

**2011 IPHC Staff
Preliminary Catch Limit
Recommendations**

Recommended Catch Limit Considerations

- ❖ Commission's desire to achieve target harvest rates in all areas
- ❖ Recent high exploitation rates in Area 2
- ❖ Declining growth rate and effect on Ebio
- ❖ Addressing inconsistencies in treatment of U32/O26 removals/deductions and consideration of U26 removals as direct deductions

Change to Slow Up Fast Down (SUFD)

- ❖ SUFD phases in change asymmetrically
- ❖ EBio (x HR) -> TCEY (- OR) -> FCEY (SUFD) -> CLR
- ❖ Fishery CEY adjustment termed “Slow Up Fast Down”
 - Option to suspend or modify to Slow Up Full Down
- ❖ SUFD has resulted in Coastwide quotas 9-14% over the Fishery CEY (FCEY) the last few years
 - Individual regulatory areas have been as much as 75% over FCEY
- ❖ Analysis shows that SUFD does not work as well under conditions of:
 - Starting from catch levels well above FCEY
 - Continuing decline in growth rates

Catch Limit Options

Reg Area	Standard Deductions, All U32 BAWM in HR			Direct U32/O26 Deductions, All U26 BAWM in HR			Direct U32 Deductions, No U32 BAWM HR		
	No SUFD	SUFD	SUFuIID	No SUFD	SUFD	SUFuIID	No SUFD	SUFD	SUFuIID
2A	1.13	0.92	0.92	0.95	0.86	0.86	0.97	0.86	0.86
2B	7.65	7.55	7.55	7.94	7.65	7.65	8.07	7.69	7.69
2C	2.27	3.34	2.27	2.33	3.36	2.33	2.41	3.40	2.41
3A	14.85	17.42	14.85	14.36	17.17	14.36	14.70	17.34	14.70
3B	8.08	8.99	8.08	7.52	8.71	7.52	7.47	8.69	7.47
4A	2.67	2.44	2.44	2.58	2.41	2.41	2.56	2.41	2.41
4B	2.14	2.15	2.14	2.21	2.18	2.18	2.20	2.17	2.17
4CDE	4.44	3.87	3.87	4.00	3.72	3.72	3.96	3.71	3.71
Total	43.22	46.67	42.11	41.89	46.06	41.02	42.34	46.27	41.42

All cases use Hook/Timing Adjustment Factors and Kalman averaging of survey WPUEs

Staff Catch Limit Recommendation

Reg Area	Standard Deductions, All U32 BAWM in HR			Direct U32/O26 Deductions, All U26 BAWM in HR			Direct U32 Deductions, No U32 BAWM in HR		
	No SUFD	SUFD	SUFuIID	No SUFD	SUFD	SUFuIID	No SUFD	SUFD	SUFuIID
2A	1.13	0.92	0.92	0.95	0.86	0.86	0.97	0.86	0.86
2B	7.65	7.55	7.55	7.94	7.65	7.65	8.07	7.69	7.69
2C	2.27	3.34	2.27	2.33	3.36	2.33	2.41	3.40	2.41
3A	14.85	17.42	14.85	14.36	17.17	14.36	14.70	17.34	14.70
3B	8.08	8.99	8.08	7.52	8.71	7.52	7.47	8.69	7.47
4A	2.67	2.44	2.44	2.58	2.41	2.41	2.56	2.41	2.41
4B	2.14	2.15	2.14	2.21	2.18	2.18	2.20	2.17	2.17
4CDE	4.44	3.87	3.87	4.00	3.72	3.72	3.96	3.71	3.71
Total	43.22	46.67	42.11	41.89	46.06	41.02	42.34	46.27	41.42

All cases use Hook/Timing Adjustment Factors and Kalman averaging of survey WPUEs

EXTRA SLIDES

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment with no SUFD

Reg Area	Exploitable biomass	Target Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	2011 Catch Limit Recomm.	
2A	6.63	20.0%	1.33	0.20	0.81	1.13	1.13	1
2B	40.89	20.0%	8.18	0.53	7.50	7.65	7.65	2
2C	25.05	20.0%	5.01	2.74	4.40	2.27	2.27	
3A	109.39	20.0%	21.88	7.03	19.99	14.85	14.85	
3B	57.32	15.0%	8.60	0.52	9.90	8.08	8.08	
4A	21.25	15.0%	3.19	0.52	2.33	2.67	2.67	
4B	16.14	15.0%	2.42	0.28	2.16	2.14	2.14	
4CDE	40.32	15.0%	6.05	1.61	3.58	4.44	4.44	
Total	317.00	17.9%	56.65	13.43	50.67	43.22	43.22	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

Assumes GHL of 0.788 Milb in Area 2C, 3.65 Milb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment with SUFD

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up-Fast Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	20.0%	1.33	0.20	0.81	1.13	-0.21	0.92	1,3
2B	40.89	20.0%	8.18	0.53	7.50	7.65	-0.10	7.55	2,3
2C	25.05	20.0%	5.01	2.74	4.40	2.27	1.06	3.34	4
3A	109.39	20.0%	21.88	7.03	19.99	14.85	2.57	17.42	4
3B	57.32	15.0%	8.60	0.52	9.90	8.08	0.91	8.99	4
4A	21.25	15.0%	3.19	0.52	2.33	2.67	-0.22	2.44	3
4B	16.14	15.0%	2.42	0.28	2.16	2.14	0.01	2.15	4
4CDE	40.32	15.0%	6.05	1.61	3.58	4.44	-0.58	3.87	3
Total	317.00	17.9%	56.65	13.43	50.67	43.22	+3.45	46.67	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

⁴ Calculated as 2010 Catch Limit minus 1/2 of the difference between
2011 Fishery CEY and 2010 Catch Limit

Assumes GHL of 0.788 Milb in Area 2C, 3.65 Milb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment with SUFullD

Reg Area	Exploitable biomass	Target Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up-Full Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	20.0%	1.33	0.20	0.81	1.13	-0.21	0.92	1,3
2B	40.89	20.0%	8.18	0.53	7.50	7.65	-0.10	7.55	2,3
2C	25.05	20.0%	5.01	2.74	4.40	2.27	0.00	2.27	4
3A	109.39	20.0%	21.88	7.03	19.99	14.85	0.00	14.85	4
3B	57.32	15.0%	8.60	0.52	9.90	8.08	0.00	8.08	4
4A	21.25	15.0%	3.19	0.52	2.33	2.67	-0.22	2.44	3
4B	16.14	15.0%	2.42	0.28	2.16	2.14	0.00	2.14	4
4CDE	40.32	15.0%	6.05	1.61	3.58	4.44	-0.58	3.87	3
Total	317.00	17.9%	56.65	13.43	50.67	43.22	-1.11	42.11	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

⁴ Calculated as 2011 Fishery CEY

Assumes GHL of 0.788 Milb in Area 2C, 3.65 Milb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, no SUFD, and Direct U32/O26 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	2011 Catch Limit Recomm.	
2A	6.63	21.5%	1.43	0.48	0.81	0.95	0.95	¹
2B	40.89	21.5%	8.79	0.85	7.50	7.94	7.94	²
2C	25.05	21.5%	5.39	3.06	4.40	2.33	2.33	
3A	109.39	21.5%	23.52	9.16	19.99	14.36	14.36	
3B	57.32	16.1%	9.24	1.72	9.90	7.52	7.52	
4A	21.25	16.1%	3.43	0.85	2.33	2.58	2.58	
4B	16.14	16.1%	2.60	0.39	2.16	2.21	2.21	
4CDE	40.32	16.1%	6.50	2.50	3.58	4.00	4.00	
Total	317.00	19.2%	60.90	19.01	50.67	41.89	41.89	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing AFs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

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Assumes GHL of 0.788 MIb in Area 2C, 3.65 MIb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, SUFD, and Direct U32/O26 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up-Fast Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	21.5%	1.43	0.48	0.81	0.95	-0.09	0.86	1,3
2B	40.89	21.5%	8.79	0.85	7.50	7.94	-0.30	7.65	2,3
2C	25.05	21.5%	5.39	3.06	4.40	2.33	1.04	3.36	4
3A	109.39	21.5%	23.52	9.16	19.99	14.36	2.82	17.17	4
3B	57.32	16.1%	9.24	1.72	9.90	7.52	1.19	8.71	4
4A	21.25	16.1%	3.43	0.85	2.33	2.58	-0.16	2.41	3
4B	16.14	16.1%	2.60	0.39	2.16	2.21	-0.03	2.18	3
4CDE	40.32	16.1%	6.50	2.50	3.58	4.00	-0.28	3.72	3
Total	317.00	19.2%	60.90	19.01	50.67	41.89	4.18	46.06	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

⁴ Calculated as 2010 Catch Limit minus 1/2 of the difference between
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Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, SUFullD, and Direct U32/O26 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up-Full Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	21.5%	1.43	0.48	0.81	0.95	-0.09	0.86	1,3
2B	40.89	21.5%	8.79	0.85	7.50	7.94	-0.30	7.65	2,3
2C	25.05	21.5%	5.39	3.06	4.40	2.33	0.00	2.33	4
3A	109.39	21.5%	23.52	9.16	19.99	14.36	0.00	14.36	4
3B	57.32	16.1%	9.24	1.72	9.90	7.52	0.00	7.52	4
4A	21.25	16.1%	3.43	0.85	2.33	2.58	-0.16	2.41	3
4B	16.14	16.1%	2.60	0.39	2.16	2.21	-0.03	2.18	3
4CDE	40.32	16.1%	6.50	2.50	3.58	4.00	-0.28	3.72	3
Total	317.00	19.2%	60.90	19.01	50.67	41.89	-0.86	41.02	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

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Assumes GHL of 0.788 Milb in Area 2C, 3.65 Milb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, no SUFD, and Direct All U32 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	2011 Catch Limit Recomm.	
2A	6.63	23.0%	1.52	0.56	0.81	0.97	0.97	1
2B	40.89	23.0%	9.41	1.33	7.50	8.07	8.07	2
2C	25.05	23.0%	5.76	3.36	4.40	2.41	2.41	
3A	109.39	23.0%	25.16	10.46	19.99	14.70	14.70	
3B	57.32	17.3%	9.89	2.42	9.90	7.47	7.47	
4A	21.25	17.3%	3.67	1.11	2.33	2.56	2.56	
4B	16.14	17.3%	2.78	0.59	2.16	2.20	2.20	
4CDE	40.32	17.3%	6.96	2.99	3.58	3.96	3.96	
Total	317.00	20.6%	65.15	22.81	50.67	42.34	42.34	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

Assumes GHL of 0.788 Milb in Area 2C, 3.65 Milb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

U26 BAWM distributed according to Ebio, with Hook/Timing AF and Kalman weighting

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, SUFD, and Direct All U32 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up-Fast Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	23.0%	1.52	0.56	0.81	0.97	-0.11	0.86	1,3
2B	40.89	23.0%	9.41	1.33	7.50	8.07	-0.38	7.69	2,3
2C	25.05	23.0%	5.76	3.36	4.40	2.41	1.00	3.40	
3A	109.39	23.0%	25.16	10.46	19.99	14.70	2.65	17.34	
3B	57.32	17.3%	9.89	2.42	9.90	7.47	1.21	8.69	
4A	21.25	17.3%	3.67	1.11	2.33	2.56	-0.15	2.41	3
4B	16.14	17.3%	2.78	0.59	2.16	2.20	-0.03	2.17	3
4CDE	40.32	17.3%	6.96	2.99	3.58	3.96	-0.25	3.71	3
Total	317.00	20.6%	65.15	22.81	50.67	42.34	3.94	46.27	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

⁴ Calculated as 2010 Catch Limit minus 1/2 of the difference between
2011 Fishery CEY and 2010 Catch Limit

Assumes GHM of 0.788 Mlb in Area 2C, 3.65 Mlb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHM

U26 BAWM distributed according to Ebio, with Hook/Timing AF and Kalman weighting

Coastwide Assessment: Hook Competition and Timing AFs, Kalman averaging to Survey Apportionment, SUFullD, and Direct All U32 Deduction

Reg Area	Exploitable biomass	Harvest Rate	Total CEY	2010 Other Removals	2010 Catch Limit	2011 Fishery CEY	Slow Up- Full Down Adjustment	2011 Catch Limit Recomm.	
2A	6.63	23.0%	1.52	0.56	0.81	0.97	-0.11	0.86	1.3
2B	40.89	23.0%	9.41	1.33	7.50	8.07	-0.38	7.69	2,3
2C	25.05	23.0%	5.76	3.36	4.40	2.41	0.00	2.41	4
3A	109.39	23.0%	25.16	10.46	19.99	14.70	0.00	14.70	4
3B	57.32	17.3%	9.89	2.42	9.90	7.47	0.00	7.47	4
4A	21.25	17.3%	3.67	1.11	2.33	2.56	-0.15	2.41	3
4B	16.14	17.3%	2.78	0.59	2.16	2.20	-0.03	2.17	3
4CDE	40.32	17.3%	6.96	2.99	3.58	3.96	-0.25	3.71	3
Total	317.00	20.6%	65.15	22.81	50.67	42.34	-0.92	41.42	

Note: Exploitable biomass is coastwide assessment, survey partitioning; Hook & Timing Afs; Kalman wts

¹ Catch limits and Fishery CEY for 2A includes commercial, sport, and treaty subsistence catches

² Catch limits and Fishery CEY for 2B includes commercial and sport catch

³ Calculated as 2010 catch limit plus 1/3 of the difference between
2011 Fishery CEY and 2010 Catch Limit

⁴ Calculated as 2010 Fishery CEY

Assumes GHL of 0.788 Mlb in Area 2C, 3.65 Mlb in Area 3A under Other Removals

Other removals for 2C and 3A are adding projected unguided harvest to the applicable GHL

U26 BAWM distributed according to Ebio, with Hook/Timing AF and Kalman weighting

Table 5. 2010 Other removals in detail.

	Area 2A	Area 2B	Area 2C	Area 3A	Area 3B	Area 4A	Area 4B	Area 4CDE	Total
Sport catch	0.341	1.092	2.548	5.069	0.040	0.042	0.000	0.000	9.132
O32 bycatch	0.199	0.109	0.214	0.951	0.445	0.438	0.279	1.566	4.201
Personal use	0.030	0.405	0.458	0.329	0.026	0.034	0.001	0.027	1.310
O32 wastage	0.001	0.019	0.009	0.020	0.010	0.007	0.003	0.013	0.082
Total	0.571	1.625	3.229	6.369	0.521	0.521	0.283	1.606	14.725
Total, excludes sport catch in Areas 2A and 2B and personal use in 2A	0.200	0.533	3.229	6.369	0.521	0.521	0.283	1.606	13.262

Guided 1.279 2.992
Unguided 1.269 2.077
Total 2.548 5.069

Other removals, not subtracted from Total CEY

O26/U32 Bycatch	0.269	0.087	0.088	0.777	0.416	0.221	0.082	0.834	2.774
O26/U32 Wastage	0.007	0.228	0.231	1.358	0.797	0.116	0.029	0.075	2.841
U26 bycatch	0.041	0.016	0.039	0.935	0.365	0.496	0.151	1.525	3.568
U26 wastage	0.000	0.005	0.011	0.059	0.090	0.022	0.003	0.007	0.197

2A deductions on yield table are only legal sized bycatch and legal sized wastage because others in CSP.

GHL	0.788	3.650
Ung	1.269	2.077
Subtot	2.057	5.727
Other	0.681	1.300
Tot	2.738	7.027

Calculated deduction with GHL for guided removal

Table 6. 2010 Other removals in detail with Direct O26 Accounting.

	Area 2A	Area 2B	Area 2C	Area 3A	Area 3B	Area 4A	Area 4B	Area 4CDE	Total
Sport catch	0.341	1.092	2.548	5.069	0.040	0.042	0.000	0.000	9.132
O32 bycatch	0.199	0.109	0.214	0.951	0.445	0.438	0.279	1.566	4.201
Personal use	0.030	0.405	0.458	0.329	0.026	0.034	0.001	0.027	1.310
O32 wastage	0.001	0.019	0.009	0.020	0.010	0.007	0.003	0.013	0.082
U32/O26 BAWM	0.276	0.315	0.319	2.135	1.213	0.337	0.111	0.909	5.615
Total	0.847	1.940	3.548	8.504	1.734	0.858	0.394	2.515	20.340
Total, excludes sport catch									
in Areas 2A and 2B and	0.476	0.848	3.548	8.504	1.734	0.858	0.394	2.515	18.877
personal use in 2A									

Guided	1.279	2.992
Unguided	1.269	2.077
Total	2.548	5.069

Other removals, not subtracted from Total CEY

O26/U32 Bycatch	0.269	0.087	0.088	0.777	0.416	0.221	0.082	0.834	2.774
O26/U32 Wastage	0.007	0.228	0.231	1.358	0.797	0.116	0.029	0.075	2.841
U26 bycatch	0.041	0.016	0.039	0.935	0.365	0.496	0.151	1.525	3.568
U26 wastage	0.000	0.005	0.011	0.059	0.090	0.022	0.003	0.007	0.197

Includes direct deduction for U32/O26 BAWM

GHL	0.788	3.650
Ung	1.269	2.077
Subtot	2.057	5.727
Other	1.000	3.435
Tot	3.057	9.162

Calculated deduction with GHL for guided removal