GROUNDFISH MANAGEMENT TEAM REPORT ON BIENNIAL MANAGEMENT MEASURES FOR 2021-2022: OFF-THE-TOP DEDUCTIONS

This report covers Item #3 from the Action Item Checklist (Agenda Item H.8, Attachment 1). Items #1, 2, and 4-10 (GMT Report 2) and Items #11-21 (GMT Report 3) will be in separate reports.

Action Item # 3: Off-the-top Deductions

Background

The fishery harvest guideline (HG) is the basis for setting allocations to the directed groundfish fisheries (e.g., trawl and non-trawl), and is the result of reducing the annual catch limit (ACL) to account for mortality in exempted fishing permit, tribal, research, and non-directed groundfish fisheries (e.g., pink shrimp), also known as "off-the-top deductions." Off-the-top deductions ensure that, together, the total mortality from directed and non-directed groundfish fisheries does not exceed the ACL. That each "off-the-top" sector stay within the sector-specific set-aside is less important, because sectors are not closed early if they exceed their set-asides.

Typically, off-the-top deductions are set cautiously for each sector (e.g., the 15-year high rather than a five-year average), since they are not subject to closures, and most are not managed in-season (e.g., research and IOA mortality estimates are typically on a one-year lag). Setting cautious off-the-top deductions reduces the allocation to the directed groundfish fisheries. Balancing these trade-offs when setting off-the-top deductions is essential to simultaneously reducing risk to the ACL, and providing allocations for the directed fisheries.

For most stocks where fishery attainments of the ACL are low, the selection of the off-the-top deduction is rather inconsequential. For example, a high off-the-top deduction is not necessary to reduce risks to the ACL for low-attainment stocks, because the fisheries total mortality is well below the ACL. At the same time, a low off-the-top deduction provides little benefit to fisheries, which receive more allocation for a species that is not targeted. However, lower off-the-top deductions can be beneficial to fisheries targeting stocks like petrale sole, where the likelihood of attaining the ACL is low due to catch being minimal in non-trawl sectors, while at the same time the trawl fishery could utilize and profit from any additional allocation.

Tribal

For most stocks, a tribal set-aside is based on the request from the tribes, which will allow them to manage the expected mortality in their upcoming fisheries. The GMT has been notified that the tribes intend on continuing all of their existing groundfish fisheries for 2021 and 2022, and are requesting the set-asides as noted within Agenda Item H.8.a., Supplemental Tribal Report 1 and Agenda Item H.8.a., Revised Supplemental Tribal Report 3. These set-asides are consistent with the off-the-top deductions requested by the tribes during the 2019-2020 biennial specifications process, with the exception of petrale sole, longnose skate, cabezon, and yelloweye rockfish.

Petrale sole is a high attainment stock within the treaty small footrope bottom trawl fishery. The treaty set aside was fully attained in both 2016 and 2018, when the set aside was 220 mt. At this

time, the tribes requested a set aside of 290 mt for the 2019-20 biennial period based on the needs of the tribal fishery in 2018. The GMT was briefed by Joe Schumacher of the Quinault Indian Nation that they intend to exercise their treaty rights to groundfish and will be developing a bottom trawl fishery, as described in Agenda Item H.8.a., Supplemental Report 2. In light of this new development of the treaty bottom trawl fishery, the tribes are requesting an increase in the annual set-aside of petrale from 290 mt from the 2019-2020 to 350 mt in the 2021-2022 biennial period.

The treaty fisheries attained the longnose skate treaty set-aside of 130 mt in 2015, 2016, and 2017. The tribes are requesting an increase of the annual set-aside of longnose skate from 130 mt in 2019-2020 to 220 mt in the 2021-2022 biennium, so that the treaty set-aside is more reflective of current attainment within the treaty fishery.

The treaty set-aside of yelloweye rockfish in 2019-2020 is 2.3 mt. The tribes have effectively managed their fisheries within the treaty set-aside of yelloweye rockfish, since yelloweye rockfish was declared overfished. In doing so, they have foregone opportunities for species that co-occur with yelloweye rockfish, such as lingcod. Now that yelloweye rockfish is rebuilding at a rate that is faster than originally expected, the tribes are requesting an increase in the annual treaty set-aside from 2.3 mt in 2019-2020 to 5.0 mt in the 2021-2022 biennial period.

Currently the tribes do not have a treaty set-aside for cabezon. The tribes have not targeted cabezon in the past, but do have limited landings within nearshore fisheries. The GMT has been notified that the tribes are requesting a set-aside for cabezon of 2 mt per year in the 2021-2022 biennial period.

The GMT recommends the Council adopt the tribal requested set-asides, as shown in Agenda Item H.8.a., REVISED Supplemental Tribal Report 3, November 2019.

Research

Research activities include the National Marines Fisheries Service (NMFS) bottom trawl survey, International Pacific Halibut Commission (IPHC) longline survey, and other federal and state research. In previous harvest specification cycles, the approach of the Pacific Fishery Management Council (Council) was to establish research set-asides equal to the maximum historical scientific research catch since 2005, for all species other than yelloweye rockfish and cowcod. The GMT reviewed the historical catch of overfished and highly-attained species, with information updated through 2018 from the Groundfish Expanded Multiyear Mortality (GEMM) product (Somers et al. 2019; Table 1). **The GMT recommends the Council continue to use the maximum historical scientific research catch for set-asides for all species, except yelloweye rockfish and cowcod, for 2021 and 2022**.

Table 1. Recent research mortality (mt), 2005-2018 maximum (mt), and 2020 set aside (mt) for key species.

Species	2014	2015	2016	2017	2018	2005-2018 Max Value	2020 Set-aside
Bocaccio (south of 40° 10′ N lat.)	4.2	3.6	5.6	3.2	4.7	5.6	5.6
Cowcod (south of 40° 10′ N lat)	0.2	0.5	0.3	0.4	0.6	0.6	2.1a\
Darkblotched rockfish	1.5	8.0	8.5	1.7	2.5	8.5	8.5
Pacific ocean perch (north of 40° 10′ N lat.)	0.6	1.6	3.1	1.1	5.4	5.4	3.1
Petrale sole	17.7	6.0	24.1	10.0	21.2	24.1	24.1
Yelloweye rockfish	0.3	0.7	0.9	0.9	0.8	1.8	2.92a\
a\ Exception to the Max value for yelloweye rockfish and cowcod. Number is value adopted by the Council.							

The Council adopted 2.92 mt of yelloweye rockfish for 2019 and 2020 research, based on anticipated research needs of the IPHC (1.1 mt); Washington Department of Fish and Wildlife (WDFW; 1 mt); Oregon Department of Fish and Wildlife (ODFW; 0.4 mt); California Department of Fish and Wildlife (CDFW; 0.22 mt); and other projects (0.2 mt). Any data indicating that a deduction for research was exceeded during the fishing year would be evaluated by the Council and NMFS. Adjustments could be made to prevent the harvest specifications from being exceeded. Therefore, **the Council should consider the appropriate amount of yelloweye rockfish to set aside for the research, based on anticipated projects.**

CDFW indicated they were anticipating impacting 0.1 mt of cowcod via research projects for 2019-2020. Adding that to the 2018 set-aside gave an updated mortality value of 2.1 mt. The GMT has not been made aware of any additional planned research projects at this time. Therefore, **the Council should consider the appropriate amount of cowcod to set aside for research, based on anticipated projects.**

Incidental Open Access

Similar to the process for establishing off-the-top deductions for scientific research, the Council has adopted off-the-top deductions for incidental open access (IOA) fisheries based on the historical maximum catch for the majority of species (based on the GEMM product, Somers et al. 2019). The GMT did not identify the need to deviate from this general approach for most species (Table 2), other than the potential exceptions described below.

Table 2. Recent annual incidental open access mortality (mt), 2005-2018 maximum value (mt), and the 2020 set-aside for key species.

Species	2014	2015	2016	2017	2018	2005-2018 Max Value	2020 Set-aside
Bocaccio (south of 40° 10′ N lat.)	0.6	0.4	0.3	2.2	1.9	2.2	0.5
Cowcod (south of 40° 10′ N lat.)	0		0	0.16	0.17	0.17	0.0
Darkblotched rockfish	24.6	5.3	6.4	6.8	3.6	24.6	24.6
Pacific ocean perch (north of 40° 10′ N lat.)	10.0	0.3	0.1	0.3	0.1	10.0	10.0
Petrale sole	3.0	5.2	6.6	11.0	5.5	34.3	6.4
Yelloweye rockfish	0.0		0.0	0.7	0.0	0.7	0.62

Petrale Sole

The 2005-2018 average value of 13.3 mt is expected to accommodate annual IOA bycatch, as they have taken less than that each year during the IFQ era (2011-2018). Additionally, low attainments in the non-trawl fishery translate to minimal risk of exceeding the ACL, even if IOA mortality was greater than 13.3 mt. The historical maximum non-trawl mortality of 9.2 mt is far less than the 2021-2022 non-trawl allocations for all three of these ACL options, which range from 170 to 202 mt. Using 13.3 mt for the IOA set-aside, instead of the maximum of 34.3 mt, would result in an additional 19.95 mt for the IFQ fishery, which the GMT projects could add an extra ~$100,000 in income to fishermen, processors, and fishing support businesses. Therefore, **the GMT recommends using the 2005-2018 average IOA mortality (13.3 mt) instead of the historical maximum of 34.3 mt (**Table 3**).**

Table 3. Historical mortality of petrale sole in the IOA and non-trawl fisheries in relation to the range of potential non-trawl allocations for 2021-2022. Potential 2021-2022 non-trawl allocations (P* of 0.45, P*of 0.4, and "stair step" ACL alternatives) range from 170 to 202 mt.

Year	IOA Mortality (mt)	Non-trawl Mortality (mt)
2005	20.5	0.9
2006	34.3	1.2
2007	11.7	1.5
2008	32.4	5.7
2009	16.4	0.8
2010	11.6	0.8
2011	2.4	1.3
2012	1.8	1.7
2013	2.2	3.2
2014	3.0	1.6
2015	5.2	3.9
2016	6.6	5.4
2017	11.0	7.7
2018	5.5	9.2
MAX	**34.3**	**9.2**
Avg	**13.3**	**3.6**

Sablefish south of 36° N. lat.

Annual IOA mortality was less than 2 mt from 2011 to 2017, but increased to 11.8 mt in 2018. The GMT anticipates that IOA mortality in 2021-2022 could be even higher than 11.8 mt, as the sablefish year class of 2016 was likely strong and could start entering the fisheries during 2021-2022. As will be discussed during inseason, there may be another strong 2018 year class that that could also enter the fishery by 2021-2022. To accommodate this potential increase, the **GMT suggests setting the 2021-2022 set-aside at 25 mt, slightly more than twice the 2018 mortality, to cover the IOA sectors without adversely impacting other sectors.**

Sablefish north of 36° N. lat.

IOA mortality, mainly from the Pacific halibut directed fishery, ranged from 16-28 mt from 2011 to 2017, but increased to 69 mt in 2018. IOA mortality may increase further in 2021-2022, due to higher Pacific halibut total allowable catches, the potentially strong year class of 2016 entering the fishery, and the potential for higher trip limits for the open access daily trip limit fishery, which could be implemented if the Council adopts the higher P* of 0.45 ABC alternative. Although future IOA mortality could be higher than 69 mt, the GMT concludes that the ACL would not be at risk selecting 69 mt as the off-the-top deduction, because industry reports low market demand (due to excess frozen stockpiles by their main Japanese buyers) causing lower than normal IFQ attainments (e.g., 215 mt of the IFQ allocation was unutilized in 2018, even when accounting for carryover catch).

Therefore, the GMT recommends that the Council continue to adopt the maximum historical high value for off-the-top deductions for all species except petrale sole (suggested deduction: 13.3 mt) and sablefish south (suggested deduction: 25 mt) to accommodate catch in IOA fisheries in 2021-2022.

Exempted Fishing Permits

The Council considered exempted fishing permits (EFP) under Agenda Item H.5. Based on Council action, several EFPs were forwarded for public review including off-the-top deductions from the ACL, as recommended by the Council. The set-asides for those EFPs are included in the Appendices. **The GMT recommends the Council adopt the EFP set-asides as approved under Agenda Item H.5.**

Summary

Appendices 1 and 2 summarize off-the-top deductions relative to 2021 and 2022 ACLs and includes the proposed tribal set-asides and off-the-top deductions for research and IOA discussed above and EFP set-asides as adopted by the Council under Agenda Item H.5. These off-the-top deductions provide preliminary fishery harvest guidelines for Council consideration. Highlighted numbers represent values that are higher than adopted for 2019-2020.

GMT Recommendations

The GMT recommends the Council adopt for set-asides (shown in Appendix 1 and 2):

1. **the Tribal requested set-asides, as shown in Agenda Item H.8.a., Supplemental Tribal Report 1, November 2019**
2. **the maximum historical scientific research catch for set-asides for all species, except yelloweye rockfish and cowcod, for 2021 and 2022**
    a. **the appropriate amount of yelloweye rockfish to set aside for the research, based on anticipated projects**
    b. **the appropriate amount of cowcod to set aside for research, based on anticipated projects**
3. **the maximum historical high value for off-the-top deductions for all species except petrale sole (suggested deduction: 13.3 mt) and sablefish south (suggested deduction: 25 mt) to accommodate catch in IOA fisheries in 2021-22**
4. **the EFP set-asides as approved under Agenda Item H.5**

Appendix 1. GMT recommended off-the-top deductions for Tribal, research, EFPs, and incidental open access sectors for 2021. Shaded cells indicate values are higher than what is in the 2020 regulations.

Stock/Complex	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Arrowtooth flounder	Coastwide	9,933	2,041	0.1	13.0	41.0	**2,095.1**	7,837.9
Big skate	Coastwide	1477	15	0.1	5.5	36.7	**57.3**	1,419.7
Black (WA)	Washington	293	18	0	0.1	0.0	**18.1**	274.9
Black (CA)	California	348	-	0	0.1	1.2	**1.3**	346.7
BOCACCIO	S of 40º10' N. lat.	1,748	-	40	5.6	2.2	**47.8**	1,700.2
Cabezon (CA)	S of 42º N. lat.	210.5	-	1	0.0	0.3	**1.3**	209.2
California scorpionfish	S of 34°27' N. lat.	291	-	0	0.2	3.7	**3.9**	287.1
Canary rockfish	Coastwide	1,338	50	8	10.1	1.3	**69.4**	1,268.6
Chilipepper	S of 40º10' N. lat.	2,358	-	70	14.0	13.7	**97.7**	2,260.3
COWCOD	S of 40º10' N. lat.	87	-	7.17	2.10	0.17	**9.4**	77.6
DARKBLOTCHED ROCKFISH	Coastwide	882	0.2	0.6	8.5	24.6	**33.9**	848.1
Dover sole	Coastwide	50,000	1,497.0	0.1	50.8	49.3	**1,597.2**	48,402.8
English sole	Coastwide	9,175	200	0.1	8.0	42.5	**250.6**	8,924.4
Lingcod	N of 40'10º N. lat.	5,369	250	0.1	16.6	11.7	**278.4**	5,090.6
Lingcod	S of 40'10º N. lat.	1102	-	1.5	3.2	8.3	**13.0**	1,089.0
Longnose skate	Coastwide	1,823	220	0.1	12.5	18.8	**251.4**	1,571.6
Longspine thornyhead	N of 34º27' N. lat.	2,634	30	0	17.5	6.2	**53.7**	2,580.3
Longspine thornyhead	S of 34º27' N. lat.	831.8	-	0	1.4	0.8	**2.2**	829.6
Pacific cod	Coastwide	1,600	500	0.1	5.5	0.5	**506.1**	1,093.9
Pacific whiting	Coastwide	TBD	TBD	1.1	TBD	1500.0	**1,501.1**	TBD
Petrale Sole	Coastwide	3,843	350	0.1	24.1	13.3	**387.5**	3,455.5
POP	N of 40º10' N. lat.	3,843	9.2	0.1	5.4	10.0	**24.7**	3,818.3
Sablefish	N of 36º N. lat.	6,479	-	1.1	--	69.0	**70.1**	6,408.9

Stock/Complex	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Sablefish	S of 36º N. lat.	2,312	-	0	2.4	25.0	**27.4**	2,284.6
Shortbelly	Coastwide	3,000	-	0.1	8.2	21.6	**29.9**	2,970.1
Shortspine thornyhead	N of 34º27' N. lat.	1,428	50	0.1	10.5	17.8	**78.4**	1,349.6
Shortspine thornyhead	S of 34º27' N. lat.	756	-	0	0.7	6.0	**6.7**	749.3
Spiny Dogfish	Coastwide	1,621	275	1.1	34.3	33.6	**344.0**	1,277.0
Splitnose	S of 40º10' N. lat.	1,666	-	1.5	11.2	5.8	**18.4**	1,647.6
Starry flounder	Coastwide	392	2	0.1	0.6	45.7	**48.4**	343.6
Widow	Coastwide	14,725	200	28	17.3	3.1	**248.3**	14,476.7
YELLOWEYE ROCKFISH	Coastwide	50	5	0.24	2.92	0.69	**8.9**	41.2
Yellowtail	N of 40º10' N. lat.	6,050	1,000.0	40	20.6	7.0	**1,067.5**	4,982.5
Stock Complexes								
Nearshore rockfish north	N of 40º10' N. lat.	77	1.5	0.5	0.5	0.6	**3.1**	73.9
Nearshore rockfish south	S of 40º10' N. lat.	1,016	-	0	2.7	1.7	**4.4**	1,011.6
Shelf rockfish north	N of 40º10' N. lat.	1,511	30	4.5	15.3	25.6	**75.4**	1,435.6
Shelf rockfish south	S of 40º10' N. lat.	1,438	-	30	15.1	67.7	**112.8**	1,325.2
Slope rockfish north	N of 40º10' N. lat.	1,595	36	1.5	10.5	18.9	**66.9**	1,528.1
Slope rockfish south	S of 40º10' N. lat.	709	-	1	18.2	19.7	**38.9**	670.1
Other Fish	Coastwide	223	-	0.1	6.3	15.0	**21.3**	201.7
Other flatfish	Coastwide	4,802	60	0.1	23.6	137.2	**220.9**	4,581.1
Oregon black/ blue/ deacon	Oregon	603	-	0.5	0.1	1.7	**2.3**	600.7
Oregon cabezon/ kelp greenling	Oregon	198	-	0.1	0.1	0.1	**0.2**	197.8
Washington cabezon /kelp greenling	Washington	20	2	0	-	-	**2.0**	18.0

Appendix 2. GMT recommended off-the-top deductions for Tribal, research, EFPs, and incidental open access sectors for 2022. Shaded cells indicate values are higher than what is in the 2020 regulations.

Species	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Arrowtooth flounder	Coastwide	8,458	2,041.0	0.1	13.0	41.0	**2,095.1**	6,362.9
Big skate	Coastwide	1389	15	0.1	5.5	36.7	**57.3**	1,331.7
Black (WA)	Washington	291	18	0	0.1	0.0	**18.1**	272.9
Black (CA)	California	341	-	0	0.1	1.2	**1.3**	339.7
BOCACCIO	S of 40º10' N. lat.	1,724	-	40	5.6	2.2	**47.8**	1,676.2
Cabezon (CA)	S of 42º N. lat.	195	-	1	0.0	0.3	**1.3**	193.7
California scorpionfish	S of 34°27' N. lat.	275	-	0	0.2	3.7	**3.9**	271.1
Canary rockfish	Coastwide	1,307	50	8	10.1	1.3	**69.4**	1,237.6
Chilipepper	S of 40º10' N. lat.	2,259	-	70	14.0	13.7	**97.7**	2,161.3
COWCOD	S of 40º10' N. lat.	85	-	7.17	2.10	0.17	**9.4**	75.6
DARKBLOTCHED ROCKFISH	Coastwide	831	0.2	0.6	8.5	24.6	**33.9**	797.1
Dover sole	Coastwide	50,000	1,497.0	0.1	50.8	49.3	**1,597.2**	48,402.8
English sole	Coastwide	9,108	200	0.1	8.0	42.5	**250.6**	8,857.4
Lingcod	N of 40'10º N. lat.	4,958	250	0.1	16.6	11.7	**278.4**	4,679.6
Lingcod	S of 40'10º N. lat.	1172	-	1.5	3.2	8.3	**13.0**	1,159.0
Longnose skate	Coastwide	1,761	220	0.1	12.5	18.8	**251.4**	1,509.6
Longspine thornyhead	N of 34º27' N. lat.	2,452	30	0	17.5	6.2	**53.7**	2,398.7
Longspine thornyhead	S of 34º27' N. lat.	774.4	-	0	1.4	0.8	**2.2**	772.2
Pacific cod	Coastwide	1,600	500	0.1	5.5	0.5	**506.1**	1,093.9
Pacific whiting	Coastwide	*TBD*	*TBD*	1.1	TBD	1500.0	**1,501.1**	*TBD*
Petrale Sole	Coastwide	3,455	350	0.1	24.1	13.3	**387.5**	3,067.5
POP	N of 40º10' N. lat.	3,455	9.2	0.1	5.4	10.0	**24.7**	3,430.3

Species	Area	ACL	Tribal	EFP	Research	IOA	Set-aside Total	Fishery HG
Sablefish	N of 36º N. lat.	6,172	-	1.1	--	69.0	**70.1**	6,101.9
Sablefish	S of 36º N. lat.	2,203	-	0	2.4	25.0	**27.4**	2,175.6
Shortbelly	Coastwide	3,000	-	0.1	8.2	21.6	**29.9**	2,970.1
Shortspine thornyhead	N of 34º27' N. lat.	1,393	50	0.1	10.5	17.8	**78.4**	1,314.6
Shortspine thornyhead	S of 34º27' N. lat.	737	-	0	0.7	6.0	**6.7**	730.3
Spiny Dogfish	Coastwide	1,585	275	1.1	34.3	33.6	**344.0**	1,241.0
Splitnose	S of 40º10' N. lat.	1,630	-	1.5	11.2	5.8	**18.4**	1,611.6
Starry flounder	Coastwide	392	2	0.1	0.6	45.7	**48.4**	343.6
Widow	Coastwide	13,788	200	28	17.3	3.1	**248.3**	13,539.7
YELLOWEYE ROCKFISH	Coastwide	51	5	0.24	2.92	0.69	**8.9**	42.2
Yellowtail	N of 40º10' N. lat.	5,831	1,000.0	40	20.6	7.0	**1,067.5**	4,763.5
Stock Complexes								
Nearshore rockfish north	N of 40º10' N. lat.	76	1.5	0.5	0.5	0.6	**3.1**	72.9
Nearshore rockfish south	S of 40º10' N. lat.	1,010	-	0	2.7	1.7	**4.4**	1,005.6
Shelf rockfish north	N of 40º10' N. lat.	1,450	30	4.5	15.3	25.6	**75.4**	1,374.6
Shelf rockfish south	S of 40º10' N. lat.	1,428	-	30	15.1	67.7	**112.8**	1,315.2
Slope rockfish north	N of 40º10' N. lat.	1,568	36	1.5	10.5	18.9	**66.9**	1,501.1
Slope rockfish south	S of 40º10' N. lat.	705	-	1	18.2	19.7	**38.9**	666.1
Other Fish	Coastwide	233	-	0.1	6.3	15.0	**21.3**	211.7
Other flatfish	Coastwide	4,838	60	0.1	23.6	137.2	**220.9**	4,617.1
Oregon black/blue/deacon	Oregon	6000	-	0.5	0.1	1.7	**2.3**	5,997.7
Oregon cabezon/kelp greenling	Oregon	190	-	0.1	0.1	0.1	**0.2**	189.8
Washington cabezon/kelp greenling	Washington	17	2	0	-	-	**2.0**	15.0