

PREFERRED 2015 AND 2016 HARVEST SPECIFICATIONS
FOR GROUND FISH STOCKS AND STOCK COMPLEXES

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Table 1. Preferred harvest specifications for stocks and stock complexes for 2015-2016. The harvest control rule used to calculate the ABCs and ACLs are shown in the right column.

Stock*	Area	2015			2016			Harvest Control Rule
		OFL	ABC	ACL	OFL	ABC	ACL	
BOCACCIO	S of 40°10' N. lat.	1,444	1,380	349	1,351	1,291	362	SPR = 77.7%
CANARY	Coastwide	733	701	122	729	697	125	SPR = 88.7%
COWCOD	S of 40°10' N. lat.	67	60	10	68	62	10	SPR = 82.7% (E = 0.007); ACT = - 4 mt
DARKBLOTCHED	Coastwide	574	549	338	580	554	346	SPR = 64.9%
POP	N of 40°10' N. lat.	842	805	158	850	813	164	SPR = 86.4%
PETRALE SOLE	Coastwide	2,946	2,816	2,816	3,044	2,910	2,910	25-5 rule (P* = 0.45)
YELLOWEYE	Coastwide	52	47	18	52	47	19	SPR = 76.0%
Arrowtooth flounder	Coastwide	6,599	5,497	5,497	6,396	5,328	5,328	ACL = ABC (P* = 0.4)
Black	WA	421	402	402	423	404	404	ACL = ABC (P* = 0.45)
Black	OR & CA	1,176	1,124	1,000	1,183	1,131	1,000	1,000 mt constant catch
Cabezon	OR	49	47	47	49	47	47	ACL = ABC (P* = 0.45)
Cabezon	CA	161	154	154	158	151	151	ACL = ABC (P* = 0.45)
California scorpionfish	S of 34°27' N. lat.	119	114	114	117	111	111	ACL = ABC (P* = 0.45)
Chilipepper	S of 40°10' N. lat.	1,703	1,628	1,628	1,694	1,619	1,619	ACL = ABC (P* = 0.45)
Dover sole	Coastwide	66,871	63,929	50,000	59,221	56,615	50,000	50,000 mt constant catch
English sole	Coastwide	12,092	11,040	11,040	8,493	7,754	7,754	ACL = ABC (P* = 0.45)
Lingcod	N of 40°10' N. lat.	3,010	2,830	2,830	2,891	2,719	2,719	ACL = ABC (P* = 0.45)
Lingcod	S of 40°10' N. lat.	1,205	1,004	1,004	1,136	946	946	ACL = ABC (P* = 0.4)
Longnose skate	Coastwide	2,449	2,341	2,000	2,405	2,299	2,000	2,000 mt constant catch
Longspine thornyhead	Coastwide	5,007	4,171	NA	4,763	3,968	NA	NA
	N of 34°27' N. lat.	NA	NA	3,170	NA	NA	3,015	ACL = prop. of coastwide ABC (P* = 0.4)
	S of 34°27' N. lat.	NA	NA	1,001	NA	NA	952	ACL = prop. of coastwide ABC (P* = 0.4)
Pacific cod	Coastwide	3,200	2,221	1,600	3,200	2,221	1,600	1,600 constant catch
Pacific whiting	Coastwide	NA	NA	NA	NA	NA	NA	NA

Stock*	Area	2015			2016			Harvest Control Rule
		OFL	ABC	ACL	OFL	ABC	ACL	
Sablefish	Coastwide	7,857	7,173	NA	8,526	7,784	NA	NA
	N of 36° N. lat.	NA	NA	4,793	NA	NA	5,241	ACL = prop. of coastwide ABC (P* = 0.4)
	S of 36° N. lat.	NA	NA	1,719	NA	NA	1,880	ACL = prop. of coastwide ABC (P* = 0.4)
Shortbelly	Coastwide	6,950	5,789	50	6,950	5,789	50	50 mt constant catch
Shortspine thornyhead	Coastwide	3,203	2,668	NA	3,169	2,640	NA	NA
	N of 34°27' N. lat.	NA	NA	1,745	NA	NA	1,726	ACL = prop. of coastwide ABC (P* = 0.4)
	S of 34°27' N. lat.	NA	NA	923	NA	NA	913	ACL = prop. of coastwide ABC (P* = 0.4)
Spiny Dogfish	Coastwide	2,523	2,101	2,101	2,503	2,085	2,085	ACL = ABC (P* = 0.4)
Splitnose	S of 40°10' N. lat.	1,794	1,715	1,715	1,826	1,746	1,746	ACL = ABC (P* = 0.45)
Starry flounder	Coastwide	1,841	1,534	1,534	1,847	1,539	1,539	ACL = ABC (P* = 0.4)
Widow	Coastwide	4,137	3,929	2,000	3,990	3,790	2,000	2,000 mt constant catch
Yellowtail	N of 40°10' N. lat.	12,281	11,213	11,213	11,647	10,634	10,634	ACL = ABC (P* = 0.45)
<i>Nearshore Rockfish N</i>	N of 40°10' N. lat.	88	77	69	88	77	69	ACL = ABC (P* = 0.45); 40-10 adj. for blue in CA + China
<i>Nearshore Rockfish S</i>	S of 40°10' N. lat.	1,313	1,169	1,114	1,288	1,148	1,006	ACL = ABC (P* = 0.45); 40-10 adj. for blue N of Pt. Con.
<i>Shelf Rockfish N</i>	N of 40°10' N. lat.	2,209	1,944	1,944	2,218	1,953	1,952	ACL = ABC (P* = 0.45); 40-10 adj. for greenspotted in CA
<i>Shelf Rockfish S</i>	S of 40°10' N. lat.	1,918	1,625	1,624	1,919	1,626	1,625	ACL = ABC (P* = 0.45); 40-10 adj. for greenspotted N of Pt. Con.
<i>Slope Rockfish N</i>	N of 40°10' N. lat.	1,804	1,669	1,669	1,818	1,683	1,683	ACL = ABC (P* = 0.45)
<i>Slope Rockfish S</i>	S of 40°10' N. lat.	806	698	687	807	699	689	ACL = ABC (P* = 0.45); 40-10 adj. for blackgill
<i>Other Flatfish</i>	Coastwide	11,298	8,620	8,620	9,948	7,496	7,496	ACL = ABC (P* = 0.4)
<i>Other Fish</i>	Coastwide	291	242	242	291	243	243	ACL = ABC (P* = 0.45)

Table 2. Estimated time to rebuild and exploitation rate relative to alternative 2015-2016 ACLs for cowcod south of 40°10' N lat.

Stock	Current T _{TARGET}	Current SPR or Harvest Control Rule	Pref. T _{TARGET}	ACL Alt.	ACLs (mt)		SPR or Harvest Control Rule	Median Time to Rebuild	Rebuilding Duration Beyond T@F=0 (yrs.)	Prob. of Rebuilding by Current T _{TARGET}	Prob. of Rebuilding by T _{MAX}
					2015	2016					
Cowcod	2068	82.7%	X		0	0	E = 0	2019	0	95.9%	93.8%
					1.8	1.9	E = 0.0013	2019	0	95.2%	93.0%
					2.4	2.5	E = 0.0018	2019	0	95.0%	92.7%
					3.0	3.1	E = 0.0022	2019	0	94.7%	92.4%
					3.6	3.7	E = 0.0027	2019	0	94.4%	91.9%
				Pref. ACT	4.2	4.4	E = 0.0031	2019	0	94.0%	91.5%
					4.8	5.0	E = 0.0036	2019	0	93.4%	91.3%
					5.5	5.6	E = 0.0040	2019	0	93.4%	91.0%
					6.1	6.2	E = 0.0045	2019	0	93.1%	90.6%
					6.7	6.9	E = 0.0049	2019	0	92.7%	90.2%
					7.3	7.5	E = 0.0054	2019	0	92.4%	89.8%
					7.9	8.1	E = 0.0058	2019	0	92.0%	89.6%
					8.5	8.7	E = 0.0063	2019	0	91.5%	89.2%
					9.1	9.3	E = 0.0067	2019	0	91.2%	88.8%
				Pref. ACL	9.5	9.7	E = 0.007	2020	1	90.9%	88.4%
					9.7	10.0	E = 0.0072	2020	1	90.9%	88.5%
					27.7	28.1	E = 0.0203	2022	3	76.7%	74.3%
					38.1	38.4	E = 0.0281	2025	6	67.5%	65.7%
					48.3	48.5	E = 0.0356	2030	11	60.6%	59.2%
					53.0	53.0	E = 0.0391	2035	16	57.5%	56.4%
	55.5	55.4	E = 0.0409	2039	20	55.0%	53.4%				
	62.1	61.9	E = 0.0458	2057	38	51.4%	50.0%				

Table 3. Option 1 state harvest guidelines for the Nearshore Rockfish complex north of 40°10' N lat. in 2015 and 2016 under preferred harvest specifications.

Option 1 Miles of Coastline

Species	WA%	OR%	CA%	2015				2016			
				Contribution	WA mt	OR mt	CA mt	Contribution	WA mt	OR mt	CA mt
<i>Black and yellow</i>	26%	49%	25%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Blue (CA)</i>	0%	0%	100%	17.0	0.0	0.0	17.0	17.5	0.0	0.0	17.5
<i>Blue (OR & WA)</i>	34%	66%	0%	26.9	9.2	17.8	0.0	26.9	9.2	17.8	0.0
<i>Brown</i>	26%	49%	25%	1.7	0.5	0.9	0.4	1.7	0.4	0.8	0.4
<i>Calico</i>	26%	49%	25%	-	-	-	-	-	-	-	-
<i>China</i>	26%	49%	25%	6.2	1.6	3.0	1.6	6.5	1.7	3.2	1.6
<i>Copper</i>	26%	49%	25%	9.7	2.5	4.8	2.4	9.4	2.5	4.6	2.4
<i>Gopher</i>	26%	49%	25%	-	-	-	-	-	-	-	-
<i>Grass</i>	26%	49%	25%	0.5	0.1	0.3	0.1	0.5	0.1	0.3	0.1
<i>Kelp</i>	26%	49%	25%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Olive</i>	26%	49%	25%	0.3	0.1	0.1	0.1	0.3	0.1	0.1	0.1
<i>Quillback</i>	26%	49%	25%	6.2	1.6	3.0	1.5	6.2	1.6	3.0	1.5
<i>Treefish</i>	26%	49%	25%	0.2	0.0	0.1	0.0	0.2	0.0	0.1	0.0
Total				68.7	15.6	30.0	23.2	69.2	15.6	29.9	23.7

Table 4. Option 2 state harvest guidelines for the Nearshore Rockfish complex north of 40°10' N lat. in 2015 and 2016 under preferred harvest specifications.

Option 2 Historical Catch

Species	WA%	OR%	CA%	2015				2016			
				Contribution	WA mt	OR mt	CA mt	Contribution	WA mt	OR mt	CA mt
<i>Black and yellow</i>	0%	21%	79%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Blue (CA)</i>	NA	NA	100%	17.0	NA	NA	17.0	17.5	NA	NA	17.5
<i>Blue (OR & WA)</i>	6%	94%	NA	26.9	1.6	25.3	NA	26.9	1.6	25.3	NA
<i>Brown</i>	0%	8%	92%	1.7	0.0	0.1	1.6	1.7	0.0	0.1	1.6
<i>Calico</i>	NA	NA	NA	-	-	-	-	-	-	-	-
<i>China</i>	18%	68%	14%	6.2	1.1	4.2	0.9	6.5	1.2	4.4	0.9
<i>Copper</i>	13%	53%	34%	9.7	1.3	5.1	3.3	9.4	1.2	5.0	3.2
<i>Gopher</i>	0%	29%	71%	-	-	-	-	-	-	-	-
<i>Grass</i>	0%	49%	51%	0.5	0.0	0.3	0.3	0.5	0.0	0.3	0.3
<i>Kelp</i>	NA	NA	NA	0.0	NA	NA	NA	0.0	NA	NA	NA
<i>Olive</i>	0%	3%	97%	0.3	0.0	0.0	0.3	0.3	0.0	0.0	0.3
<i>Quillback</i>	16%	47%	36%	6.2	1.0	2.9	2.2	6.2	1.0	2.9	2.2
<i>Treefish</i>	0%	0%	100%	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.2
Total				68.7	5.0	38.0	25.7	69.2	5.0	38.0	26.1

Table 5. Option 3 state harvest guidelines for the Nearshore Rockfish complex north of 40°10' N lat. in 2015 and 2016 under preferred harvest specifications.

Option 3 Hybrid

Species	WA%	OR%	CA%	2015				2016			
				Contribution	WA mt	OR mt	CA mt	Contribution	WA mt	OR mt	CA mt
<i>Black and yellow</i>	0%	21%	79%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Blue (CA)</i>	NA	NA	100%	17.0	NA	NA	17.0	17.5	NA	NA	17.5
<i>Blue (OR & WA)</i>	6%	94%	NA	26.9	1.6	25.3	NA	26.9	1.6	25.3	NA
<i>Brown</i>	0%	8%	92%	1.7	0.0	0.1	1.6	1.7	0.0	0.1	1.6
<i>Calico</i>	NA	NA	NA	-	-	-	-	-	-	-	-
<i>China</i>	26%	49%	25%	6.2	1.6	3.0	1.6	6.5	1.7	3.2	1.6
<i>Copper</i>	26%	49%	25%	9.7	2.5	4.8	2.4	9.4	2.5	4.6	2.4
<i>Gopher</i>	0%	29%	71%	-	-	-	-	-	-	-	-
<i>Grass</i>	0%	49%	51%	0.5	0.0	0.3	0.3	0.5	0.0	0.3	0.3
<i>Kelp</i>	NA	NA	NA	0.0	NA	NA	NA	0.0	NA	NA	NA
<i>Olive</i>	0%	3%	97%	0.3	0.0	0.0	0.3	0.3	0.0	0.0	0.3
<i>Quillback</i>	26%	49%	25%	6.2	1.6	3.0	1.5	6.2	1.6	3.0	1.5
<i>Treefish</i>	0%	0%	100%	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.2
Total				68.7	7.4	36.6	24.8	69.2	7.4	36.5	25.3

Table 6. Preferred blue rockfish harvest guidelines for California fisheries in 2015 and 2016.

Area	OFL contribution by area		ABC contribution by area		40-10 adjusted HG contribution by area	
			P* = 0.45 a/		P* = 0.45 a/	
	2015	2016	2015	2016	2015	2016
40°10' - 42° N lat.	27.4	27.7	25.0	25.3	17.0	17.5
34°27' - 40°10' N lat.	188.6	190.3	172.2	173.8	116.6	120.0
South of 34°27' N lat. (unassessed area)	72.9	72.9	60.8	60.8	60.8	60.8
Total for CA	288.9	290.9	258.0	259.8	194.4	198.3

a/ Harvest specifications based on the ABCs determined using a P* = 0.45 are preferred.

Table 7. Preferred 2015 and 2016 OFL and ABC contributions (in mt), and proposed harvest guidelines (in mt) for blackgill rockfish south of 40°10' N lat.

Stock	2015 OFL contribution	2015 ABC contribution	2015 HG a/	2016 OFL contribution	2016 ABC contribution	2016 HG a/
Blackgill Rockfish S of 40°10'	137	125	114	140	128	117

a/ Harvest guideline is based on the 40-10 adjustment from the preferred ABC.