2019-2020 Harvest Specifications and Management Measures

March 2018

Road Map

1. Progress to Date
2. Harvest Specifications Alternatives and Associated Biological Impacts
3. Results of the Analysis of the Integrated Alternatives
4. Summary of the Economic Analysis

Progress to Date

- ✓Complete harvest specifications and integrated alternatives analyses were submitted for internal review on schedule
- ✓Internal review completed, document updated accordingly, ready for April briefing book publication
- ✓The NEPA analysis will be an EA
- ✓January 1 implementation is within reach

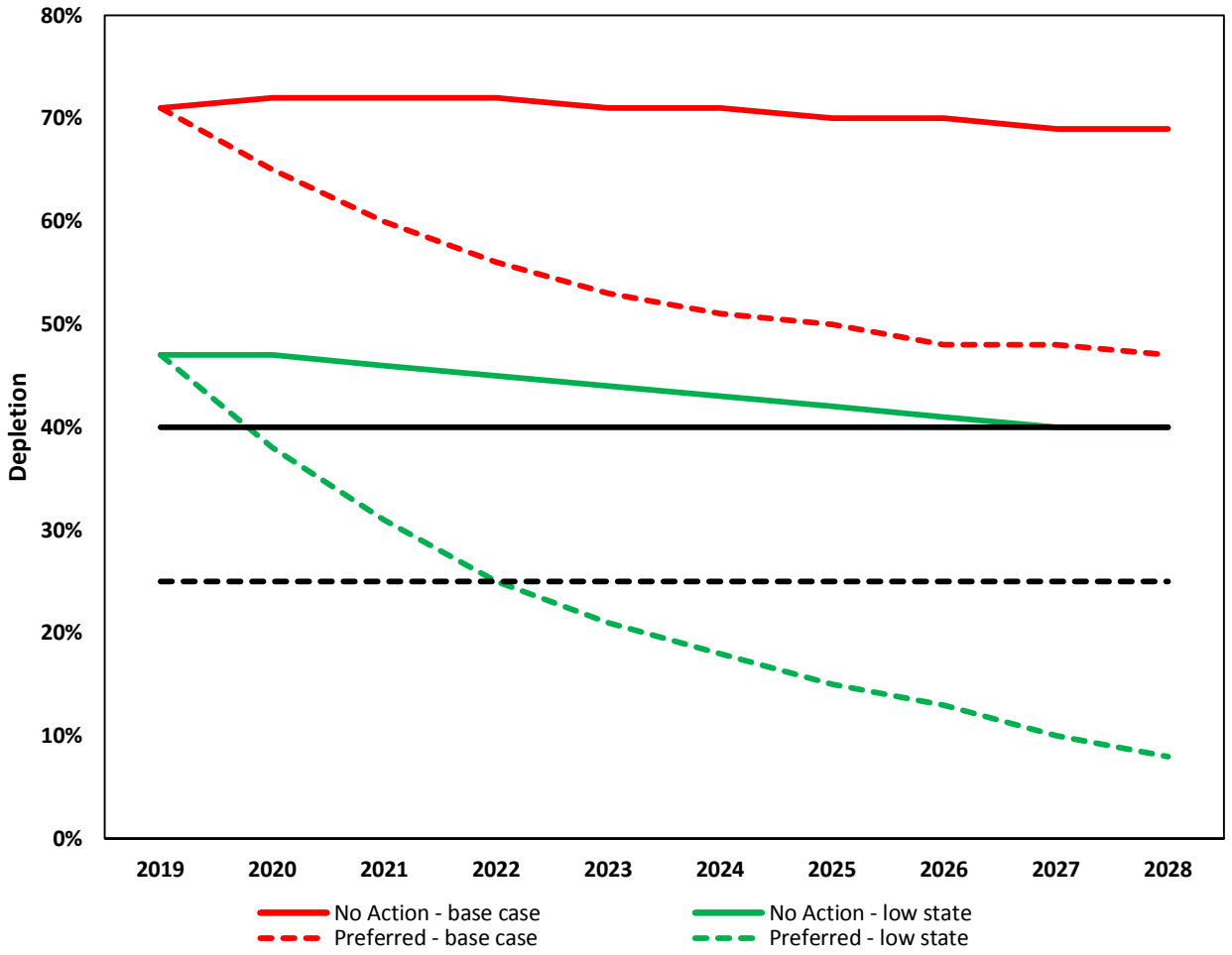
Need to Correct Harvest Specifications Decisions Made to Date

- The wrong lingcod harvest specifications were adopted in November due to a copy and paste error
  - Revised projections were reviewed by the SSC Groundfish Subcommittee and the Integrated Alternatives Analysis was revised accordingly
  - The SSC will recommend OFLs at this meeting
- The wrong 2020 bocaccio OFL was adopted in November
  - The change is minor (ACL is 21 mt less than what was adopted) and does not affect the Integrated Alternatives analysis
  - The SSC will recommend a revised 2020 OFL at this meeting
- The "default" HCR for yelloweye was incorrect in November
  - The default P* was 0.4 and a P* of 0.45 was adopted
  - No change to the ACLs
  - The Council will be asked what P* is part of their preferred alternative in April

Harvest Specifications Alternatives and Associated Biological Impacts

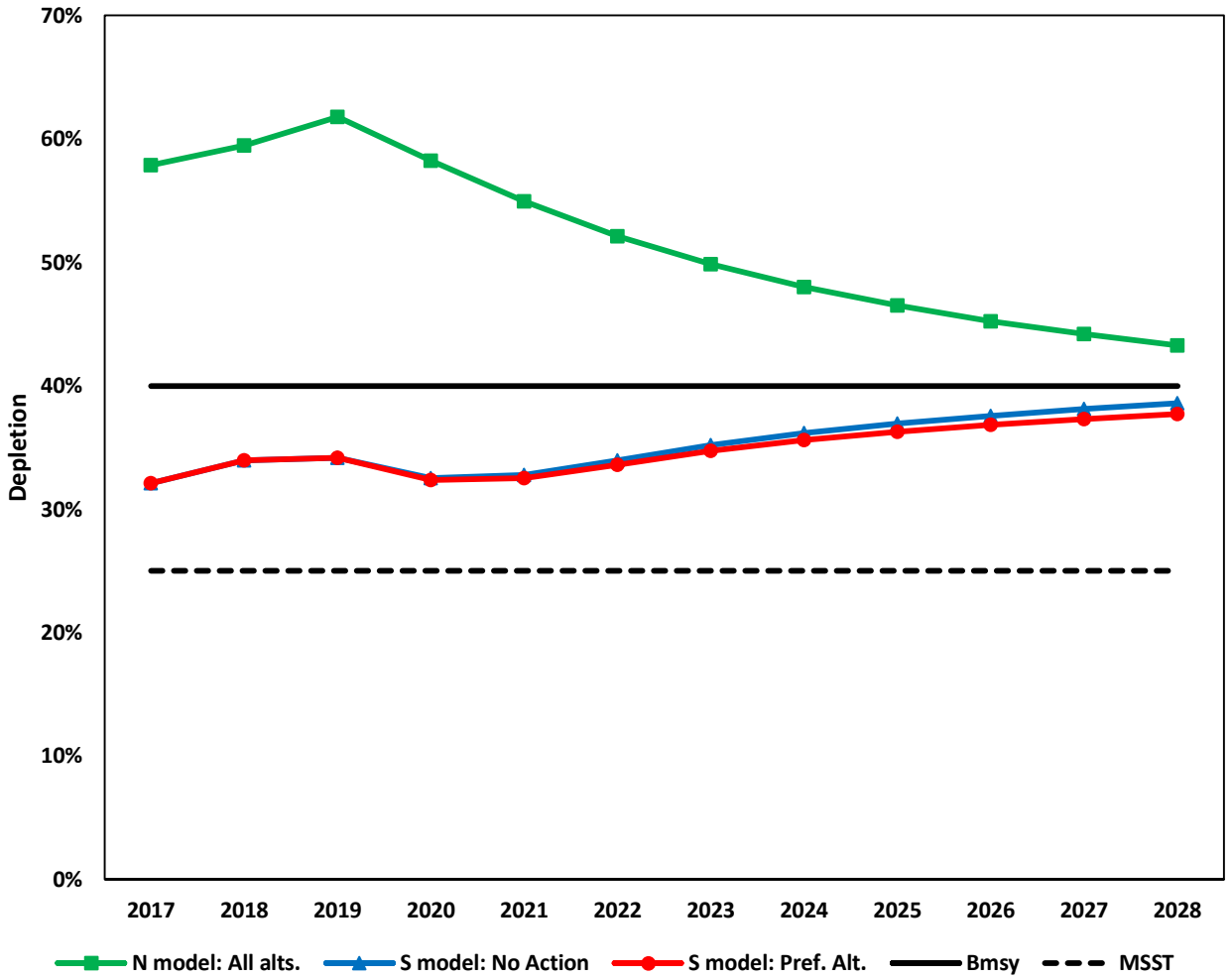
California Scorpionfish
Under Two HCRs and Two States of Nature

- 2017 assessment indicates a healthy stock at a 54% depletion
- Assumed natural mortality rate (M) is the major axis of uncertainty in the decision table
- Two ACL alts.:
  - No Action: ACL = 150 mt
  - Alt. 1 (preferred): ACL = ABC (P* = 0.45)
- The stock remains healthy under both ACL alternatives based on the most likely base model 10-year projections
- The stock remains healthy under the No Action ACL but is projected to be severely depleted (9%) under the Preferred ACL alternative based on the less likely low state of nature model 10-year projections



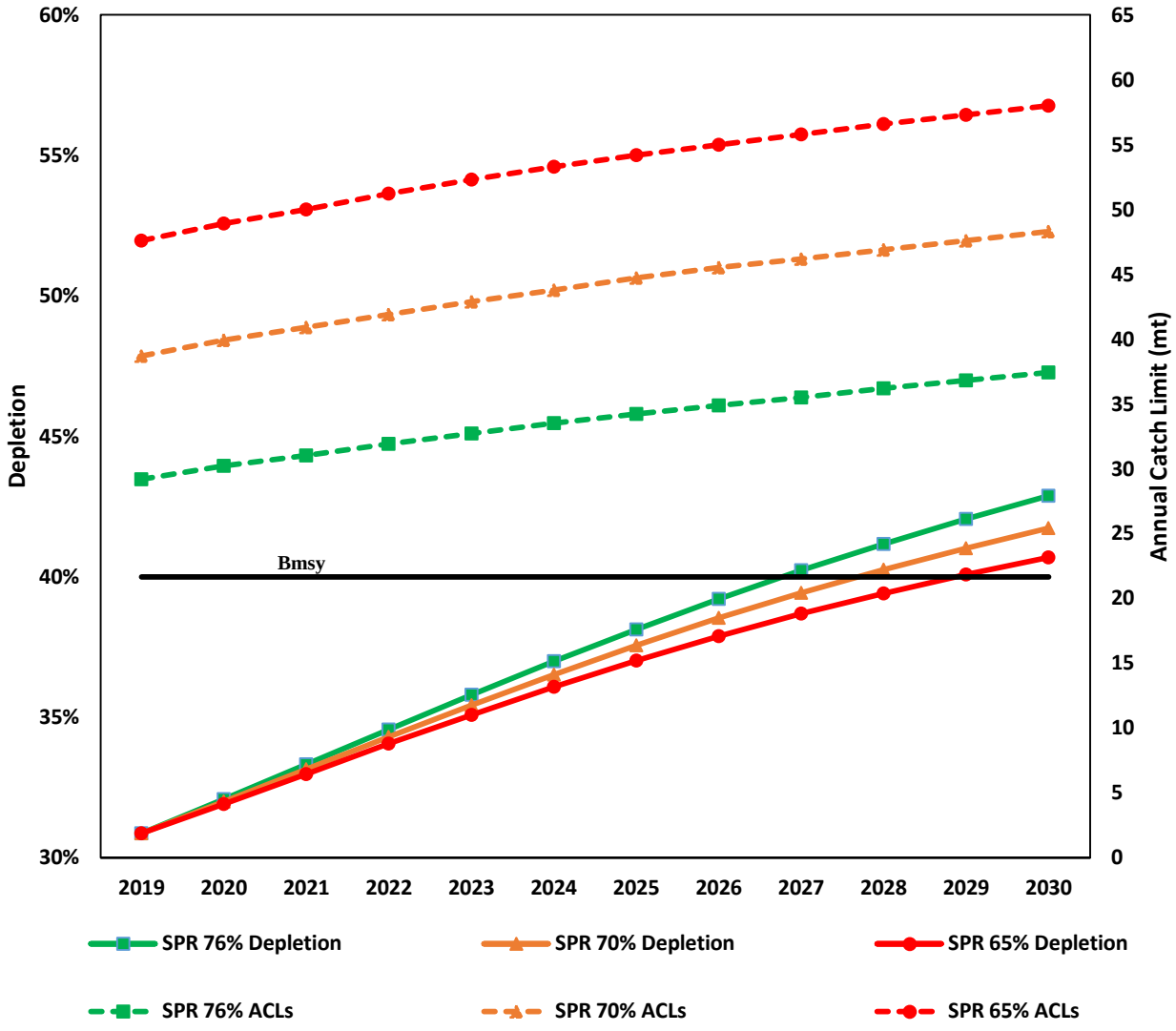
Lingcod
Under Two HCRs Assuming the Revised Base Model

- 2017 assessment indicates a healthy stock in the north (OR & WA) at a 58% depletion and in the precautionary zone in the south (CA) at a 32% depletion
- Two ACL alts. In the south:
  - No Action: ACL = ABC (P* = 0.40)
  - Alt. 1 (preferred): ACL = ABC (P* = 0.45)
- The northern stock remains healthy based on the most likely base model 10-year projections
- The stock slowly rebuilds in the south under both ACL alternatives based on the most likely base model 10-year projections with about a 1% depletion difference in 10 years



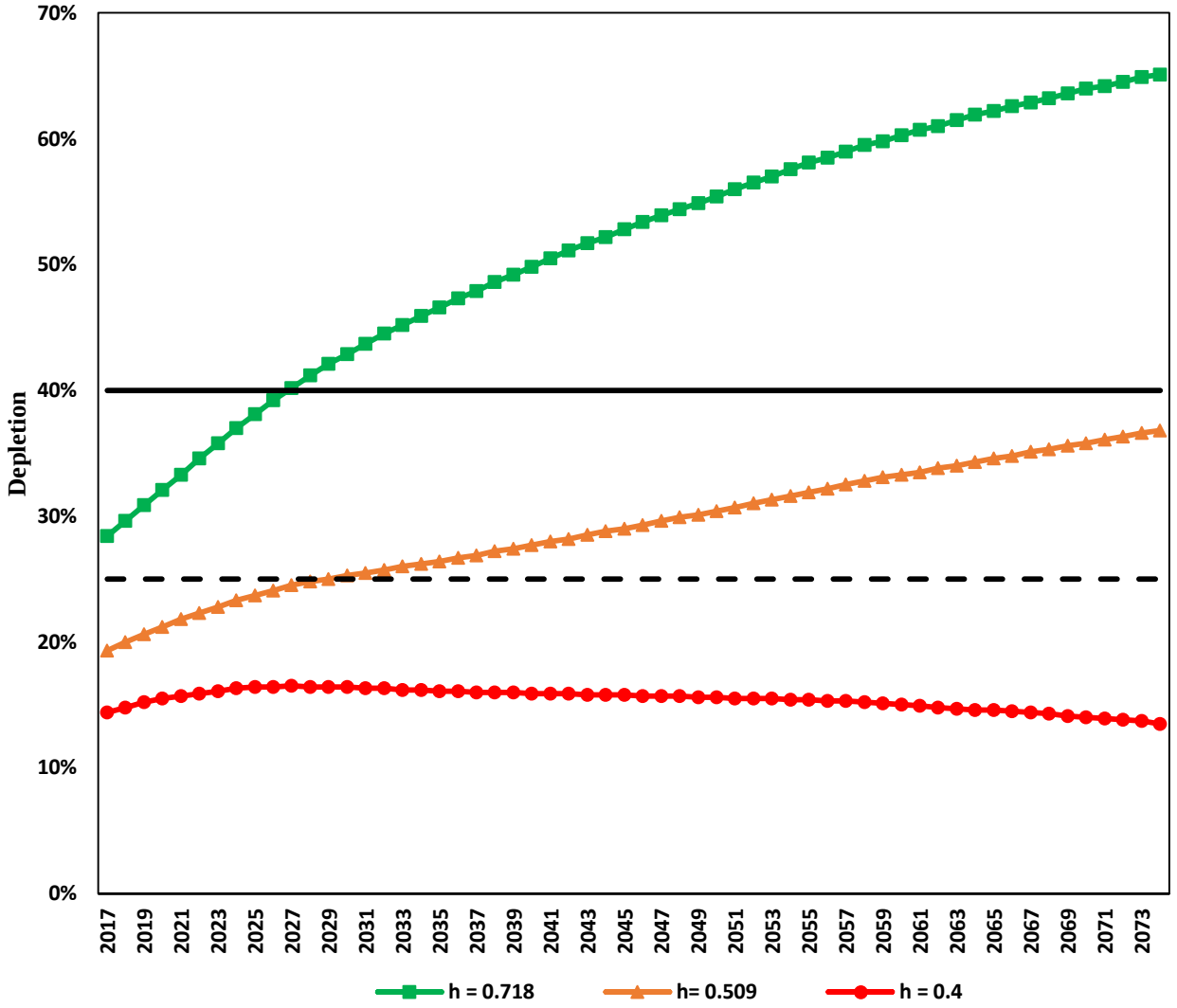
Yelloweye Rockfish
ACL/Rebuilding Alternatives

- 2017 assessment indicates a more productive population with a depletion of 28%
- Three ACL alts.:
  - No Action: ACL based on SPR = 76%; 2019 ACL = 29 mt
  - Alt. 1: ACL based on SPR = 70%; 2019 ACL = 39 mt
  - Alt. 2: ACL based on SPR = 65%; 2019 ACL = 48 mt
- The median year to rebuild under these alternatives varies from 2027 under the No Action Alt. to 2028 and 2029 under Alts. 2 and 3, respectively
- This compares to the shortest time to rebuild (no yelloweye impacts starting in 2019) of 2026



Yelloweye Rockfish
Critical Uncertainties

- Steepness of the S-R relationship (h) and the natural mortality rate (M) are assumed and higher than previous estimates
- If actual steepness is lower than assumed, rebuilding objectives may not be met
- Natural mortality is based on the oldest age in the population, which is highly uncertain
- Adaptive management and the low likelihood of future full ACL attainment means rebuilding objectives will likely be met sooner



Results of the Analysis of the Integrated Alternatives

Integrated Alternatives

- Combine the harvest specifications alternatives with routine adjustments to management measures to keep catch within the ACLs
- Routine measures are those previously analyzed and available in regulation. For example RCA adjustments, bag limits, trip limits, size limits, etc.
- The Integrated Alternatives analyses also include options to evaluate alternative stock complex compositions for implementation

How the Integrated Alternatives are Structured

- No Action: Default HCRs are implemented for all stocks and stock complexes
- Alt. 1: Default HCRs are implemented for all stocks and stock complexes except for CA scorpionfish, lingcod, and yelloweye rockfish
  - The preferred HCR alternatives for CA scorpionfish and lingcod are assumed (ACL = ABC (P* = 0.45)
  - ➢ The yelloweye ACL is based on an SPR harvest rate of 70%
- Alt. 2: Default HCRs are implemented for all stocks and stock complexes except for CA scorpionfish, lingcod, and yelloweye rockfish
  - The preferred HCR alternatives for CA scorpionfish and lingcod are assumed (ACL = ABC (P* = 0.45)
  - ➢ The yelloweye ACL is based on an SPR harvest rate of 65%

Yelloweye Rockfish- Integrated Alternatives and Management Measures

- As a reminder, the Council recommended status quo allocation alternatives for preliminary analysis in November 2017

	Baseline 2017	Allocation Alternatives		
		No Action Default SPR 76%	Alt 1 SPR 70%	Alt 2 SPR 65%
50% probability to rebuild	NA	2027	2028	2029
100% probability to rebuild	NA	2027	2028	2030
ACL	20	29	39	48
Fishery HG	12.5	23.1	33.1	42.1
At-sea	0	0	0	0
IFQ	1.1	1.9	2.7	3.4
Non-nearshore	0.8	1.1	1.6	2.1
Nearshore	2.1	3.2	4.6	5.9
---OR Share	1.4	2.3	3.4	4.3
---CA Share	0.7	0.9	1.3	1.6
WA Rec	3.3	5.5	7.9	10
OR Rec	3	4.9	7.1	9
CA Rec	3.9	6.5	9.3	11.8

GMT Analysis of SQ Management Measures- Creating the Baseline

- Looked at SQ management measures (2017) compared to proposed allocations/shares under each alternative

	Baseline 2017	Allocation Alternatives			Projection for 2019 with SQ Regs
		No Action Default SPR 76%	Alt 1 SPR 70%	Alt 2 SPR 65%	
50% probability to rebuild	NA	2027	2028	2029	
100% probability to rebuild	NA	2027	2028	2030	
ACL	20	29	39	48	
Fishery HG	12.5	23.1	33.1	42.1	Total = 12.6
At-sea	0	0	0	0	0
IFQ	1.1	1.9	2.7	3.4	0.2
Non-nearshore	0.8	1.1	1.6	2.1	0.8
Nearshore	2.1	3.2	4.6	5.9	1.4
---OR Share	1.4	2.3	3.4	4.3	0.9
---CA Share	0.7	0.9	1.3	1.6	0.5
WA Rec	3.3	5.5	7.9	10	3.2
OR Rec	3	4.9	7.1	9	3.7
CA Rec	3.9	6.5	9.3	11.8	3.3

Yelloweye RF Fishery Harvest Guideline vs. Status Quo Projected Impacts

	2017	**No Action**	**Alt 1**	**Alt 2**	**Projected Impacts Under SQ MMs**
ACL	20	29	39	48	12.6
Fishery HG	12.5	23.1	33.1	42.1	

Uncertainty and Volatility of Yelloweye Catch

- High volatility has caused disruption to individual sectors in the past even though ACL attainments have been low
- The Council may consider if there is currently enough “buffer” built into the sector shares, or if they want to provide more for uncertainty

Options for Stock Complex Compositions
Stock Complex Proposal 1

Option	Stock or Complex	2019			2020		
		OFL	**ABC**	**ACL**	**OFL**	**ABC**	**ACL**
Status Quo	Black RF (OR)	565	516	516	561	512	512
	Nearshore RF North Complex	203	183	183	200	180	180
	BDR (OR) [a/]	*112.3*	*101.5*	*101.5*	*108.8*	*98.4*	*98.4*
Option 1	New Black RF/BDR Complex (OR)	677	617	617	670	611	611
	Nearshore RF North Complex	91	81	81	92	82	82

[a/] Blue/Deacon Rockfish specifications contribute to the Nearshore Rockfish North complex specifications.

Options for Stock Complex Compositions
Stock Complex Proposal 2

Option	Stock or Complex	2019			2020		
		OFL	ABC	ACL	OFL	ABC	ACL
Status Quo	Cabezon (OR)	49	47	47	49	47	47
	Other Fish	480	420	420	465	406	406
	Cabezon (WA) [a/]	*5.5*	*4.6*	*4.6*	*5.4*	*4.5*	*4.5*
	Kelp Greenling (CA) [a/]	*118.9*	*99.2*	*99.2*	*118.9*	*99.2*	*99.2*
	Kelp Greenling (OR) [a/]	*180.9*	*171.1*	*171.1*	*166.5*	*157.5*	*157.5*
	Kelp Greenling (WA) [a/]	*7.1*	*5.9*	*5.9*	*7.1*	*5.9*	*5.9*
	Leopard Shark [a/]	*167.1*	*139.4*	*139.4*	*167.1*	*139.4*	*139.4*
Option 1	Other Fish	299	249	249	299	249	249
	Cabezon/K. Greenling (OR)	230	218	218	216	204	204
Option 2	Other Fish	467	410	410	453	3,963	3,963
	Cabezon/K. Greenling (WA)	13	11	11	13	10	10
Option 3	Other Fish	286	239	239	286	239	239
	Cabezon/K. Greenling (OR)	230	218	218	216	204	204
	Cabezon/K. Greenling (WA)	13	11	11	13	10	10

a/ Stock specifications contribute to the Other Fish complex specifications.

Considerations for New Stock Complexes

- Options are intended to restructure complexes to manage species with similar life histories and geographic distribution
- For Oregon stocks, complexes provide less protections but result in greater management flexibility to increase fishery stability
- Removing BDR from the Nearshore North complex has no effect on the remaining complex stocks
- Potential concerns with BDR being an inflator stock exist whether managed within the nearshore complex or in an OR Black RF / BDR complex
- Management measures to address attainment of species-specific HGs such as OR Black rockfish have been analyzed

Shorebased IFQ

- Similar impacts under all alternatives
- Slight difference for yelloweye
- Similar attainment results as in past years:
  - High for sablefish, petrale, whiting
  - Medium for mid-water rockfishes
  - Low for most other species
- Predicted to catch ¼ of non-whiting allocations

At-Sea Whiting

- Impacts and allocations same under all integrated alternatives
- Under the assumption that the automatic authority developed through Amendment 21-3 is in place

At-Sea Whiting Projections for 2019-2020

- Both sectors likely to take full allocations
- Darkblotched rockfish
  - Both sectors have a ~1:100 chance of exceeding set asides
  - Likely to take 50-75% of set aside based on bootstrap and bycatch catch rate approach
- Widow rockfish
  - Higher risk of exceeding allocations in 2019-20 with lower widow ACLs

Non-Trawl - Commercial

- 2017 non-trawl RCA structure is proposed under all alternatives
- Non-Nearshore would have the same trip limits for LE and OA as in 2017 under all three alternatives, except for
  - Increased lingcod north of 40°10´ N. lat. trip limits
  - Decreased lingcod south of 40°10´ N. lat. trip limits
  - A 50 lbs monthly OA trip limit for thornyheads north of 40°10´ N. lat.
  - De-coupled slope rockfish and darkblotched rockfish OA trip limits from sablefish north of 40°10´ N. lat.
  - A period 2 (Mar-Apr) closure for Canary south of 40°10´ N. lat.
    - LE - south of 34°27´ N. lat.
    - OA - south of 40°10´ N. lat.

Non-Trawl – Commercial continued

- Nearshore would have the same trip limits for LE and OA as in 2017 under all three alternatives, except for
  - Increased lingcod north of 40°10´ N. lat. trip limits
  - Decreased lingcod south of 40°10´ N. lat. trip limits
  - A period 2 closure for Canary south of 40°10´ N. lat.
    - LE - south of 34°27´ N. lat.
    - OA - south of 40°10´ N. lat.
- Proposal to split lingcod north of 40°10´ N. lat. trip limits at 42° N. lat.

Non-Trawl – California Recreational

- Season Structure Options
  - Baseline – 2017 season structure
  - No Action – Default HCR
    - Option 1: 2017 season and depths, and year round fishing for CA scorpionfish
    - Option 2: Option 1, with deeper depths in southern management area
  - Alternative 1 -
    - Option 3: year round, all depth statewide

- Sub-bag Limits Options
  - Lingcod S of 40°10´ N. lat.: decrease to 1
  - Cabezon: removal of sub-bag limit; up to 10
  - Canary: increase to 2

Non-Trawl—Oregon Recreational

- Goals for the fishery, based on public input
  - Maintain year round fishing opportunities
  - Minimize changes/disruptions inseason
- Season structure and regulations try to balance yelloweye and black rockfish impacts
  - For all alternatives black RF is as restrictive to the fishery as yelloweye RF
    - Shallower depths ↓ yelloweye RF but ↑ black RF
    - Deeper depths ↑ yelloweye RF and ↓ black RF
- Modeled ~140 season structure alternatives, with combinations of:
  - Months with depth restrictions
  - Bag limits
  - Sub-bag limits

***All season structure, modeling, etc. includes the offshore longleader fishery April-September.*

Non-Trawl—Oregon Recreational

- Baseline—same season structure as in 2017-2018
  - State-specified HG for black RF projected to be exceeded
    - Bag limit, or sub-bag limit, will be adjusted through state regulations
- No Action-Default HCR
    - Increased yelloweye RF HG could allow fewer months with depth restrictions
    - Liberalize state depth restrictions from 30 fm to 40 fm in state regulations
    - June-August, instead of April – September
    - Relieve some pressure on black RF, and other nearshore species
- Alternative 1 & 2
  - Additional increase in yelloweye RF HG could mean even fewer depth restrictions
    - Relieve some additional pressure on nearshore species
    - Possibly allow additional lingcod opportunities
    - Possibly reduced restrictions on bottomfish retention with halibut

Non-Trawl—Washington Recreational

Same season structure as 2018, except:

- Depth Restriction Options
  - Progressively reduce or remove the 20 and 30 fm depth restrictions depending on Yelloweye ACL
- Sub-Bag Limit Options
  - Canary Rockfish: no sub-bag limit in all marine areas
  - Cabezon: sub-bag limit of 1 in all marine areas
- Groundfish Retention Restrictions
  - Allow lingcod and rockfish retention with halibut on board north of the Washington- Oregon border MA 1 during the halibut fishery

Recreational Summary

- Management measures in WA, OR and CA are primarily driven by the need to minimize encounters with yelloweye rockfish
- Depth restriction is the primary catch control used in all three states
- Yelloweye ACL alternatives considered for 2019 and 2020, including No Action, allow some liberalization of depth restrictions, and other management measures
- Depth restrictions become progressively less restrictive as you move from No Action to Alt. 1 and could potentially be removed completely under Alt. 2

Summary of Economic Analysis

Socioeconomic Impacts

- Ex-vessel revenue, angler trips, and community income impacts estimated based on GMT projections of commercial landings and recreational effort
- Comparisons made to status quo baseline, the GMT estimate of 2017 fishing but for whiting the pre-apportionment allocations are used

Commercial Fishery Ex-vessel Revenue, Change from Status Quo (2017 $ millions)

Fishery Sector	Status Quo	No Action	Alternative 1	Alternative 2
Shoreside Sectors:				
Whiting	*21.1*	+0.000		
Non-whiting Trawl+Non-trawl IFQ	*37.9*	+0.526	+0.539	
Limited Entry Fixed Gear	*18.9*	+0.905		
Nearshore Open Access	*4.5*	+0.826		
Non-nearshore Open Access	*3.6*	+0.175		
Incidental Open Access	*0.2*	+0.000		
Tribal (incl. whiting)	*11.7*	-0.403		
Shoreside sectors' Totals	***97.9***	**2.029**	**2.043**	
At-sea Sectors:				
Non Tribal Whiting	*34.6*	+0.000		
Tribal Whiting	*6.9*	+0.000		
At-sea sectors' Totals	***41.5***	+0.000		
TOTAL Groundfish Revenue	***139.4***	**+2.029**	**+2.043**	

Commercial Fishery Income Impacts, Change from Status Quo (2017 $ millions)

Community Groups	**Status Quo**	**No Action, Alternative 1, Alternative 2**
Puget Sound	*7.3*	+0.5
Washington Coast	*20.0*	+0.2
Astoria-Tillamook	*43.7*	+0.3
Newport	*22.0*	+0.1
Coos Bay-Brookings	*11.1*	+0.5
Crescent City-Eureka	*8.5*	+0.2
Fort Bragg – Bodega Bay	*7.3*	+0.5
San Francisco Area	*2.7*	+0.2
SC – Mo – MB	*5.9*	+0.7
SB – LA – SD	*10.0*	+0.1
Coastwide Total	***138.5***	**+3.3**

Recreational Fishery Income Impacts ($ millions), Change from Status Quo

Community Groups	*Status Quo*	No Action	Alternative 1	Alternative 2
Puget Sound				
Washington Coast	*6.9*	+0.2	+0.9	
Astoria-Tillamook	*1.8*	-		
Newport	*7.9*	-		
Coos Bay-Brookings	*3.3*	-		
Crescent City-Eureka	*5.4*	-	+1.9	
Fort Bragg - Bodega Bay	*3.4*	-	+1.2	
San Francisco Area	*14.6*	-	+3.7	
SC – Mo – MB	*16.7*	-	+3.8	
SB – LA – SD	*125.1*	-	+43.5	
Coastwide Total	***185.1***	**+0.2**	**+54.2**	**+54.8**

New Management Measures

Details provided in April

Mentioned now as a reminder of what they are

New Management Measures

- Salmon mitigation measures
- IFQ Fishery
  - Eliminate daily vessel limits for rebuilt or all species
  - Implement survival credits for lingcod and sablefish
  - Continue the Adaptive Management Program pass-through
  - Prohibit retention of crab in trawl fisheries off California*: Unable to be analyzed in time for 2019-2020 biennium*
- Removal of automatic authority established in conjunction with Amendment 21-3 for darkblotched rockfish and POP in the at-sea sectors
- Adjustment to the Non-Trawl Rockfish Conservation Area in California (42° to 40° 10´ N. lat.)
- Modify Commercial Fixed Gear Depths inside the Western Cowcod Conservation Area
- Modify Recreational Depths inside the Western Cowcod Conservation Area