ERRATA in Attachment 2 for D2: Halibut DMRs

Page 21 of the document:

4.4.3 Rockfish Program

"Operational characteristics in the rockfish fishery both increase the DMR and complicate sample collection by an observer. When crew is actively sorting halibut, such as when fishing non-pelagic gear, an observer is able to collect viability data. However, when the catch is dumped directly into the RSW tanks and the crew is not actively sorting for halibut, such as when fishing pelagic gear (Pacific Ocean Perch), viability data cannot be collected. In these latter situations, all halibut are delivered to a shoreside processing facility. Halibut delivered to the shoreside processing facility are dead. Even in situations where the crew is sorting halibut and observers obtain viabilities, the presence of rockfish spines tends to decrease the overall condition of the halibut. For these reasons, **we recommend calculating DMRs specific to the Rockfish Program and separately for pelagic and non-pelagic gears, reflecting different handling processes (i.e. at-sea sorting). When fishing with pelagic trawl gear, a DMR of 100% will be used since catch is not sorted at sea and any bycaught halibut are delivered shoreside. Due to *a limited amount of viability data available for* non-pelagic gear (within Rockfish Program), the *DMR for GOA CPs fishing NPT gear* will be used. As *data* become available, the DMR computations will be based on viability data.**"

Should read:

4.4.3 Rockfish Program

"Operational characteristics in the rockfish fishery both increase the DMR and complicate sample collection by an observer. When crew is actively sorting halibut, such as when fishing non-pelagic gear, an observer is able to collect viability data. However, when the catch is dumped directly into the RSW tanks and the crew is not actively sorting for halibut, such as when fishing pelagic gear (Pacific Ocean Perch), viability data cannot be collected. In these latter situations, all halibut are delivered to a shoreside processing facility. Halibut delivered to the shoreside processing facility are dead. Even in situations where the crew is sorting halibut and observers obtain viabilities, the presence of rockfish spines tends to decrease the overall condition of the halibut. For these reasons, **we recommend calculating DMRs specific to the Rockfish Program and separately for pelagic and non-pelagic gears, reflecting different handling processes (i.e. at-sea sorting). When fishing with pelagic trawl gear, a DMR of 100% will be used since catch is not sorted at sea and any bycaught halibut are delivered shoreside. Due to difficulties in matching viability data to CV trips using non-pelagic gear (within Rockfish Program), the status quo DMR for rockfish will be used (0.66). As methods for obtaining viability data from this operational grouping become available, the DMR computations will be based on viability data using the proposed estimation methods.**"

Page 25 of the document:

Constraints on Estimation

Table 2 contains the proposed breakout of operational groupings as well as an indication of the number of individual halibut for which data were collected from 2009 to 2015. For much of the groundfish fleet, the average annual number of viabilities ranged from just under 500 (GOA CV HAL) to over 11 thousand (BSAI CV HAL). While a minimum number of halibut conditions on which a DMR estimate can be based has not been identified, in all cases, except PTR, the working group suggests using an observer-based estimate. On vessels fishing PTR outside of pollock fisheries, however, observers were unable to

collect viability data. **The quantity of halibut PSC in non-pollock PTR fisheries is small, and so we propose that these trips be grouped with pollock PTR (100% mortality) based on their operational similarities.**

Rockfish Program CVs fishing NPT in the GOA have limited viabilities available from which to generate an estimate. As stated in **4.4.3**, **we recommend basing RPP DMRs for NPT CVs on the DMR for GOA CPs fishing NPT gear**. Additionally, as data become available, the DMR calculation for RPP NPT CVs will be based on sampled viability data.

Should read

Constraints on Estimation

Table 2 contains the proposed breakout of operational groupings as well as an indication of the number of individual halibut for which data were collected from 2009 to 2015. For much of the groundfish fleet, the average annual number of viabilities ranged from just under 500 (GOA CV HAL) to over 11 thousand (BSAI CV HAL). While a minimum number of halibut conditions on which a DMR estimate can be based has not been identified, in all cases, except PTR, the working group suggests using an observer-based estimate. On vessels fishing PTR outside of pollock fisheries, however, observers were unable to collect viability data. **The quantity of halibut PSC in non-pollock PTR fisheries is small, and so we propose that these trips be grouped with pollock PTR (100% mortality) based on their operational similarities.**

Rockfish Program CVs fishing NPT in the GOA **are difficult to unambiguously identify in the viability datasets**. As stated in **4.4.3**, **we recommend basing RPP DMRs for NPT CVs on the status quo until direct estimates are possible**. Additionally, as data become available, the DMR calculation for RPP NPT CVs will be based on sampled viability data.

Additionally, Tables 2, 8, 9, and 12 are modified as follows:

ORIGINAL:

Table 1. Halibut DMR operational groups, sample sizes, and working group decision on whether to estimate DMRs or assign 100% DMRs.

Operational Group				Sample Size (Mean Annual $N_{Viabilities}$)	Estimate DMR?
Sector	Region	Gear	Target		
CP	BSAI	PTR	pollock	6,562	N (100%)
			non-pollock	1	N (100%)
		NPT	all	3,625	Y
		HAL	all	11,210	Y
		POT	all	760[b]	Y
	GOA	PTR	pollock	0	N (100%)
			non-pollock	0	N (100%)
		NPT[a]	all	546	Y
		HAL	all	1,295	Y
		POT	all	547[c]	Y
CV	BSAI	PTR	pollock	569	N (100%)
			non-pollock	14	N (100%)
		NPT	all	2,138	Y
		HAL	all	62[d]	Y
		POT	all	760[b]	Y
	GOA	PTR	pollock	2	N (100%)
			non-pollock	4	N (100%)
		NPT	RPP	0	N (85%)[e]
			non-RPP	1,477	Y
		HAL	all	490	Y
		POT	all	547[c]	Y

[a] GOA CP NPT RPP and non-RPP pooled
[b] CV, CP pots in same group by design
[c] CV, CP in same group by design
[d] Most vessels not required to have observer coverage prior to 2013
[e] GOA CV NPT RPP placed in same group as GOA CP NPT

NEW:

Table 2. Halibut DMR operational groups, sample sizes, and working group decision on whether to estimate DMRs or assign 100% DMRs.

Operational Group				Sample Size (Mean Annual $N_{Viabilities}$)	Estimate DMR?
Sector	Region	Gear	Target		
CP	BSAI	PTR	pollock	6,562	N (100%)
			non-pollock	1	N (100%)
		NPT	all	3,625	Y
		HAL	all	11,210	Y
		POT	all	760[b]	Y
	GOA	PTR	pollock	0	N (100%)
			non-pollock	0	N (100%)
		NPT[a]	all	546	Y
		HAL	all	1,295	Y
		POT	all	547[c]	Y
CV	BSAI	PTR	pollock	569	N (100%)
			non-pollock	14	N (100%)
		NPT	all	2,138	Y
		HAL	all	62[d]	Y
		POT	all	760[b]	Y
	GOA	PTR	pollock	2	N (100%)
			non-pollock	4	N (100%)
		NPT	RPP	0	N (66%)[e]
			non-RPP	1,477	Y
		HAL	all	490	Y
		POT	all	547[c]	Y

[a] GOA CP NPT RPP and non-RPP pooled
[b] CV, CP pots in same group by design
[c] CV, CP in same group by design
[d] Most vessels not required to have observer coverage prior to 2013
[e] GOA CV NPT RPP using status quo DMR until estimation is possible

ORIGINAL:

Table 3. Estimated Pacific halibut mortalities for the **GOA** in **2015**, under the DMRs calculated using current methods (current) as well as the proposed alternative methods (new).

				Current			New		Difference	
Gear	Sector	Program	Halibut PSC	DMR	Halibut mortality	Target	DMR	Halibut mortality	Current minus New	PSC limit
HAL	CV	OA	1,262	0.11	139	Pacific cod	0.12	151	(13)	145
PTR	CV	RPP	0	0.60	0	Bottom pollock	1.00	0	(0)	
PTR	CV	RPP	5	0.66	3	Rockfish	1.00	5	(2)	
NPT	CV	RPP	0	0.60	0	Bottom pollock	0.85	0	(0)	
NPT	CV	RPP	22	0.62	14	Pacific cod	0.85	19	(5)	
NPT	CV	RPP	30	0.66	20	Rockfish	0.85	25	(6)	
NPT	CV	RPP	3	0.71	2	Shallow water flatfish	0.85	3	(0)	
								-	-	
PTR	CV	OA	6	0.60	4	Bottom pollock	1.00	6		
PTR	CV	OA	1	0.62	1	Pacific cod	1.00	1	(0)	
PTR	CV	OA	7	0.71	5	Pelagic pollock	1.00	7	(2)	
								-	-	
NPT	CV	OA	150	0.60	90	Bottom pollock	0.63	95	(5)	
NPT	CV	OA	757	0.62	469	Pacific cod	0.63	477	(8)	
NPT	CV	OA	99	0.67	66	Shallow water flatfish	0.63	62	4	
NPT	CV	OA	0	0.66	0	Rockfish	0.63	0	0	
NPT	CV	OA	3	0.71	2	Pelagic pollock	0.63	2	0	
NPT	CV	OA	-	0.71	-	Shallow water flatfish	0.63	-		
NPT	CV	OA	488	0.73	356	Arrowtooth flounder	0.63	307	49	
NPT	CV	OA	8	0.69	5	Rex sole	0.63	5	0	
HAL	CP	OA	628	0.11	69	Pacific cod	0.11	69	-	
HAL	CP	OA	0	0.11	0	Other species	0.11	0	-	116
									-	
NPT	CP	OA	0	0.60	0	Bottom pollock	0.85	0	(0)	
NPT	CP	OA	1	0.62	1	Pacific cod	0.85	1	(0)	
NPT	CP	OA	-	0.43	-	Deep water flatfish	0.85	-	-	
NPT	CP	OA	62	0.67	41	Shallow water flatfish	0.85	53	(11)	
NPT	CP	OA	46	0.66	30	Rockfish	0.85	39		
NPT	CP	OA	4	0.65	2	Flathead sole	0.85	3	(1)	
NPT	CP	OA	0	0.71	0	Sablefish	0.85	0	(0)	
NPT	CP	OA	306	0.73	223	Arrowtooth flounder	0.85	260	(37)	
NPT	CP	OA	35	0.69	24	Rex sole	0.85	30	(6)	
NPT	CP	RPP	77	0.66	51	Rockfish	0.85	65	(15)	
NPT	CP	RPP	3	0.73	2	Arrowtooth flounder	0.85	3	(0)	
PTR	CP	OA	-	0.66	-	Rockfish	1.00	-	-	
Total			4,002		1,620			1,688	(67)	2,021
Summary										
Hook-and-line CV			1,262		139			151	(13)	145
Hook-and-line CP			628		69			69	-	116
Trawl			2,112		1,413			1,467	(55)	1,759
Total			4,002		1,620			1,688	(67)	2,020

NEW:

Table 4. Estimated Pacific halibut mortalities for the **GOA** in **2015**, under the DMRs calculated using current methods (current) as well as the proposed alternative methods (new).

2015 Gulf of Alaska Halibut Mortality using proposed DMRs (as of August 30, 2016)										
				Current			New		Difference	
Gear	Sector	Program	Halibut PSC	DMR	Halibut mortality	Target	DMR	Halibut mortality	Current minus New	PSC limit
HAL	CV	OA	1,262	0.11	139	Pacific cod	0.12	151	(13)	145
PTR	CV	RPP	0	0.60	0	Bottom pollock	1.00	0	(0)	
PTR	CV	RPP	5	0.66	3	Rockfish	1.00	5	(2)	
NPT	CV	RPP	0	0.60	0	Bottom pollock	0.66	0	(0)	
NPT	CV	RPP	22	0.62	14	Pacific cod	0.66	14	(1)	
NPT	CV	RPP	30	0.66	20	Rockfish	0.66	20	-	
NPT	CV	RPP	3	0.71	2	Shallow water flatfish	0.66	2	0	
								-	-	
PTR	CV	OA	6	0.60	4	Bottom pollock	1.00	6		
PTR	CV	OA	1	0.62	1	Pacific cod	1.00	1	(0)	
PTR	CV	OA	7	0.71	5	Pelagic pollock	1.00	7	(2)	
								-	-	
NPT	CV	OA	150	0.60	90	Bottom pollock	0.63	95	(5)	
NPT	CV	OA	757	0.62	469	Pacific cod	0.63	477	(8)	
NPT	CV	OA	99	0.67	66	Shallow water flatfish	0.63	62	4	
NPT	CV	OA	0	0.66	0	Rockfish	0.63	0	0	
NPT	CV	OA	3	0.71	2	Pelagic pollock	0.63	2	0	
NPT	CV	OA	-	0.71	-	Shallow water flatfish	0.63	-		
NPT	CV	OA	488	0.73	356	Arrowtooth flounder	0.63	307	49	
NPT	CV	OA	8	0.69	5	Rex sole	0.63	5	0	
HAL	CP	OA	628	0.11	69	Pacific cod	0.11	69	-	
HAL	CP	OA	0	0.11	0	Other species	0.11	0	-	116
									-	
NPT	CP	OA	0	0.60	0	Bottom pollock	0.85	0	(0)	
NPT	CP	OA	1	0.62	1	Pacific cod	0.85	1	(0)	
NPT	CP	OA	-	0.43	-	Deep water flatfish	0.85	-	-	
NPT	CP	OA	62	0.67	41	Shallow water flatfish	0.85	53	(11)	
NPT	CP	OA	46	0.66	30	Rockfish	0.85	39		
NPT	CP	OA	4	0.65	2	Flathead sole	0.85	3	(1)	
NPT	CP	OA	0	0.71	0	Sablefish	0.85	0	(0)	
NPT	CP	OA	306	0.73	223	Arrowtooth flounder	0.85	260	(37)	
NPT	CP	OA	35	0.69	24	Rex sole	0.85	30	(6)	
NPT	CP	RPP	77	0.66	51	Rockfish	0.85	65	(15)	
NPT	CP	RPP	3	0.73	2	Arrowtooth flounder	0.85	3	(0)	
PTR	CP	OA	-	0.66	-	Rockfish	1.00	-	-	
Total			4,002		1,620			1,677	(57)	2,021
Summary										
Hook-and-line CV			1,262		139			151	(13)	145
Hook-and-line CP			628		69			69	-	116
Trawl			2,112		1,413			1,457	(44)	1,759
Total			4,002		1,620			1,677	(57)	2,020

ORIGINAL:

Table 5. Estimated Pacific halibut mortalities for the **GOA** in **2016**, under the DMRs calculated using current methods (current) as well as the proposed alternative methods (new).

				Current			New		Difference	
Gear	Sector	Program	Halibut PSC	DMR	Halibut mortality	Target	DMR	Halibut mortality	Current minus New	PSC limit
HAL	CV	OA	1,509	0.10	151	Pacific cod	0.12	181	(30)	129
NPT	CV	RPP	35	0.65	23	Rockfish	0.85	29	(7)	
NPT	CV	RPP	6	0.59	4	Sablefish	0.85	6	(2)	
PTR	CV	RPP	1	0.65	0	Rockfish	1.00	1	(0)	
PTR	CV	OA	2	0.58	1	Bollom pollock	1.00	2	(1)	
PTR	CV	OA	1	0.66	0	Shallow water flatfish	1.00	1	(0)	
PTR	CV	OA	1	0.65	0	Pelagic pollock	1.00	1	(0)	
NPT	CV	OA	56	0.58	33	Bollom pollock	0.63	35	(3)	
NPT	CV	OA	537	0.62	333	Pacific cod	0.63	338	(5)	
NPT	CV	OA	51	0.66	34	Shallow water flatfish	0.63	32	2	
NPT	CV	OA	10	0.67	6	Flathead sole	0.63	6	0	
NPT	CV	OA	-	0.62	-	Other species	0.63	-	-	
NPT	CV	OA	0	0.65	0	Pelagic pollock	0.63	0	0	
NPT	CV	OA	550	0.76	418	Arrowtooth flounder	0.63	347	72	
NPT	CV	OA	18	0.72	13	Rex sole	0.63	11	2	
HAL	CP	OA	459	0.10	46	Pacific cod	0.11	50	(5)	128
NPT	CP	OA	3	0.62	2	Pacific cod	0.85	3	(1)	
NPT	CP	OA	26	0.66	17	Shallow water flatfish	0.85	22	(5)	
NPT	CP	OA	24	0.65	15	Rockfish	0.85	20	(5)	
NPT	CP	OA	2	0.67	1	Flathead sole	0.85	1	(0)	
NPT	CP	OA	139	0.76	105	Arrowtooth flounder	0.85	118	(12)	
NPT	CP	OA	2	0.72	1	Rex sole	0.85	1	(0)	
NPT	CP	RPP	56	0.65	37	Rockfish	0.85	48	(11)	
NPT	CP	RPP	2	0.76	2	Arrowtooth flounder	0.85	2	(0)	
PTR	CP	OA	-	0.65	-	Rockfish	1.00	-	-	
Total			3,490		1,243			1,256	(13)	1,706
Summary										
Hook-and-line CV			1,509		151			181	(30)	129
Hook-and-line CP			459		46			50	(5)	128
Trawl			1,521		1,047			1,025	22	1,706
Total			3,490		1,243			1,256	(13)	1,963

NEW:

Table 6. Estimated Pacific halibut mortalities for the **GOA** in **2016**, under the DMRs calculated using current methods (current) as well as the proposed alternative methods (new).

2016 Gulf of Alaska Halibut Mortality using proposed DMRs (as of August 30, 2016)										
				Current			New		Difference	
Gear	Sector	Program	Halibut PSC	DMR	Halibut mortality	Target	DMR	Halibut mortality	Current minus New	PSC limit
HAL	CV	OA	1,509	0.10	151	Pacific cod	0.12	181	(30)	129
NPT	CV	RPP	35	0.65	23	Rockfish	0.66	23	(0)	
NPT	CV	RPP	6	0.59	4	Sablefish	0.66	4	(0)	
PTR	CV	RPP	1	0.65	0	Rockfish	1.00	1	(0)	
PTR	CV	OA	2	0.58	1	Bollom pollock	1.00	2	(1)	
PTR	CV	OA	1	0.66	0	Shallow water flatfish	1.00	1	(0)	
PTR	CV	OA	1	0.65	0	Pelagic pollock	1.00	1	(0)	
NPT	CV	OA	56	0.58	33	Bollom pollock	0.63	35	(3)	
NPT	CV	OA	537	0.62	333	Pacific cod	0.63	338	(5)	
NPT	CV	OA	51	0.66	34	Shallow water flatfish	0.63	32	2	
NPT	CV	OA	10	0.67	6	Flathead sole	0.63	6	0	
NPT	CV	OA	-	0.62	-	Other species	0.63	-	-	
NPT	CV	OA	0	0.65	0	Pelagic pollock	0.63	0	0	
NPT	CV	OA	550	0.76	418	Arrowtooth flounder	0.63	347	72	
NPT	CV	OA	18	0.72	13	Rex sole	0.63	11	2	
HAL	CP	OA	459	0.10	46	Pacific cod	0.11	50	(5)	128
NPT	CP	OA	3	0.62	2	Pacific cod	0.85	3	(1)	
NPT	CP	OA	26	0.66	17	Shallow water flatfish	0.85	22	(5)	
NPT	CP	OA	24	0.65	15	Rockfish	0.85	20	(5)	
NPT	CP	OA	2	0.67	1	Flathead sole	0.85	1	(0)	
NPT	CP	OA	139	0.76	105	Arrowtooth flounder	0.85	118	(12)	
NPT	CP	OA	2	0.72	1	Rex sole	0.85	1	(0)	
NPT	CP	RPP	56	0.65	37	Rockfish	0.85	48	(11)	
NPT	CP	RPP	2	0.76	2	Arrowtooth flounder	0.85	2	(0)	
PTR	CP	OA	-	0.65	-	Rockfish	1.00	-	-	
Total			3,490		1,243			1,249	(5)	1,706
Summary										
Hook-and-line CV			1,509		151			181	(30)	129
Hook-and-line CP			459		46			50	(5)	128
Trawl			1,521		1,047			1,017	30	1,706
Total			3,490		1,243			1,249	(5)	1,963

ORIGINAL:

Table 7. Estimated Pacific halibut mortalities for the GOA and BSAI in 2015 and 2016, under the current and proposed DMRs compared to specified PSC limits.

BSAI

		2016 Halibut mortality				2015 Halibut mortality			
BSAI Sector		With current DMR	With proposed DMR	Current minus Proposed	**2016 Halibut PSC Limit**	With current DMR	With proposed DMR	Current minus Proposed	**2015 Halibut PSC Limit**
	CV	0	0	(0)	13	2	2	(1)	15
Hook-and-line Pacific cod	CP	134	119	-	648	289	257	32	760
Non-trawl	CV/CP	2	1	0	49	3	2	1	58
BSAI trawl limited access	CV/CP	537	502	35	745	485	453	32	875
Amendment 80	CP	918	934	(16)	1,745	1,404	1,461	(57)	2,325
CDQ	CV/CP	110	107	3	315	130	124	6	393
Total		1,701	1,663	38	3,515	2,312	2,299	13	4,426
Does not include the 2016 trawl deck sorting Experimental Fishing Permit (EFP) halibut mortality.									
Does not include the 2015 Amendment 80 deck sorting EFP halibut mortality of 232 mt.									

GOA

		2016 Halibut mortality				2015 Halibut mortality			
GOA Sector		With current DMR	With proposed DMR	Current minus Proposed	**2016 Halibut PSC Limit**	With current DMR	With proposed DMR	Current minus Proposed	**2015 Halibut PSC Limit**
	CV	151	181	(30)	129	139	151	(12)	145
Hook-and-line Pacific cod	CP	46	50	(4)	128	69	69	0	116
Trawl	CV/CP	1,047	1,025	22	1,706	1,413	1,467	(54)	1,760
Total		1,243	1,256	(13)	1,963	1,620	1,687	(67)	2,021

NEW:

Table 8. Estimated Pacific halibut mortalities for the GOA and BSAI in 2015 and 2016, under the current and proposed DMRs compared to specified PSC limits.

BSAI

BSAI Sector		2016 Halibut mortality			2016 Halibut PSC Limit	2015 Halibut mortality			2015 Halibut PSC Limit
		With current DMR	With proposed DMR	Current minus Proposed		With current DMR	With proposed DMR	Current minus Proposed	
	CV	0	0	(0)	13	2	2	(1)	15
Hook-and-line Pacific cod	CP	134	119	-	648	289	257	32	760
Non-trawl	CV/CP	2	1	0	49	3	2	1	58
BSAI trawl limited access	CV/CP	537	502	35	745	485	453	32	875
Amendment 80	CP	918	934	(16)	1,745	1,404	1,461	(57)	2,325
CDQ	CV/CP	110	107	3	315	130	124	6	393
Total		1,701	1,663	38	3,515	2,312	2,299	13	4,426
Does not include the 2016 trawl deck sorting Experimental Fishing Permit (EFP) halibut mortality.									
Does not include the 2015 Amendment 80 deck sorting EFP halibut mortality of 232 mt.									

GOA

GOA Sector		2016 Halibut mortality			2016 Halibut PSC Limit	2015 Halibut mortality			2015 Halibut PSC Limit
		With current DMR	With proposed DMR	Current minus Proposed		With current DMR	With proposed DMR	Current minus Proposed	
	CV	151	181	(30)	129	139	151	(12)	145
Hook-and-line Pacific cod	CP	46	50	(4)	128	69	69	0	116
Trawl	CV/CP	1,047	1,017	30	1,706	1,413	1,457	(44)	1,760
Total		1,243	1,249	(5)	1,963	1,620	1,677	(57)	2,021