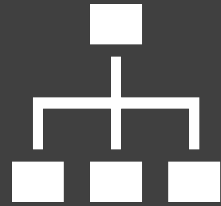


Final Preferred Alternatives for the 2023-2024 Biennial Harvest Specifications

Supplemental GMT Report 1

Council Action:



FPA on Harvest Specifications

1. Default Harvest Control Rules

2. Alternative HCRs

Default HCRs include:

Overfishing Limit (OFL)

Stock Category

Sigma and P* (OFL \rightarrow ABC)

Acceptable Biological Catch (ABC)

Annual Catch Limit (ACL)

Tables 1-3 (2023) & 1-4
(2024) in [Attachment 1](#)

Harvest Control Rules (HCRs)

Default HCRs: Tables 1-3
(2023) & 1-4 (2024) in
[Attachment 1](#)

Alternative HCRs: Table 1 in
[Supplemental GMT Report 1](#)



**GMT recommendation:
adopt default HCRs for all
species as FPA, except:**

1. Sablefish (coastwide)

2. Lingcod north of 40° 10' N. lat.

3. Lingcod south of 40° 10' N. lat.

4. Oregon black rockfish

5. Pacific spiny dogfish

6. Vermilion/sunset rockfish north of 40° 10' N. lat.

7. Vermilion/sunset rockfish south of 40° 10' N. lat.

8. Quillback rockfish – NEW (April 2022)

Alternative Harvest Control Rules (Council's PPAs from Nov 2021 are bolded)

Table 1 in Supplemental GMT Report 1

#	Species/Stock	Default HCR	Alternative 1	Alternative 2
1	Sablefish	ABC P* 0.45	ABC P* 0.40	ABC P* 0.35
2	Lingcod north of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
3	Lingcod south of 40° 10' N lat.	ACL < ABC w/ 40-10 adjustment, P* of 0.45	ABC P* 0.40	N/A
4	Black rockfish Oregon	ABC P* 0.45	ABC set = 2020 ABC of 512 mt	N/A
5	Pacific spiny dogfish	ABC P* 0.40	ACL=1,075 mt for 2023-2024, then ACL=ABC P* of 0.40 thereafter	N/A
6	Vermilion/sunset rockfish north of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
7	Vermilion/sunset rockfish south of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
8	Quillback rockfish (<i>new April 2022</i>)	<u>Method 1:</u> ACL < ABC w/ 40-10 adjustment; P* 0.45 <u>Method 2:</u> ACL < ABC w/ 40-10 adjustment off CA only; P* 0.45	WA & OR: ACL = ABC; P*0.45 Off CA only: ABC (P* = 0.45), ACL (SPR = 55%)	WA & OR: ACL = ABC; P*0.45 Off CA only: ABC (P* = 0.45), ACL (SPR = 60%)

1. Sablefish (coastwide)

No Action: **ACL = ABC**, $P^* = 0.45$
ABCs = 10,825 mt (2023) & 9,923 mt (2024)

Alternative 1: ACL = ABC, $P^* = 0.40$
ABCs = 10,107 mt (2023) & 9,252 mt (2024)

Alternative 2: ACL = ABC, $P^* = 0.35$
ABCs = 9,412 mt (2023) & 8,608 mt (2024)

On all slides, **bolded text** indicates the Council's PPA

1. Sablefish (coastwide)

Recent Sablefish Removals

Year	Coastwide ACL (mt)	Removals (mt)	Attainment (%)
2016	7,121	5,576	82%
2017	7,117	5,833	82%
2018	7,419	5,497	79%
2019	7,750	5,565	75%
2020	7,896	4,131	74%

ACL apportionments north and south of 36° N. lat.

HCR Action Alternative	North of 36° N. lat. ACLs (mt) = 78.4%		South of 36° N. lat. ACLs (mt) = 21.6%	
	2023	2024	2023	2024
No Action (P* of 0.45)	8,486	7,780	2,338	2,143
Alt. 1 (P* of 0.40)	7,924	7,253	2,183	1,998
Alt. 2 (P* of 0.35)	7,379	6,749	2,033	1,859

1. Sablefish (coastwide)

Background/Rationale

- The update assessment in 2021 indicated that the stock is at 58% of unfished spawning biomass.
 - This suggests a more optimistic status than was estimated in the 2019 full assessment (46% of unfished).
- The long-term risk to the stock is similar under the low, middle, and high states of nature for the default P^* of 0.45 and the two alternative harvest strategies.
 - middle state =
 - 49% under P^* of 0.45,
 - 51% under P^* of 0.40, and
 - 53% under P^* of 0.35
- Alternative 2 would result in the greatest loss in economic opportunity for the IFQ and primary sablefish fisheries.
- The additional opportunity under Alternative 1, compared to Alternative 2, could help alleviate some sablefish constraints to IFQ vessels targeting co-occurring species like Dover sole.
- Sablefish is assessed relatively frequently, so risk of being wrong is lower than most other stocks

1. Sablefish (coastwide)

GMT Recommendation

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

No Action: ACL = ABC, $P^* = 0.45$
ABCs = 10,824 mt (2023) & 9,923 mt (2024)



Alternative 1: ACL = ABC, $P^* = 0.40$
ABCs = 10,107 mt (2023) & 9,251 mt (2024)

Alternative 2: ACL = ABC, $P^* = 0.35$
ABCs = 9,412 mt (2023) & 8,608 mt (2024)

2. Lingcod north of 40° 10' N. lat.

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

ACLs = 4,378 mt (2023) & 3,854 mt (2024)

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

ACLs = 3,817 mt (2023) & 3,418 mt (2024)

2. Lingcod north of 40° 10' N. lat.

Background/Rationale

- 2021 stock assessment for lingcod north of 40° 10' N lat. was highly uncertain around the estimates of stock size
 - designated Cat 2 assessment with a sigma value of 1.0
 - previous assessment in 2017 was designated Cat 1 with a sigma value of 0.50.
 - During the STAR panel, a P* of 0.40 catch projection was conducted as a possible management option to account for the large uncertainty in the assessment
- Recent estimated total mortality has been approximately 1,000 mt,
 - much less than the No Action ACL and the Alt 1 ACL,
 - the GMT does not foresee any notable economic implications under either alternative

2. Lingcod north of
40° 10' N. lat.

GMT Recommendation

**No Action: ACL = ABC,
P* = 0.45**

No Action: ACL = ABC, P* = 0.45
ACLs = 4,378 mt (2023) & 3,854 mt (2024)



Alternative 1: ACL = ABC, P* = 0.40
ACLs = 3,817 mt (2023) & 3,418 mt (2024)

3. Lingcod south of 40° 10' N. lat.

No Action: ACL (40-10 adj.) < ABC, P* = 0.45
ACLs = 726 mt (2023) & 722 mt (2024)

Alternative 1: ACL (40-10 adj.) < ABC, P* = 0.40
ACLs = 633 mt (2023) & 634 mt (2024)

3. Lingcod south of 40° 10' N. lat.

Background/Rationale

- designated a Category 2 stock accounting for the uncertainty around the estimated spawning biomass and fraction unfished
- Also similar to lingcod north, the STAR Panel applied a P* of 0.40 as a means to address the uncertainty in the assessment
- Recent estimated total mortality has been approximately 290-450 mt
 - less than the No Action ACL and the Alt 1 ACL
- Given that recent estimated total mortality has been declining and is much less than the No Action ACL and the Alternative 1 ACL,
 - the GMT does not foresee any notable economic implications under either alternative.

3. Lingcod south of
40° 10' N. lat.

GMT Recommendation

**No Action: ACL (40-10
adj.) < ABC, P* = 0.45**

No Action: ACL (40-10 adj.) < ABC, P* = 0.45
ACLs = 726 mt (2023) & 722 mt (2024)



Alternative 1: ACL (40-10 adj.) < ABC, P* = 0.40
ACLs = 633 mt (2023) & 634 mt (2024)

4. Oregon Black Rockfish

No Action: $ACL = ABC$, $P^* = 0.45$
ACLs = 477 mt (2023) & 471 mt (2024)

Alternative 1: $ACL = \text{“Case-by-case” } ABC$,
set at 2021-2022 ACL
ACLs = 512 mt (2023 & 2024)

4. Oregon Black Rockfish

Background/Rationale

- 2015 assessment was approved for management but there were some issues identified by reviewers
 - SSC designated the 2015 assessment as Cat. 2 due to the large overall level of uncertainty around stock size and status
 - 60% of unfished spawning biomass at the beginning of 2015
- Similar long-term results for both alternatives:
 - 54.4% under No Action; 54.1% under Alternative 1
- Alt 1 provides short-term benefit
 - More time to incorporate survey into new assessment
 - Stabilizes fisheries

Year	Rec. Mortality (mt)	Comm. Nearshore Mortality (mt)	Total Mortality (mt)	OR ACL or HG (mt)
2015	479	121	601	580
2016	423	106	530	580
2017	417	123	543	527
2018	295	123	419	520
2019	319	120	440	513
2020	334	102	437	512
2021	340	112	452	512

4. Oregon Black Rockfish

GMT Recommendation:
Alternative 1: ACL = 512 mt (same as 2022 ACL)

No Action: ACL = ABC, $P^* = 0.45$
ACLs = 477 mt (2023) & 471 mt (2024)

Alternative 1: ACL = “Case-by-case” ABC,
set at 2021-2022 ACL
ACLs = 512 mt (2023 & 2024)



5. Pacific Spiny Dogfish

No Action: ACL = ABC, $P^* = 0.40$
ACLs = 1,456 mt (2023) & 1,407 mt (2024)

Alternative 1: ACL = 1,075 mt for 2023-2024,
then ACL = ABC, P^* of 0.40 thereafter
ACLs = 1,075 mt (2023 & 2024)

The Council did not identify a PPA in November

5. Pacific Spiny Dogfish

Background/Rationale

- No Action is 10% and 13% lower than 2021 ACL (1,621 mt)
- Alt 1 provides a ~400 mt buffer below No Action
- Alt 1 is based on the recent (2016-2020) five-year average total mortality and would be a short-term precautionary approach

Biological Implications:

- 2021 stock assessment estimates that the proxy harvest rate $SPR_{50\%}$ may not be sustainable -> SSC workshop in 2022
- There is little difference in depletion levels under either alternative
- The 2023 and 2024 ACLs do not appear to greatly influence long-term depletion levels

Economic Implications:

- Alternative 1 could economically impact the trawl sectors if the ACL is approached

Management Implications:

- The Council will have Block Area Closures to minimize trawl bycatch of Pacific spiny dogfish and the GMT will track catch inseason via a Pacific spiny dogfish scorecard

5. Pacific Spiny Dogfish

GMT Recommendation

**No Action: ACL = ABC,
P* = 0.40**

No Action: ACL = ABC, P* = 0.40
ACLs = 1,456 mt (2023) & 1,407 mt (2024)



Alternative 1: ACL = 1,075 mt for 2023-2024,
then ACL = ABC, P* of 0.40 thereafter
ACLs = 1,075 mt (2023 & 2024)

6. Vermilion/sunset
rockfish north of 40°
10' N. lat.

**No Action: ACL = ABC, $P^* = 0.45$
ACLs = 19.86 mt (2023) & 19.77 mt (2024)**

Alternative 1: ACL = ABC, $P^* = 0.35$
ACLs = 18.49 mt (2023) & 18.43 mt (2024)

6. Vermilion/
sunset rockfish
north of 40° 10'
N. lat.

Background/Rationale

Year	Area	ACL Contribution with P* 0.45 (No Action)	ACL Contribution with P*0.40 (Alt. 1)
2023	WA	0.72	0.62
	OR	12.60	11.77
	40° 10' to 42° N lat.	6.54	6.10
	Combined	19.86	18.49
2024	WA	0.70	0.61
	OR	12.45	11.63
	40° 10' to 42° N lat.	6.62	6.19
	Combined	19.77	18.43

6. Vermilion/ sunset rockfish north of 40° 10' N. lat.

Background/Rationale

- With recent overages of the OFL contribution to the complex, the Council may want to consider being more precautionary & apply a P^* of 0.40.
- Even under P^* of 0.45, management actions may be necessary to keep the total mortality below the ACL contribution.
- Not a targeted species in the recreational fisheries off of WA & OR nor are they targeted by commercial nearshore & non-nearshore fisheries.
 - Therefore, designing management measures to reduce impacts will be challenging

Year	Total Mortality (mt)
2018	22.9
2019	25.7
2020	20.2

6. Vermilion/sunset
rockfish north of 40°
10' N. lat.

GMT Recommendation

**No Action: ACL = ABC,
P* = 0.45**

No Action: ACL = ABC, P* = 0.45
ACLs = 19.86 mt (2023) & 19.77 mt (2024)



Alternative 1: ACL = ABC, P* = 0.35
ACLs = 18.49 mt (2023) & 18.43 mt (2024)

7. Vermilion/
sunset rockfish
south of 40° 10' N.
lat.

**No Action: ACL = ABC, $P^* = 0.45$
ACLs = 281.28 mt (2023) & 281.29 mt (2024)**

Alternative 1: ACL = ABC, $P^* = 0.40$
ACLs = 254.03 mt (2023) & 253.36 mt (2024)

7. Vermilion/ sunset rockfish south of 40° 10' N. lat.

Background/Rationale

- Alternatives are the same as for vermilion/sunset rockfish north of 40° 10' N lat. and for the same reasons
- With the recent overages of the OFL contribution to the complex, the Council may want to consider being more precautionary & apply a P* of 0.40.
- Decision tables provided for California vermilion/sunset rockfish with ACLs for a P* of 0.45 and 0.40 are for the assessment areas rather than management areas.

Year	Assessment Area	ACL Contribution with P* 0.45 (No Action)	ACL Contribution with P* 0.40 (Alt. 1)
2023	34-27 to 40-10	142.00	135.59
	South of 34-27	139.28	121.44
	Total	281.28	254.03
2024	34-27 to 40-10	143.92	134.09
	South of 34-27	137.37	119.27
	Total	281.29	253.36

7. Vermilion/
sunset rockfish
south of 40° 10' N.
lat.

GMT Recommendation

**No Action: ACL = ABC,
P* = 0.45**

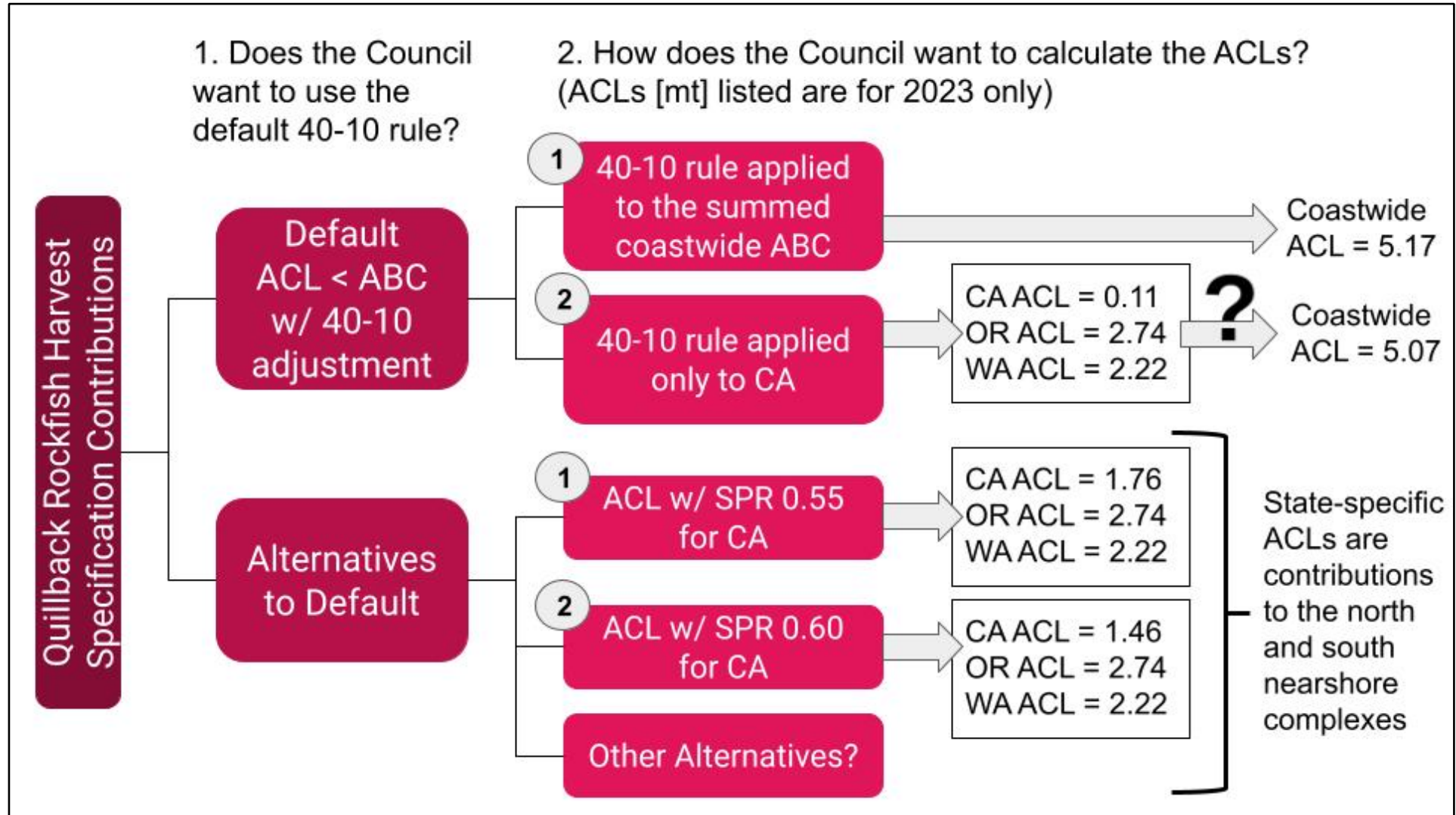
No Action: ACL = ABC, P* = 0.45
ACLs = 281.28 mt (2023) & 281.29 mt (2024)



Alternative 1: ACL = ABC, P* = 0.40
ACLs = 254.03 mt (2023) & 253.36 mt (2024)

8. Quillback Rockfish

New in April 2022



8. Quillback Rockfish

Two potential methods of applying the default 40-10 rule:

- Method 1: $ACL < ABC$ w/ 40-10 adjustment; P^* of 0.45
- Method 2: $ACL < ABC$ w/ 40-10 adjustment off CA only; P^* of 0.45

Quillback rockfish 2023 ACL contributions calculated using the two different methods of applying the 40-10 rule:

Potential Stock Management Areas	Projected Fraction Unfished (2023)	OFL (mt)	ABC (mt)	Method 1: ACL Calculated Coastwide (mt)	Method 2: Area Based ACL (mt)
CA	10.5%	2.11	1.85	1.40 a/	0.112
OR	45.1%	3.14	2.74	2.09 a/	2.74
WA	39.1%	2.85	2.22	1.69 a/	2.22
Coastwide	23.3%	8.10	6.81	5.17 b/	5.07

a/ these values are the coastwide ACL of 5.17 mt apportioned by state percent of the ABC to calculate the state-specific ACL contributions

b/ The coastwide ACL is calculated based on the coastwide ABC of 6.81 mt multiplied by the 40-10 adjustment of 0.76

8. Quillback Rockfish

These tables were provided by the assessors but have not yet been reviewed by the SSC.

Quillback rockfish 2024 ACL contributions calculated using Method 1 of applying the 40-10 rule in 2023.

Potential Stock Management Areas	Projected Fraction Unfished (2024)	OFL (mt)	ABC (mt)	Method 1: ACL Calculated Coastwide (mt)
CA	11.5%	2.33	2.01	1.55 a/
OR	45.8%	3.18	2.75	2.21 a/
WA	40.1%	2.56	2.21	1.69 a/
Coastwide	24.2%	8.39	6.97	5.45 b/

Quillback rockfish 2024 ACL contributions calculated using Method 2 of applying the 40-10 rule in 2023.

Potential Stock Management Areas	Projected Fraction Unfished (2024)	OFL (mt)	ABC (mt)	Method 2: Area Based ACL (mt)
CA	11.7%	2.38	2.06	0.42
OR	45.4%	3.15	2.72	2.72
WA	39.6%	2.86	2.23	2.23
Coastwide	24.2%	8.39	7.01	5.37

8. Quillback Rockfish

Alternative harvest control rules that diverge from the default 40-10 harvest control policy for the portion of the quillback rockfish stock off of California only:

- Alternative 1: SPR 0.55; 2023 ACL contribution = 1.76 mt, 2024 ACL contribution = 1.93 mt; P* 0.45
- Alternative 2: SPR 0.60; 2023 ACL contribution = 1.46 mt, 2024 ACL contribution = 1.61 mt; P* 0.45

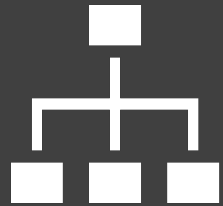
The GMT does not have a recommendation on which method and/or alternative to chose.

Summary of GMT Recommendations (highlighted):

Appendix 1 in Supplemental GMT Report 1

#	Species/Stock	Default HCR	Alternative 1	Alternative 2
1	Sablefish	ABC P* 0.45	ABC P* 0.40	ABC P* 0.35
2	Lingcod north of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
3	Lingcod south of 40° 10' N lat.	ACL < ABC w/ 40-10 adjustment, P* of 0.45	ABC P* 0.40	N/A
4	Oregon black rockfish	ABC P* 0.45	ABC set = 2020 ABC of 512 mt	N/A
5	Pacific spiny dogfish	ABC P* 0.40	ACL=1,075 mt for 2023-2024, then ACL=ABC P* of 0.40 thereafter	N/A
6	Vermilion/sunset rockfish north of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
7	Vermilion/sunset rockfish south of 40° 10' N lat.	ABC P* 0.45	ABC P* 0.40	N/A
8	Quillback rockfish (<i>New in April 2022</i>)	<p><u>Method 1:</u> ACL < ABC w/ 40-10 adjustment; P* 0.45</p> <p><u>Method 2:</u> ACL < ABC w/ 40-10 adjustment off CA only; P* 0.45</p>	<p>WA & OR: ACL = ABC; P*0.45</p> <p>Off CA only: ABC (P* = 0.45), ACL (SPR = 55%)</p>	<p>WA & OR: ACL = ABC; P*0.45</p> <p>Off CA only: ABC (P* = 0.45), ACL (SPR = 60%)</p>

Goals for today



Questions?

FPA on Harvest Specifications



1. Default HCRs



2. Alternative HCRs

