

PROPOSED OVERFISHING LIMITS, ACCEPTABLE BIOLOGICAL CATCHES, AND PRESUMPTIVE ANNUAL CATCH LIMITS FOR 2015 AND 2016 GROUND FISH FISHERIES

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Table 1. 2014 OFLs (mt) and proposed 2015 and 2016 OFLs (mt) for west coast groundfish stocks (overfished stocks in CAPS; stocks with new assessments in **bold**; component stocks in status quo stock complexes in *italics*, OFLs yet to be decided in **highlight**).

Stock	2014 OFL	Cat.	Sub-cat.	2015 OFL	2016 OFL
OVERFISHED STOCKS					
BOCACCI S. of 40°10' N. latitude	881	1		1,444	1,351
CANARY	741	1		733	729
COWCOD S. of 40°10' N. latitude	12			NA	NA
<i>COWCOD (Conception)</i>	7	2	c	NA	NA
<i>COWCOD (Monterey)</i>	5	3	d	NA	NA
DARKBLOTCHED	553	1		588	595
PACIFIC OCEAN PERCH	838	1		842	850
PETRALE SOLE	2,774	1		2,946	3,044
YELLOWEYE	51	2		52	52
NON-OVERFISHED STOCKS					
Arrowtooth Flounder	6,912	2	d	6,599	6,396
Black Rockfish (OR-CA)	1,166	1		1,176	1,183
Black Rockfish (WA)	428	1		421	423
Cabazon (CA)	165	1		161	158
Cabazon (OR)	49	1		49	49
California scorpionfish	122	1		119	117
Chilipepper S. of 40°10' N. latitude	1,722	1		1,703	1,694
Dover Sole	77,774	1		66,871	59,221
English Sole	5,906	2		12,092	8,493
Lingcod N. of 42° N. latitude (OR & WA)	1,984	1		1,898	1,842
Lingcod S. of 42° N. latitude (CA)	2,454	2	d	2,317	2,185
Lingcod N. of 40°10' N. latitude	3,162	1		3,010	2,891
Lingcod S. of 40°10' N. latitude	1,276	2	d	1,205	1,136
Longnose skate	2,816	1		2,449	2,405
Longspine Thornyhead (coastwide)	3,304	2		5,007	4,763
Pacific Cod	3,200	3	b	3,200	3,200
Sablefish (coastwide)	7,158	1		7,857	8,526
Shortbelly	6,950	2	d	6,950	6,950
Shortspine Thornyhead (coastwide)	2,310	2		3,203	3,169
Splitnose S. of 40°10' N. latitude	1,747	1		1,794	1,826
Starry Flounder	1,834	2	d	1,841	1,847
Widow	4,435	1		4,137	3,990
Yellowtail N. of 40°10' N. latitude	4,584	2		12,281	11,647
STOCK COMPLEXES					
Minor Nearshore Rockfish North	110			NA	NA
<i>Black and yellow</i>	<i>0.01</i>	3	d	<i>0.01</i>	<i>0.01</i>
<i>Blue (CA)</i>	<i>27.4</i>	2	d	<i>27.4</i>	<i>27.7</i>
<i>Blue (OR & WA)</i>	<i>32.3</i>	3	d	<i>32.3</i>	<i>32.3</i>
Brown	5.5	2		NA	NA
<i>Calico</i>	-	3	a	-	-
China	9.8	2		NA	NA
Copper	26.0	2		NA	NA
<i>Gopher</i>	-	3	a	-	-
<i>Grass</i>	<i>0.7</i>	3	d	<i>0.7</i>	<i>0.7</i>

Stock	2014 OFL	Cat.	Sub-cat.	2015 OFL	2016 OFL
<i>Kelp</i>	0.01	3	d	0.01	0.01
<i>Olive</i>	0.3	3	d	0.3	0.3
<i>Quillback</i>	7.4	3	d	7.4	7.4
<i>Treefish</i>	0.2	3	d	0.2	0.2
Minor Shelf Rockfish North	2,195			2,207	2,217
<i>Bronzespotted</i>	-	3	a	-	-
<i>Bocaccio</i>	284.0	3	d	284.0	284.0
<i>Chameleon</i>	-	3	a	-	-
<i>Chilipepper</i>	129.6	3	d	128.2	127.5
<i>Cowcod</i>	-	3	a	-	-
<i>Flag</i>	0.1	3	d	0.1	0.1
<i>Freckled</i>	-	3	a	-	-
<i>Greenblotched</i>	1.3	3	c	1.3	1.3
<i>Greenspotted 40°10' to 42° N. latitude</i>	9.4	2		9.3	9.3
<i>Greenspotted N. of 42 N. latitude (OR & WA)</i>	6.1	3	d	6.1	6.1
<i>Greenstriped</i>	1,268.3	2	d	1,281.9	1,292.0
<i>Halfbanded</i>	-	3	a	-	-
<i>Harlequin</i>	-	3	a	-	-
<i>Honeycomb</i>	-	3	a	-	-
<i>Mexican</i>	-	3	a	-	-
<i>Pink</i>	0.004	3	d	0.004	0.004
<i>Pinkrose</i>	-	3	a	-	-
<i>Puget Sound</i>	-	3	a	-	-
<i>Pygmy</i>	-	3	a	-	-
<i>Redstripe</i>	269.9	3	d	269.9	269.9
<i>Rosethorn</i>	12.9	3	d	12.9	12.9
<i>Rosy</i>	3.0	3	d	3.0	3.0
<i>Silvergray</i>	159.4	3	d	159.4	159.4
<i>Speckled</i>	0.2	3	d	0.2	0.2
<i>Squarespot</i>	0.2	3	c	0.2	0.2
<i>Starry</i>	0.004	3	d	0.004	0.004
Stripetail	40.4	3	d	40.4	40.4
<i>Swordspine</i>	0.0001	3	d	0.0001	0.0001
<i>Tiger</i>	1.0	3	d	1.0	1.0
<i>Vermilion</i>	9.7	3	c	9.7	9.7
Minor Slope Rockfish North	1,553			1,804	1,817
Aurora	15.4	1		17.4	17.5
<i>Bank</i>	17.2	3	d	17.2	17.2
<i>Blackgill</i>	4.7	3	c	4.7	4.7
<i>Redbanded</i>	45.3	3	d	45.3	45.3
Rougheye	71.1	1		201.9	205.8
Sharpchin	214.5	2		305.6	297.6
<i>Shortraker</i>	18.7	3	d	18.7	18.7
<i>Splitnose</i>	974.1	1		1,000.6	1,018.2
<i>Yellowmouth</i>	192.4	3	d	192.4	192.4
Minor Nearshore Rockfish South	1,160			NA	NA
<i>Shallow Nearshore Species</i>	NA	NA	NA	NA	NA
<i>Black and yellow</i>	27.5	3	c	27.5	27.5
China	16.6	2	c	NA	NA
<i>Gopher (N of Pt. Conception)</i>	153.0	1		148.0	144.0

Stock	2014 OFL	Cat.	Sub-cat.	2015 OFL	2016 OFL
<i>Gopher (S of Pt. Conception)</i>	25.6	3	c	25.6	25.6
<i>Grass</i>	59.6	3	d	59.6	59.6
<i>Kelp</i>	27.7	3	d	27.7	27.7
<i>Deeper Nearshore Species</i>	NA	NA	NA	NA	NA
<i>Blue (assessed area)</i>	187.8	2	d	188.6	190.3
<i>Blue (S of 34°27' N. latitude)</i>	72.9	3	c	72.9	72.9
Brown	204.6	2		NA	NA
<i>Calico</i>	-	3	a	-	-
Copper	141.5	2		NA	NA
<i>Olive</i>	224.6	3	d	224.6	224.6
<i>Quillback</i>	5.4	3	d	5.4	5.4
<i>Treefish</i>	13.2	3	d	13.2	13.2
Minor Shelf Rockfish South	1,912.9			1,914.1	1,915.4
<i>Bronzespotted</i>	3.6	3	c	3.6	3.6
<i>Chameleon</i>	-	3	a	-	-
<i>Flag</i>	23.4	3	c	23.4	23.4
<i>Freckled</i>	-	3	a	-	-
<i>Greenblotched</i>	23.1	3	d	23.1	23.1
<i>Greenspotted</i>	80.3	2	d	79.0	78.4
<i>Greenstriped</i>	232.7	2	d	235.1	237.0
<i>Halfbanded</i>	-	3	a	-	-
<i>Harlequin</i>	-	3	a	-	-
<i>Honeycomb</i>	9.9	3	c	9.9	9.9
<i>Mexican</i>	5.1	3	c	5.1	5.1
<i>Pink</i>	2.5	3	d	2.5	2.5
<i>Pinkrose</i>	-	3	a	-	-
<i>Pygmy</i>	-	3	a	-	-
<i>Redstripe</i>	0.5	3	d	0.5	0.5
<i>Rosethorn</i>	2.1	3	d	2.1	2.1
<i>Rosy</i>	44.5	3	d	44.5	44.5
<i>Silvergray</i>	0.5	3	d	0.5	0.5
<i>Speckled</i>	39.4	3	d	39.4	39.4
<i>Squarespot</i>	11.1	3	c	11.1	11.1
<i>Starry</i>	62.6	3	d	62.6	62.6
Stripetail	23.6	3	d	23.6	23.6
<i>Swordspine</i>	14.2	3	d	14.2	14.2
<i>Tiger</i>	0.04	3	d	0.04	0.04
<i>Vermilion</i>	269.3	3	d	269.3	269.3
<i>Yellowtail</i>	1,064.4	3	d	1,064.4	1,064.4
Minor Slope Rockfish South	685			806	807
Aurora	26.1	1		74.3	74.3
<i>Bank</i>	503.2	3	d	503.2	503.2
<i>Blackgill</i>	134.0	2		137.0	140.0
<i>Pacific ocean perch</i>	-	3	a	-	-
<i>Redbanded</i>	10.4	3	d	10.4	10.4
Rougheye	0.4	1		4.1	4.2
Sharpchin	9.8	2		76.4	74.4
<i>Shortraker</i>	0.1	3	d	0.1	0.1
<i>Yellowmouth</i>	0.8	3	d	0.8	0.8

Stock	2014 OFL	Cat.	Sub-cat.	2015 OFL	2016 OFL
Other Flatfish	10,060			11,298	9,948
<i>Butter sole</i>	4.6	3	b	4.6	4.6
<i>Curlfin sole</i>	8.2	3	b	8.2	8.2
<i>Flathead sole</i>	35.0	3	b	35.0	35.0
<i>Pacific sanddab</i>	4,801.0	3		4,801.0	4,801.0
<i>Rex sole</i>	4,371.5	2		5,609.0	4,259.0
<i>Rock sole</i>	66.7	3	c	66.7	66.7
<i>Sand sole</i>	773.2	3	c	773.2	773.2
Other Fish a/	6,802	3		NA	NA
<i>Big skate</i>	458.0	3		c/	c/
<i>Cabezon (WA)</i>	b/	3		b/	b/
<i>California skate</i>	86.0	3		c/	c/
<i>Finescale codling</i>	b/	3		b/	b/
<i>Kelp greenling (CA)</i>	118.9	3	d	c/	c/
<i>Kelp greenling (OR & WA)</i>	b/	3		b/	b/
<i>Leopard shark</i>	167.1	3	d	c/	c/
<i>Pacific grenadier</i>	1,519.0	3	c	c/	c/
<i>Ratfish</i>	1,441.0	3		c/	c/
<i>Soupsin shark</i>	61.6	3	c	c/	c/
<i>Spiny dogfish</i>	2,950.0	2	d	2,522.7	2,503.3

a/ Values for these specifications are the sum of known contributions of component stocks.

b/ No OFL contribution for these stocks given the lack of an approved method.

c/ No OFL recommended pending decisions on restructuring this complex.

Table 2. The basis for proposed 2015 and 2016 OFLs for west coast groundfish stocks.

Stock	Comments
OVERFISHED STOCKS	
BOCACCI S. of 40°10' N. latitude	Projected using a 50% SPR from the 2013 update assessment with a 6% reduction to subtract the portion of the assessed stock north of 40°10' N. lat.
CANARY	Projected using a 50% SPR from the 2011 rebuilding analysis.
COWCOD S. of 40°10' N. latitude	Sum of Conception and Monterey OFLs.
<i>COWCOD (Conception)</i>	Not available pending provision of a 2013 rebuilding analysis in Nov. Projected using a 50% SPR from the 2009 rebuilding analysis.
<i>COWCOD (Monterey)</i>	Not yet available. Revised DB-SRA estimate.
DARKBLOTCHED	Projected using a 50% SPR from the 2011 rebuilding analysis.
PACIFIC OCEAN PERCH	Projected using a 50% SPR from the 2011 rebuilding analysis.
PETRALE SOLE	Projected using a 30% SPR from the 2011 rebuilding analysis.
YELLOWEYE	Projected using a 50% SPR from the 2011 rebuilding analysis.
NON-OVERFISHED STOCKS	
Arrowtooth Flounder	Projected using a 30% SPR from the 2007 full assessment.
Black Rockfish (OR-CA)	Projected using a 50% SPR from the 2007 full assessment with the addition of the northern OFL 3% reduction to account for the portion of the stock estimated between Cape Falcon and the Columbia River.
Black Rockfish (WA)	Projected using a 50% SPR from the 2007 full assessment with a 3% reduction to account for the portion of the stock estimated between Cape Falcon and the Columbia River.
Cabazon (CA)	Projected using a 45% SPR from the 2009 full assessment.
Cabazon (OR)	Projected using a 45% SPR from the 2009 full assessment.
California scorpionfish	Projected using a 45% SPR from the 2005 full assessment.
Chilipepper S. of 40°10' N. latitude	Projected using a 50% SPR from the 2007 full assessment. The portion of the coastwide stock south of 40°10' N. lat. (93%) is based on average historical landings.
Dover Sole	Projected using a 30% SPR from the 2011 full assessment.
English Sole	Projected using a 30% SPR from the 2013 data-moderate assessment.
Lingcod N. of 40°10' N. latitude	Projected using a 45% SPR from the 2009 full assessment with 48% of the OFL S. of 42° N. latitude added to account for line shift.
Lingcod S. of 40°10' N. latitude	Projected using a 45% SPR from the 2009 full assessment with 48% of the OFL S. of 42° N. latitude subtracted to account for line shift.
Longnose skate	Projected using a 50% SPR from the 2007 full assessment. 2015 and 2016 OFLs projected using the status quo 45% SPR rate are 2,745 and 2,686 mt, respectively.
Longspine Thornyhead (coastwide)	Projected using a 50% SPR from the 2013 full assessment.
Pacific Cod	Status quo OFL.
Sablefish (coastwide)	Projected using a 45% SPR from the 2011 full assessment.
Shortbelly	MSY estimated from 2007 assessment.
Shortspine Thornyhead	Projected using a 50% SPR from the 2013 full assessment.

Stock	Comments
(coastwide)	
Splitnose S. of 40°10' N. latitude	Projected using a 50% SPR from the 2009 full assessment. The portion of the coastwide stock south of 40°10' N. lat. (64.2%) is based on average historical (1916-2008) landings.
Starry Flounder	Projected using a 30% SPR from the 2005 full assessment.
Widow	Projected using a 50% SPR from the 2011 full assessment.
Yellowtail N. of 40°10' N. latitude	Projected using a 50% SPR from the 2013 data-moderate assessment.
STOCK COMPLEXES	
Minor Nearshore Rockfish North	Sum of OFL contributions of component stocks in the complex.
<i>Black and yellow</i>	<i>DB-SRA estimate.</i>
<i>Blue (CA)</i>	<i>Projected using a 50% SPR from the 2007 full assessment. The portion of the assessed stock in CA north of 40°10' N. lat. (12.7%) is based on average historical landings.</i>
<i>Blue (OR & WA)</i>	<i>DCAC estimate.</i>
Brown	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
<i>Calico</i>	<i>DB-SRA estimate.</i>
China	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
Copper	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
<i>Gopher</i>	<i>No harvest contribution (3a stock).</i>
<i>Grass</i>	<i>DB-SRA estimate.</i>
<i>Kelp</i>	<i>DB-SRA estimate.</i>
<i>Olive</i>	<i>DB-SRA estimate.</i>
<i>Quillback</i>	<i>DB-SRA estimate.</i>
<i>Treefish</i>	<i>DB-SRA estimate.</i>
Minor Shelf Rockfish North	Sum of OFL contributions of component stocks in the complex.
<i>Bronzespotted</i>	<i>DB-SRA estimate.</i>
<i>Bocaccio</i>	<i>DB-SRA estimate.</i>
<i>Chameleon</i>	<i>No harvest contribution (3a stock).</i>
<i>Chilipepper</i>	<i>Projected using a 50% SPR from the 2007 full assessment. The portion of the coastwide stock north of 40°10' N. lat. (7%) is based on average historical landings.</i>
<i>Cowcod</i>	<i>No harvest contribution (3a stock).</i>
<i>Flag</i>	<i>DB-SRA estimate.</i>
<i>Freckled</i>	<i>No harvest contribution (3a stock).</i>
<i>Greenblotched</i>	<i>DB-SRA estimate.</i>
<i>Greenspotted 40°10' to 42° N. latitude</i>	<i>Projection using a 50% SPR from the full 2011 assessment. The portion of the assessed area north of 40°10' N lat. (22.2% of OFL from northern California model) based on average historical catch.</i>
<i>Greenspotted N. of 42 N. latitude (OR & WA)</i>	<i>DCAC estimate</i>
<i>Greenstriped</i>	<i>Projected using a 50% SPR from the full 2009 assessment. The portion of the coastwide stock north of 40°10' N. lat. (84.5%) is based on the</i>

Stock	Comments
	<i>mean of the 2003-2008 swept area biomass estimates from the NMFS trawl survey.</i>
<i>Halfbanded</i>	<i>No harvest contribution (3a stock).</i>
<i>Harlequin</i>	<i>DB-SRA estimate.</i>
<i>Honeycomb</i>	<i>DB-SRA estimate.</i>
<i>Mexican</i>	<i>DB-SRA estimate.</i>
<i>Pink</i>	<i>DB-SRA estimate.</i>
<i>Pinkrose</i>	<i>DB-SRA estimate.</i>
<i>Puget Sound</i>	<i>No harvest contribution (3a stock).</i>
<i>Pygmy</i>	<i>No harvest contribution (3a stock).</i>
<i>Redstripe</i>	<i>DB-SRA estimate.</i>
<i>Rosethorn</i>	<i>DB-SRA estimate.</i>
<i>Rosy</i>	<i>DB-SRA estimate.</i>
<i>Silvergray</i>	<i>DB-SRA estimate.</i>
<i>Speckled</i>	<i>DB-SRA estimate.</i>
<i>Squarespot</i>	<i>DB-SRA estimate.</i>
<i>Starry</i>	<i>DB-SRA estimate.</i>
<i>Stripetail</i>	<i>DB-SRA estimate. Only status determined from 2013 data-moderate assessment, so presumed to remain a cat. 3 stock.</i>
<i>Swordspine</i>	<i>DB-SRA estimate.</i>
<i>Tiger</i>	<i>DB-SRA estimate.</i>
<i>Vermilion</i>	<i>DB-SRA estimate.</i>
Minor Slope Rockfish North	Sum of OFL contributions of component stocks in the complex.
<i>Aurora</i>	<i>Projected using a 50% SPR from the 2013 full assessment. The portion of the coastwide stock north of 40°10' N lat. (19%) is based on average survey biomass.</i>
<i>Bank</i>	<i>DB-SRA estimate.</i>
<i>Blackgill</i>	<i>DCAC estimate.</i>
<i>Redbanded</i>	<i>DB-SRA estimate.</i>
<i>Rougheye</i>	<i>Projected using a 50% SPR from the 2013 full assessment. The coastwide OFLs are apportioned north (98%) and south (2%) based on average landings during 1985-2012.</i>
<i>Sharpchin</i>	<i>Coastwide OFLs projected using a 50% SPR from the 2013 data-moderate assessment. OFLs are apportioned north and south of 40°10' N lat. (80%N, 20% S) based on average swept area biomass estimates from the triennial survey.</i>
<i>Shortraker</i>	<i>DB-SRA estimate.</i>
<i>Splitnose</i>	<i>Projected using a 50% SPR from the 2009 full assessment. The portion of the coastwide stock north of 40°10' N. lat. (35.8%) is based on average historical (1916-2008) landings.</i>
<i>Yellowmouth</i>	<i>DB-SRA estimate.</i>
Minor Nearshore Rockfish South	Sum of OFL contributions of component stocks in the complex.
<i>Shallow Nearshore Species</i>	
<i>Black and yellow</i>	<i>DB-SRA estimate.</i>

Stock	Comments
China	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
<i>Gopher (N of Pt. Conception)</i>	<i>Projected using a 50% SPR from the 2005 full assessment.</i>
<i>Gopher (S of Pt. Conception)</i>	<i>DCAC estimate.</i>
<i>Grass</i>	<i>DB-SRA estimate.</i>
<i>Kelp</i>	<i>DB-SRA estimate.</i>
<i>Deeper Nearshore Species</i>	
<i>Blue (assessed area)</i>	<i>Projected using a 50% SPR from the 2007 full assessment. The portion of the assessed stock in CA south of 40°10' N. lat. (87.3%) is based on average historical landings.</i>
<i>Blue (S of 34°27' N. latitude)</i>	<i>DCAC estimate.</i>
Brown	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
<i>Calico</i>	<i>DB-SRA estimate.</i>
Copper	Not yet available. Projected using a 50% SPR from the 2013 data-moderate assessment.
<i>Olive</i>	<i>DB-SRA estimate.</i>
<i>Quillback</i>	<i>DB-SRA estimate.</i>
<i>Treefish</i>	<i>DB-SRA estimate.</i>
<i>Minor Shelf Rockfish South</i>	<i>Sum of OFL contributions of component stocks in the complex.</i>
<i>Bronzespotted</i>	<i>DB-SRA estimate.</i>
<i>Chameleon</i>	<i>No harvest contribution (3a stock).</i>
<i>Flag</i>	<i>DB-SRA estimate.</i>
<i>Freckled</i>	<i>No harvest contribution (3a stock).</i>
<i>Greenblotched</i>	<i>DB-SRA estimate.</i>
<i>Greenspotted</i>	<i>Projection using a 50% SPR from the full 2011 assessment. The portion of the assessed area south of 40°10' N lat. (77.8% of OFL from northern California model from average historical catch + the OFL from the southern California model)</i>
<i>Greenstriped</i>	<i>Projected using a 50% SPR from the full 2009 assessment. The portion of the coastwide stock south of 40°10' N. lat. (15.5%) is based on the mean of the 2003-2008 swept area biomass estimates from the NMFS trawl survey.</i>
<i>Halfbanded</i>	<i>No harvest contribution (3a stock).</i>
<i>Harlequin</i>	<i>DB-SRA estimate.</i>
<i>Honeycomb</i>	<i>DB-SRA estimate.</i>
<i>Mexican</i>	<i>DB-SRA estimate.</i>
<i>Pink</i>	<i>DB-SRA estimate.</i>
<i>Pinkrose</i>	<i>DB-SRA estimate.</i>
<i>Pygmy</i>	<i>No harvest contribution (3a stock).</i>
<i>Redstripe</i>	<i>DB-SRA estimate.</i>
<i>Rosethorn</i>	<i>DB-SRA estimate.</i>
<i>Rosy</i>	<i>DB-SRA estimate.</i>
<i>Silvergray</i>	<i>DB-SRA estimate.</i>

Stock	Comments
<i>Speckled</i>	<i>DB-SRA estimate.</i>
<i>Squarespot</i>	<i>DB-SRA estimate.</i>
<i>Starry</i>	<i>DB-SRA estimate.</i>
Stripetail	<i>DB-SRA estimate. Only status determined from 2013 data-moderate assessment, so presumed to remain a cat. 3 stock.</i>
<i>Swordspine</i>	<i>DB-SRA estimate.</i>
<i>Tiger</i>	<i>DB-SRA estimate.</i>
<i>Vermilion</i>	<i>DB-SRA estimate.</i>
<i>Yellowtail</i>	<i>DB-SRA estimate.</i>
Minor Slope Rockfish South	Sum of OFL contributions of component stocks in the complex.
Aurora	<i>Projected using a 50% SPR from the 2013 full assessment. The portion of the coastwide stock south of 40°10' N lat. (81%) is based on average survey biomass.</i>
<i>Bank</i>	<i>DB-SRA estimate.</i>
<i>Blackgill</i>	<i>Projected using a 50% SPR from the 2011 full assessment.</i>
<i>Pacific ocean perch</i>	<i>No harvest contribution (3a stock).</i>
<i>Redbanded</i>	<i>DB-SRA estimate.</i>
Rougheye	<i>Projected using a 50% SPR from the 2013 full assessment. The coastwide OFLs are apportioned north (98%) and south (2%) based on average landings during 1985-2012.</i>
Sharpchin	<i>Coastwide OFLs projected using a 50% SPR from the 2013 data-moderate assessment. OFLs are apportioned north and south of 40°10' N lat. (80%N, 20% S) based on average swept area biomass estimates from the triennial survey.</i>
<i>Shortraker</i>	<i>DB-SRA estimate.</i>
<i>Yellowmouth</i>	<i>DB-SRA estimate.</i>
Other Flatfish	Sum of OFL contributions of component stocks in the complex.
<i>Butter sole</i>	<i>Based on the average catch during 1994-1998 + a 60% discard rate estimated from the EDCP study.</i>
<i>Curlfin sole</i>	<i>Based on the average catch during 1994-1998 + a 60% discard rate estimated from the EDCP study.</i>
<i>Flathead sole</i>	<i>Max. catch = 35 mt in 2005</i>
Pacific sanddab	<i>DB-SRA estimate. Only status determined from 2013 full assessment, so presumed to remain a cat. 3 stock.</i>
Rex sole	<i>Projected using a 50% SPR from the 2013 data-moderate assessment.</i>
<i>Rock sole</i>	<i>DB-SRA estimate.</i>
<i>Sand sole</i>	<i>DB-SRA estimate.</i>
Other Fish a/	Not yet available pending decision on restructuring this complex
<i>Big skate</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL derived from survey biomass and MSY harvest rate estimates</i>
<i>Cabezon (WA)</i>	<i>No approved method for estimating OFL</i>
<i>California skate</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL derived from survey biomass and MSY harvest rate estimates</i>
<i>Finescale codling</i>	<i>No approved method for estimating OFL</i>
<i>Kelp greenling (CA)</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL based on DB-SRA estimate.</i>
<i>Kelp greenling (OR & WA)</i>	<i>No approved method for estimating OFL</i>
<i>Leopard shark</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL based on DB-SRA estimate.</i>
<i>Pacific grenadier</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL derived from survey biomass and MSY harvest rate estimates</i>

Stock	Comments
<i>Ratfish</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL derived from survey biomass and MSY harvest rate estimates</i>
<i>Southern shark</i>	<i>Not yet available pending decision on restructuring this complex. SQ OFL based on DCAC estimate.</i>
<i>Spiny dogfish</i>	<i>Projected using a 50% SPR from the 2011 full assessment. 2015 and 2016 OFLs projected using the status quo 50% SPR rate are 2,921 and 2,893 mt, respectively.</i>

Table 3. Relationship between the overfishing probability (P*) and the percent reduction of the OFL for deciding the 2015 and 2016 ABCs for category 1, aurora rockfish, widow rockfish, category 2, and category 3 stocks based on sigma (σ) values (i.e., biomass variances) of 0.36, 0.39, 0.41, 0.72, and 1.44, respectively.

P*	Assessment Uncertainty (σ)				
	Cat. 1 0.36	Aurora 0.39	Widow 0.41	Cat. 2 0.72	Cat. 3 1.44
0.5	0	0	0	0	0
0.45	4.4%	4.8%	5.0%	8.7%	16.6%
0.44	5.3%		6.0%	10.3%	19.5%
0.43	6.2%		7.0%	11.9%	22.4%
0.42	7.0%		7.9%	13.5%	25.2%
0.41	7.9%		8.9%	15.1%	27.9%
0.4	8.7%	9.4%	9.9%	16.7%	30.6%
0.39	9.6%		10.8%	18.2%	33.1%
0.38	10.4%		11.8%	19.7%	35.6%
0.37	11.3%		12.7%	21.3%	38.0%
0.36	12.1%		13.7%	22.7%	40.3%
0.35	13.0%	14.0%	14.6%	24.2%	42.6%
0.34	13.8%		15.6%	25.7%	44.8%
0.33	14.6%		16.5%	27.1%	46.9%
0.32	15.5%		17.4%	28.6%	49.0%
0.31	16.3%		18.4%	30.0%	51.0%
0.3	17.2%	18.5%	19.3%	31.4%	53.0%
0.29	18.1%		20.3%	32.9%	54.9%
0.28	18.9%		21.3%	34.3%	56.8%
0.27	19.8%		22.2%	35.7%	58.6%
0.26	20.7%		23.2%	37.1%	60.4%
0.25	21.6%	23.1%	24.2%	38.5%	62.1%
0.24	22.5%		25.1%	39.9%	63.8%
0.23	23.4%		26.1%	41.3%	65.5%
0.22	24.3%		27.1%	42.6%	67.1%
0.21	25.2%		28.2%	44.0%	68.7%
0.2	26.1%	28.0%	29.2%	45.4%	70.2%
0.19	27.1%		30.2%	46.9%	71.8%
0.18	28.1%		31.3%	48.3%	73.2%
0.17	29.1%		32.4%	49.7%	74.7%
0.16	30.1%		33.5%	51.1%	76.1%
0.15	31.1%	33.2%	34.6%	52.6%	77.5%
0.14	32.2%		35.8%	54.1%	78.9%
0.13	33.3%		37.0%	55.6%	80.2%
0.12	34.5%		38.2%	57.1%	81.6%
0.11	35.7%		39.5%	58.7%	82.9%
0.1	37.0%	39.3%	40.9%	60.3%	84.2%
0.09	38.3%		42.3%	61.9%	85.5%
0.08	39.7%		43.8%	63.6%	86.8%
0.07	41.2%		45.4%	65.4%	88.1%
0.06	42.9%		47.1%	67.4%	89.3%
0.05	44.7%	47.3%	49.1%	69.4%	90.6%

Table 4. Proposed stock categories and a range of alternative 2015 ABCs (mt) varied by the probability of overfishing (P*) for west coast groundfish stocks.

Stock	Status Quo 2014 ABC	2015 OFL	Category	Range of Alternative 2015 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
OVERFISHED STOCKS								
BOCACCIO S. of 40°10' N. latitude	842	1,444	1	1,380	1,318	1,256	1,195	1,132
CANARY	709	733	1	701	669	638	607	575
COWCOD S. of 40°10' N. latitude	9	NA		NA	NA	NA	NA	NA
<i>COWCOD (Conception)</i>	6	NA	2	NA	NA	NA	NA	NA
<i>COWCOD (Monterey)</i>	3	NA	3	NA	NA	NA	NA	NA
DARKBLOTCHED	529	588	1	562	537	512	487	461
PACIFIC OCEAN PERCH	801	842	1	805	769	733	697	660
PETRALE SOLE	2,652	2,946	1	2,816	2,690	2,563	2,439	2,310
YELLOWEYE	43	52	2	47	43	39	35	32
NON-OVERFISHED STOCKS								
Arrowtooth Flounder	5,758	6,599	2	6,025	5,497	5,002	4,527	4,058
Black Rockfish (OR-CA)	1,115	1,176	1	1,124	1,074	1,023	974	922
Black Rockfish (WA)	409	421	1	402	384	366	349	330
Cabazon (CA)	158	161	1	154	147	140	133	126
Cabazon (OR)	47	49	1	47	45	43	41	38
California scorpionfish	117	119	1	114	109	104	99	93
Chilipepper S. of 40°10' N. latitude	1,647	1,703	1	1,628	1,555	1,482	1,410	1,335
Dover Sole	74,352	66,871	1	63,929	61,053	58,178	55,369	52,427
English Sole	5,646	12,092	2	11,040	10,073	9,166	8,295	7,437
Lingcod N. of 42° N. latitude (OR & WA)	1,897	1,898	1	1,814	1,733	1,651	1,572	1,488
Lingcod S. of 42° N. latitude (CA)	2,044	2,317	2	2,115	1,930	1,756	1,589	1,425
Lingcod N. of 40°10' N. latitude	2,878	3,010	1	2,830	2,659	2,494	2,334	2,172
Lingcod S. of 40°10' N. latitude	1,063	1,205	2	1,100	1,004	913	827	741
Longnose skate	2,692	2,449	1	2,341	2,236	2,130	2,027	1,920
Longspine Thornyhead (coastwide)	2,752	5,007	2	4,571	4,171	3,795	3,435	3,079
Pacific Cod	2,221	3,200	3	2,669	2,221	1,837	1,504	1,213
Sablefish (coastwide)	6,535	7,857	1	7,511	7,173	6,836	6,506	6,160
Shortbelly	5,789	6,950	2	6,345	5,789	5,268	4,768	4,274
Shortspine Thornyhead (coastwide)	2,208	3,203	2	2,924	2,668	2,428	2,197	1,970
Splitnose S. of 40°10' N. latitude	1,670	1,794	1	1,715	1,638	1,561	1,485	1,406
Starry Flounder	1,528	1,841	2	1,681	1,534	1,395	1,263	1,132

Stock	Status Quo 2014 ABC	2015 OFL	Category	Range of Alternative 2015 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
Widow	4,212	4,137	1	3,929	3,729	3,532	3,337	3,138
Yellowtail N. of 40°10' N. latitude	4,382	12,281	2	11,213	10,230	9,309	8,425	7,553
STOCK COMPLEXES								
Minor Nearshore Rockfish North	94	68		59	51	44	38	32
<i>Black and yellow</i>	0.0	0.014	3	0.011	0.009	0.008	0.006	0.005
<i>Blue (CA)</i>	25.0	27.4	2	25.0	22.9	20.8	18.8	16.9
<i>Blue (OR & WA)</i>	26.9	32.3	3	26.9	22.4	18.5	15.2	12.2
Brown	4.6	NA	2	NA	NA	NA	NA	NA
<i>Calico</i>	0.0	-	3	-	-	-	-	-
China	8.2	NA	2	NA	NA	NA	NA	NA
Copper	21.6	NA	2	NA	NA	NA	NA	NA
<i>Gopher</i>	0.0	-	3	-	-	-	-	-
<i>Grass</i>	0.5	0.7	3	0.5	0.5	0.4	0.3	0.2
<i>Kelp</i>	0.0	0.009	3	0.008	0.006	0.005	0.004	0.003
<i>Olive</i>	0.3	0.3	3	0.3	0.2	0.2	0.1	0.1
<i>Quillback</i>	6.2	7.4	3	6.2	5.1	4.2	3.5	2.8
<i>Treefish</i>	0.2	0.2	3	0.2	0.2	0.1	0.1	0.1
Minor Shelf Rockfish North	1,932	2,207		1,943	1,711	1,505	1,316	1,141
<i>Bronzespotted</i>	0.0	-	3	-	-	-	-	-
<i>Bocaccio</i>	236.9	284.0	3	236.9	197.1	163.0	133.5	107.6
<i>Chameleon</i>	0.0	-	3	-	-	-	-	-
<i>Chilipepper</i>	108.1	128.2	3	106.9	88.9	73.6	60.2	48.6
<i>Cowcod</i>	0.0	-	3	-	-	-	-	-
<i>Flag</i>	0.1	0.07	3	0.06	0.05	0.04	0.03	0.03
<i>Freckled</i>	0.0	-	3	-	-	-	-	-
<i>Greenblotched</i>	1.1	1.3	3	1.1	0.9	0.7	0.6	0.5
<i>Greenspotted 40°10' to 42° N. latitude</i>	9	9.3	2	8.5	7.7	7.0	6.4	5.7
<i>Greenspotted N. of 42 N. latitude (OR & WA)</i>	5.1	6.1	3	5.1	4.2	3.5	2.9	2.3
<i>Greenstriped</i>	1,158	1,281.9	2	1,170.3	1,067.8	971.7	879.4	788.3
<i>Halfbanded</i>	0.0	-	3	-	-	-	-	-
<i>Harlequin</i>	0.0	-	3	-	-	-	-	-
<i>Honeycomb</i>	0.0	-	3	-	-	-	-	-
<i>Mexican</i>	0.0	-	3	-	-	-	-	-
<i>Pink</i>	0.0	0.004	3	0.003	0.003	0.002	0.002	0.001

Stock	Status Quo 2014 ABC	2015 OFL	Category	Range of Alternative 2015 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
<i>Pinkrose</i>	0.0	-	3	-	-	-	-	-
<i>Puget Sound</i>	0.0	-	3	-	-	-	-	-
<i>Pygmy</i>	0.0	-	3	-	-	-	-	-
<i>Redstripe</i>	225.1	269.9	3	225.1	187.3	154.9	126.9	102.3
<i>Rosethorn</i>	10.8	12.9	3	10.8	9.0	7.4	6.1	4.9
<i>Rosy</i>	2.5	3.0	3	2.5	2.1	1.7	1.4	1.1
<i>Silvergray</i>	133.0	159.4	3	133.0	110.6	91.5	74.9	60.4
<i>Speckled</i>	0.1	0.17	3	0.14	0.12	0.10	0.08	0.06
<i>Squarespot</i>	0.1	0.17	3	0.14	0.12	0.10	0.08	0.07
<i>Starry</i>	0.0	0.00	3	0.003	0.003	0.002	0.002	0.001
Stripetail	33.7	40.4	3	33.7	28.0	23.2	19.0	15.3
<i>Swordspine</i>	0.0	0.0001	3	0.00008	0.00007	0.00006	0.00005	0.00004
<i>Tiger</i>	0.8	1.0	3	0.8	0.7	0.6	0.5	0.4
<i>Vermilion</i>	8.1	9.7	3	8.1	6.7	5.6	4.6	3.7
Minor Slope Rockfish North	1,414	1,804		1,677	1,561	1,453	1,350	1,250
Aurora	12.8	17.4	1	16.6	15.8	15.0	14.2	13.4
<i>Bank</i>	14.4	17.2	3	14.4	12.0	9.9	8.1	6.5
<i>Blackgill</i>	3.9	4.7	3	3.9	3.3	2.7	2.2	1.8
<i>Redbanded</i>	37.7	45.3	3	37.7	31.4	26.0	21.3	17.2
Rougeye	59.3	201.9	1	193	184	176	167	158
Sharpchin	178.9	305.6	2	279.0	254.6	231.6	209.6	187.9
<i>Shortraker</i>	15.6	18.7	3	15.6	13.0	10.7	8.8	7.1
<i>Splitnose</i>	931.3	1,000.6	1	956.6	913.6	870.5	828.5	784.5
<i>Yellowmouth</i>	160.5	192.4	3	160.5	133.6	110.5	90.4	72.9
Minor Nearshore Rockfish South	1,001	793		694	609	534	466	405
<i>Shallow Nearshore Species</i>	NA	NA	NA	NA	NA	NA	NA	NA
<i>Black and yellow</i>	23.0	28	3	23.0	19.1	15.8	12.9	10.4
China	13.8	NA	2	NA	NA	NA	NA	NA
<i>Gopher (N of Pt. Conception)</i>	146.3	148	1	141.5	135.1	128.8	122.5	116.0
<i>Gopher (S of Pt. Conception)</i>	21.4	26	3	21.4	17.8	14.7	12.0	9.7
<i>Grass</i>	49.7	60	3	49.7	41.4	34.2	28.0	22.6
<i>Kelp</i>	23.1	28	3	23.1	19.2	15.9	13.0	10.5
<i>Deeper Nearshore Species</i>	NA	NA	NA	NA	NA	NA	NA	NA
<i>Blue (assessed area)</i>	171.4	189	2	172.2	157.1	142.9	129.4	116.0

Stock	Status Quo 2014 ABC	2015 OFL	Category	Range of Alternative 2015 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
<i>Blue (S of 34°27' N. latitude)</i>	60.8	73	3	60.8	50.6	41.8	34.3	27.6
Brown	170.6	NA	2	NA	NA	NA	NA	NA
<i>Calico</i>	0.0	-	3	-	-	-	-	-
Copper	118.0	NA	2	NA	NA	NA	NA	NA
<i>Olive</i>	187.4	225	3	187.4	155.9	128.9	105.6	85.1
<i>Quillback</i>	4.5	5	3	4.5	3.7	3.1	2.5	2.0
<i>Treefish</i>	11.0	13	3	11.0	9.2	7.6	6.2	5.0
Minor Shelf Rockfish South	1,620	1,914		1,621	1,372	1,156	967	800
<i>Bronzespotted</i>	3.0	3.6	3	3.0	2.5	2.1	1.7	1.4
<i>Chameleon</i>	0.0	-	3	-	-	-	-	-
<i>Flag</i>	19.5	23.4	3	19.5	16.3	13.4	11.0	8.9
<i>Freckled</i>	0.0	-	3	-	-	-	-	-
<i>Greenblotched</i>	19.3	23.1	3	19.3	16.1	13.3	10.9	8.8
<i>Greenspotted</i>	73.3	79.0	2	72.1	65.8	59.9	54.2	48.6
<i>Greenstriped</i>	212.4	235.1	2	214.7	195.9	178.2	161.3	144.6
<i>Halfbanded</i>	0.0	-	3	-	-	-	-	-
<i>Harlequin</i>	0.0	-	3	-	-	-	-	-
<i>Honeycomb</i>	8.2	9.9	3	8.2	6.8	5.7	4.6	3.7
<i>Mexican</i>	4.2	5.1	3	4.2	3.5	2.9	2.4	1.9
<i>Pink</i>	2.1	2.5	3	2.1	1.8	1.5	1.2	1.0
<i>Pinkrose</i>	0.0	-	3	-	-	-	-	-
<i>Pygmy</i>	0.0	-	3	-	-	-	-	-
<i>Redstripe</i>	0.4	0.5	3	0.4	0.3	0.3	0.2	0.2
<i>Rosethorn</i>	1.8	2.1	3	1.8	1.5	1.2	1.0	0.8
<i>Rosy</i>	37.1	44.5	3	37.1	30.9	25.5	20.9	16.9
<i>Silvergray</i>	0.4	0.5	3	0.4	0.4	0.3	0.3	0.2
<i>Speckled</i>	32.8	39.4	3	32.8	27.3	22.6	18.5	14.9
<i>Squarespot</i>	9.2	11.1	3	9.2	7.7	6.4	5.2	4.2
<i>Starry</i>	52.2	62.6	3	52.2	43.4	35.9	29.4	23.7
Stripetail	19.7	23.6	3	19.7	16.4	13.6	11.1	9.0
<i>Swordspine</i>	11.9	14.2	3	11.9	9.9	8.2	6.7	5.4
<i>Tiger</i>	0.0	0.04	3	0.03	0.03	0.02	0.02	0.02
<i>Vermilion</i>	224.6	269.3	3	224.6	186.9	154.6	126.6	102.1
<i>Yellowtail</i>	887.7	1,064.4	3	887.7	738.7	611.0	500.3	403.4

Stock	Status Quo 2014 ABC	2015 OFL	Category	Range of Alternative 2015 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
Minor Slope Rockfish South	622	806		699	606	525	452	387
<i>Aurora</i>	21.7	74.3	1	70.7	67.3	63.9	60.6	57.1
<i>Bank</i>	459.4	503.2	3	419.7	349.2	288.8	236.5	190.7
<i>Blackgill</i>	122.3	137.0	2	125.1	114.1	103.8	94.0	84.3
<i>Pacific ocean perch</i>	0.0	-	3	-	-	-	-	-
<i>Redbanded</i>	8.7	10.4	3	8.7	7.2	6.0	4.9	3.9
<i>Rougheye</i>	0.3	4.1	1	3.9	3.8	3.6	3.4	3.2
<i>Sharpchin</i>	8.2	76.4	2	69.8	63.6	57.9	52.4	47.0
<i>Shorthead</i>	0.1	0.10	3	0.09	0.07	0.06	0.05	0.04
<i>Yellowmouth</i>	0.7	0.8	3	0.7	0.6	0.5	0.4	0.3
Other Flatfish	6,982	11,298		9,865	8,620	7,517	6,521	5,606
<i>Butter sole</i>	3.2	4.6	3	3.9	3.2	2.7	2.2	1.8
<i>Curlfin sole</i>	5.7	8.2	3	6.9	5.7	4.7	3.9	3.1
<i>Flathead sole</i>	24.3	35.0	3	29.2	24.3	20.1	16.5	13.3
<i>Pacific sanddab</i>	3,331.9	4,801.0	3	4,004.0	3,331.9	2,755.8	2,256.5	1,819.6
<i>Rex sole</i>	3,033.8	5,609.0	2	5,121.0	4,672.3	4,251.6	3,847.8	3,449.5
<i>Rock sole</i>	46.3	66.7	3	55.6	46.3	38.3	31.3	25.3
<i>Sand sole</i>	536.6	773.2	3	644.8	536.6	443.8	363.4	293.0
Other Fish	4,697	2,523		b/	b/	b/	b/	b/
<i>Big skate</i>	317.9	b/	3	b/	b/	b/	b/	b/
<i>Cabazon (WA)</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>California skate</i>	59.7	b/	3	b/	b/	b/	b/	b/
<i>Finescale codling</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>Kelp greenling (CA)</i>	82.5	b/	3	b/	b/	b/	b/	b/
<i>Kelp greenling (OR & WA)</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>Leopard shark</i>	116.0	b/	3	b/	b/	b/	b/	b/
<i>Pacific grenadier</i>	1,054.2	b/	3	b/	b/	b/	b/	b/
<i>Ratfish</i>	1,000.1	b/	3	b/	b/	b/	b/	b/
<i>Southern shark</i>	42.8	b/	3	b/	b/	b/	b/	b/
<i>Spiny dogfish (SPR = 50%)</i>	2,024	2,522.7	2	2,303.2	2,101.4	1,912.2	1,730.6	1,551.5

a/ No ABC contribution for these stocks given the lack of an approved method for estimating the OFL.

b/ No ABC recommended pending decisions on restructuring this complex.

Table 5. Proposed stock categories and a range of alternative 2016 ABCs (mt) varied by the probability of overfishing (P*) for west coast groundfish stocks.

Stock	Status Quo 2014 ABC	2016 OFL	Category	Range of Alternative 2016 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
OVERFISHED STOCKS								
BOCACCIO S. of 40°10' N. latitude	842	1,351	1	1,291	1,233	1,175	1,118	1,059
CANARY	709	729	1	697	666	634	604	572
COWCOD S. of 40°10' N. latitude	9	NA		NA	NA	NA	NA	NA
<i>COWCOD (Conception)</i>	6	NA	2	NA	NA	NA	NA	NA
<i>COWCOD (Monterey)</i>	3	NA	3	NA	NA	NA	NA	NA
DARKBLOTCHED	529	595	1	569	543	518	493	466
PACIFIC OCEAN PERCH	801	850	1	813	776	740	704	666
PETRALE SOLE	2,652	3,044	1	2,910	2,779	2,648	2,520	2,386
YELLOWEYE	43	52	2	47	43	39	35	32
NON-OVERFISHED STOCKS								
Arrowtooth Flounder	5,758	6,396	2	5,840	5,328	4,848	4,388	3,934
Black Rockfish (OR-CA)	1,115	1,183	1	1,131	1,080	1,029	980	927
Black Rockfish (WA)	409	423	1	404	386	368	350	332
Cabazon (CA)	158	158	1	151	144	137	131	124
Cabazon (OR)	47	49	1	47	45	43	41	38
California scorpionfish	117	117	1	111	106	101	97	91
Chilipepper S. of 40°10' N. latitude	1,647	1,694	1	1,619	1,547	1,474	1,403	1,328
Dover Sole	74,352	59,221	1	56,615	54,069	51,522	49,035	46,429
English Sole	5,646	8,493	2	7,754	7,075	6,438	5,826	5,223
Lingcod N. of 42° N. latitude (OR & WA)	1,897	1,842	1	1,761	1,682	1,603	1,525	1,444
Lingcod S. of 42° N. latitude (CA)	2,044	2,185	2	1,995	1,820	1,656	1,499	1,344
Lingcod N. of 40°10' N. latitude	2,878	2,891	1	2,719	2,555	2,398	2,245	2,089
Lingcod S. of 40°10' N. latitude	1,063	1,136	2	1,037	946	861	779	699
Longnose skate	2,692	2,405	1	2,299	2,196	2,092	1,991	1,885
Longspine Thornyhead (coastwide)	2,752	4,763	2	4,349	3,968	3,610	3,267	2,929
Pacific Cod	2,221	3,200	3	2,669	2,221	1,837	1,504	1,213
Sablefish (coastwide)	6,535	8,526	1	8,151	7,784	7,418	7,060	6,684
Shortbelly	5,789	6,950	2	6,345	5,789	5,268	4,768	4,274
Shortspine Thornyhead (coastwide)	2,208	3,169	2	2,893	2,640	2,402	2,174	1,949
Splitnose S. of 40°10' N. latitude	1,670	1,826	1	1,746	1,667	1,589	1,512	1,432
Starry Flounder	1,528	1,847	2	1,686	1,539	1,400	1,267	1,136

Stock	Status Quo 2014 ABC	2016 OFL	Category	Range of Alternative 2016 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
Widow	4,212	3,990	1	3,790	3,596	3,407	3,218	3,026
Yellowtail N. of 40°10' N. latitude	4,382	11,647	2	10,634	9,702	8,828	7,990	7,163
STOCK COMPLEXES								
Minor Nearshore Rockfish North	94	69		59	51	44	38	33
<i>Black and yellow</i>	0.0	0.014	3	0.011	0.009	0.008	0.006	0.005
<i>Blue (CA)</i>	25.0	27.7	2	25.3	23.1	21.0	19.0	17.0
<i>Blue (OR & WA)</i>	26.9	32.3	3	26.9	22.4	18.5	15.2	12.2
Brown	4.6	NA	2	NA	NA	NA	NA	NA
<i>Calico</i>	0.0	-	3	-	-	-	-	-
China	8.2	NA	2	NA	NA	NA	NA	NA
Copper	21.6	NA	2	NA	NA	NA	NA	NA
<i>Gopher</i>	0.0	-	3	-	-	-	-	-
<i>Grass</i>	0.5	0.7	3	0.5	0.5	0.4	0.3	0.2
<i>Kelp</i>	0.0	0.009	3	0.008	0.006	0.005	0.004	0.003
<i>Olive</i>	0.3	0.32	3	0.26	0.22	0.18	0.15	0.12
<i>Quillback</i>	6.2	7.4	3	6.2	5.1	4.2	3.5	2.8
<i>Treefish</i>	0.2	0.22	3	0.18	0.15	0.12	0.10	0.08
Minor Shelf Rockfish North	1,932	2,217		1,952	1,719	1,512	1,323	1,147
<i>Bronzespotted</i>	0.0	-	3	-	-	-	-	-
<i>Bocaccio</i>	236.9	284.0	3	236.9	197.1	163.0	133.5	107.6
<i>Chameleon</i>	0.0	-	3	-	-	-	-	-
<i>Chilipepper</i>	108.1	127.5	3	106.4	88.5	73.2	59.9	48.3
<i>Cowcod</i>	0.0	-	3	-	-	-	-	-
<i>Flag</i>	0.1	0.07	3	0.06	0.05	0.04	0.03	0.03
<i>Freckled</i>	0.0	-	3	-	-	-	-	-
<i>Greenblotched</i>	1.1	1.3	3	1.1	0.9	0.7	0.6	0.5
<i>Greenspotted 40°10' to 42° N. latitude</i>	9	9.3	2	8.5	7.7	7.0	6.4	5.7
<i>Greenspotted N. of 42 N. latitude (OR & WA)</i>	5.1	6.1	3	5.1	4.2	3.5	2.9	2.3
<i>Greenstriped</i>	1,158	1,292.0	2	1,179.6	1,076.2	979.3	886.3	794.6
<i>Halfbanded</i>	0.0	-	3	-	-	-	-	-
<i>Harlequin</i>	0.0	-	3	-	-	-	-	-
<i>Honeycomb</i>	0.0	-	3	-	-	-	-	-
<i>Mexican</i>	0.0	-	3	-	-	-	-	-
<i>Pink</i>	0.0	0.004	3	0.003	0.003	0.002	0.002	0.001

Stock	Status Quo 2014 ABC	2016 OFL	Category	Range of Alternative 2016 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
<i>Pinkrose</i>	0.0	-	3	-	-	-	-	-
<i>Puget Sound</i>	0.0	-	3	-	-	-	-	-
<i>Pygmy</i>	0.0	-	3	-	-	-	-	-
<i>Redstripe</i>	225.1	269.9	3	225.1	187.3	154.9	126.9	102.3
<i>Rosethorn</i>	10.8	12.9	3	10.8	9.0	7.4	6.1	4.9
<i>Rosy</i>	2.5	3.0	3	2.5	2.1	1.7	1.4	1.1
<i>Silvergray</i>	133.0	159.4	3	133.0	110.6	91.5	74.9	60.4
<i>Speckled</i>	0.1	0.17	3	0.14	0.12	0.10	0.08	0.06
<i>Squarespot</i>	0.1	0.17	3	0.14	0.12	0.10	0.08	0.07
<i>Starry</i>	0.0	0.004	3	0.003	0.003	0.002	0.002	0.001
<i>Stripetail</i>	33.7	40.4	3	33.7	28.0	23.2	19.0	15.3
<i>Swordspine</i>	0.0	0.0	3	0.0	0.0	0.0	0.0	0.0
<i>Tiger</i>	0.8	1.0	3	0.8	0.7	0.6	0.5	0.4
<i>Vermilion</i>	8.1	9.7	3	8.1	6.7	5.6	4.6	3.7
Minor Slope Rockfish North	1,414	1,817		1,691	1,574	1,465	1,363	1,262
<i>Aurora</i>	12.8	17.5	1	16.7	15.9	15.1	14.3	13.5
<i>Bank</i>	14.4	17.2	3	14.4	12.0	9.9	8.1	6.5
<i>Blackgill</i>	3.9	4.7	3	3.9	3.3	2.7	2.2	1.8
<i>Redbanded</i>	37.7	45.3	3	37.7	31.4	26.0	21.3	17.2
<i>Rougheye</i>	59.3	205.8	1	197	188	179	170	161
<i>Sharpchin</i>	178.9	297.6	2	271.7	247.9	225.6	204.2	183.0
<i>Shortraker</i>	15.6	18.7	3	15.6	13.0	10.7	8.8	7.1
<i>Splitnose</i>	931.3	1,018.2	1	973.4	929.6	885.8	843.0	798.2
<i>Yellowmouth</i>	160.5	192.4	3	160.5	133.6	110.5	90.4	72.9
Minor Nearshore Rockfish South	1,001	791		692	607	532	464	403
<i>Shallow Nearshore Species</i>	NA	NA	NA	NA	NA	NA	NA	NA
<i>Black and yellow</i>	23.0	27.5	3	23.0	19.1	15.8	12.9	10.4
<i>China</i>	13.8	NA	2	NA	NA	NA	NA	NA
<i>Gopher (N of Pt. Conception)</i>	146.3	144.0	1	137.7	131.5	125.3	119.2	112.9
<i>Gopher (S of Pt. Conception)</i>	21.4	25.6	3	21.4	17.8	14.7	12.0	9.7
<i>Grass</i>	49.7	59.6	3	49.7	41.4	34.2	28.0	22.6
<i>Kelp</i>	23.1	27.7	3	23.1	19.2	15.9	13.0	10.5
<i>Deeper Nearshore Species</i>	NA	NA	NA	NA	NA	NA	NA	NA
<i>Blue (assessed area)</i>	171.4	190.3	2	173.8	158.5	144.3	130.6	117.0

Stock	Status Quo 2014 ABC	2016 OFL	Category	Range of Alternative 2016 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
<i>Blue (S of 34°27' N. latitude)</i>	60.8	72.9	3	60.8	50.6	41.8	34.3	27.6
Brown	170.6	NA	2	NA	NA	NA	NA	NA
<i>Calico</i>	0.0	-	3	-	-	-	-	-
Copper	118.0	NA	2	NA	NA	NA	NA	NA
<i>Olive</i>	187.4	224.6	3	187.4	155.9	128.9	105.6	85.1
<i>Quillback</i>	4.5	5.4	3	4.5	3.7	3.1	2.5	2.0
<i>Treefish</i>	11.0	13.2	3	11.0	9.2	7.6	6.2	5.0
Minor Shelf Rockfish South	1,620	1,915		1,622	1,373	1,157	968	800
<i>Bronzespotted</i>	3.0	3.6	3	3.0	2.5	2.1	1.7	1.4
<i>Chameleon</i>	0.0	-	3	-	-	-	-	-
<i>Flag</i>	19.5	23.4	3	19.5	16.3	13.4	11.0	8.9
<i>Freckled</i>	0.0	-	3	-	-	-	-	-
<i>Greenblotched</i>	19.3	23.1	3	19.3	16.1	13.3	10.9	8.8
<i>Greenspotted</i>	73.3	78.4	2	71.6	65.3	59.5	53.8	48.2
<i>Greenstriped</i>	212.4	237.0	2	216.4	197.4	179.6	162.6	145.8
<i>Halfbanded</i>	0.0	-	3	-	-	-	-	-
<i>Harlequin</i>	0.0	-	3	-	-	-	-	-
<i>Honeycomb</i>	8.2	9.9	3	8.2	6.8	5.7	4.6	3.7
<i>Mexican</i>	4.2	5.1	3	4.2	3.5	2.9	2.4	1.9
<i>Pink</i>	2.1	2.5	3	2.1	1.8	1.5	1.2	1.0
<i>Pinkrose</i>	0.0	-	3	-	-	-	-	-
<i>Pygmy</i>	0.0	-	3	-	-	-	-	-
<i>Redstripe</i>	0.4	0.5	3	0.4	0.3	0.3	0.2	0.2
<i>Rosethorn</i>	1.8	2.1	3	1.8	1.5	1.2	1.0	0.8
<i>Rosy</i>	37.1	44.5	3	37.1	30.9	25.5	20.9	16.9
<i>Silvergray</i>	0.4	0.5	3	0.4	0.4	0.3	0.3	0.2
<i>Speckled</i>	32.8	39.4	3	32.8	27.3	22.6	18.5	14.9
<i>Squarespot</i>	9.2	11.1	3	9.2	7.7	6.4	5.2	4.2
<i>Starry</i>	52.2	62.6	3	52.2	43.4	35.9	29.4	23.7
Stripetail	19.7	23.6	3	19.7	16.4	13.6	11.1	9.0
<i>Swordspine</i>	11.9	14.2	3	11.9	9.9	8.2	6.7	5.4
<i>Tiger</i>	0.0	0.04	3	0.03	0.03	0.02	0.02	0.02
<i>Vermilion</i>	224.6	269.3	3	224.6	186.9	154.6	126.6	102.1
<i>Yellowtail</i>	887.7	1,064.4	3	887.7	738.7	611.0	500.3	403.4

Stock	Status Quo 2014 ABC	2016 OFL	Category	Range of Alternative 2016 ABCs				
				Overfishing Probability (P*)				
				0.45	0.40	0.35	0.30	0.25
Minor Slope Rockfish South	622	807		700	607	525	453	387
<i>Aurora</i>	21.7	74.3	1	70.7	67.3	63.9	60.6	57.1
<i>Bank</i>	459.4	503.2	3	419.7	349.2	288.8	236.5	190.7
<i>Blackgill</i>	122.3	140.0	2	127.8	116.6	106.1	96.0	86.1
<i>Pacific ocean perch</i>	0.0	-	3	-	-	-	-	-
<i>Redbanded</i>	8.7	10.4	3	8.7	7.2	6.0	4.9	3.9
<i>Rougheye</i>	0.3	4.2	1	4	4	4	3	3
<i>Sharpchin</i>	8.2	74.4	2	67.9	62.0	56.4	51.0	45.8
<i>Shorthead</i>	0.1	0.10	3	0.09	0.07	0.06	0.05	0.04
<i>Yellowmouth</i>	0.7	0.8	3	0.7	0.6	0.5	0.4	0.3
Other Flatfish	6,982	9,948		8,633	7,496	6,494	5,595	4,775
<i>Butter sole</i>	3.2	4.6	3	3.9	3.2	2.7	2.2	1.8
<i>Curlfin sole</i>	5.7	8.2	3	6.9	5.7	4.7	3.9	3.1
<i>Flathead sole</i>	24.3	35.0	3	29.2	24.3	20.1	16.5	13.3
<i>Pacific sanddab</i>	3,331.9	4,801.0	3	4,004.0	3,331.9	2,755.8	2,256.5	1,819.6
<i>Rex sole</i>	3,033.8	4,259.0	2	3,888.5	3,547.7	3,228.3	2,921.7	2,619.3
<i>Rock sole</i>	46.3	66.7	3	55.6	46.3	38.3	31.3	25.3
<i>Sand sole</i>	536.6	773.2	3	644.8	536.6	443.8	363.4	293.0
Other Fish	4,697	2,503	0	b/	b/	b/	b/	b/
<i>Big skate</i>	317.9	b/	3	b/	b/	b/	b/	b/
<i>Cabezon (WA)</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>California skate</i>	59.7	b/	3	b/	b/	b/	b/	b/
<i>Finescale codling</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>Kelp greenling (CA)</i>	82.5	b/	3	b/	b/	b/	b/	b/
<i>Kelp greenling (OR & WA)</i>	0.0	a/	3	a/	a/	a/	a/	a/
<i>Leopard shark</i>	116.0	b/	3	b/	b/	b/	b/	b/
<i>Pacific grenadier</i>	1,054.2	b/	3	b/	b/	b/	b/	b/
<i>Ratfish</i>	1,000.1	b/	3	b/	b/	b/	b/	b/
<i>Southern shark</i>	42.8	b/	3	b/	b/	b/	b/	b/
<i>Spiny dogfish (SPR = 50%)</i>	2,024	2,503.3	2	2,285.5	2,085.2	1,897.5	1,717.2	1,539.5

a/ No ABC contribution for these stocks given the lack of an approved method for estimating the OFL.

b/ No ABC recommended pending decisions on restructuring this complex.

Table 6. Presumptive 2015 and 2016 annual catch limits (ACLs in mt) for west coast groundfish stocks and stock complexes assuming the default harvest control rules (HCRs) specified for 2013 and 2014 (stocks with new assessments in bold).

Stock	Status Quo ACL	Presumptive ACLs Based on Default HCRs		Presumptive ACLs Varied by the Overfishing Probability (P*)			
		2014	2015	2016	2015		2016
	P* = 0.45				P* = 0.25	P* = 0.45	P* = 0.25
OVERFISHED STOCKS							
BOCACCIO S. of 40°10'	337	349	362	349	349	362	362
CANARY	119	122	125	122	122	125	125
COWCOD S. of 40°10'	3	NA	NA	NA	NA	NA	NA
<i>COWCOD (Conception)</i>	1.5	NA	NA	NA	NA	NA	NA
<i>COWCOD (Monterey)</i>	1.5	NA	NA	NA	NA	NA	NA
DARKBLOTCHED	330	338	346	338	338	346	346
PACIFIC OCEAN PERCH	153	158	164	158	158	164	164
PETRALE SOLE	2,652	2,816	2,910	2,816	2,310	2,910	2,386
YELLOWEYE	18	18	19	18	18	19	19
NON-OVERFISHED STOCKS							
Arrowtooth Flounder	5,758	5,497	5,328	6,025	4,058	5,840	3,934
Black Rockfish (OR-CA)	1,000	1,000	1,000	1,000	922	1,000	927
Black Rockfish (WA)	409	402	404	402	330	404	332
Cabezon (CA)	158	154	151	154	126	151	124
Cabezon (OR)	47	47	47	47	38	47	38
California scorpionfish	117	114	111	114	93	111	91
Chilipepper S. of 40°10'	1,647	1,628	1,619	1,628	1,335	1,619	1,328
Dover Sole	25,000	25,000	25,000	25,000	25,000	25,000	25,000
English Sole	5,646	11,040	7,754	11,040	7,437	7,754	5,223
Lingcod N. of 42° (OR & WA) a/		2,010	1,897	1,814	1,488	1,761	1,444
Lingcod S. of 42° (CA) a/		2,137	2,044	2,115	1,425	1,995	1,344
Lingcod N. of 40°10'	2,635	2,830	2,719	2,830	2,172	2,719	2,089
Lingcod S. of 40°10'	1,063	1,004	1,037	1,100	741	1,037	699
Longnose skate	2,000	2,000	2,000	2,000	1,920	2,000	1,885
Longspine Thornyhead (coastwide)	NA	NA	NA	See Thornyhead Worksheet – Table 8			
Longspine Thornyhead N. of 34°27'	1,958	2,854	2,715				
Longspine Thornyhead S. of 34°27'	347	601	572				
Pacific Cod	1,600	1,600	1,600	1,600	1,213	1,600	1,213
Sablefish (coastwide)	NA	NA	NA	NA	NA	NA	NA

Stock	Status Quo ACL	Presumptive ACLs Based on Default HCRs		Presumptive ACLs Varied by the Overfishing Probability (P*)			
		2014	2015	2016	2015		2016
	P* = 0.45				P* = 0.25	P* = 0.45	P* = 0.25
Sablefish N. of 36°	4,349	4,793	5,241	NA	NA	NA	NA
Sablefish S. of 36°	1,560	1,719	1,880	NA	NA	NA	NA
Shortbelly	50	50	50	50	50	50	50
Shortspine Thornyhead (coastwide)	NA	NA	NA	See Thornyhead Worksheet – Table 8			
Shortspine Thornyhead N. of 34°27'	1,525	2,095	2,073				
Shortspine Thornyhead S. of 34°27'	393	554	548				
Splitnose S. of 40°10'	1,670	1,715	1,746	1,715	1,406	1,746	1,432
Starry Flounder	1,528	1,534	1,539	1,681	1,132	1,686	1,136
Widow	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Yellowtail N. of 40°10'	4,382	11,213	10,634	11,213	7,553	10,634	7,163
STOCK COMPLEXES							
Minor Nearshore Rockfish North a/	94	NA	NA	NA	NA	NA	NA
Minor Shelf Rockfish North	968	968	968	968	968	968	968
Minor Slope Rockfish North	1,160	1,160	1,160	1,160	1,160	1,160	1,160
Minor Nearshore Rockfish South a/	990	NA	NA	NA	NA	NA	NA
Minor Shelf Rockfish South	714	714	714	714	714	714	714
Minor Slope Rockfish South	622	699	700	699	387	700	387
Other Flatfish	4,884	4,884	4,884	4,884	4,884	4,884	4,775
Other Fish b/	4,697	NA	NA	NA	NA	NA	NA

a/ Presumptive ACLs not available pending contribution OFLs and ABCs for brown, copper, and China rockfish.

b/ Presumptive ACLs not available pending decisions on restructuring this complex.

Table 7. The basis for presumptive 2015 and 2016 annual catch limits (ACLs in mt) for west coast groundfish stocks and stock complexes assuming the default harvest control rules (HCRs) specified for 2013 and 2014.

Stock	Default HCR	Comment
OVERFISHED STOCKS		
BOCACCIO S. of 40°10'	SPR = 77.7%	Projected from 2011 reb. anal. w/ 6% reduction to subtract the portion of the assessed stock north of 40°10' N. lat.
CANARY	SPR = 88.7%	Projected from 2011 reb. anal.
COWCOD S. of 40°10'	SPR = 82.7%	Conception area ACLs projected from 2013 reb. anal.; Con. ACLs doubled to account for the stock in the Monterey area.
<i>COWCOD (Conception)</i>		
<i>COWCOD (Monterey)</i>		
DARKBLOTCHED	SPR = 64.9%	Projected from 2011 reb. anal.
PACIFIC OCEAN PERCH	SPR = 86.4%	Projected from 2011 reb. anal.
PETRALE SOLE	25-5 rule	Projected from 2011 reb. anal.
YELLOWEYE	SPR = 76.0%	Projected from 2011 reb. anal.
NON-OVERFISHED STOCKS		
Arrowtooth Flounder	ACL = ABC (P* = 0.4)	OFLs projected from 2007 assessment assuming $F_{MSY} = 30\%$ SPR.
Black Rockfish (OR-CA)	Constant catch strategy	ACL < ABC (P*0.45)
Black Rockfish (WA)	ACL = ABC (P* = 0.45)	
Cabazon (CA)	ACL = ABC (P* = 0.45)	
Cabazon (OR)	ACL = ABC (P* = 0.45)	
California scorpionfish	ACL = ABC (P* = 0.45)	
Chilipepper S. of 40°10'	ACL = ABC (P* = 0.45)	
Dover Sole	Constant catch strategy	
English Sole	ACL = ABC (P* = 0.45)	
Lingcod N. of 42° (OR & WA) a/		
Lingcod S. of 42° (CA) a/		
Lingcod N. of 40°10'	ACL = ABC (P* = 0.45)	
Lingcod S. of 40°10'	ACL = ABC (P* = 0.4)	
Longnose skate	Constant catch strategy	ACL < ABC (P*0.45)
Longspine Thornyhead N. of 34°27'	ACL = 76% of coastwide OFL w/ a 25% reduction for scientific uncertainty	The default apportionment of the coastwide OFL was 79%; 76% estimated in 2013 assessment. Assessment indicates the 25% additional scientific uncertainty buffer may not be justified.

Stock	Default HCR	Comment
Longspine Thornyhead S. of 34°27'	ACL = 24% of coastwide OFL w/ a 50% reduction for scientific uncertainty	The default apportionment of the coastwide OFL was 21%; 24% estimated in 2013 assessment. Assessment indicates the 50% additional scientific uncertainty buffer may not be justified.
Pacific Cod	ACL = 50% of OFL	
Sablefish N. of 36°	40-10 rule applied to ABC (P* = 0.4); northern stock estimated to be 73.6% of coastwide biomass	
Sablefish S. of 36°	40-10 rule applied to ABC (P* = 0.4); southern stock estimated to be 26.4% of coastwide biomass	
Shortbelly	De minimis ACL to accommodate incidental bycatch and allow harvestable surplus to be available as forage	
Shortspine Thornyhead N. of 34°27'	ACL = 65.4% of coastwide OFL	The default apportionment of the coastwide OFL was 66%; 65.4% estimated in 2013 assessment.
Shortspine Thornyhead S. of 34°27'	ACL = 34.6% of coastwide OFL w/ a 50% reduction for scientific uncertainty	The default apportionment of the coastwide OFL was 34%; 34.6% estimated in 2013 assessment. Assessment indicates the 50% additional scientific uncertainty buffer may not be justified.
Splitnose S. of 40°10'	ACL = ABC (P* = 0.45); 64.2% of coastwide biomass estimated south of 40°10' N lat. based on average historical (1916-2008) landings.	
Starry Flounder	ACL = ABC (P* = 0.4)	
Widow	Constant catch strategy	
Yellowtail N. of 40°10'	ACL = ABC (P* = 0.45)	
STOCK COMPLEXES		
Minor Nearshore Rockfish North a/	ACL = ABC (P* = 0.45)	
Minor Shelf Rockfish North	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Minor Slope Rockfish North	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Minor Nearshore Rockfish South a/	ACL = status quo ACL	
Minor Shelf Rockfish South	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Minor Slope Rockfish South	ACL = ABC (P* = 0.45)	

Stock	Default HCR	Comment
Other Flatfish	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45 in 2015 and under P* range of 0.3-0.45 in 2016)	
Other Fish b/	ACL = ABC (P* = 0.4 for unassessed stocks and 0.3 for spiny dogfish)	

Table 8. 2015 and 2016 annual catch limits for longspine and shortspine thornyheads based on alternative harvest control rules, including a test of whether the sum of the ACLs north and south of 34°27' N lat. are within specified coastwide ABCs.

Longspine Thornyhead

Year	Overfishing Probability (P*)	ACLs (mt) by Alternative Harvest Control Rules							
		Default (OFL Apportioned N and S w/ Sci. Unc. Adj.)				No Sci. Unc. Adj. (ABC Apportioned N and S)			
		N of 34°27' N lat.	S of 34°27' N lat.	Σ area ACLs	Σ ACLs ≤ ABC?	N of 34°27' N lat.	S of 34°27' N lat.	Σ area ACLs	Σ ACLs ≤ ABC?
2015	0.45	2,854	601	3,455	Y	3,474	1,097	4,571	Y
	0.40	2,854	601	3,455	Y	3,170	1,001	4,171	Y
	0.35	2,854	601	3,455	Y	2,884	911	3,795	Y
	0.30	2,854	601	3,455	N	2,610	824	3,435	Y
	0.25	2,854	601	3,455	N	2,340	739	3,079	Y
2016	0.45	2,715	572	3,286	Y	3,305	1,044	4,349	Y
	0.40	2,715	572	3,286	Y	3,015	952	3,968	Y
	0.35	2,715	572	3,286	Y	2,744	866	3,610	Y
	0.30	2,715	572	3,286	N	2,483	784	3,267	Y
	0.25	2,715	572	3,286	N	2,226	703	2,929	Y

Shortspine Thornyhead

Year	Overfishing Probability (P*)	ACLs (mt) by Alternative Harvest Control Rules							
		Default (OFL Apportioned N and S w/ Sci. Unc. Adj.)				No Sci. Unc. Adj. (ABC Apportioned N and S)			
		N of 34°27' N lat.	S of 34°27' N lat.	Σ area ACLs	Σ ACLs ≤ ABC?	N of 34°27' N lat.	S of 34°27' N lat.	Σ area ACLs	Σ ACLs ≤ ABC?
2015	0.45	2,095	554	2,649	Y	1,913	1,012	2,924	Y
	0.40	2,095	554	2,649	Y	1,745	923	2,668	Y
	0.35	2,095	554	2,649	N	1,588	840	2,428	Y
	0.30	2,095	554	2,649	N	1,437	760	2,197	Y
	0.25	2,095	554	2,649	N	1,288	682	1,970	Y
2016	0.45	2,073	548	2,621	Y	1,892	1,001	2,893	Y
	0.40	2,073	548	2,621	Y	1,726	913	2,640	Y
	0.35	2,073	548	2,621	N	1,571	831	2,402	Y
	0.30	2,073	548	2,621	N	1,422	752	2,174	Y
	0.25	2,073	548	2,621	N	1,275	674	1,949	Y