GROUNDFISH MANAGEMENT TEAM REPORT ON ECOSYSTEM COMPONENT SPECIES DESIGNATIONS AND STOCK COMPLEXES

The Groundfish Management Team (GMT) had lengthy discussions about stock complexes regarding the 2017-2018 biennial groundfish harvest specifications and management measures at our October work session, and at this meeting. Below are our thoughts and considerations.

Ecosystem Component Species

The GMT reviewed the 2014 mortality estimates for each of the ecosystem component (EC) species, and notes that there have been no significant increases in mortality that would necessitate any changes to the current species with EC designations, except for big skate (Table 1). It should be noted that the 'Unidentified Skate' category is largely comprised of big skate, which the Council has recommended to be re-designated as 'in the fishery' (Agenda Item E.8.a, GMT Report 2, April 2015).

Table 1. Mortality of EC species from 2012-2014 and the 2014 acceptable biological catch (ABC) if available.

Species	2014 ABC [1/]	2014 Mortality	2013 Mortality	2012 Mortality
Aleutian skate		1.7	1.9	2.6
Bering/sandpaper skate		41.5	42.1	41.5
Big skate	*317.9*	*89.0*	*101.0*	*76.5*
California skate	59.7	1.9	6.2	2.9
Roughtail/black skate		34.4	28.0	23.5
Deepsea skate		1.8	0.6	0.3
Pacific electric ray		3.3	0.0	1.4
Starry skate		0.1	0.1	0.1
Thornback skate		0.2	1.3	0.6
White skate		0.1	0.1	0.4
Shark/Skate Unid		412.1	281.6	328.0
Pacific grenadier	1,054.2	89.6	223.4	74.8
Grenadier Unid		66.8	94.2	126.2
Finescale codling		2.8	7.4	2.7
Spotted ratfish	1,000.1	95.8	107.8	86.3
Soupfin shark	42.8	5.4	1.8	2.7

1/ Last year a harvest specification specified, if available.

Action Item 1: Big Skate and Skate Complex

In the 2015-2016 biennial harvest specifications process, the Council took action in regulation and in the fishery management plan (FMP) to list all endemic skate species (except longnose skate) as EC species. However, in April 2015, the GMT brought to the Council's attention new information

that suggested big skate was being targeted in the shorebased individual fishing quota (IFQ) fishery (Agenda Item E.8.a, GMT Report 2, April 2015). Trip limits and a sorting requirement for big skate were put into place for the shorebased IFQ fishery starting on June 1, 2015. For the 2017-2018 biennial process, the Council recommended changing the big skate classification from "EC" to "in the fishery" based on analysis in the briefing materials (Agenda Item H.5., Attachment 2, Agenda Item H.5.a, Supplemental GMT Report REVISED).

Under the Agenda Item, the Council is tasked with taking final action on whether to manage big skate with stock-specific harvest specifications (Alternative 1), or as a complex with longnose skate (Alternative 2). The GMT discussed at length the issue of whether to manage big skate individually or in a complex with longnose skate. According to the National Standard 1 (NS1) guidelines, a stock complex is a group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar. As discussed in GMT Report 1 under this agenda item, the two species generally do not occupy the same habitats; with big skate having a shallower depth distribution than longnose skate (Bizzarro 2015). Comparatively, longnose skate are typically found on the outer shelf and upper slope, while big skate tend to be found in shallower depth ranges. In areas where their distributions do overlap spatially, the two species segregate into species-specific groups, and do not usually co-occur (Bizarro 2015). Both species also have very different exploitation histories, and little is known regarding the species composition of the historical landings. Furthermore, Table 2 below shows the Productivity-Susceptibility-Vulnerability (PSA) scores for both species. Based on the initial GMT score below, big skate is more susceptible and vulnerable than longnose skate.

Table 2: Productivity, susceptibility and vulnerability to fishing for big skate and longnose skate.

Stock Name	Productivity	Susceptibility	Vulnerability
Big skate	2.45	2.05	1.99
Longnose skate	1.53	1.80	1.68

However, the GMT did not take into consideration the recent knowledge that the vast majority of big skate was landed within the unspecified skate category. If the Council selected Alternative 2, the GMT could look at rescoring the PSA for big skate over winter in order to inform management within the complex.

Under Alternative 2, longnose skate is also being considered as an indicator stock. However, the GMT discussed whether longnose skate would be a good indicator for the complex as NS1 states that indicator stocks "should be representative of the typical status of each stock within the complex, due to similarity in vulnerability"; if the indicator is less vulnerable (as is longnose skate), "management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery." Based on the life history characteristics described above, and the PSA scores, there is some cause for concern to use longnose as an indicator for a new complex. The GMT also discussed the issue of whether longnose skate would act as an inflator stock if the two species were managed in a complex. In Supplemental GMT Report 3, landings of longnose skate have not been close to the 2,000 mt ACL. Furthermore, while big skate landings were high in 2014, as discussed in Agenda Item I.8.a., Supplemental GMT Report and

Supplemental GMT Report 3 under this agenda item, landings on average have been under the complex or species ABC and with trip limits are not expected to exceed the 2015 ABC amount or 2017-2018 ABCs. Therefore, there may not be a concern that landings of big skate (i.e. the more vulnerable species) would increase landings significantly simply because the complex would have a greater ACL.

The GMT recognizes that there may be concern for managing big skate, a stock with little information, with stock-specific specifications. However, the GMT does see an advantage in managing species individually that have different life history characteristics and targeting strategies; species-specific data is also considered better for management purposes. **The GMT therefore supports Alternative 1.**

Under Alternative 1, there are three potential management measure options. The GMT supports options 1 (maintaining trip limits for the shorebased IFQ sector) and 2 (sorting requirement for all sectors). A sorting requirement for all sectors would help to inform future stock assessments. The GMT does not believe at this time that the non-IFQ sectors need trip limits for management as landings have been relatively minor (Agenda Item I.8.a, Supplemental GMT Report). Supplemental GMT Report 4 will speak to option 3, the establishment of big skate IFQ in the shorebased IFQ fishery; the GMT does not recommend this option at this time.

However, if the Council selects Alternative 2, the GMT offers up a potential plan for future biennial harvest specification cycles: manage longnose skate and big skate in a complex for the 2017-2018 biennial cycle; make a full assessment for big skate a priority in the next stock assessment cycle; develop a new PSA score for big skate; and then create species specific harvest specifications for 2019-2020. This would also allow for the needed time to develop IFQ for big skate outside of the 2017-2018 harvest specifications, if desired by the Council.

Action Item 2: Other Flatfish Complex

During the Mop-up stock assessment and review (STAR) panel, the Scientific and Statistical Committee (SSC) Groundfish Subcommittee discussed how to determine the 2017-2018 overfishing level (OFL) for starry flounder. The most recent assessment was conducted in 2005[1] and does not have OFL projections for 2017 and beyond. The Mop-up STAR panel recommended that the 2016 OFL, ABC, and ACL be rolled forward for 2017-2018. Additionally, the GMT understands that the SSC will be recommending that starry flounder be changed from a Category 2 to a Category 3 stock. The GMT had a brief discussion about the appropriateness of managing a Category 3 stock as an individual species or if it would be better included in the Other Flatfish complex. The GMT does not have a recommendation on this at this time, but wanted to bring it to the Council's attention for consideration. If the Council does choose to include starry flounder in the Other Flatfish complex, this should be indicated at this meeting to facilitate the analysis over the winter.

Action Item 3: Other Fish Complex

During the 2015-2016 biennial process, the Council reorganized several stock complexes, including the Other Fish complex. The current Other Fish complex includes: kelp greenling,

[1] http://www.pcouncil.org/wp-content/uploads/Starry05-final.pdf

cabezon in Washington, and leopard shark[2]. In 2015, a new full assessment of kelp greenling in Oregon was conducted. This means that kelp greenling in Oregon is now a Category 1 stock and could be managed separately (i.e., taken out of the Other Fish complex). The GMT does not see any biological or management advantages to keeping kelp greenling in or removing from the Other Fish complex. If the Council wishes to make a change to the Other Fish category (e.g., remove Oregon kelp greenling), this should be indicated under this agenda item, keeping in mind the other analysis and workload priorities associated with the biennial process.

Recommendations

1. **The GMT recommends Alternative 1: Actively manage big skate with stock-specific harvest specifications.**
2. **Under Alternative 1, the GMT recommends management measure options 1 (trip limits for the shorebased IFQ fishery) and 2 (establish a sorting requirement for all sectors).**

Reference

Bizzarro, J.J. 2015. Comparative resource utilization of eastern North Pacific skate with applications for fisheries management. PhD Dissertation, University of Washington, Seattle, WA.

PFMC
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[2] http://www.pcouncil.org/wp-content/uploads/GF15_16_SpexFEISJanuary2015.pdf section 2.2.4