DRAFT RANGE OF ALTERNATIVES FOR MANAGING WEST COAST SKATE SPECIES

The Council decided in April to reconsider the Ecosystem Component (EC) species designation for big skate (*Raja binoculata*) or contemplate a broader consideration for all skates to be managed in a new Skate complex. The rationale for this consideration is based on new evidence that big skate are targeted in trawl fisheries and retained for sale in greater amounts than previously understood. According to the National Marine Fisheries Service National Standard 1 Guidelines, EC species do not require conservation and management because (a) they are not be determined to be subject to overfishing, approaching overfished, or overfished; (b) not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and (c) not generally be retained for sale or personal use. The EC designation was specified for all west coast skate species other than longnose skate (*Raja rhina*) beginning in 2015; longnose skate are currently managed with species-specific harvest specifications. The following alternatives are posed for considering this action. Some additional analysis done by members of the Groundfish Management Team (GMT) is also provided in Appendix 1 to inform considerations for adopting a range of skate management alternatives for detailed analysis in the 2017 and beyond specifications process.

Draft Alternatives for Managing West Coast Skate Species

The draft alternatives presented below, other than No Action, contemplate removing the EC designation for big skate, which has been landed in higher amounts than originally thought when the Council made the EC designation. While other skate species are caught in the fishery (Table 2 in Appendix 1), the only new information available since the decision to designate all endemic skate species other than longnose as EC species is the higher amounts of big skate landed. Therefore, the only action alternatives offered are those that contemplate removing the EC designation for big skate and actively managing the species beginning in 2017.

No Action Alternative

Under the No Action alternative, longnose skate would continue to be managed with stock-specific harvest specifications and all the other endemic skate species (Table 1) would continue to be designated EC species. As EC species, no harvest specifications would be specified for these species although a monitoring requirement is specified to ensure the species are not being targeted or routinely retained for sale. Big skate cumulative landing limits are listed as a routine management measure for the shorebased individual fishing quota (IFQ) program (§660.60(c)(1)(i)). Current cumulative landing limits for the shorebased IFQ program are unlimited from January 1 to May, 15,000 lbs/month in June, and 35,000 lbs/2 months for the rest of the year. The shorebased IFQ trip limit also requires that big skate are sorted and reported on fish tickets.

Table 1. West coast skate species currently designated as Ecosystem Component species.

Common Name	Scientific Name
Aleutian skate	*Bathyraja aleutica*
Bering/sandpaper skate	*B. interrupta*
Big skate	*Raja binoculata*
California skate	*R. inornata*
Roughtail/black skate	*Bathyraja trachura*
All other skates	Endemic species in the family *Arhynchobatidae*

Alternative 1: Actively Manage Big Skate with Stock-Specific Harvest Specifications

Big skate would be actively managed using stock-specific harvest specifications under Alternative 1. If this alternative was chosen, big skate would be only the second data-poor, category 3 Groundfish FMP species managed with stock-specific harvest specifications (only Pacific cod is currently managed this way). One consideration under this alternative is whether actively managing data-poor species outside of a complex is sound policy given the greater uncertainty in determining sustainable fishing limits.

Management Measures Option 1: Big skate cumulative landing limits would remain as a routine management measure for the shorebased individual fishing quota (IFQ) program. Cumulative landing limits and/or bag limits could also be established as a routine management measure for the non-trawl sectors; however, catches in this sector are relatively low and thus such measures may be unnecessary.

Management Measure Option 2: In addition to big skate cumulative landing limits, implement a sorting requirement for all sectors (i.e., not just for the shorebased IFQ program when cumulative landing limits are implemented) to improve coastwide estimates of big skate mortality and to inform future stock assessments.

Management Measure Option 3: Establish shorebased IFQ for big skate in lieu of cumulative landing limits as well as a coastwide sorting requirement for all sectors.

Alternative 2: Actively Manage Big and Longnose Skate in a Skate Complex

Big skate would be actively managed in a new Skate complex with longnose skate under Alternative 2. Longnose skate would be an indicator species for the new Skate complex since it has been assessed. The use of longnose skate as an indicator species for the complex would work in this case since longnose and big skate have similar vulnerabilities to potential overfishing (Table 4 in Appendix 1) and the status and biomass trends of longnose skate are likely similar to those for big skate given their similar life history attributes.

Since both these species are predominantly caught in trawl fisheries, quota for the Skate complex could be issued to more effectively manage trawl impacts, although cumulative landing limits for the complex could be used in lieu of IFQ management. Given that longnose skate are not as prevalent in the catch as longnose (2010-2014 average total catch of big skate is about 40% of the total mortality of longnose skate; Table 2 in Appendix 1), there is less concern that the OFL

contribution of big skate would act as an OFL inflator in a new Skate complex. They are both landed and marketed on the west coast with both species a likely market substitution for the other.

Other Alternatives That Could Be Considered

Council staff reevaluated the EC species designations for west coast skates based on the National Standard 1 (NS1) guidelines, the data presented during the 2015-2016 analysis, and the revised data contained in Appendix 1. The review resulted in the two action alternatives described above, which only propose changes for big skate and longnose skate. A summary of the review is described below and could be used to determine whether the existing range of alternatives is sufficient. The criteria for an EC designation provided in the NS1 guidelines are used to evaluate sufficiency of these alternatives.

(a) Not be determined to be subject to overfishing, approaching overfished, or overfished

Table 2 and Table 4 contain information to inform whether historical mortality has exceeded the component species OFL in 2015, which is an indication that overfishing may be occurring. In 2010, mortality of Aleutian skate would have exceeded the 2015 component OFL, if an OFL had been established. However, the average recent year total mortality of Aleutian skate has been below the 2015 component OFL. No other skate species, including big skate, were subject to mortality levels higher than their 2015 component OFLs.

It is not possible to determine whether any of the skate species, other than longnose skate, are approaching an overfished condition or are overfished without a stock assessment. The use of longnose skate as an indicator species for the other endemic skates is the only inference that can be made regarding the status of other skate species.

(b) Not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures

The mortality of EC species is monitored annually when the WCGOP total mortality reports are published. Action can be taken through several avenues, depending on the species and level of concern (e.g., inseason action, two meeting process, and biennial adjustments). The responsive management system should reduce the risk that an EC species would experience overfishing or become overfished in the absence of conservation and management. Similar management measures as used to manage the impacts of longnose skate could be considered for these other skate species if concern arises regarding total mortality trends.

(c) Not generally be retained for sale or personal use

During the 2015-2016 specifications process, the Council determined that the average landings of skate species other than longnose skate, met the standard of "generally not retained for sale." As described above, new information brought forward in 2015 indicates that big skate may no longer meet these criteria. The revised data for the remaining skate species were also re-evaluated against this standard.

California skate and sandpaper skate are the only other skate species other than longnose and big skate that have average annual landings during 2010-2014 that are greater than 1 mt (Table 3, Appendix 1). The average annual landings of California skate (4 mt) and sandpaper skate (2 mt) are significantly less than those for longnose (870 mt) and big skate (322 mt), which may indicate that these species are not generally retained for sale or personal use.

Table 1 in Appendix 1 shows the following average total mortality estimated during 2010-2014 for skate species other than big and longnose skate: sandpaper (47 mt), black skate (36 mt), California skate (12 mt), and Aleutian skate (3 mt). Average annual total mortality for all other skates is less than 1 mt during this period. The average total mortality values in Appendix 1 were calculated using a different time period than what was used during the 2015-2016 biennial analysis (i.e., 2010-2014 vs. 2007-2011) and the values in Appendix 1 apply species compositions to the unidentified skate category. However, the results are similar using the two methodologies (see Agenda Item G.8.b, Supplemental GMT Report 6, September 2013).

Appendix 1

Initial GMT Analysis in Consideration of Changing the EC Designation of Big Skate and Other Endemic Skate Species

To facilitate our review, we walked (at a high level) through the stepwise process. The following informal summary includes some updated catch information, questions and considerations that might be helpful to the drafting of Council Staff materials on the exploration of the EC designation for big skate and possibly a broader consideration for a skate complex.

Step 1: Consider whether a species should be added to the FMP, removed from the FMP, designated as "in the fishery" or designated as an EC species. To do this, we updated total mortality for all of the EC skate species.

In September 2013, the GMT used estimated mortality from 2002-2011. In this analysis the GMT chose to provide estimates from 2010-2014 for several reasons.

1. The West Coast Groundfish Observer Program (WCGOP) now has total mortality data through 2013. For 2014, the analysis used landings data from PacFIN and used 2013 discard values as a proxy for 2014.
2. In 2009, a sorting requirement was placed on longnose skate. However, the data suggests that there may have been a lag in sorting in Washington based on the graph below (Figure 1), which shows no longnose skate landings in 2008 and 2009 (only unidentified), but in 2010, a majority of skate was sorted as longnose.
3. Prior to 2009, longnose skate was not individually sorted and therefore it is believed that a significant amount of unidentified skate was longnose skate. However, there is not sufficient information to inform the proportion that may be longnose. There may be additional information on longnose skate for earlier years in the longnose skate stock assessment but for the purposes of this analysis we chose more recent years where the data are considered more robust due to the sorting requirement.

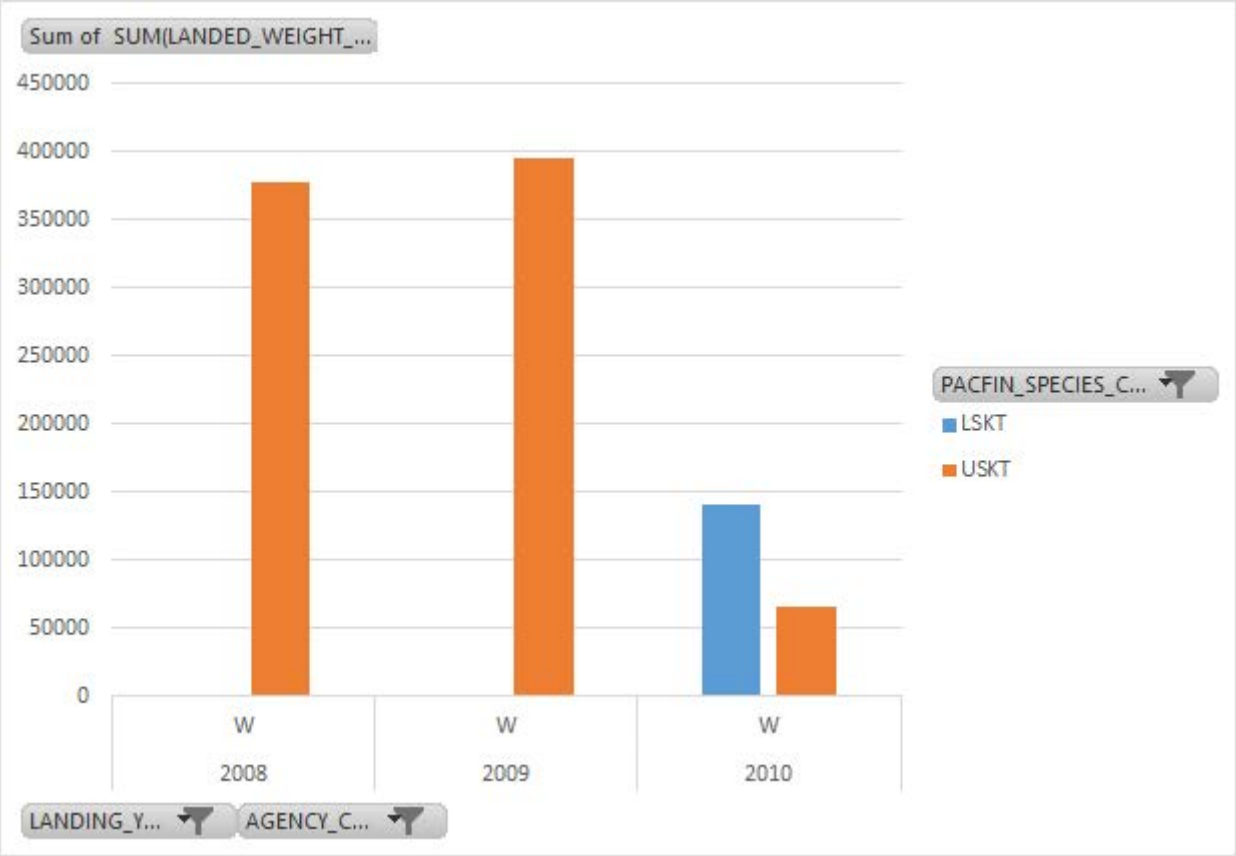

Figure 1. Skate landings (mt) in WA (tribal and nontribal).

Table 2 shows the 2010-2014 total mortality for all skates. Several assumptions were made to estimate species composition of the unidentified skates landed and discarded.

1. It was assumed that 98 percent of all unidentified skate (both landed and discard) was big skate. While the SSC recommended that 98 percent be used for Oregon and 95.2 percent be used for Washington in April 2015, due to time constraints, recognition that most skate landings occur off of Oregon, and that the WCGOP Groundfish Mortality report is at a coastwide level, the GMT used 98 percent for this initial analysis to estimate the proportion of unidentified skate that was big skate from 2010-2014. The GMT can expand on this analysis if needed, and update when the 2014 WCGOP report is published in November.
2. The proportion of the remaining species to the total catch of those species was then applied to the remaining amount of unidentified skates (i.e., remaining amount = unidentified skate landing or discard - estimated big skate landing or discard proportion).
3. For 2014, landings were queried from PacFIN answers as the Groundfish Total Mortality report by WCGOP is not currently available for 2014. The estimated discard amounts from 2013 (observed discards + composition applied discards to unidentified skates) were used as a proxy until the final amounts become available in November.

Table 2. 2010-2014 total mortality of west coast skate species (mt). Years where mortality exceeds the 2015 OFL contribution are bolded.

Species	2010	2011	2012	2013	2014	Average
Aleutian Skate	**6.15**	1.67	2.63	1.87	1.87	2.84
Bering Skate	0.03	0	0	0	0	0.01
Big Skate	300.07	403.04	396.73	374.51	512.53	397.38
Black Skate	65.22	34.03	23.57	27.97	27.97	35.75
California Skate	16.84	12.5	8.82	9.13	10.52	11.56
Deepsea Skate	1.44	1.2	0.33	0.56	0.56	0.82
Flathead Skate	0	0.01	0	0.01	0.01	0.01
Longnose Skate	1175.83	958.32	982.62	981.31	898.06	999.23
Roughshoulder/Broad Skate	0	0.03	0	0.01	0.01	0.01
Sandpaper Skate	68.15	35.23	41.82	44.48	45.51	47.04
Soft Snout Skate	0.04	0	0	0	0	0.01
Starry Skate	1.73	0.2	0.13	0.12	0.12	0.46
Thornback Skate	0.62	0.8	0.27	1.3	1.3	0.86
White Skate	0	0.01	0.43	0.07	0.07	0.12

Table 3 provides the landings of west coast skate species using the methodology described above for applying species compositions to the unidentified skate landings.

Table 3. 2010-2014 landings of west coast skate species (mt).

Species	2010	2011	2012	2013	2014	Average
Aleutian Skate	-	-	-	-	-	-
Bering Skate	-	-	-	-	-	-
Black Skate	-	2.40	0.06	-	-	0.49
California Skate	1.15	3.62	7.42	3.22	4.61	4.00
Deepsea Skate	-	-	-	-	-	-
Flathead Skate	-	-	-	-	-	-
Roughshoulder/Broad Skate	-	-	-	-	-	-
Sandpaper Skate	3.94	1.13	0.25	2.38	3.42	2.22
Soft Snout Skate	0.04	-	-	-	-	0.01
Starry Skate	-	-	-	-	-	-
Thornback Skate	-	-	-	-	-	-
White Skate	-	-	-	-	-	-
Big Skate	240.12	316.93	324.74	293.89	431.91	321.52
Longnose	972.53	793.13	886.80	889.64	806.38	869.69

With the availability of new information, including better species composition data, and an improved understanding of susceptibility, the GMT believes that catch concerns and PSA scores could be re-evaluated. The GMT could work on the new PSA scores at our October meeting.

Step 2: Consider removing species from the complex for individual management because it may be potentially at risk of overfishing. The metric for fish with an OFL is to look at the ratio of catch to OFL/ABC with cumulative catch relative to cumulative OFL/ABC as most indicative of a potential problem (as recommended by the SSC, Agenda Item F.8.b, Supplemental SSC Report, June 2013).

Step 3: When evaluating species to manage in a complex, individual management should be considered for a species that would act as an inflator species and that may cause others within the complex to be potentially at risk of overfishing. This step considers similar information as in Step 2. The GMT looked at the average total mortality from 2010-2014 compared to the 2015 and 2016 component OFLs. PSA scores are included here but some (big skate) may merit review given our improved understanding of the species composition of unspecified skate and fishing behavior. Note: These OFLs were developed but not adopted by the Council as all skates (except longnose) were designed as EC species in the 2015-2016 harvest specifications.

Table 4. PSA scores and average total mortality (2010-2014) compared to the estimated 2015 OFL for west coast skate species.

Species	PSA Score	Average Total Mortality (2010-2014)	2015 OFL	Over 2015 OFL?
Big skate	1.99	397.4	540.8	No
Longnose skate	1.68	999.28	2449	No
California skate	2.12	11.6	129.6	No
Aleutian skate	1.71	2.84	3.6	No
Roughtail/black skate	1.68	35.75	184.8	No
Bering/sandpaper skate	1.8	47.04	177.4	No
All other skates		2.28	24.9	No

Step 4: Consider creating new complexes to better align stocks in terms of life history, appearance, and spatial overlap, and thereby decreasing the potential of overfishing any single stock within the complex. Tables and figures from Appendix C, Agenda Item H.4.b, GMT Report, November 2013 shows species co-occurrence and distribution for species that were then included in the Other Fish complex.