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2025 Yellowtail Rockfish North of 40° 10' N. STAR presentation 6: Response to STAR requests from Day 4

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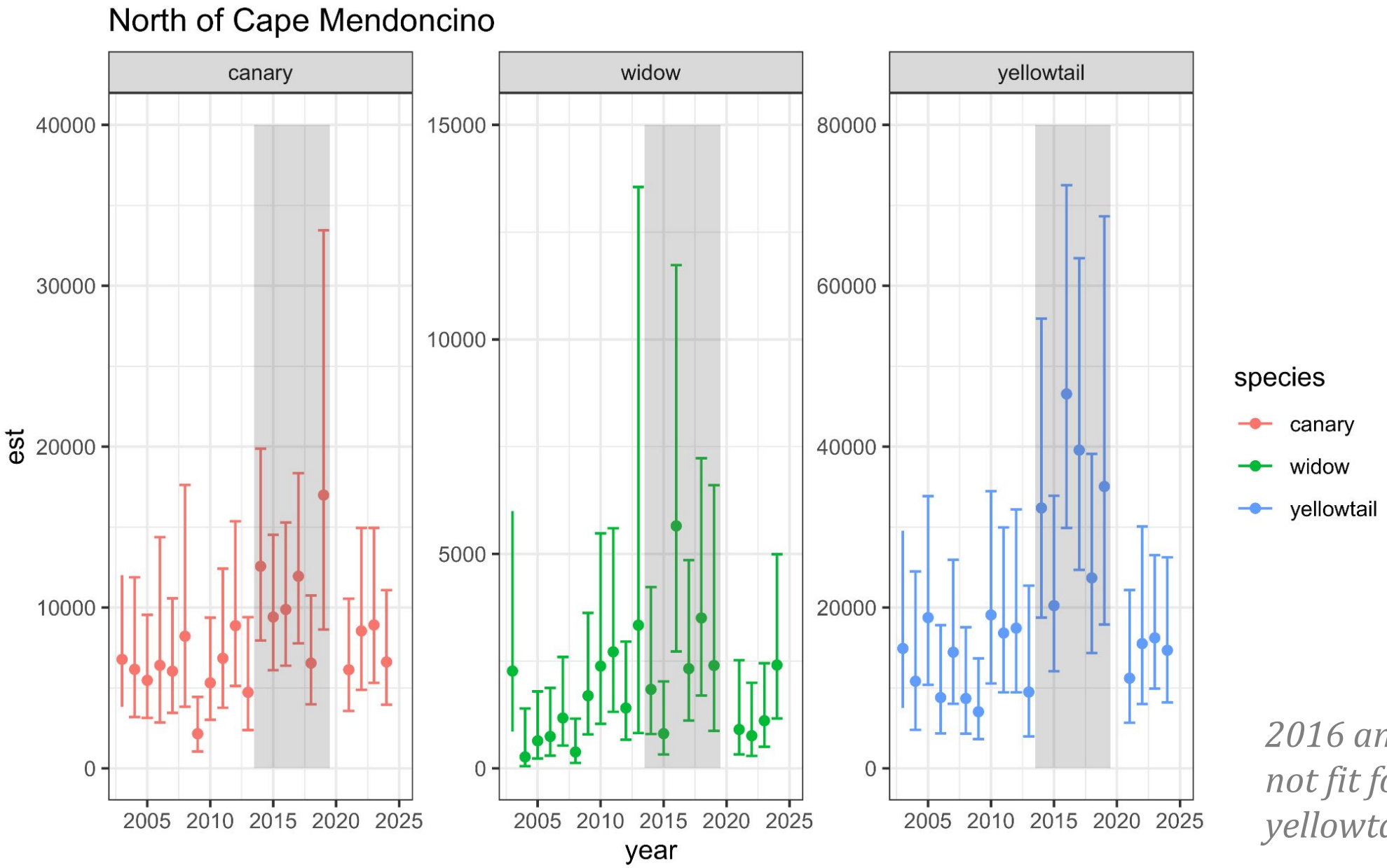
May 23, 2025

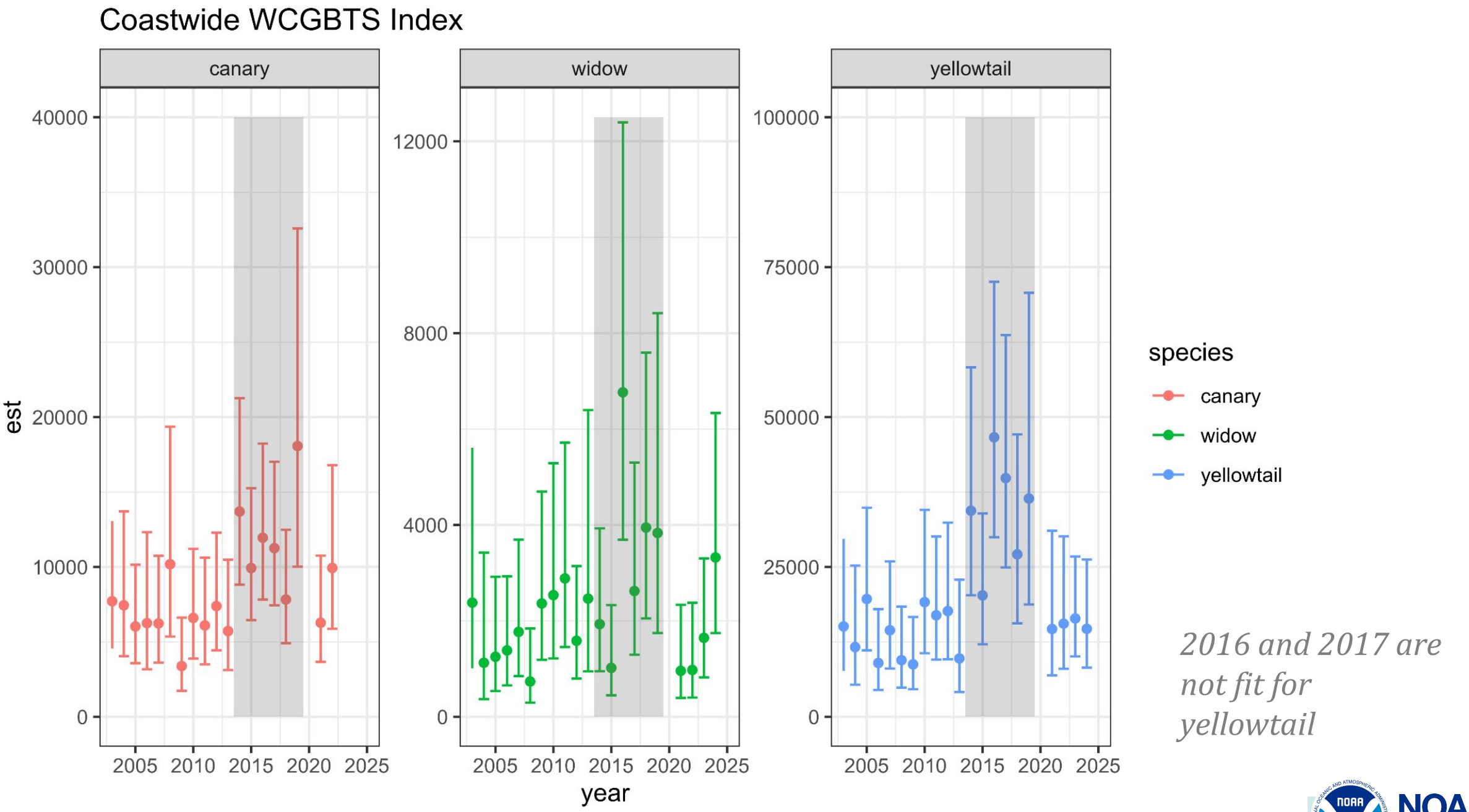
Request 14

Request: Compare the trends in the WCGBTS index for yellowtail rockfish to those for canary and widow rockfish stratified at 40 deg 10 min. N. Lat.

Rationale: The comparison will provide an indication as to whether there may be environmental influences contributing to the increased index values in the mid 2000s.



2016 and 2017 are not fit for yellowtail



2016 and 2017 are not fit for yellowtail

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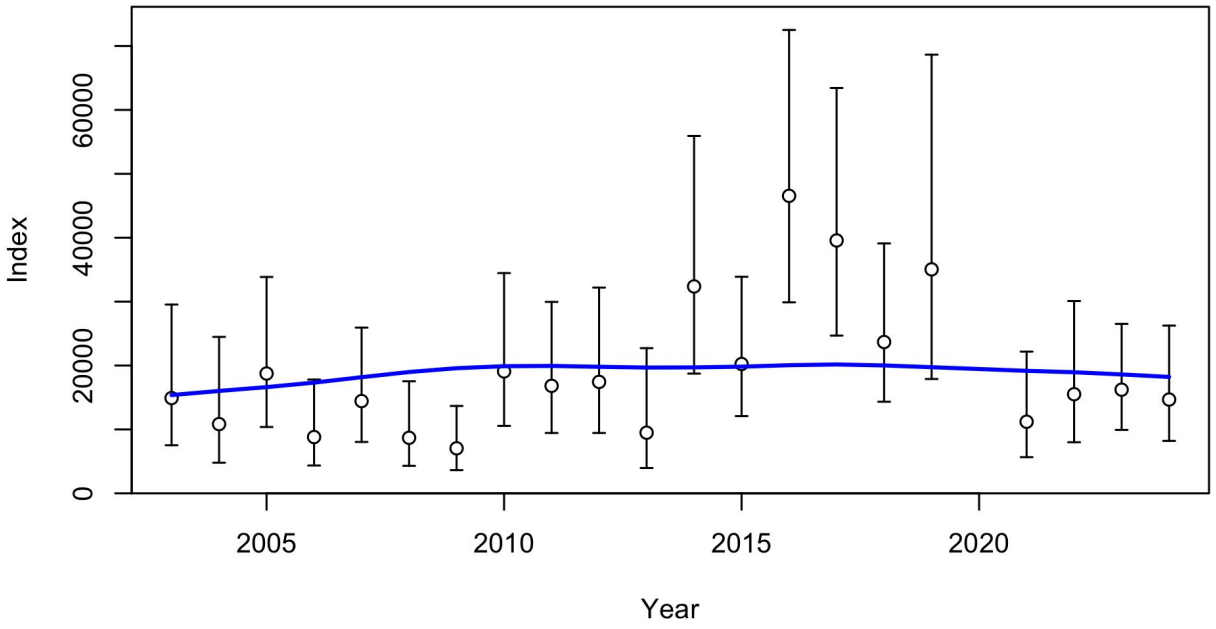
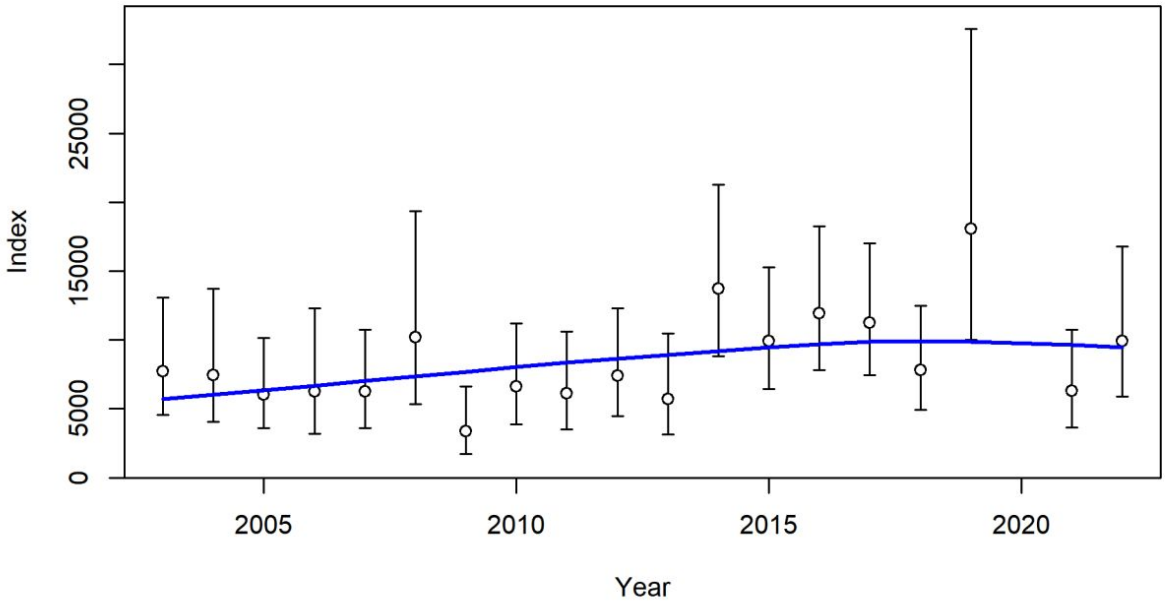
Yellowtail 2025



Canary 2023



Request 15

Request: Provide a decision table using R0 as the primary axis of uncertainty based on the catch time series reflecting full attainment as required by the TOR as well as alternative catch projections based on recent catch and attainment to bracket the range of catch alternatives in the decision table.

Rationale: This will help compose the basis for the catch time series in the decision table.

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Table 30: Decision table with 10-year projections. 'Mgmt' refers to the two managemen scenarios (A) the default harvest control rule $P^* = 0.45$ and sigma = 0.5 (B) Assuming an average ACL attainment of 55% (consistent with recen attainment) from 2027-2036. In each case the 2025 and 2026 catches ar fixed at estimates provided by the GMT. The alternative states of natur ('Low', 'Base', and 'High' as discussed in the text) are provided in the columns with Spawning Output ('Spawn', in trillions of eggs) and Fraction of unfishe spawning output ('Frac') provided for each state.

Mgmt	Year	Catch	Low Spawn	Low Frac	Base Spawn	Base Frac	High Spawn	High Frac
A	2025	4060	7.75	0.538	9.13	0.626	10.38	0.693
	2026	4066	7.41	0.515	8.77	0.601	9.98	0.666
	2027	4723	7.06	0.490	8.39	0.575	9.57	0.639
	2028	4540	6.65	0.462	7.95	0.545	9.11	0.608
	2029	4445	6.33	0.440	7.63	0.523	8.76	0.585
	2030	4421	6.14	0.426	7.43	0.509	8.57	0.572
	2031	4435	6.06	0.421	7.36	0.504	8.51	0.568
	2032	4467	6.07	0.422	7.39	0.506	8.56	0.571
	2033	4485	6.12	0.425	7.47	0.512	8.66	0.578
	2034	4476	6.18	0.429	7.55	0.517	8.76	0.585
	2035	4452	6.21	0.431	7.59	0.520	8.81	0.588
	2036	4414	6.21	0.431	7.59	0.520	8.82	0.589

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B	2025	4060	7.75	0.538	9.13	0.626	10.38	0.693
	2026	4066	7.41	0.515	8.77	0.601	9.98	0.666
	2027	2598	7.06	0.490	8.39	0.575	9.57	0.639
	2028	2497	6.95	0.483	8.26	0.566	9.41	0.628
	2029	2445	6.92	0.481	8.20	0.562	9.33	0.623
	2030	2431	6.97	0.484	8.25	0.565	9.37	0.626
	2031	2439	7.12	0.494	8.40	0.576	9.53	0.636
	2032	2457	7.35	0.510	8.64	0.592	9.77	0.652
	2033	2467	7.61	0.528	8.90	0.610	10.05	0.671
	2034	2462	7.86	0.546	9.16	0.628	10.32	0.689
	2035	2449	8.08	0.561	9.38	0.643	10.53	0.703
	2036	2428	8.25	0.573	9.54	0.654	10.68	0.713

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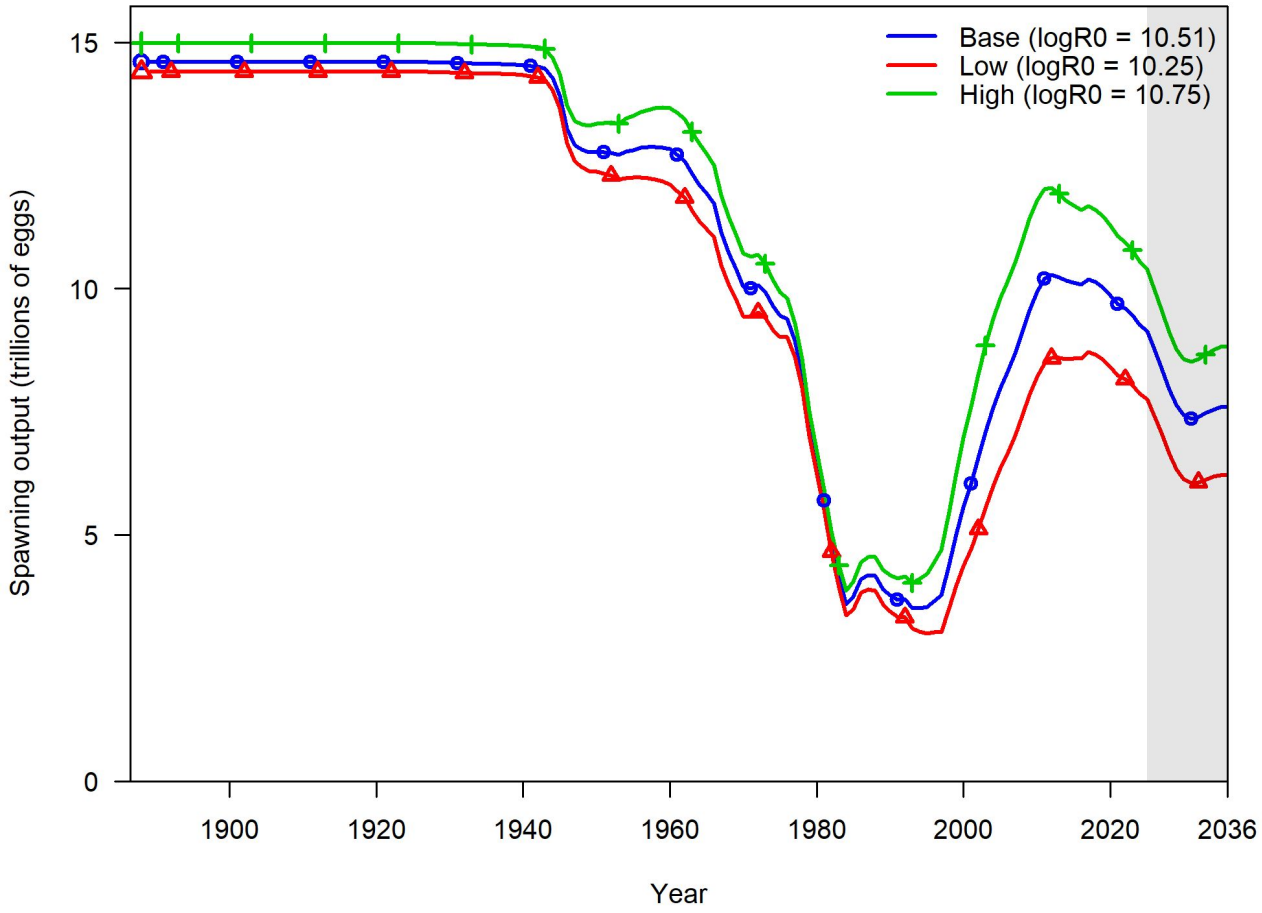
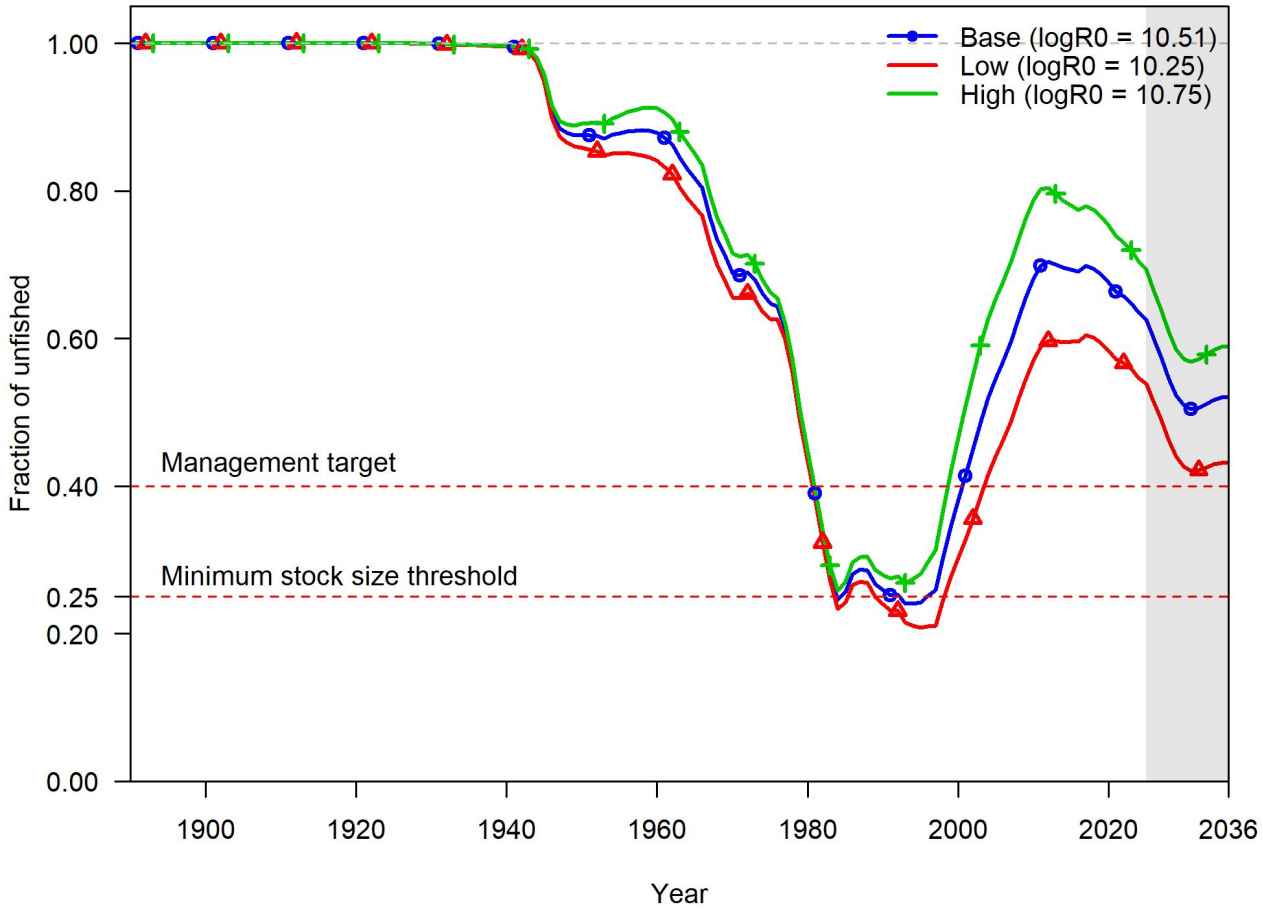
Spawning output



Fraction of unfished spawning output



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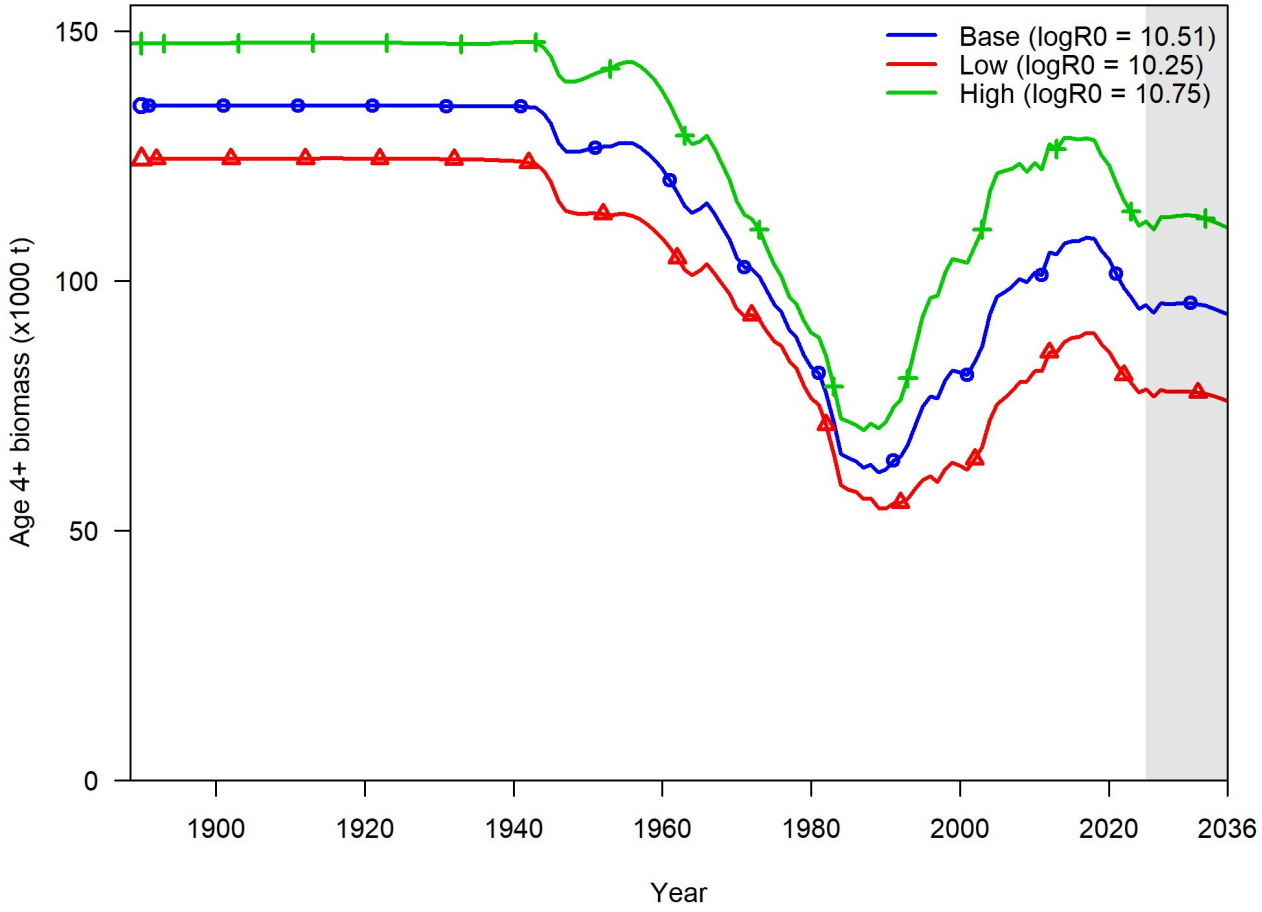
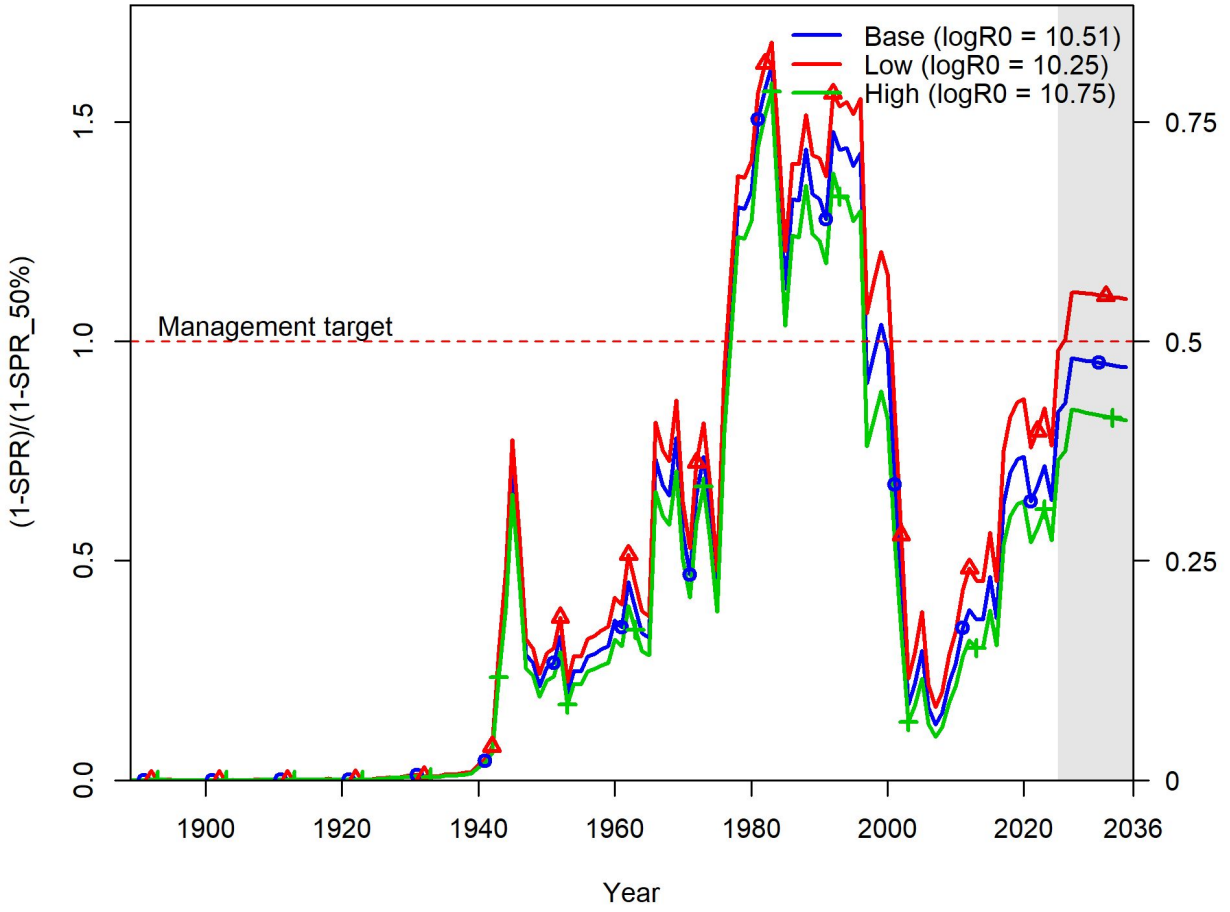
Age 4+ biomass



Relative fishing intensity



Risk table: assessment model fits and structural uncertainty

- Well-informed sex-specific estimates of natural mortality, unfished recruitment, and growth
- Steepness fixed at meta-analysis prior.
- Good fits to abundant composition data with fairly simple selectivity assumptions and fleet structure
- Model generally misses an increase in the WCGBTS from 2014-2019. Non-stationary catchability seems more likely than an incorrect modeled population trajectory, given similar increases seen during this time for all midwater rockfish (of varying life history). Removing these years leads to slight increase in summary biomass scale.
- Highly numerically stable model, MCMC posteriors are similar to assumption of asymptotic normality
- Most sensitivity model runs are well within the asymptotic confidence interval of the base model

Level 1: favorable / below average uncertainty