46.5  | 0.0       |
|                      | Shoreside  | 90,510      | 10,575,628   | 1.3    | 4.8          | 1.6 | 39.6  | 0.0       |
|                      | Total      | 248,000     | 28,977,525   | 6.5    | 15.0         | 5.9 | 118.4 | 0.0       |
| 200,000              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 40,920      | 4,781,292    | 2.5    | 3.4          | 0.7 | 21.2  | 0.0       |
|                      | CP         | 57,970      | 6,773,497    | 0.5    | 4.6          | 2.2 | 36.8  | 0.0       |
|                      | Shoreside  | 71,610      | 8,367,260    | 1.0    | 3.8          | 1.3 | 31.3  | 0.0       |
|                      | Total      | 198,000     | 23,135,282   | 5.2    | 11.9         | 4.7 | 94.0  | 0.0       |
| 188,348              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 38,124      | 4,454,537    | 2.3    | 3.2          | 0.7 | 19.7  | 0.0       |
|                      | CP         | 54,008      | 6,310,595    | 0.5    | 4.3          | 2.0 | 34.2  | 0.0       |
|                      | Shoreside  | 66,716      | 7,795,440    | 0.9    | 3.6          | 1.2 | 29.2  | 0.0       |
|                      | Total      | 186,348     | 21,773,806   | 5.0    | 11.1         | 4.4 | 87.9  | 0.0       |
| 120,000              | Tribal     | 21,000      | 2,453,742    | 0.9    | 0.0          | 0.4 | 3.6   | -         |
|                      | Mothership | 23,280      | 2,720,148    | 1.4    | 1.9          | 0.4 | 12.0  | 0.0       |
|                      | CP         | 32,980      | 3,853,543    | 0.3    | 2.6          | 1.2 | 20.9  | 0.0       |
|                      | Shoreside  | 40,740      | 4,760,260    | 0.6    | 2.2          | 0.7 | 17.8  | 0.0       |
|                      | Total      | 118,000     | 13,787,693   | 3.2    | 6.8          | 2.8 | 54.4  | 0.0       |

Table 12. Predicted impacts (mt) and exvessel revenues (\$) for 2007-2008 limited entry whiting trawl fisheries by whiting trawl sector and a range of possible U.S. whiting OYs with a 100 fm depth restriction.

**2007-2008 Pacific Whiting Alternatives**

**Estimated bycatch with 100 fm line restriction (mt)**

| U.S. Whiting OY (mt) | Sector     | Allocations | Exvessel Rev | Canary | Darkblotched | POP  | Widow | Yelloweye |
|----------------------|------------|-------------|--------------|--------|--------------|------|-------|-----------|
| 349,790              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6  | 6.0   | -         |
|                      | Mothership | 75,070      | 8,771,497    | 4.7    | 6.7          | 1.4  | 40.0  | 0.0       |
|                      | CP         | 106,349     | 12,426,287   | 0.9    | 8.0          | 4.0  | 66.1  | 0.0       |
|                      | Shoreside  | 131,372     | 15,350,120   | 3.4    | 11.8         | 4.9  | 95.5  | 0.0       |
|                      | Total      | 347,790     | 40,637,474   | 10.6   | 26.6         | 10.9 | 207.6 | 0.0       |
| 300,000              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6  | 6.0   | -         |
|                      | Mothership | 63,120      | 7,375,248    | 4.0    | 5.7          | 1.2  | 33.6  | 0.0       |
|                      | CP         | 89,420      | 10,448,267   | 0.8    | 6.7          | 3.3  | 55.6  | 0.0       |
|                      | Shoreside  | 110,460     | 12,906,683   | 2.8    | 9.9          | 4.1  | 80.3  | 0.0       |
|                      | Total      | 298,000     | 34,819,768   | 9.2    | 22.3         | 9.2  | 175.5 | 0.0       |
| 250,000              | Tribal     | 32,500      | 3,797,458    | 1.5    | 0.0          | 0.6  | 5.6   | -         |
|                      | Mothership | 51,720      | 6,043,216    | 3.3    | 4.6          | 0.9  | 27.5  | 0.0       |
|                      | CP         | 73,270      | 8,561,223    | 0.6    | 5.5          | 2.7  | 45.5  | 0.0       |
|                      | Shoreside  | 90,510      | 10,575,628   | 2.3    | 8.1          | 3.4  | 65.8  | 0.0       |
|                      | Total      | 248,000     | 28,977,525   | 7.7    | 18.3         | 7.6  | 144.5 | 0.0       |
| 200,000              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5  | 4.8   | -         |
|                      | Mothership | 40,920      | 4,781,292    | 2.6    | 3.7          | 0.7  | 21.8  | 0.0       |
|                      | CP         | 57,970      | 6,773,497    | 0.5    | 4.4          | 2.2  | 36.0  | 0.0       |
|                      | Shoreside  | 71,610      | 8,367,260    | 1.8    | 6.4          | 2.7  | 52.1  | 0.0       |
|                      | Total      | 198,000     | 23,135,282   | 6.1    | 14.5         | 6.1  | 114.6 | 0.0       |
| 188,348              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5  | 4.8   | -         |
|                      | Mothership | 38,124      | 4,454,537    | 2.4    | 3.4          | 0.7  | 20.3  | 0.0       |
|                      | CP         | 54,008      | 6,310,595    | 0.5    | 4.1          | 2.0  | 33.6  | 0.0       |
|                      | Shoreside  | 66,716      | 7,795,440    | 1.7    | 6.0          | 2.5  | 48.5  | 0.0       |
|                      | Total      | 186,348     | 21,773,806   | 5.8    | 13.5         | 5.7  | 107.1 | 0.0       |
| 120,000              | Tribal     | 21,000      | 2,453,742    | 0.9    | 0.0          | 0.4  | 3.6   | -         |
|                      | Mothership | 23,280      | 2,720,148    | 1.5    | 2.1          | 0.4  | 12.4  | 0.0       |
|                      | CP         | 32,980      | 3,853,543    | 0.3    | 2.5          | 1.2  | 20.5  | 0.0       |
|                      | Shoreside  | 40,740      | 4,760,260    | 1.0    | 3.7          | 1.5  | 29.6  | 0.0       |
|                      | Total      | 118,000     | 13,787,693   | 3.7    | 8.2          | 3.6  | 66.1  | 0.0       |

Table 13. Predicted impacts (mt) and exvessel revenues (\$) for 2007-2008 limited entry whiting trawl fisheries by whiting trawl sector and a range of possible U.S. whiting OYs with a 125 fm depth restriction.

**2007-2008 Pacific Whiting Alternatives**

**Estimated bycatch with 125 fm line restriction (mt)**

| U.S. Whiting OY (mt) | Sector     | Allocations | Exvessel Rev | Canary | Darkblotched | POP | Widow | Yelloweye |
|----------------------|------------|-------------|--------------|--------|--------------|-----|-------|-----------|
| 349,790              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 75,070      | 8,771,497    | 6.1    | 5.5          | 1.6 | 35.5  | 0.0       |
|                      | CP         | 106,349     | 12,426,287   | 0.7    | 7.2          | 2.4 | 67.6  | 0.0       |
|                      | Shoreside  | 131,372     | 15,350,120   | 2.7    | 9.7          | 3.0 | 89.2  | 0.0       |
|                      | Total      | 347,790     | 40,637,474   | 11.1   | 22.4         | 7.7 | 198.4 | 0.0       |
| 300,000              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 63,120      | 7,375,248    | 5.1    | 4.6          | 1.3 | 29.8  | 0.0       |
|                      | CP         | 89,420      | 10,448,267   | 0.6    | 6.1          | 2.0 | 56.9  | 0.0       |
|                      | Shoreside  | 110,460     | 12,906,683   | 2.3    | 8.1          | 2.5 | 75.0  | 0.0       |
|                      | Total      | 298,000     | 34,819,768   | 9.6    | 18.9         | 6.5 | 167.8 | 0.0       |
| 250,000              | Tribal     | 32,500      | 3,797,458    | 1.5    | 0.0          | 0.6 | 5.6   | -         |
|                      | Mothership | 51,720      | 6,043,216    | 4.2    | 3.8          | 1.1 | 24.5  | 0.0       |
|                      | CP         | 73,270      | 8,561,223    | 0.5    | 5.0          | 1.7 | 46.6  | 0.0       |
|                      | Shoreside  | 90,510      | 10,575,628   | 1.9    | 6.7          | 2.1 | 61.5  | 0.0       |
|                      | Total      | 248,000     | 28,977,525   | 8.0    | 15.5         | 5.4 | 138.1 | 0.0       |
| 200,000              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 40,920      | 4,781,292    | 3.3    | 3.0          | 0.9 | 19.3  | 0.0       |
|                      | CP         | 57,970      | 6,773,497    | 0.4    | 3.9          | 1.3 | 36.9  | 0.0       |
|                      | Shoreside  | 71,610      | 8,367,260    | 1.5    | 5.3          | 1.6 | 48.6  | 0.0       |
|                      | Total      | 198,000     | 23,135,282   | 6.4    | 12.2         | 4.3 | 109.6 | 0.0       |
| 188,348              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 38,124      | 4,454,537    | 3.1    | 2.8          | 0.8 | 18.0  | 0.0       |
|                      | CP         | 54,008      | 6,310,595    | 0.4    | 3.7          | 1.2 | 34.3  | 0.0       |
|                      | Shoreside  | 66,716      | 7,795,440    | 1.4    | 4.9          | 1.5 | 45.3  | 0.0       |
|                      | Total      | 186,348     | 21,773,806   | 6.1    | 11.4         | 4.1 | 102.4 | 0.0       |
| 120,000              | Tribal     | 21,000      | 2,453,742    | 0.9    | 0.0          | 0.4 | 3.6   | -         |
|                      | Mothership | 23,280      | 2,720,148    | 1.9    | 1.7          | 0.5 | 11.0  | 0.0       |
|                      | CP         | 32,980      | 3,853,543    | 0.2    | 2.2          | 0.8 | 21.0  | 0.0       |
|                      | Shoreside  | 40,740      | 4,760,260    | 0.8    | 3.0          | 0.9 | 27.7  | 0.0       |
|                      | Total      | 118,000     | 13,787,693   | 3.9    | 7.0          | 2.6 | 63.3  | 0.0       |

Table 14. Predicted impacts (mt) and exvessel revenues (\$) for 2007-2008 limited entry whiting trawl fisheries by whiting trawl sector and a range of possible U.S. whiting OYs with a 150 fm depth restriction.

**2007-2008 Pacific Whiting Alternatives**

**Estimated bycatch with 150 fm line restriction (mt)**

| U.S. Whiting OY (mt) | Sector     | Allocations | Exvessel Rev | Canary | Darkblotched | POP | Widow | Yelloweye |
|----------------------|------------|-------------|--------------|--------|--------------|-----|-------|-----------|
| 349,790              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 75,070      | 8,771,497    | 0.6    | 5.7          | 2.0 | 32.0  | 0.0       |
|                      | CP         | 106,349     | 12,426,287   | 0.5    | 5.9          | 1.7 | 95.4  | 0.0       |
|                      | Shoreside  | 131,372     | 15,350,120   | 0.6    | 9.9          | 3.5 | 57.5  | 0.0       |
|                      | Total      | 347,790     | 40,637,474   | 3.4    | 21.5         | 7.9 | 190.9 | 0.0       |
| 300,000              | Tribal     | 35,000      | 4,089,570    | 1.6    | 0.0          | 0.6 | 6.0   | -         |
|                      | Mothership | 63,120      | 7,375,248    | 0.5    | 4.8          | 1.7 | 26.9  | 0.0       |
|                      | CP         | 89,420      | 10,448,267   | 0.4    | 4.9          | 1.5 | 80.2  | 0.0       |
|                      | Shoreside  | 110,460     | 12,906,683   | 0.5    | 8.4          | 2.9 | 48.3  | 0.0       |
|                      | Total      | 298,000     | 34,819,768   | 3.1    | 18.1         | 6.7 | 161.5 | 0.0       |
| 250,000              | Tribal     | 32,500      | 3,797,458    | 1.5    | 0.0          | 0.6 | 5.6   | -         |
|                      | Mothership | 51,720      | 6,043,216    | 0.4    | 3.9          | 1.4 | 22.1  | 0.0       |
|                      | CP         | 73,270      | 8,561,223    | 0.4    | 4.0          | 1.2 | 65.7  | 0.0       |
|                      | Shoreside  | 90,510      | 10,575,628   | 0.4    | 6.8          | 2.4 | 39.6  | 0.0       |
|                      | Total      | 248,000     | 28,977,525   | 2.7    | 14.8         | 5.6 | 133.0 | 0.0       |
| 200,000              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 40,920      | 4,781,292    | 0.3    | 3.1          | 1.1 | 17.5  | 0.0       |
|                      | CP         | 57,970      | 6,773,497    | 0.3    | 3.2          | 0.9 | 52.0  | 0.0       |
|                      | Shoreside  | 71,610      | 8,367,260    | 0.4    | 5.4          | 1.9 | 31.3  | 0.0       |
|                      | Total      | 198,000     | 23,135,282   | 2.2    | 11.7         | 4.4 | 105.5 | 0.0       |
| 188,348              | Tribal     | 27,500      | 3,213,234    | 1.2    | 0.0          | 0.5 | 4.8   | -         |
|                      | Mothership | 38,124      | 4,454,537    | 0.3    | 2.9          | 1.0 | 16.3  | 0.0       |
|                      | CP         | 54,008      | 6,310,595    | 0.3    | 3.0          | 0.9 | 48.4  | 0.0       |
|                      | Shoreside  | 66,716      | 7,795,440    | 0.3    | 5.0          | 1.8 | 29.2  | 0.0       |
|                      | Total      | 186,348     | 21,773,806   | 2.1    | 10.9         | 4.2 | 98.6  | 0.0       |
| 120,000              | Tribal     | 21,000      | 2,453,742    | 0.9    | 0.0          | 0.4 | 3.6   | -         |
|                      | Mothership | 23,280      | 2,720,148    | 0.2    | 1.8          | 0.6 | 9.9   | 0.0       |
|                      | CP         | 32,980      | 3,853,543    | 0.2    | 1.8          | 0.5 | 29.6  | 0.0       |
|                      | Shoreside  | 40,740      | 4,760,260    | 0.2    | 3.1          | 1.1 | 17.8  | 0.0       |
|                      | Total      | 118,000     | 13,787,693   | 1.5    | 6.7          | 2.6 | 61.0  | 0.0       |

Table 15. Sablefish total catch (mt) allocations for 2007-2008 under sablefish OY Alternatives 1 and 2.

**Overview of sablefish total catch allocations to fishery sectors for 2007 and 2008.**

|  | N. of Conception  |                   |  |
|--|-------------------|-------------------|--|
|  | OY Alt. 1<br>(mt) | OY Alt. 2<br>(mt) |  |
| <b>Total catch OY (mt)</b>               | 4,411             | 5,723             |  |
| <b>Tribal</b> Total catch allocated (mt) | 441               | 572               |  |
| Compensation research                    | 48                | 86                | These values were previously:<br>53 53 |
| Non-groundfish+rec                       | 19                | 19                |  |
| <b>Commercial total catch OY (mt)</b>    | 3,903             | 5,046             |  |

*Commercial catch OY divided by gear*

|   |              |              |
|---|--------------|--------------|
| <b>OA</b> Total catch allocated (mt)            | <b>367</b>   | <b>474</b>   |
| <b>LE Trawl</b> Total catch allocated (mt)      | 2,051        | 2,651        |
| At-sea bycatch                                  | 53           | 53           |
| Shoreside total catch target                    | <b>1,998</b> | <b>2,598</b> |
| <b>LE fixed-gear</b> Total catch allocated (mt) | <b>1,485</b> | <b>1,920</b> |



Table 17. Sablefish primary fishery tier limits and projected bycatch of depleted species associated with all sablefish catch in the 2007-2008 limited entry fixed-gear and open access fisheries under draft Alternative 2 (sablefish OY Alternative 2 and status quo RCA).

| LE FG   | Seaward boundary of RCA at 100 fm North of<br>8,727,732 40o10' and at 150 fm South of 40o10' |                                    |        |                     | OA         | Seaward boundary of RCA at 100 fm North of<br>2,156,015 40o10' and at 150 fm South of 40o10' |                                    |            |                     |                            |
|---|--|------------------------------------|--------|---------------------|------------|--|------------------------------------|------------|---------------------|----------------------------|
|   | Coastwide<br>summary   | Gear rates and bycatch<br>Longline | Pot    | Combined<br>bycatch |            | Coastwide<br>summary   | Gear rates and bycatch<br>Longline | Pot        | Combined<br>bycatch |                            |
| Total catch allocated (mt)                                  | <b>1,920</b>   |                                    |        |                     | <b>474</b> |  |                                    |            |                     |                            |
| Observed sablefish discard rate                             | 15.91%   | 14.89%                             | 18.00% |                     | 15.91%     | 14.89%   | 18.00%                             |            |                     |                            |
| Discard mortality percentage of<br>landed mt + discarded mt | 3.65%  | 3.39%                              | 4.207% |                     | 3.65%      | 3.39%  | 4.207%                             |            |                     | Total Landed Catch (mt)    |
| Assumed discard mortality (mt)                              | 70   |                                    |        |                     | 17         |  |                                    |            |                     |                            |
| Landed catch target (mt)                                    | <b>1,850</b>   |                                    |        |                     | <b>457</b> |  |                                    |            |                     | <b>2,307</b>               |
| Amount allocated to:<br>DTL (mt)                            | 277  |                                    |        |                     | 69         |  |                                    |            |                     |                            |
| Primary fishery (mt)  | <b>1,572</b>   |                                    |        |                     |            |  |                                    |            |                     |                            |
| Primary fishery tier limits (lb)                            |  |                                    |        |                     |            |  |                                    |            |                     |                            |
| Tier 1  | 48,479   | 48,500                             |        |                     |            |  |                                    |            |                     |                            |
| Tier 2  | 22,036   | 22,000                             |        |                     |            |  |                                    |            |                     |                            |
| Tier 3  | 12,592   | 12,600                             |        |                     |            |  |                                    |            |                     |                            |
| Percent of total catch, by area                             | 100%   |                                    |        |                     | 100%       |  |                                    |            |                     |                            |
| Percent of area catch, by gear                              |  | 63.2%                              | 36.9%  |                     |            | 63.2%  | 36.9%                              |            |                     |                            |
| Estimated distribution of total catch, by                   | 1,920  | 1,212                              | 708    |                     | 474        | 300  | 175                                |            |                     |                            |
| Bycatch ratios <sup>2</sup>                                 |  |                                    |        |                     |            |  |                                    |            |                     |                            |
| Lingcod   |  | 0.368%                             | 0.148% |                     |            | 0.368%   | 0.148%                             |            |                     |                            |
| Widow rockfish  |  | 0.001%                             | 0.000% |                     |            | 0.001%   | 0.000%                             |            |                     |                            |
| Canary rockfish   |  | 0.036%                             | 0.000% |                     |            | 0.036%   | 0.000%                             |            |                     |                            |
| Yelloweye rockfish  |  | 0.081%                             | 0.000% |                     |            | 0.081%   | 0.000%                             |            |                     |                            |
| Bocaccio rockfish <sup>4</sup>                              |  | 0.000%                             | 0.000% |                     |            | 0.000%   | 0.000%                             |            |                     |                            |
| Cowcod rockfish <sup>4</sup>                                |  | 0.000%                             | 0.000% |                     |            | 0.000%   | 0.000%                             |            |                     |                            |
| Pacific ocean perch   |  | 0.018%                             | 0.000% |                     |            | 0.018%   | 0.000%                             |            |                     |                            |
| Darkblotched rockfish                                       |  | 0.045%                             | 0.009% |                     |            | 0.045%   | 0.009%                             |            |                     |                            |
| Projected bycatch impacts (mt)                              |  |                                    |        |                     |            |  |                                    |            |                     | Total bycatch impacts (mt) |
| Lingcod   |  | 4.5                                | 1.0    | <b>5.5</b>          |            | 1.1  | 0.3                                | <b>1.4</b> |                     | <b>6.9</b>                 |
| Widow rockfish  |  | 0.0                                | 0.0    | <b>0.0</b>          |            | 0.0  | 0.0                                | <b>0.0</b> |                     | <b>0.0</b>                 |
| Canary rockfish   |  | 0.4                                | 0.0    | <b>0.4</b>          |            | 0.1  | 0.0                                | <b>0.1</b> |                     | <b>0.5</b>                 |
| Yelloweye rockfish  |  | 1.0                                | 0.0    | <b>1.0</b>          |            | 0.2  | 0.0                                | <b>0.2</b> |                     | <b>1.2</b>                 |
| Bocaccio rockfish <sup>4</sup>                              |  | 0.0                                | 0.0    | <b>0.0</b>          |            | 0.0  | 0.0                                | <b>0.0</b> |                     | <b>0.0</b>                 |
| Cowcod rockfish <sup>4</sup>                                |  | 0.0                                | 0.0    | <b>0.0</b>          |            | 0.0  | 0.0                                | <b>0.0</b> |                     | <b>0.0</b>                 |
| Pacific ocean perch   |  | 0.2                                | 0.0    | <b>0.2</b>          |            | 0.1  | 0.0                                | <b>0.1</b> |                     | <b>0.3</b>                 |
| Darkblotched rockfish                                       |  | 0.6                                | 0.1    | <b>0.6</b>          |            | 0.1  | 0.0                                | <b>0.2</b> |                     | <b>0.8</b>                 |

<sup>1</sup> As in previous years, the rate of mortality for discarded sablefish in the fixed-gear fishery is assumed to be 20%.

<sup>2</sup> The bycatch ratios are calculated by dividing the total catch of each species by the total poundage of sablefish that was caught.

<sup>4</sup> Please note that the observer data on which these rates are based include no observations from south of Ft. Bragg, CA, so these are likely underestimates of true bycatch.

Table 18. Sablefish primary fishery tier limits and projected bycatch of depleted species associated with all sablefish catch in the 2007-2008 limited entry fixed-gear and open access fisheries under draft Alternative 3 (sablefish OY Alternative 1 and the northern RCA seaward boundary extended to 150 fm).

| LE FG  | Seaward boundary of RCA at 150 fm North of 40o10' and at 150 fm South of 40°10' |                                 |        |                  | OA         | Seaward boundary of RCA at 150 fm North of 40o10' and at 150 fm South of 40°10' |                                 |            |                  |
|--|---|---------------------------------|--------|------------------|------------|---|---------------------------------|------------|------------------|
|  | Coastwide summary   | Gear rates and bycatch Longline | Pot    | Combined bycatch |            | Coastwide summary   | Gear rates and bycatch Longline | Pot        | Combined bycatch |
| Total catch allocated (mt)                               | <b>1,485</b>  |                                 |        |                  | <b>367</b> |   |                                 |            |                  |
| Observed sablefish discard rate                          | 15.91%  | 14.89%                          | 18.00% |                  | 15.91%     | 14.89%  | 18.00%                          |            |                  |
| Discard mortality percentage of landed mt + discarded mt | 3.65%   | 3.39%                           | 4.207% |                  | 3.65%      | 3.39%   | 4.207%                          |            |                  |
| Assumed discard mortality (mt)                           | 54  |                                 |        |                  | 13         |   |                                 |            |                  |
| Landed catch target (mt)                                 | <b>1,431</b>  |                                 |        |                  | <b>353</b> |   |                                 |            |                  |
| Amount allocated to: DTL (mt)                            | 215   |                                 |        |                  | 53         |   |                                 |            |                  |
| Primary fishery (mt)                                     | <b>1,216</b>  |                                 |        |                  |            |   |                                 |            |                  |
| Primary fishery tier limits (lb)                         |   |                                 |        |                  |            |   |                                 |            |                  |
| Tier 1   | 37,497  | 37,500                          |        |                  |            |   |                                 |            |                  |
| Tier 2   | 17,044  | 17,000                          |        |                  |            |   |                                 |            |                  |
| Tier 3   | 9,740   | 9,700                           |        |                  |            |   |                                 |            |                  |
| Percent of total catch, by area                          | 100%  |                                 |        |                  | 100%       |   |                                 |            |                  |
| Percent of area catch, by gear                           |   | 63.2%                           | 36.9%  |                  |            | 63.2%   | 36.9%                           |            |                  |
| Estimated distribution of total catch, by gear           | 1,485   | 938                             | 547    |                  | 367        | 232   | 135                             |            |                  |
| Bycatch ratios <sup>2</sup>                              |   |                                 |        |                  |            |   |                                 |            |                  |
| Lingcod  |   | 0.228%                          | 0.272% |                  |            | 0.228%  | 0.272%                          |            |                  |
| Widow rockfish   |   | 0.000%                          | 0.000% |                  |            | 0.000%  | 0.000%                          |            |                  |
| Canary rockfish  |   | 0.008%                          | 0.000% |                  |            | 0.008%  | 0.000%                          |            |                  |
| Yelloweye rockfish                                       |   | 0.030%                          | 0.000% |                  |            | 0.030%  | 0.000%                          |            |                  |
| Bocaccio rockfish <sup>4</sup>                           |   | 0.000%                          | 0.000% |                  |            | 0.000%  | 0.000%                          |            |                  |
| Cowcod rockfish <sup>4</sup>                             |   | 0.000%                          | 0.000% |                  |            | 0.000%  | 0.000%                          |            |                  |
| Pacific ocean perch                                      |   | 0.017%                          | 0.000% |                  |            | 0.017%  | 0.000%                          |            |                  |
| Darkblotched rockfish                                    |   | 0.068%                          | 0.018% |                  |            | 0.068%  | 0.018%                          |            |                  |
| Projected bycatch impacts (mt)                           |   |                                 |        |                  |            |   |                                 |            |                  |
| Lingcod  |   | 2.1                             | 1.5    | <b>3.6</b>       |            | 0.5   | 0.4                             | <b>0.9</b> | <b>4.5</b>       |
| Widow rockfish   |   | 0.0                             | 0.0    | <b>0.0</b>       |            | 0.0   | 0.0                             | <b>0.0</b> | <b>0.0</b>       |
| Canary rockfish  |   | 0.1                             | 0.0    | <b>0.1</b>       |            | 0.0   | 0.0                             | <b>0.0</b> | <b>0.1</b>       |
| Yelloweye rockfish                                       |   | 0.3                             | 0.0    | <b>0.3</b>       |            | 0.1   | 0.0                             | <b>0.1</b> | <b>0.3</b>       |
| Bocaccio rockfish <sup>4</sup>                           |   | 0.0                             | 0.0    | <b>0.0</b>       |            | 0.0   | 0.0                             | <b>0.0</b> | <b>0.0</b>       |
| Cowcod rockfish <sup>4</sup>                             |   | 0.0                             | 0.0    | <b>0.0</b>       |            | 0.0   | 0.0                             | <b>0.0</b> | <b>0.0</b>       |
| Pacific ocean perch                                      |   | 0.2                             | 0.0    | <b>0.2</b>       |            | 0.0   | 0.0                             | <b>0.0</b> | <b>0.2</b>       |
| Darkblotched rockfish                                    |   | 0.6                             | 0.1    | <b>0.7</b>       |            | 0.2   | 0.0                             | <b>0.2</b> | <b>0.9</b>       |

Total Landed Catch (mt)  
**1,784**

Total bycatch impacts (mt)

<sup>1</sup> As in previous years, the rate of mortality for discarded sablefish in the fixed-gear fishery is assumed to be 20%.

<sup>2</sup> The bycatch ratios are calculated by dividing the total catch of each species by the total poundage of sablefish that was caught.

<sup>4</sup> Please note that the observer data on which these rates are based include no observations from south of Ft. Bragg, CA, so these are likely underestimates of true bycatch.

Table 19. Sablefish primary fishery tier limits and projected bycatch of depleted species associated with all sablefish catch in the 2007-2008 limited entry fixed-gear and open access fisheries under draft Alternative 4 (sablefish OY Alternative 2 and the northern RCA seaward boundary extended to 150 fm).

| LE FG  | Seaward boundary of RCA at 100 fm North of 40°10' and at 150 fm South of 40°10' |                   |                                 |            | OA         | Seaward boundary of RCA at 100 fm North of 40°10' and at 150 fm South of 40°10' |           |                   |                                 |  |                            |
|--|---|-------------------|---------------------------------|------------|------------|---|-----------|-------------------|---------------------------------|--|----------------------------|
|  | 8,727,732   | Coastwide summary | Gear rates and bycatch Longline | Pot        |            | Combined bycatch  | 2,156,015 | Coastwide summary | Gear rates and bycatch Longline |  | Pot                        |
| Total catch allocated (mt)                               | <b>1,920</b>  |                   |                                 |            | <b>474</b> |   |           |                   |                                 |  |                            |
| Observed sablefish discard rate                          | 15.91%  | 14.89%            | 18.00%                          |            | 15.91%     | 14.89%  | 18.00%    |                   |                                 |  |                            |
| Discard mortality percentage of landed mt + discarded mt | 3.65%   | 3.39%             | 4.207%                          |            | 3.65%      | 3.39%   | 4.207%    |                   |                                 |  | Total Landed Catch (mt)    |
| Assumed discard mortality (mt)                           | 70  |                   |                                 |            | 17         |   |           |                   |                                 |  |                            |
| Landed catch target (mt)                                 | <b>1,850</b>  |                   |                                 |            | <b>457</b> |   |           |                   |                                 |  | <b>2,307</b>               |
| Amount allocated to: DTL (mt)                            | 277   |                   |                                 |            | 69         |   |           |                   |                                 |  |                            |
| Primary fishery (mt)                                     | <b>1,572</b>  |                   |                                 |            |            |   |           |                   |                                 |  |                            |
| Primary fishery tier limits (lb)                         |   |                   |                                 |            |            |   |           |                   |                                 |  |                            |
| Tier 1   | 48,479  | 48,500            |                                 |            |            |   |           |                   |                                 |  |                            |
| Tier 2   | 22,036  | 22,000            |                                 |            |            |   |           |                   |                                 |  |                            |
| Tier 3   | 12,592  | 12,600            |                                 |            |            |   |           |                   |                                 |  |                            |
| Percent of total catch, by area                          | 100%  |                   |                                 |            | 100%       |   |           |                   |                                 |  |                            |
| Percent of area catch, by gear                           |   | 63.2%             | 36.9%                           |            |            | 63.2%   | 36.9%     |                   |                                 |  |                            |
| Estimated distribution of total catch, by                | 1,920   | 1,212             | 708                             |            | 474        | 300   | 175       |                   |                                 |  |                            |
| Bycatch ratios <sup>2</sup>                              |   |                   |                                 |            |            |   |           |                   |                                 |  |                            |
| Lingcod  |   | 0.228%            | 0.272%                          |            |            | 0.228%  | 0.272%    |                   |                                 |  |                            |
| Widow rockfish   |   | 0.000%            | 0.000%                          |            |            | 0.000%  | 0.000%    |                   |                                 |  |                            |
| Canary rockfish  |   | 0.008%            | 0.000%                          |            |            | 0.008%  | 0.000%    |                   |                                 |  |                            |
| Yelloweye rockfish                                       |   | 0.030%            | 0.000%                          |            |            | 0.030%  | 0.000%    |                   |                                 |  |                            |
| Bocaccio rockfish <sup>4</sup>                           |   | 0.000%            | 0.000%                          |            |            | 0.000%  | 0.000%    |                   |                                 |  |                            |
| Cowcod rockfish <sup>4</sup>                             |   | 0.000%            | 0.000%                          |            |            | 0.000%  | 0.000%    |                   |                                 |  |                            |
| Pacific ocean perch                                      |   | 0.017%            | 0.000%                          |            |            | 0.017%  | 0.000%    |                   |                                 |  |                            |
| Darkblotched rockfish                                    |   | 0.068%            | 0.018%                          |            |            | 0.068%  | 0.018%    |                   |                                 |  |                            |
| Projected bycatch impacts (mt)                           |   |                   |                                 |            |            |   |           |                   |                                 |  | Total bycatch impacts (mt) |
| Lingcod  |   | 2.8               | 1.9                             | <b>4.7</b> |            | 0.7   | 0.5       | <b>1.2</b>        |                                 |  | <b>5.9</b>                 |
| Widow rockfish   |   | 0.0               | 0.0                             | <b>0.0</b> |            | 0.0   | 0.0       | <b>0.0</b>        |                                 |  | <b>0.0</b>                 |
| Canary rockfish  |   | 0.1               | 0.0                             | <b>0.1</b> |            | 0.0   | 0.0       | <b>0.0</b>        |                                 |  | <b>0.1</b>                 |
| Yelloweye rockfish                                       |   | 0.4               | 0.0                             | <b>0.4</b> |            | 0.1   | 0.0       | <b>0.1</b>        |                                 |  | <b>0.4</b>                 |
| Bocaccio rockfish <sup>4</sup>                           |   | 0.0               | 0.0                             | <b>0.0</b> |            | 0.0   | 0.0       | <b>0.0</b>        |                                 |  | <b>0.0</b>                 |
| Cowcod rockfish <sup>4</sup>                             |   | 0.0               | 0.0                             | <b>0.0</b> |            | 0.0   | 0.0       | <b>0.0</b>        |                                 |  | <b>0.0</b>                 |
| Pacific ocean perch                                      |   | 0.2               | 0.0                             | <b>0.2</b> |            | 0.1   | 0.0       | <b>0.1</b>        |                                 |  | <b>0.3</b>                 |
| Darkblotched rockfish                                    |   | 0.8               | 0.1                             | <b>0.9</b> |            | 0.2   | 0.0       | <b>0.2</b>        |                                 |  | <b>1.2</b>                 |

<sup>1</sup> As in previous years, the rate of mortality for discarded sablefish in the fixed-gear fishery is assumed to be 20%.

<sup>2</sup> The bycatch ratios are calculated by dividing the total catch of each species by the total poundage of sablefish that was caught.

<sup>4</sup> Please note that the observer data on which these rates are based include no observations from south of Ft. Bragg, CA, so these are likely underestimates of true bycatch.

Table 20. Summary of predicted impacts (mt) and sablefish exvessel revenues (\$) for draft Alternatives 1-4 for the 2007-2008 primary sablefish fishery.

| Sablefish 2007 - 08                   | Draft Alternative 1                     |              | Draft Alternative 2 |              | Draft Alternative 3                     |              | Draft Alternative 4 |              |
|---------------------------------------|---|--------------|---------------------|--------------|---|--------------|---------------------|--------------|
|                                       | 100 fm North: 150 fm South <sup>1</sup> |              |                     |              | 150 fm North: 150 fm South <sup>2</sup> |              |                     |              |
|                                       | OY Alt 1                                | OY Alt 2     | OY Alt 1            | OY Alt 2     | OY Alt 1                                | OY Alt 2     | OY Alt 1            | OY Alt 2     |
| Total catch OY (mt)                   | 4411                                    | 5723         | 4411                | 5723         | 4411                                    | 5723         | 4411                | 5723         |
| Landed Catch (mt)                     | 1784                                    | 2307         | 1784                | 2307         | 1784                                    | 2307         | 1784                | 2307         |
| Exvessel Revenue (USD) <sup>3</sup>   | \$8,418,257                             | \$10,883,747 | \$8,418,257         | \$10,883,747 | \$8,418,257                             | \$10,883,747 | \$8,418,257         | \$10,883,747 |
| <b>Projected bycatch impacts (mt)</b> | 5.31                                    | 6.87         | 4.52                | 5.85         | 4.52                                    | 5.85         | 4.52                | 5.85         |
| Lingcod                               | 0.01                                    | 0.02         | 0.00                | 0.00         | 0.00                                    | 0.00         | 0.00                | 0.00         |
| Widow rockfish                        | 0.42                                    | 0.54         | 0.10                | 0.13         | 0.10                                    | 0.13         | 0.10                | 0.13         |
| Canary rockfish                       | 0.95                                    | 1.23         | 0.35                | 0.45         | 0.35                                    | 0.45         | 0.35                | 0.45         |
| Yelloweye rockfish                    | 0.00                                    | 0.00         | 0.00                | 0.00         | 0.00                                    | 0.00         | 0.00                | 0.00         |
| Bocaccio rockfish                     | 0.00                                    | 0.00         | 0.00                | 0.00         | 0.00                                    | 0.00         | 0.00                | 0.00         |
| Cowcod rockfish                       | 0.22                                    | 0.28         | 0.20                | 0.26         | 0.20                                    | 0.26         | 0.20                | 0.26         |
| Pacific ocean perch                   | 0.59                                    | 0.76         | 0.91                | 1.18         | 0.91                                    | 1.18         | 0.91                | 1.18         |
| Darkblotched rockfish                 | 0.00                                    | 0.00         | 0.00                | 0.00         | 0.00                                    | 0.00         | 0.00                | 0.00         |

<sup>1</sup>Seaward boundary of RCA at 100 fm North of 40°10' and at 150 fm South of 40°10'

<sup>2</sup>Seaward boundary of RCA at 150 fm North of 40°10' and at 150 fm South of 40°10'

<sup>3</sup>Only revenue from sablefish considered. Price per lb for sablefish assumed to be \$2.14 .

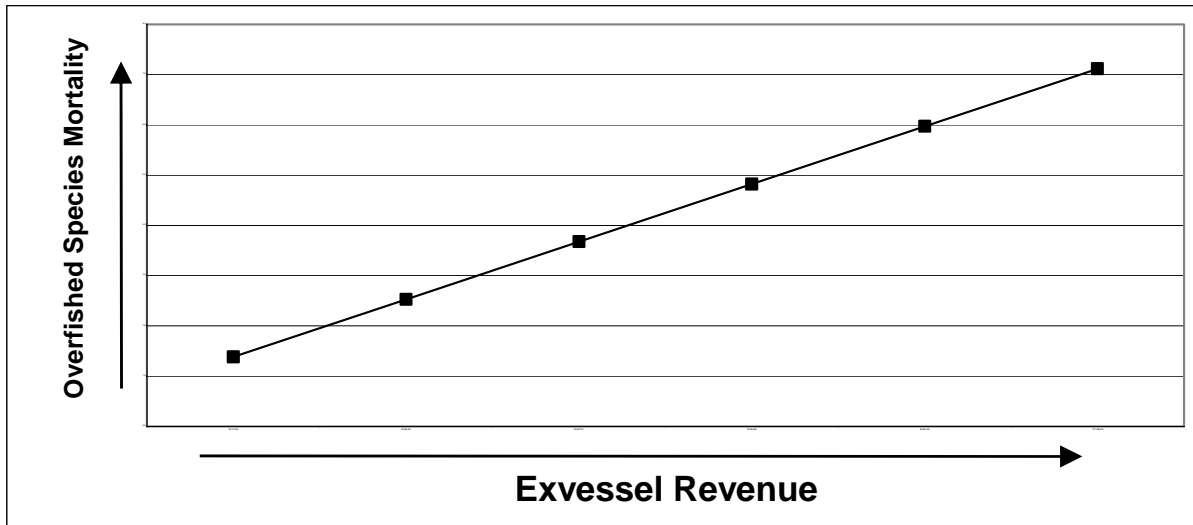


Table 21. Summary of predicted exvessel revenues (mt) from sablefish vs. depleted species impacts (mt) in the 2007-2008 primary sablefish fisheries.

| Revenue      | Lingcod 2/ | Widow rockfish | Canary rockfish | Yelloweye rockfish | Bocaccio rockfish 4 | Cowcod rockfish 4 | Pacific ocean perch | Darkblotched rockfish |
|--------------|------------|----------------|-----------------|--------------------|---------------------|-------------------|---------------------|-----------------------|
| \$ 8,727,732 | 5.51       | 0.01           | 0.44            | 0.98               | 0                   | 0                 | 0.224994803         | 0.613273169           |

| Exvessel Revenue | Lingcod | Widow | Canary | Yelloweye | Bocaccio | Cowcod | Pacific Ocean Perch | Darkblotched |
|------------------|---------|-------|--------|-----------|----------|--------|---------------------|--------------|
| \$ 2,191,036     | 1.4     | 0.003 | 0.110  | 0.247     | 0.000    | 0.000  | 0.000               | 0.154        |
| \$ 4,009,323     | 2.5     | 0.006 | 0.201  | 0.451     | 0.000    | 0.000  | 0.000               | 0.282        |
| \$ 5,827,611     | 3.7     | 0.008 | 0.292  | 0.656     | 0.000    | 0.000  | 0.000               | 0.409        |
| \$ 7,645,898     | 4.8     | 0.011 | 0.383  | 0.861     | 0.000    | 0.000  | 0.000               | 0.537        |
| \$ 9,464,185     | 6.0     | 0.013 | 0.474  | 1.065     | 0.000    | 0.000  | 0.000               | 0.665        |
| \$ 11,280,824    | 7.1     | 0.016 | 0.565  | 1.270     | 0.000    | 0.000  | 0.000               | 0.793        |

2/ Lingcod is no longer a depleted species.

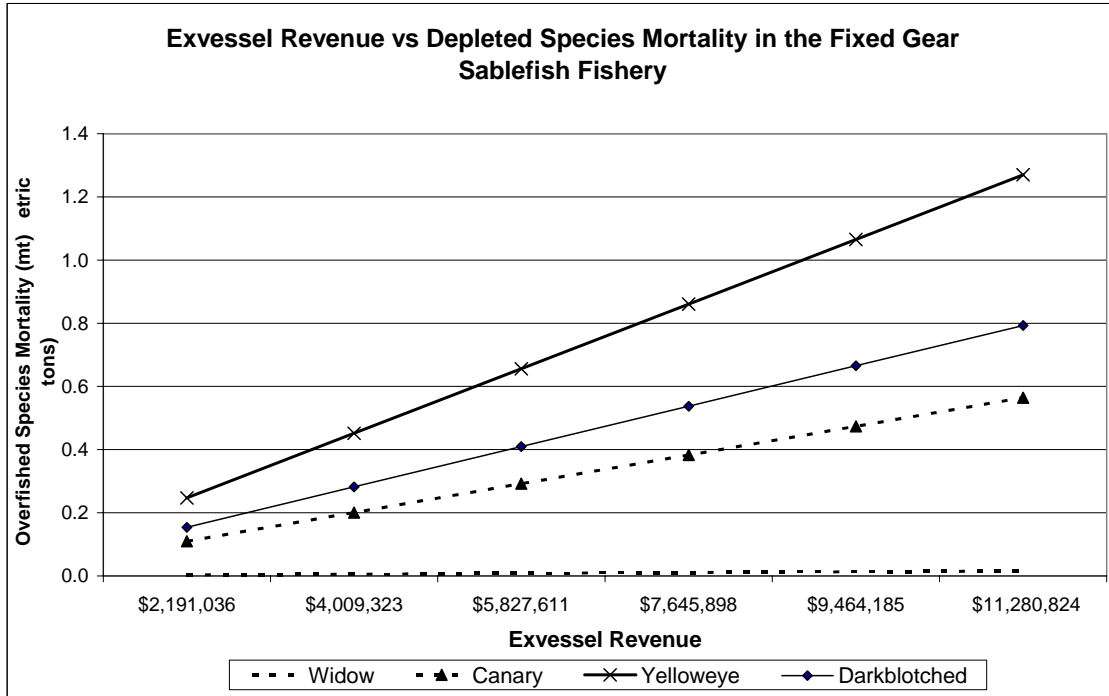


Table 22. The GMT model for estimating discard mortality in nearshore commercial fisheries.

| Area  | Species                        | All depths   |                   |             | 0 - 10 fm              |                        |                  |     |                      |    | 11 - 20 fm                 |                        |                        |                  |     |                      |    |                            |
|-------|--------------------------------|--------------|-------------------|-------------|------------------------|------------------------|------------------|-----|----------------------|----|----------------------------|------------------------|------------------------|------------------|-----|----------------------|----|----------------------------|
|       |                                | landed<br>mt | retention<br>rate | catch<br>mt | % of<br>total<br>catch | stratum<br>catch<br>mt | gross<br>discard |     | discard<br>mortality |    | stratum<br>mortality<br>mt | % of<br>total<br>catch | stratum<br>catch<br>mt | gross<br>discard |     | discard<br>mortality |    | stratum<br>mortality<br>mt |
|       |                                |              |                   |             |                        |                        | %                | mt  | %                    | mt |                            |                        |                        | %                | mt  | %                    | mt |                            |
| South | Shallow nearshore species      | 42.5         | 71%               | 60          | 81%                    | 49                     | 24%              | 15% | 1.8                  | 39 | 18%                        | 11                     | 52%                    | 6                | 45% | 2.5                  | 8  |                            |
|       | Deeper nearshore species       | 38.25        | 84%               | 46          | 43%                    | 20                     | 17%              | 10% | 0.3                  | 17 | 53%                        | 24                     | 13%                    | 3                | 40% | 1.2                  | 22 |                            |
|       | Cabezon                        | 38.25        | 70%               | 55          | 97%                    | 53                     | 29%              | 7%  | 1.1                  | 39 | 2%                         | 1                      | 72%                    | 1                | 7%  | 0.1                  | 0  |                            |
|       | Kelp Greenling                 | 2.55         | 38%               | 7           | 98%                    | 7                      | 62%              | 7%  | 0.3                  | 3  | 1%                         | 0                      | 87%                    | 0                | 7%  | 0.0                  | 0  |                            |
|       | All nearshore groundfish       | 122          | 74%               | 165         | 78%                    | 128                    | 27%              | 10% | 3.5                  | 97 | 22%                        | 36                     | 27%                    | 10               | 39% | 3.8                  | 30 |                            |
| North | Black Rockfish                 | 75.25        | 99%               | 76          | 47%                    | 36                     | 2%               | 10% | 0.1                  | 35 | 50%                        | 38                     | 1%                     | 0                | 40% | 0.2                  | 38 |                            |
|       | Blue Rockfish                  | 4.3          | 86%               | 5           | 26%                    | 1                      | 16%              | 10% | 0.0                  | 1  | 69%                        | 3                      | 12%                    | 0                | 40% | 0.2                  | 3  |                            |
|       | Other minor nearshore rockfish | 4.3          | 96%               | 4           | 55%                    | 2                      | 6%               | 20% | 0.0                  | 2  | 35%                        | 2                      | 5%                     | 0                | 50% | 0.0                  | 2  |                            |
|       | Cabezon                        | 12.9         | 79%               | 16          | 36%                    | 6                      | 21%              | 7%  | 0.1                  | 5  | 60%                        | 10                     | 21%                    | 2                | 7%  | 0.1                  | 8  |                            |
|       | Kelp Greenling                 | 9.89         | 80%               | 12          | 37%                    | 5                      | 23%              | 7%  | 0.1                  | 4  | 59%                        | 7                      | 18%                    | 1                | 7%  | 0.1                  | 6  |                            |
|       | All nearshore groundfish       | 106.64       | 94%               | 114         | 44%                    | 50                     | 7%               | 8%  | 0.3                  | 47 | 53%                        | 61                     | 7%                     | 4                | 14% | 0.6                  | 57 |                            |

| Area  | Species                        | 21 - 50 fm             |                        |                       |                      |     |                            | 0 - 50 fm       |               |             |  |
|-------|--------------------------------|------------------------|------------------------|-----------------------|----------------------|-----|----------------------------|-----------------|---------------|-------------|--|
|       |                                | % of<br>total<br>catch | stratum<br>catch<br>mt | gross<br>discard<br>% | discard<br>mortality |     | stratum<br>mortality<br>mt | mortality from: |               |             | discard as a<br>percentage<br>of mortality |
|       |                                |                        |                        |                       | %                    | mt  |                            | landing<br>mt   | discard<br>mt | total<br>mt |  |
| South | Shallow nearshore species      | 1%                     | 1                      | 60%                   | 100%                 | 0.4 | 1                          | 43              | 4.6           | 47.1        | 9.8%                                       |
|       | Deeper nearshore species       | 4%                     | 2                      | 60%                   | 100%                 | 1.1 | 2                          | 38              | 2.7           | 40.9        | 6.5%                                       |
|       | Cabezon                        | 0%                     | 0                      | 75%                   | 7%                   | 0.0 | 0                          | 38              | 1.2           | 39.4        | 2.9%                                       |
|       | Kelp Greenling                 | 1%                     | 0                      | 90%                   | 7%                   | 0.0 | 0                          | 3               | 0.3           | 2.8         | 10.4%                                      |
|       | All nearshore groundfish       | 2%                     | 3                      | 61%                   | 91%                  | 1.5 | 2                          | 122             | 8.7           | 130.3       | 6.7%                                       |
| North | Black Rockfish                 | 2%                     | 2                      | 0%                    | 100%                 | 0.0 | 2                          | 75              | 0.2           | 75.5        | 0.3%                                       |
|       | Blue Rockfish                  | 5%                     | 0                      | 14%                   | 100%                 | 0.0 | 0                          | 4               | 0.2           | 4.5         | 4.9%                                       |
|       | Other minor nearshore rockfish | 10%                    | 0                      | 2%                    | 100%                 | 0.0 | 0                          | 4               | 0.1           | 4.4         | 1.8%                                       |
|       | Cabezon                        | 4%                     | 1                      | 20%                   | 7%                   | 0.0 | 1                          | 13              | 0.2           | 13.1        | 1.8%                                       |
|       | Kelp Greenling                 | 3%                     | 0                      | 14%                   | 7%                   | 0.0 | 0                          | 10              | 0.2           | 10.1        | 1.7%                                       |
|       | All nearshore groundfish       | 3%                     | 4                      | 7%                    | 24%                  | 0.1 | 3                          | 107             | 0.9           | 107.6       | 0.9%                                       |

Table 23. Estimated bycatch (mt) of depleted groundfish species and lingcod associated with landed catch of nearshore commercial species.

|                     | 0 - 10 fm            | 11 - 20 fm | 21 - 50 fm | Estimated bycatch |            |            |              |
|---------------------|----------------------|------------|------------|-------------------|------------|------------|--------------|
|                     |                      |            |            | 0 - 10 fm         | 11 - 20 fm | 21 - 50 fm | 0 - 50 fm    |
| South               |                      |            |            |                   |            |            |              |
| Landed nearshore mt | 94                   | 27         | 1.0        |                   |            |            |              |
| Rebuilding species  | <i>Bycatch rates</i> |            |            |                   |            |            |              |
| Canary              | 0.01%                | 1.76%      | 1.76%      | 0.01              | 0.47       | 0.02       | 0.50         |
| disc. mort. (%:mt)  | 10%                  | 55%        | 100%       | 0.00              | 0.26       | 0.02       | <b>0.28</b>  |
| Lingcod             |                      |            |            |                   |            |            |              |
| catch (%:mt)        | 23.40%               | 33.77%     | 33.77%     | 21.96             | 9.00       | 0.34       | 31.30        |
| landed (%:mt)       | 58%                  | 44%        | 55%        | 12.74             | 3.96       | 0.19       | 16.88        |
| discard (%:mt)      | 42%                  | 56%        | 45%        | 9.22              | 5.04       | 0.16       | 14.42        |
| disc. mort. (%:mt)  | 7%                   | 7%         | 7%         | 0.65              | 0.35       | 0.01       | 1.01         |
| total mortality     |                      |            |            | 13.38             | 4.31       | 0.20       | <b>17.89</b> |
| North               |                      |            |            |                   |            |            |              |
| Landed nearshore mt | 47                   | 56         | 3          |                   |            |            |              |
| Rebuilding species  | <i>Bycatch rates</i> |            |            |                   |            |            |              |
| Canary              | 0.41%                | 1.65%      | 5.34%      | 0.19              | 0.93       | 0.18       | 1.30         |
| disc. mort. (%:mt)  | 10%                  | 55%        | 100%       | 0.02              | 0.51       | 0.18       | <b>0.71</b>  |
| Widow               | 0.02%                | 0.02%      | 0.17%      | 0.01              | 0.01       | 0.01       | <b>0.03</b>  |
| Yelloweye           | 0.14%                | 1.11%      | 9.40%      | 0.07              | 0.62       | 0.31       | 1.01         |
| disc. mort. (%:mt)  | 50%                  | 90%        | 100%       | 0.03              | 0.56       | 0.31       | <b>0.91</b>  |
| Lingcod             |                      |            |            |                   |            |            |              |
| catch (%:mt)        | 27.59%               | 36.70%     | 73.09%     | 12.95             | 20.68      | 2.45       | 36.08        |
| landed (%:mt)       | 57%                  | 60%        | 85%        | 7.38              | 12.41      | 2.08       | 21.87        |
| discard (%:mt)      | 43%                  | 40%        | 15%        | 5.57              | 8.27       | 0.37       | 14.21        |
| disc. mort. (%:mt)  | 7%                   | 7%         | 7%         | 0.39              | 0.58       | 0.03       | 0.99         |
| total mortality     |                      |            |            | 7.77              | 12.99      | 2.10       | <b>22.86</b> |

Table 24. Predicted impacts (mt) of select groundfish species and exvessel revenues (\$) by alternative depth restrictions and allocations in 2007-2008 nearshore commercial fisheries in Oregon and California.

Note that the 50 fm limit shown in this table is based on the WCGOP report, "Data Report and Summary Analyses of Open Access Fixed-Gear Fisheries in Waters Less than 50 Fathoms May 2005" (available online at: [http://www.nwfsc.noaa.gov/research/divisions/fram/observer/datareport/nearshore/datareport\\_nearshore\\_may2005.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/observer/datareport/nearshore/datareport_nearshore_may2005.cfm)). South of 40o10', the nearshore fishery was restricted to shallower than 20-30 fm throughout the period in which data were collected.

| Total Mortality (mt) and Exvessel Value (USD) |                                |            | Alternative 1, 0 - 50 Fathoms<br>5% S, 40% N Black Rockfish Only |             | Alternative 2, 0 - 50 Fathoms<br>12% S, 80% N Black Rockfish Only |             | Alternative 3, 0 - 50 Fathoms<br>15% S, 57% N Equal Across Sp |             |
|---|--------------------------------|------------|--|-------------|---|-------------|---|-------------|
| South   | Variable                       | Status Quo | mt or USD  | % Reduction | mt or USD   | % Reduction | mt or USD   | % Reduction |
|   | Shallow nearshore species      | 55         | 53   | 5%          | 49  | 12%         | 47  | 15%         |
|   | Deeper nearshore species       | 48         | 46   | 5%          | 42  | 12%         | 41  | 15%         |
|   | Cabezon                        | 46         | 44   | 5%          | 41  | 12%         | 39  | 15%         |
|   | Kelp Greenling                 | 3          | 3  | 5%          | 3   | 12%         | 3   | 15%         |
|   | Canary                         | 0.33       | 0.31   | 5%          | 0.29  | 12%         | 0.28  | 15%         |
|   | Exvessel Value                 | 1,718,545  | 1,632,618  | 5%          | 1,512,320   | 12%         | 1,460,764   | 15%         |
| North   | Black Rockfish                 | 176        | 105  | 40%         | 35  | 80%         | 75  | 57%         |
|   | Blue Rockfish                  | 11         | 11   | 0%          | 11  | 0%          | 5   | 57%         |
|   | Other minor nearshore rockfish | 10         | 10   | 0%          | 10  | 0%          | 4   | 57%         |
|   | Cabezon                        | 31         | 31   | 0%          | 31  | 0%          | 13  | 57%         |
|   | Kelp Greenling                 | 23         | 23   | 0%          | 23  | 0%          | 10  | 57%         |
|   | Canary                         | 1.65       | 1.22   | 26%         | 0.80  | 51%         | 0.71  | 57%         |
|   | Yelloweye                      | 2.12       | 1.59   | 25%         | 1.05  | 50%         | 0.91  | 57%         |
|   | Widow                          | 0.07       | 0.05   | 27%         | 0.03  | 54%         | 0.03  | 57%         |
|   | Exvessel Value                 | 1,128,082  | 907,400  | 20%         | 686,717   | 39%         | 485,075   | 57%         |
| Total   | Canary                         | 1.97       | 1.53   | 22%         | 1.09  | 45%         | 0.98  | 50%         |
|   | Yelloweye                      | 2.12       | 1.59   | 25%         | 1.05  | 50%         | 0.91  | 57%         |
|   | Widow                          | 0.07       | 0.05   | 27%         | 0.03  | 54%         | 0.03  | 57%         |
|   | Exvessel Value                 | 2,846,627  | 2,540,018  | 11%         | 2,199,037   | 23%         | 1,945,839   | 32%         |

| Total Mortality (mt) and Exvessel Value (USD) |                                |            | Alternative 4, 0 - 20 Fathoms<br>0% S, 10% N Black Rockfish Only |             | Alternative 5, 0 - 20 Fathoms<br>15% S, 60% N Black Rockfish Only |             | Alternative 5, 0 - 20 Fathoms<br>0% S, 100% N Black Rockfish Only |             |
|---|--------------------------------|------------|--|-------------|---|-------------|---|-------------|
| South   | Variable                       | Status Quo | mt or USD  | % Reduction | mt or USD   | % Reduction | mt or USD   | % Reduction |
|   | Shallow nearshore species      | 55         | 55   | 1%          | 47  | 16%         | 55  | 1%          |
|   | Deeper nearshore species       | 48         | 47   | 3%          | 40  | 17%         | 47  | 3%          |
|   | Cabezon                        | 46         | 46   | 0%          | 39  | 15%         | 46  | 0%          |
|   | Kelp Greenling                 | 3          | 3  | 0%          | 3   | 15%         | 3   | 0%          |
|   | Canary                         | 0.33       | 0.30   | 7%          | 0.26  | 21%         | 0   | 7%          |
|   | Exvessel Value                 | 1,718,545  | 1,718,545  | 0%          | 1,460,764   | 15%         | 1,718,545   | 0%          |
| North   | Black Rockfish                 | 176        | 158  | 10%         | 70  | 60%         | 0   | 100%        |
|   | Blue Rockfish                  | 11         | 10   | 1%          | 10  | 1%          | 10  | 1%          |
|   | Other minor nearshore rockfish | 10         | 10   | 0%          | 10  | 0%          | 10  | 0%          |
|   | Cabezon                        | 31         | 31   | 0%          | 31  | 0%          | 31  | 0%          |
|   | Kelp Greenling                 | 23         | 23   | 0%          | 23  | 0%          | 23  | 0%          |
|   | Canary                         | 1.65       | 1.17   | 29%         | 0.72  | 56%         | 0.37  | 78%         |
|   | Yelloweye                      | 2.12       | 1.32   | 38%         | 0.81  | 62%         | 0.41  | 81%         |
|   | Widow                          | 0.07       | 0.05   | 24%         | 0.03  | 53%         | 0.02  | 76%         |
|   | Exvessel Value                 | 1,128,082  | 1,072,911  | 5%          | 797,058   | 29%         | 576,376   | 49%         |
| Total   | Canary                         | 1.97       | 1.47   | 25%         | 0.98  | 50%         | 0.67  | 66%         |
|   | Yelloweye                      | 2.12       | 1.32   | 38%         | 0.81  | 62%         | 0.41  | 81%         |
|   | Widow                          | 0.07       | 0.05   | 24%         | 0.03  | 53%         | 0.02  | 76%         |
|   | Exvessel Value                 | 2,846,627  | 2,791,457  | 2%          | 2,257,822   | 21%         | 2,294,921   | 19%         |

Extra percent reduction is from depth restriction.