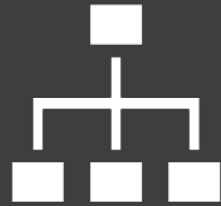


Final Preferred Alternatives for the 2021-2022 Biennial Harvest Specifications

Goals for today



FPA on Harvest Specifications

1. Default Harvest Control Rules

2. Alternative Harvest Specifications

Default HCRs include:

Tables 2-2 (2021) & 2-3
(2022) in [Supplemental
REVISED Attachment 1](#)

Overfishing limit

Stock category

Sigma and P^* (OFL \rightarrow ABC)

Acceptable biological catch

Annual catch limit

Default HCRs include:

For some species the ACLs resulting from the default HCRs are outside of the range of impacts projected in the 2015-2016 EIS. For these species additional information is available in the analytical document.

Species with ACLs outside the range previously analyzed

Big Skate	Bocaccio S of 40° 10' N. lat.	Cabazon (CA)	California Scorpionfish
Canary Rockfish	Chilipepper S of 40° 10' N. lat.	Cowcod (40° 10' - 34° 24' N. lat.)*	English Sole
Lingcod N of 40° 10' N. lat.	Lingcod S of 40° 10' N. lat.	Pacific Cod	Pacific Ocean Perch
Petrale Sole*	Shortbelly Rockfish*	Starry Flounder	Widow Rockfish

* indicates species with alternative harvest control rules also being considered

Default HCRs

Tables 2-2 (2021) & 2-3
(2022) in [Supplemental
REVISED Attachment 1](#)

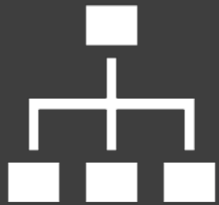


**GMT recommendation:
adopt default HCRs for
all stocks,**

Except:

1. Cowcod south of 40° 10' N. lat.
2. Oregon black rockfish
3. Petrale sole
4. Sablefish
5. Shortbelly rockfish

Goals for today



FPA on Harvest Specifications

✓ 1. Default Harvest Control Rules

2. Alternative Harvest Specifications

Alternative Harvest Specifications

Tables 2-1 in [Supplemental Revised Attachment 1](#)



1. Cowcod south of 40°10' N. lat.



2. Oregon black rockfish



3. Petrale sole

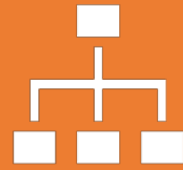


4. Sablefish



5. Shortbelly rockfish

1. Cowcod, south of 40° 10' N. lat.



No Action: ACL = ABC, $P^* = 0.45$
ACLs = 98 mt (2021) & 96 mt (2022)



Alternative 1: ACL = ABC, $P^* = 0.40$
ACLs = 84 mt (2021) & 82 mt (2022)



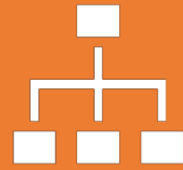
Alternative 2: ACL = ABC, $P^* = 0.30$
ACLs = 61 mt (2021) & 58 mt (2022)

1. Cowcod, south
of $40^{\circ} 10' N.$ lat.

GMT

Recommendation:

**Alternative 1: ACL =
ABC, $P^* = 0.40$**



No Action: ACL = ABC, $P^* = 0.45$
ACLs = 98 mt (2021) & 96 mt (2022)

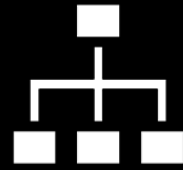


Alternative 1: ACL = ABC, $P^* = 0.40$
ACLs = 84 mt (2021) & 82 mt (2022)



Alternative 2: ACL = ABC, $P^* = 0.30$
ACLs = 61 mt (2021) & 58 mt (2022)

2. Oregon Black Rockfish



No Action: $ACL = ABC$, $P^* = 0.45$
ACLs = 479 mt (2021) & 474 mt (2022)

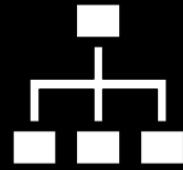


Alternative 1: $ACL = \text{"Case-by-case"}$
 ABC , set at 2020 ACL
ACLs = 512 mt (2021 & 2022)

2. Oregon Black Rockfish

GMT Recommendation:

**Alternative 1: ACL =
“Case-by-case” ABC,
ACLs = 2020 ACL**

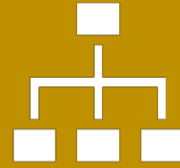


No Action: ACL = ABC, $P^* = 0.45$
ACLs = 479 mt (2021) & 474 mt (2022)



Alternative 1: ACL = “Case-by-case”
ABC, set at 2020 ACL
ACLs = 512 mt (2021 & 2022)

3. Petrale Sole



No Action: ACL= ABC, $P^* = 0.45$
ACLs= 4,115 mt (2021) & 3,660 mt (2022)



Alternative 1: ACL = ABC, $P^* = 0.40$
ACLs= 3,843 mt (2021) & 3,455 mt (2022)



Alternative 2: “Stair-step ACLs”
ACLs = 3,600 mt (2021 & 2022)

3. Petrale Sole

GMT Recommendation:
No Action: ACL = ABC,
 $P^* = 0.45$



No Action: ACL= ABC, $P^* = 0.45$
ACLs= 4,115 mt (2021) & 3,660 mt (2022)



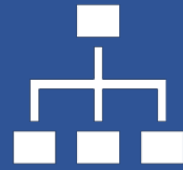
Alternative 1: ACL = ABC, $P^* = 0.40$
ACLs= 3,843 mt (2021) & 3,455 mt (2022)



Alternative 2: “Stair-step ACLs”
ACLs = 3,600 mt (2021 & 2022)

4. Sablefish (Coastwide)

*apportionment north and south of
36° N. lat. on next slide*



No Action: ACL= ABC, $P^* = 0.40$
ABC = 8,208 mt (2021) & 7,811 mt (2022)

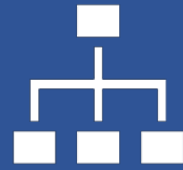


Alternative 1: ACL = ABC, $P^* = 0.45$
ABC = 8,791 mt (2021) & 8,375 mt (2022)

4. Sablefish (Coastwide)

GMT Recommendation:
Alternative 1: ACL =
ABC, $P^* = 0.45$

*apportionment north and south of
36° N. lat. on next slide*



No Action: ACL= ABC, $P^* = 0.40$
ABC = 8,208 mt (2021) & 7,811 mt (2022)



Alternative 1: ACL = ABC, $P^* = 0.45$
ABC = 8,791 mt (2021) & 8,375 mt (2022)

4. Sablefish

Apportionment north & south of 36° N. lat.



Method 1: Long-term apportionment;
73.6% north & 26.4% south



Method 2: 5-year avg. apportionment;
78.4% north & 21.6% south

4. Sablefish

Apportionment north & south of 36° N. lat.

GMT Recommendation:

Method 2: 5-year avg.

*note: may be re-evaluated every
biennium, if desired*



Method 1: Long-term apportionment;
73.6% north & 26.4% south



Method 2: 5-year avg. apportionment;
78.4% north & 21.6% south

5. Shortbelly Rockfish



No Action: $P^* = 0.40$; ACL = 500 mt



Alternative 1: $P^* = 0.40$; ACL = 3,000 mt



Alternative 2: Ecosystem Component Species
No ACLs specified

5. Shortbelly Rockfish

GMT Recommendation:

Alternative 1: $P^* = 0.40$; ACL = 3,000 mt



No Action: $P^* = 0.40$; ACL = 500 mt

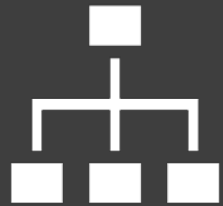


Alternative 1: $P^* = 0.40$; ACL = 3,000 mt



Alternative 2: Ecosystem Component Species
No ACLs specified

Goals for today



Questions?

FPA on Harvest Specifications

✓ 1. Default Harvest Control Rules

✓ 2. Alternative Harvest Specifications

Back-up slides from March check-in:

Shortbelly Rockfish:

Analysis provides support for Alt 1 PPA (same as 2020 ACL)

Alt.	Description	Summary
No Action	500 mt ACL	Likely to constrain fisheries
Alt. 1 (PPA)	3,000 mt ACL	Extra cushion for fisheries Stock thriving - supports robust forage base Other prey abundant (e.g, anchovy)
Alt. 2	EC species	ACLs more incentive to reduce bycatch EC species do not have harvest specifications

Oregon Black Rockfish (in complex with OR blue/deacon)

Analysis provides support for higher Alt 1 ABCs and ACLs

Alt.	Description
No Action	ACL = ABC P*0.45 <ul style="list-style-type: none">• 512 mt ABC in 2020• 479 mt in 2021• 474 mt in 2022
Alt. 1 (PPA)	Case-by-case ABC <ul style="list-style-type: none">• Stay at 512 mt for 2021-22• Revert to using P* in 2023+

Trade-off with Alt 1:

Cowcod South of 40°10':

Alt 1 PPA accommodates ACT range of 40-60 mt

Alt.	Description
No Action	ACL = ABC P*0.45 (98 mt in 2021)
Alt. 1 (PPA)	ACL = ABC P*0.40 (87 mt in 2021)
Alt. 2	ACL = ABC P*0.30 (69 mt in 2021)

Petrале Sole: GMT previously recommended precaution

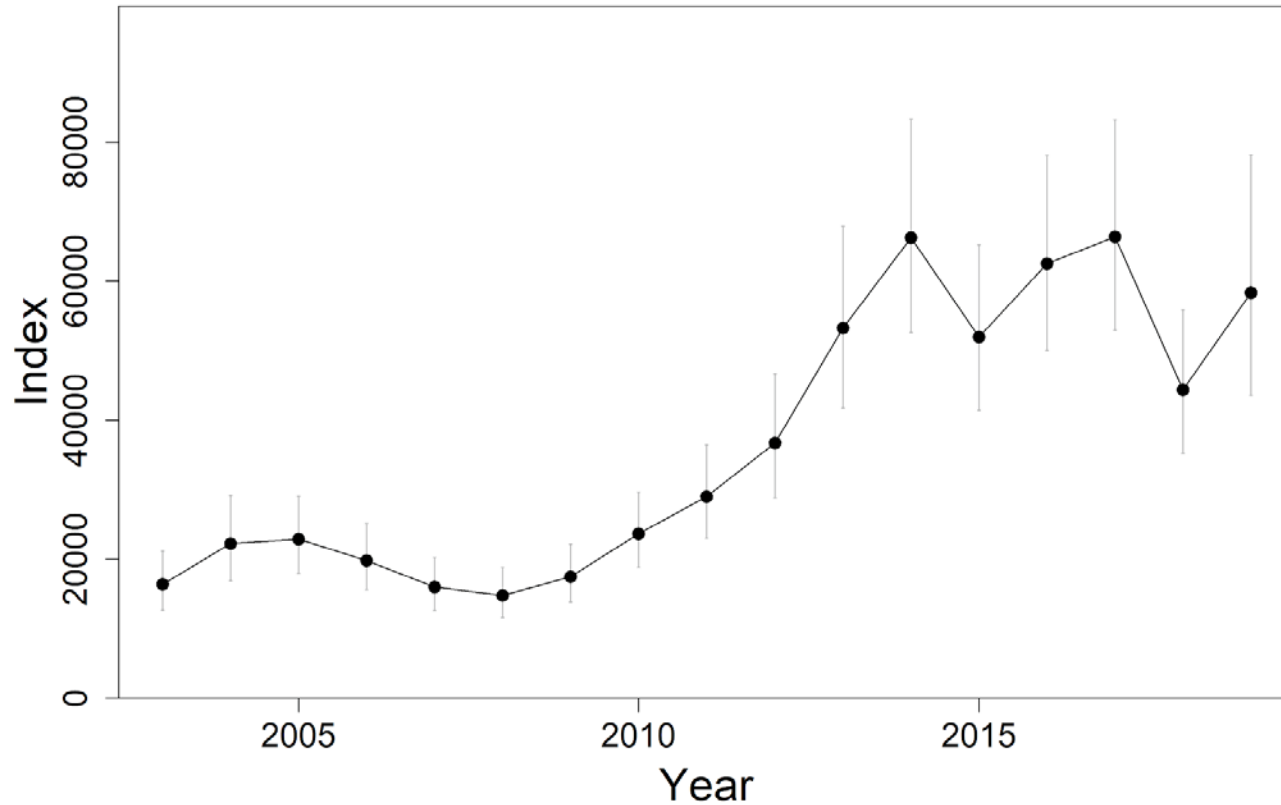
Council wanted precaution w/ “overestimate” from 2019 update assessment

- Both Alt 1 and 2 equally precautionary and provide same long-term \$ benefits
- Alt 1 = more benefits in 2021-22
- Alt 2 = more spread out later

Alt.	Description
No Action	ACL = ABC P*0.45
Alt. 1 (PPA)	ACL = ABC P*0.40
Alt. 2	“Stair-step ACLs” (constant each biennium; decline over time)

Petrale Sole: GMT is now supporting No Action for FPA

NWFSC WCGBTS: petrale_sole



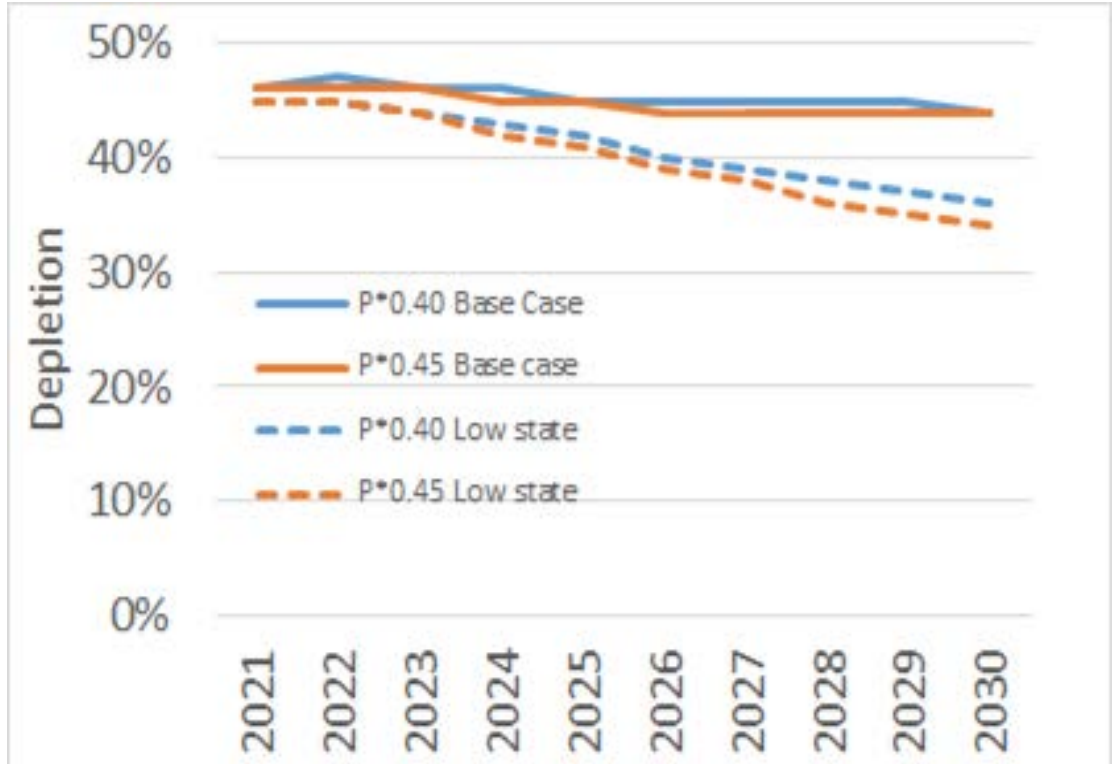
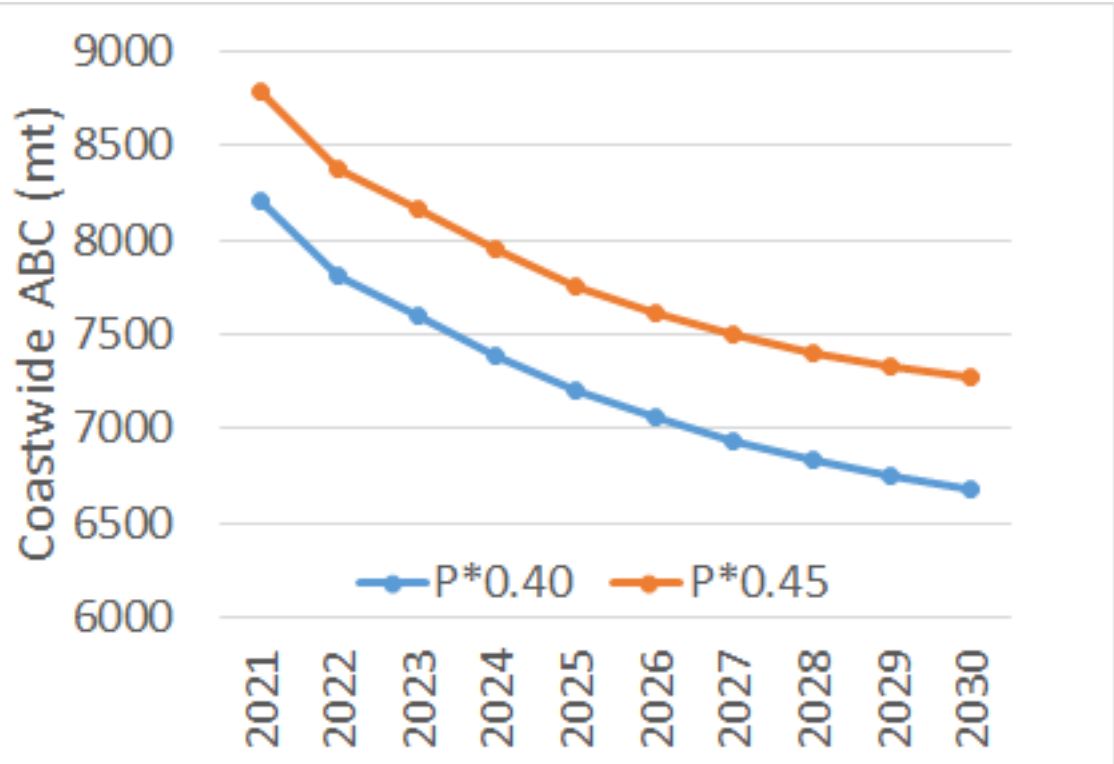
- **New 2019 survey estimate is higher (received 1 week ago)**
- **Concerns with 2019 update assessment reduced**
- **Now support NA because provides more benefit**

Sablefish: 4 ACL options

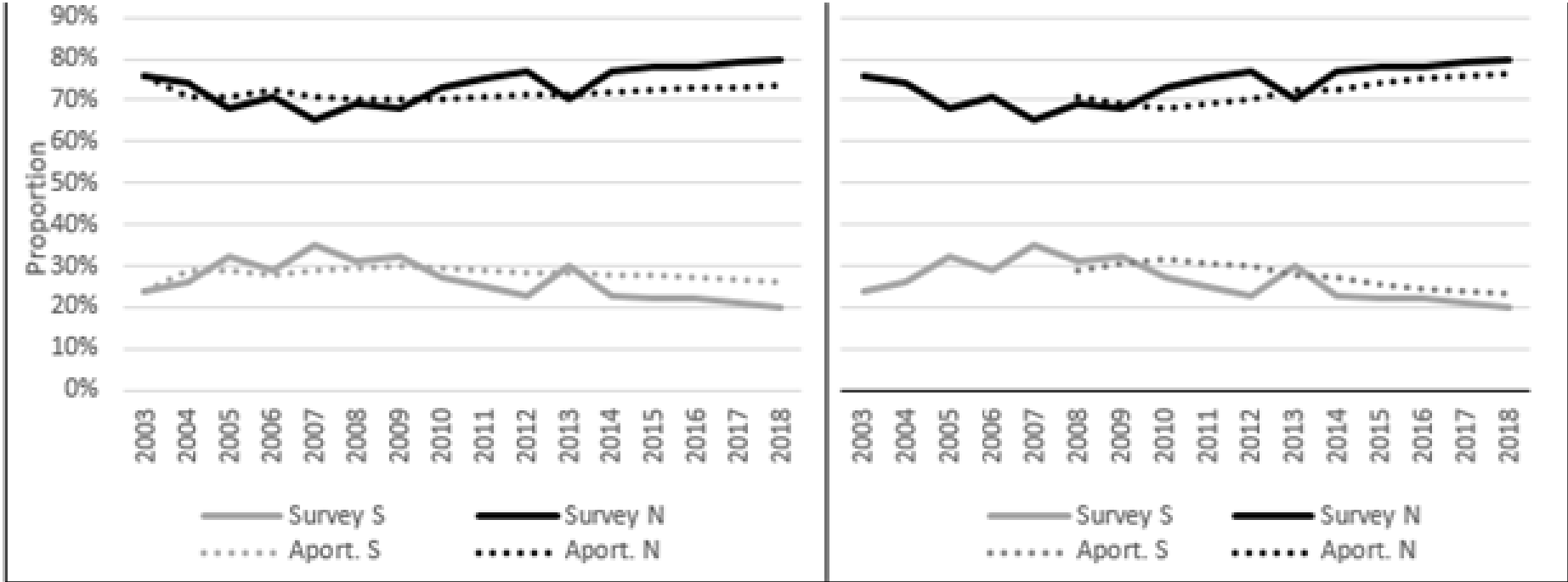
4 Options	Coastwide ABC Alt.	ACL Apportionment Method	% N 36	% S 36
No Action Method 1	NA: P*0.40	1: Long-term avg	73.6%	26.4%
No Action Method 2		2: 5-year avg	78.4%	21.5%
Alt 1 Method 1	1: P*0.45	1: Long-term avg	73.6%	26.4%
Alt 1 Method 2 (PPA)		2: 5-year avg	78.4%	21.5%

Sablefish ABCs: main focus

Higher catch not expected to negatively impact stock vs lower catch



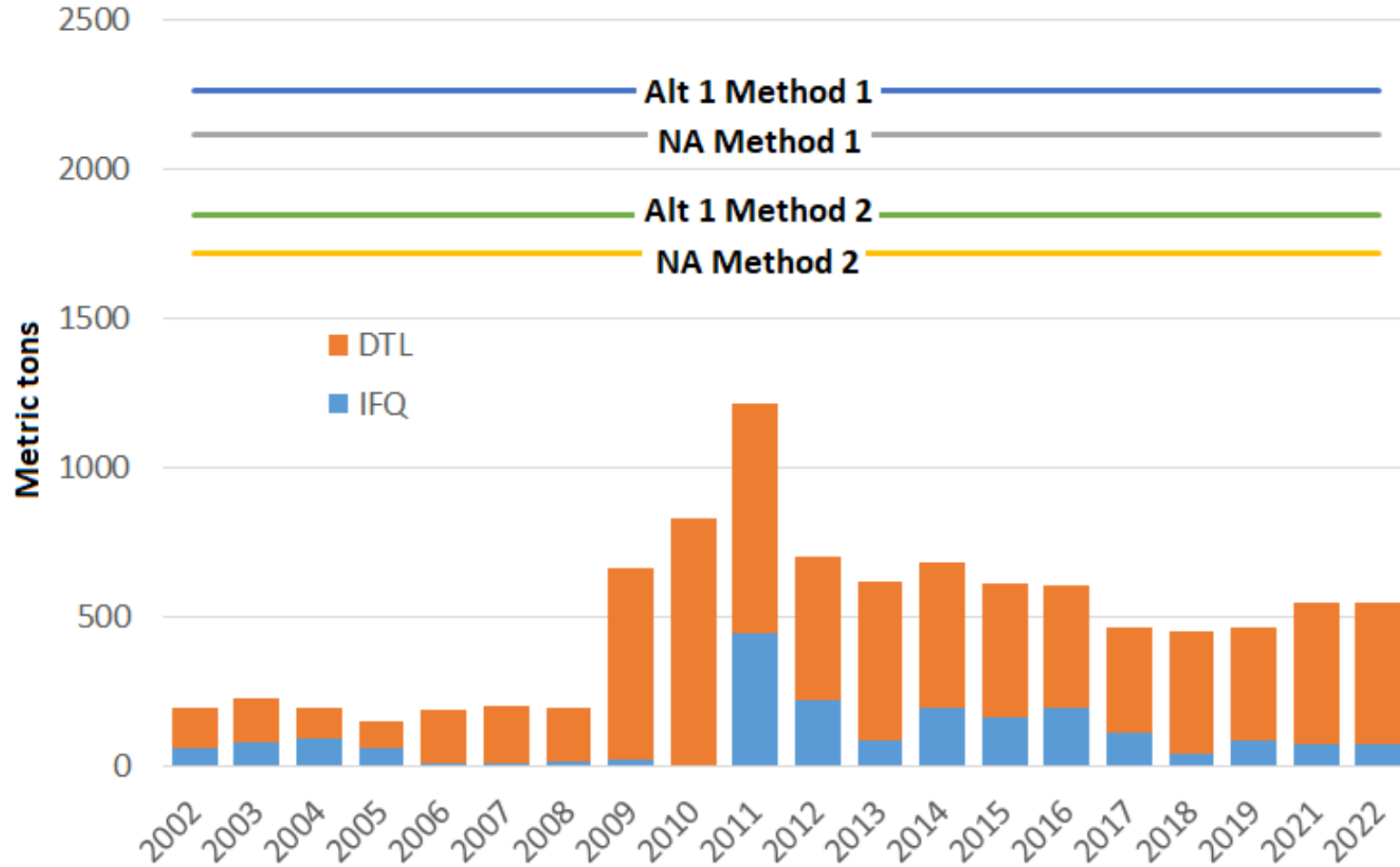
Sablefish: 2 ACL apportionment methods



Sablefish N 36° Lat.

Year	Coastwide ABC		North of 36° N lat ACLs			
	P*0.40	P*0.45	No Action Method 1 (P*0.40 + 73.6% long-term avg)	No Action Method 2 (P*0.40 and 78.4% 5-year avg)	Alt 1 Method 1 (P*0.45 + 73.6% long-term avg)	Alt 1 Method 2 (P*0.45 + 78.4% 5-year avg)
2019	7,750	---	5,606	---	---	---
2020	7,896	---	5,723	---	---	---
2021	8,208	8,791	6,041	6,435	6,470	6,892
2022	7,811	8,375	5,749	6,124	6,164	6,566

Sablefish S 36° Lat.



Sablefish S 36° Lat.

Year	Coastwide ABC		South of 36° N lat ACLs			
	P*0.40	P*0.45	No Action Method 1 (P*0.40 + 26.4% long-term avg)	No Action Method 2 (P*0.40 and 21.5% 5-year avg)	Alt 1 Method 1 (P*0.45 + 26.4% long-term avg)	Alt 1 Method 2 (P*0.45 + 21.5% 5-year avg)
2019	7,750	---	1,990	---	---	---
2020	7,896	---	2,032	---	---	---
2021	8,208	8,791	2,167	1,765	2,321	1,890
2022	7,811	8,375	2,062	1,679	2,211	1,801