

SEDAR 94: Florida Hogfish

West Florida Shelf

Gulf Council SSC Meeting

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SEDAR 94: Florida Hogfish WFS Projections



Deterministic Projection Methods

- Developed by SEFSC staff:
 - An iterative process to set fleet-specific F_s each year to ensure that a given constant fishing mortality rate (or constant catch) scenario is achieved
- Fleet allocations, selectivity, and retention
 - Set as the average of the last 3-year estimates from the WFS base model
- Recruitment (age-0) in Jan 2025
 - SAFMC SSC Catch Level Projections Workgroup Final Report, April 2022
 - For equilibrium (long-term) projections:
 - Average recruitment across the whole timeseries (Type A)
 - WFS: 1986 – 2024
 - For short-term projections:
 - Average recruitment from 2020 – 2024 (5 years)

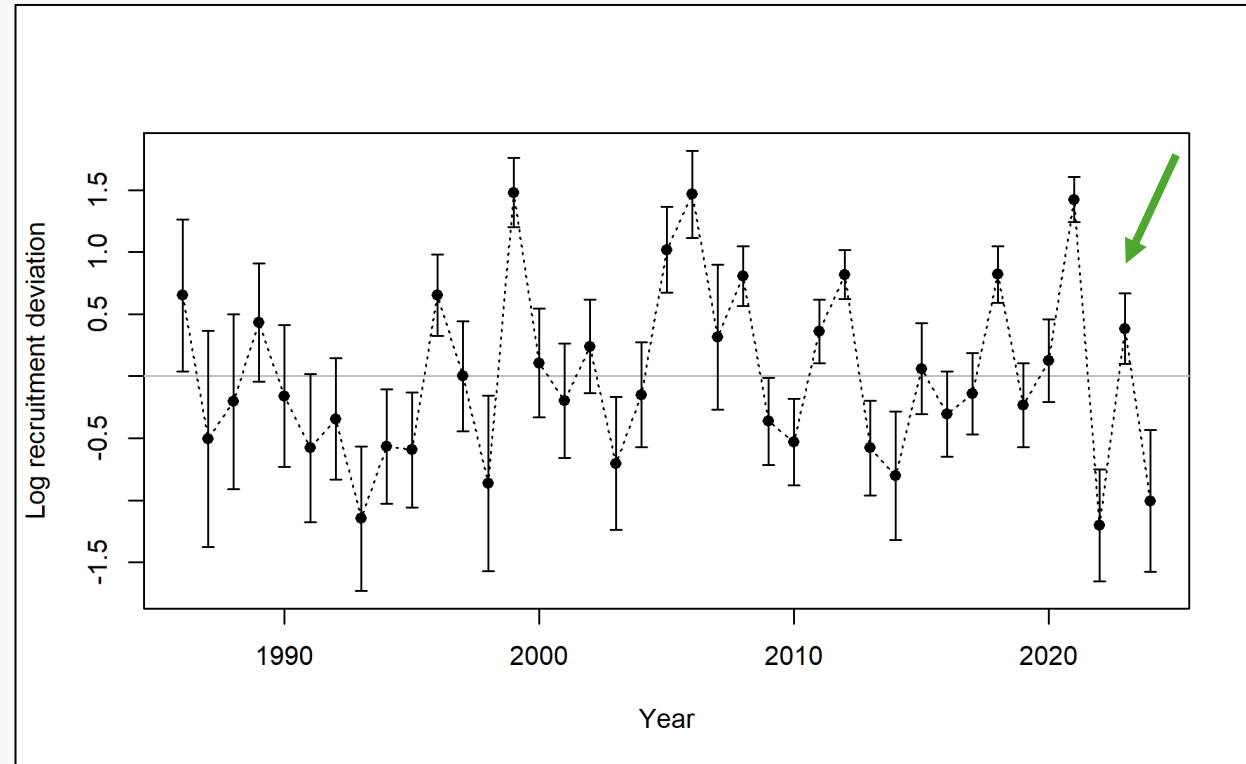
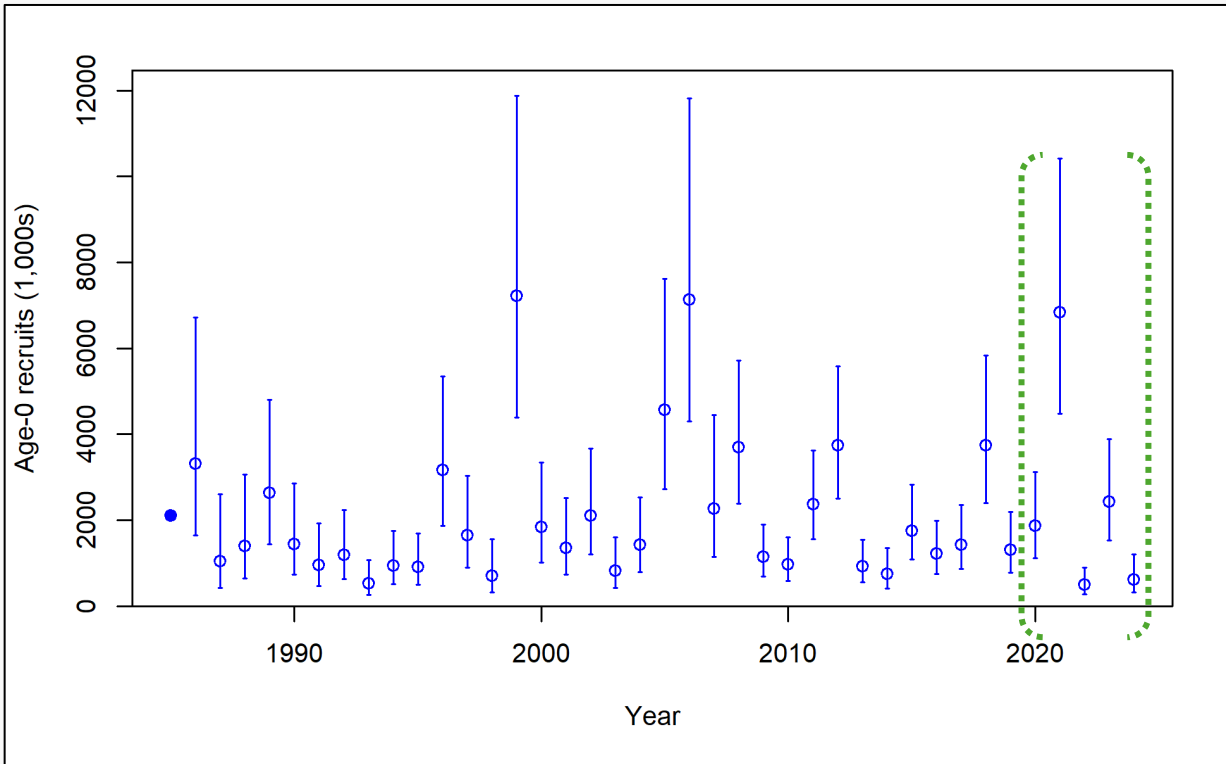


Projection Scenarios (TOR #10.4)

- Stock projections (including yields) shall be developed in accordance with the following (F_{Current} is the geometric mean of the most recent three years of data):
 - A) If stock is overfished:
 $F=0$, F_{Current} , $F=F_{\text{MSY}}$, F at 75% of F_{MSY} , F_{OY}
 $F=F_{\text{Rebuild}}$ (per Magnuson-Stevens Act)
 - B) If overfishing is occurring:
 $F=F_{\text{Current}}$, $F=F_{\text{MSY}}$, F at 75% of F_{MSY} , F_{OY}
 - **C) If stock is neither overfished nor undergoing overfishing:**
 $F=F_{\text{Current}}$, $F=F_{\text{MSY}}$, F at 75% of F_{MSY} , F_{OY}
 - D) If data limitations preclude classic projections (i.e. A, B, C above), explore alternative models to provide management advice.
 - E) If an alternative proxy for F_{MSY} is recommended, provide outputs for both the current and recommended proxies.
 - **Gulf regulations based on $F_{30\% \text{SPR}}$**

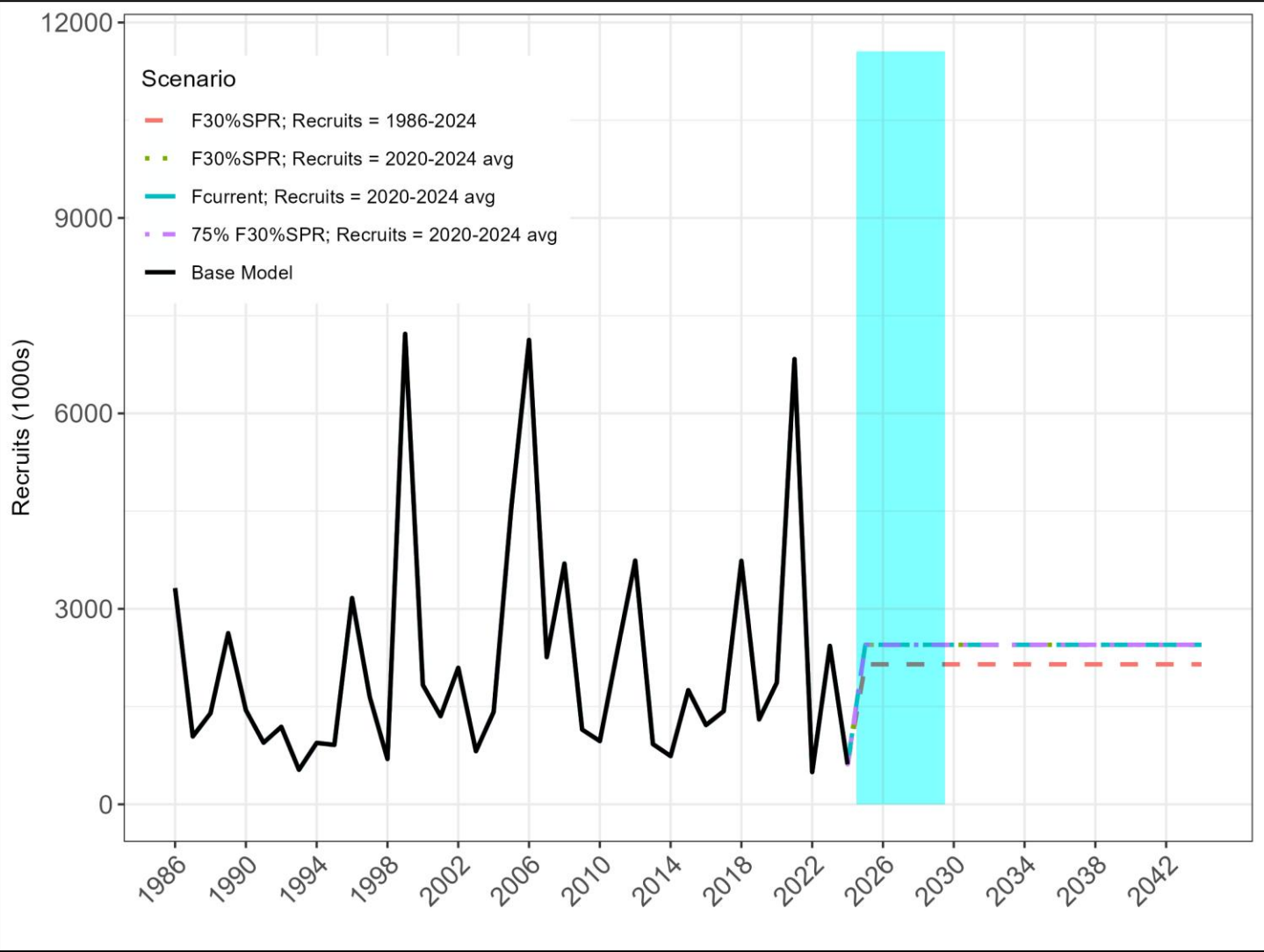


Estimated Age-0 Recruitment



Whole avg. 2,148,935 fish
5-year avg. 2,448,483 fish

Constant F Projection: Recruitment



Avg recr 2020-2024: 2,448.5

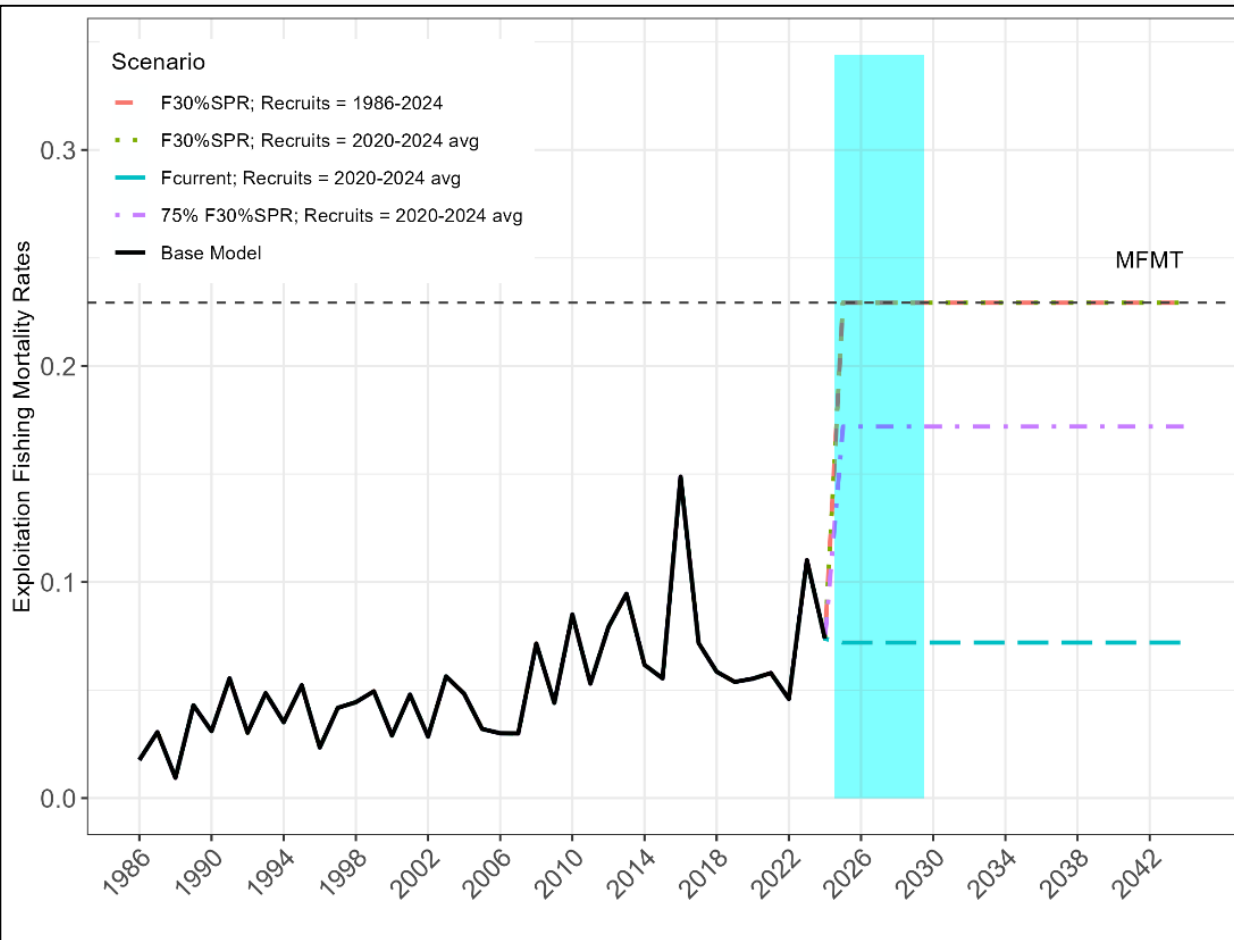
Avg recr 1986-2024: 2,148.9

AW Report Figure 4.71

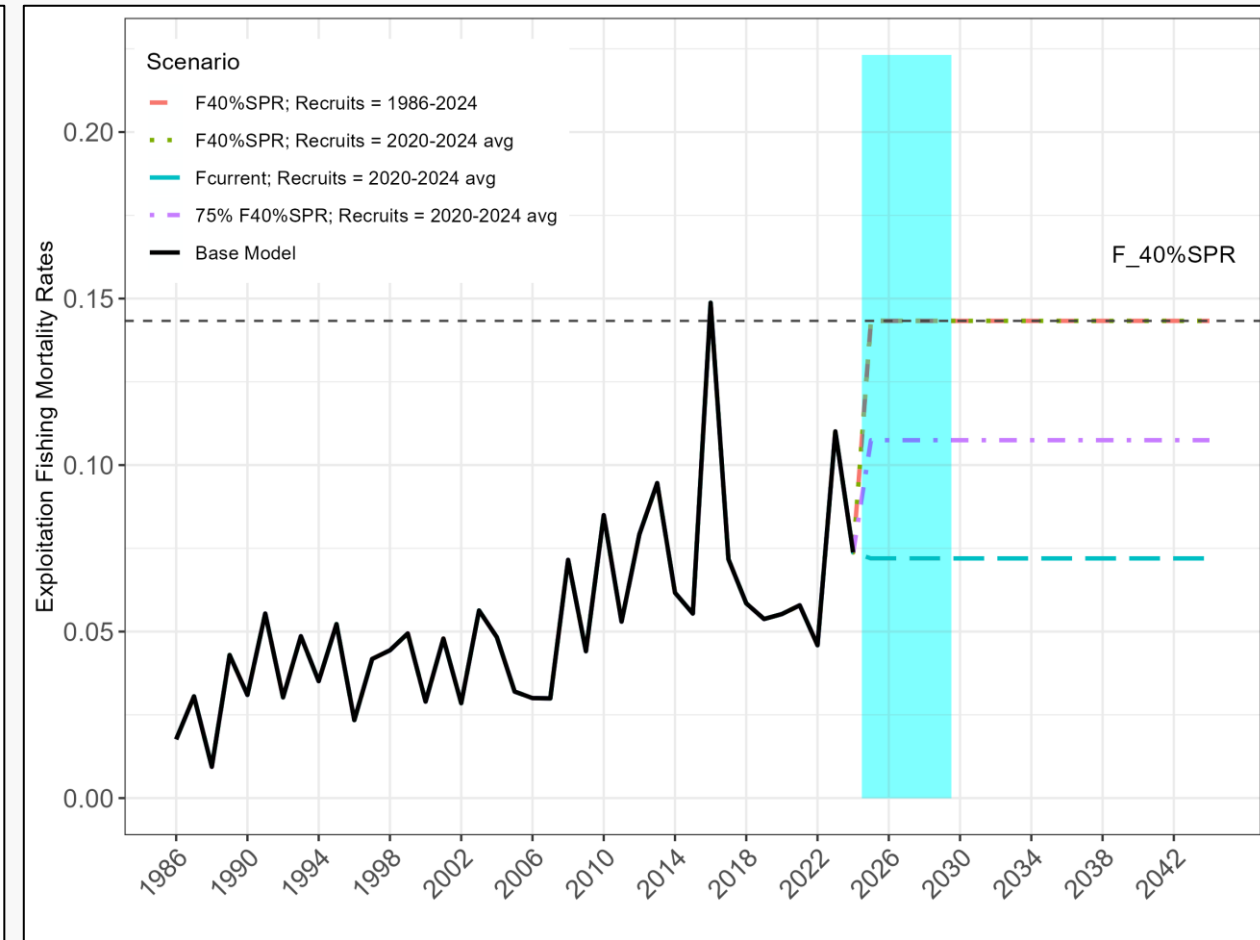


Constant F Projection Scenarios

AW Report Figure 4.70



- $F_{30\%SPR} = 0.229 \text{ yr}^{-1}$
- $F_{\text{current}} = 0.072 \text{ yr}^{-1}$
- $F_{75\%_F30\%SPR} = 0.172 \text{ yr}^{-1}$

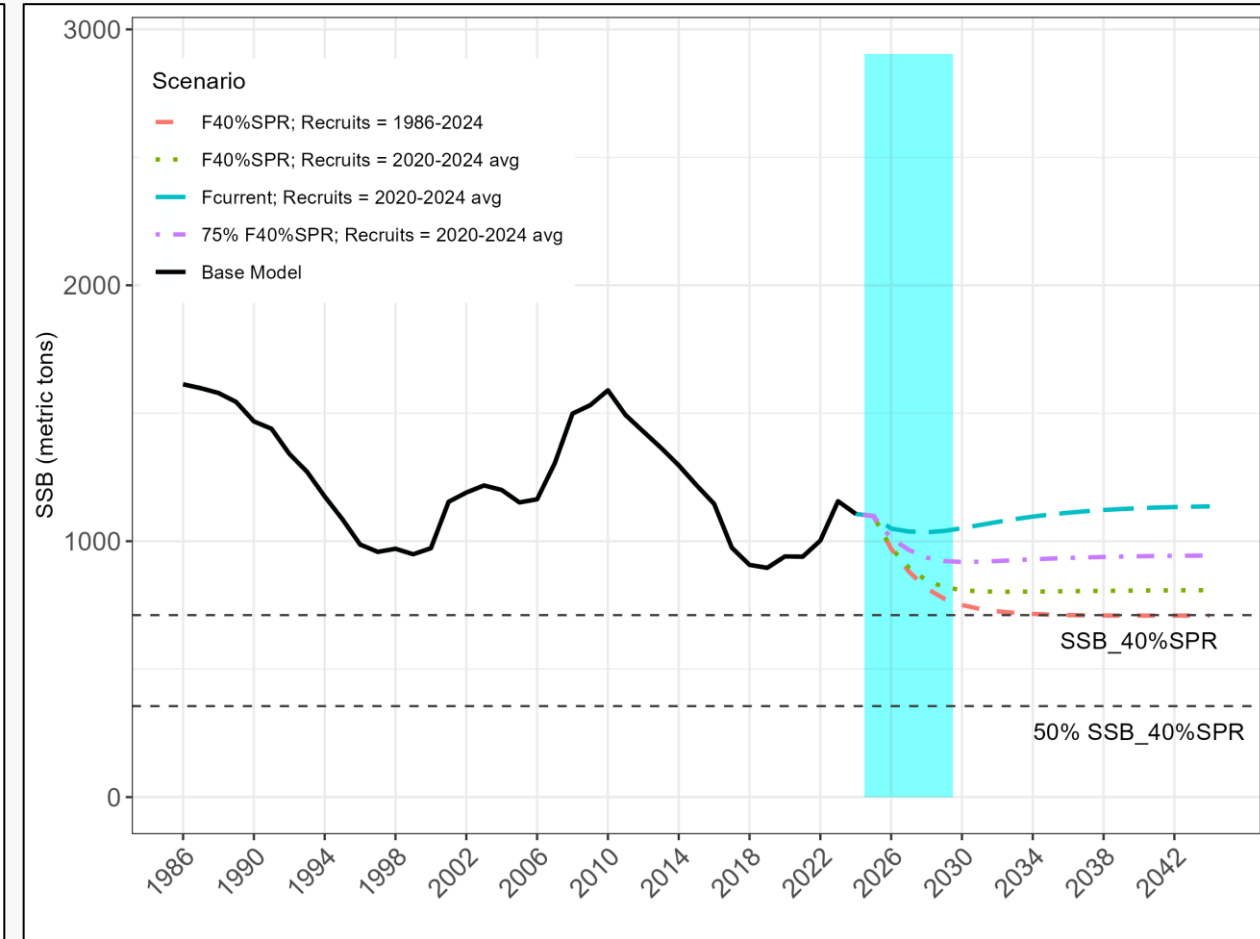
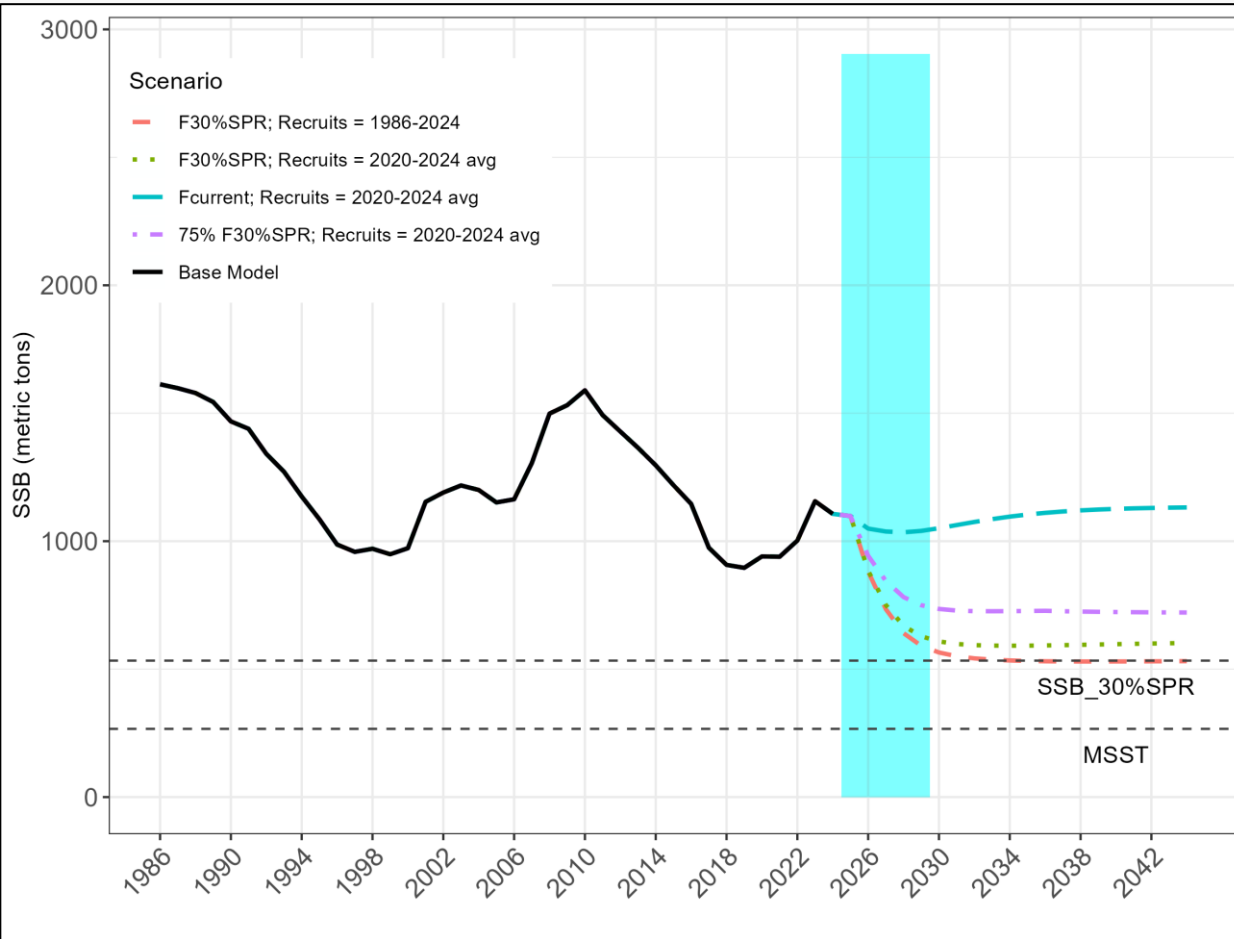


- $F_{40\%SPR} = 0.143 \text{ yr}^{-1}$
- $F_{75\%_F40\%SPR} = 0.107 \text{ yr}^{-1}$



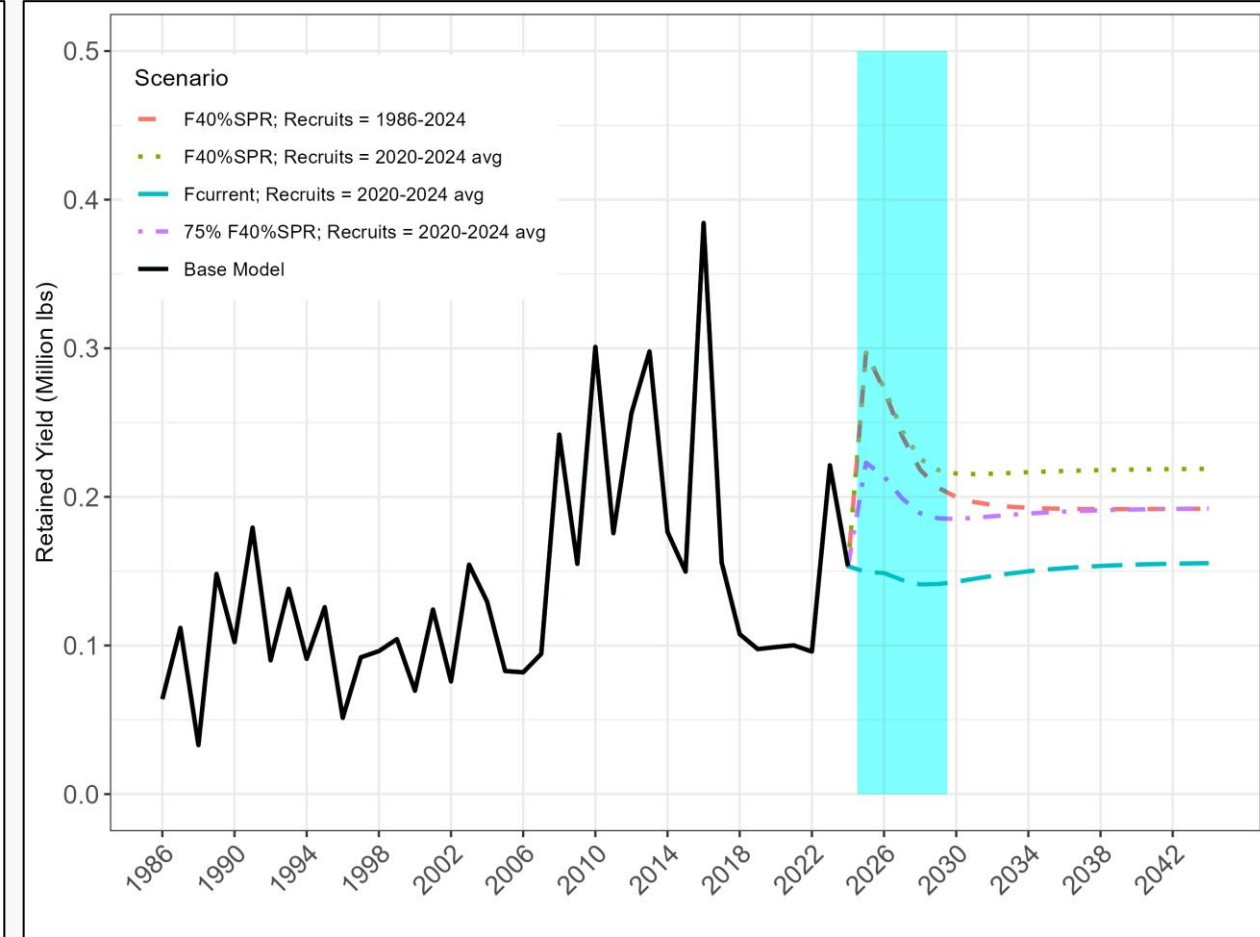
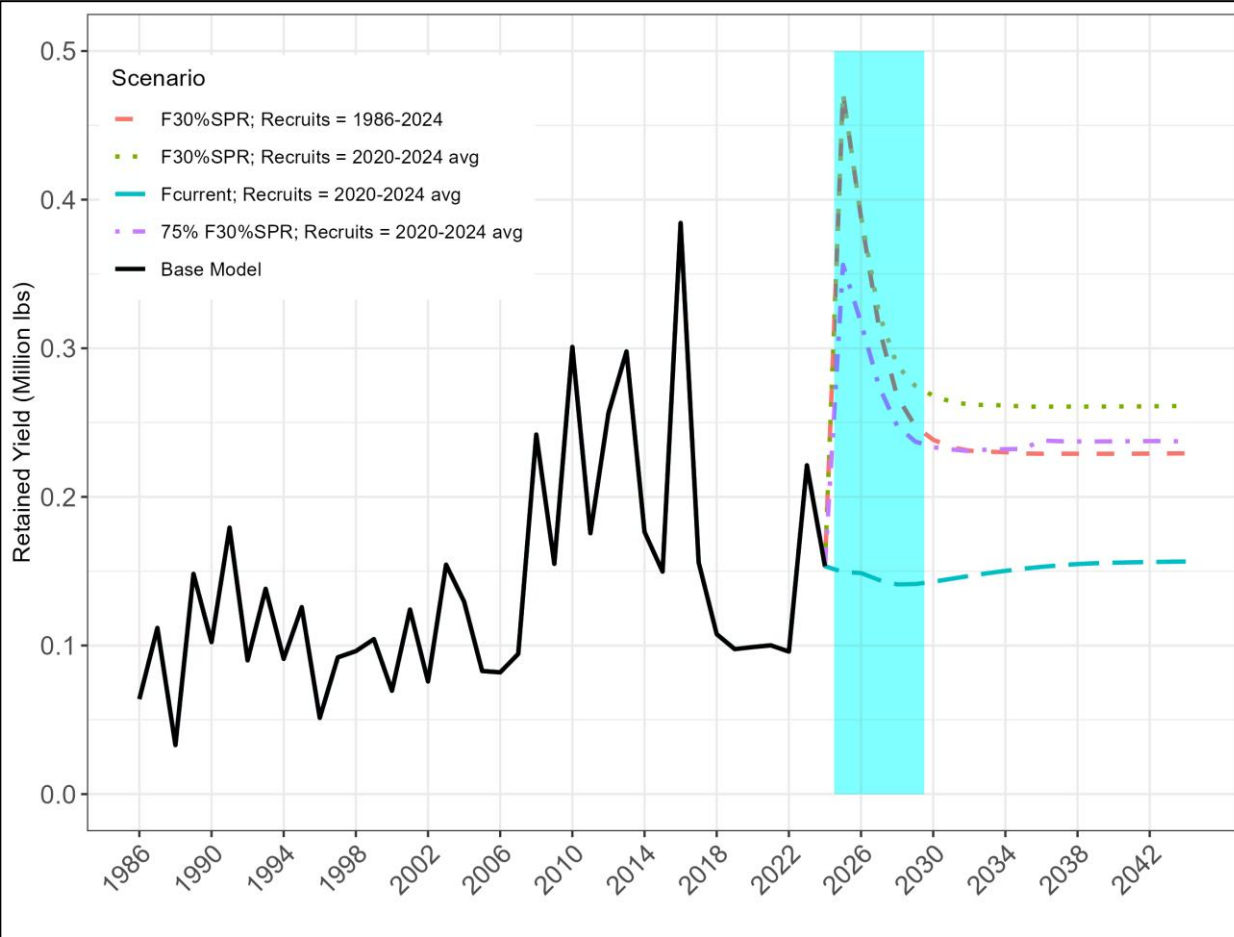
Constant F Projection: SSB

AW Report Figure 4.74



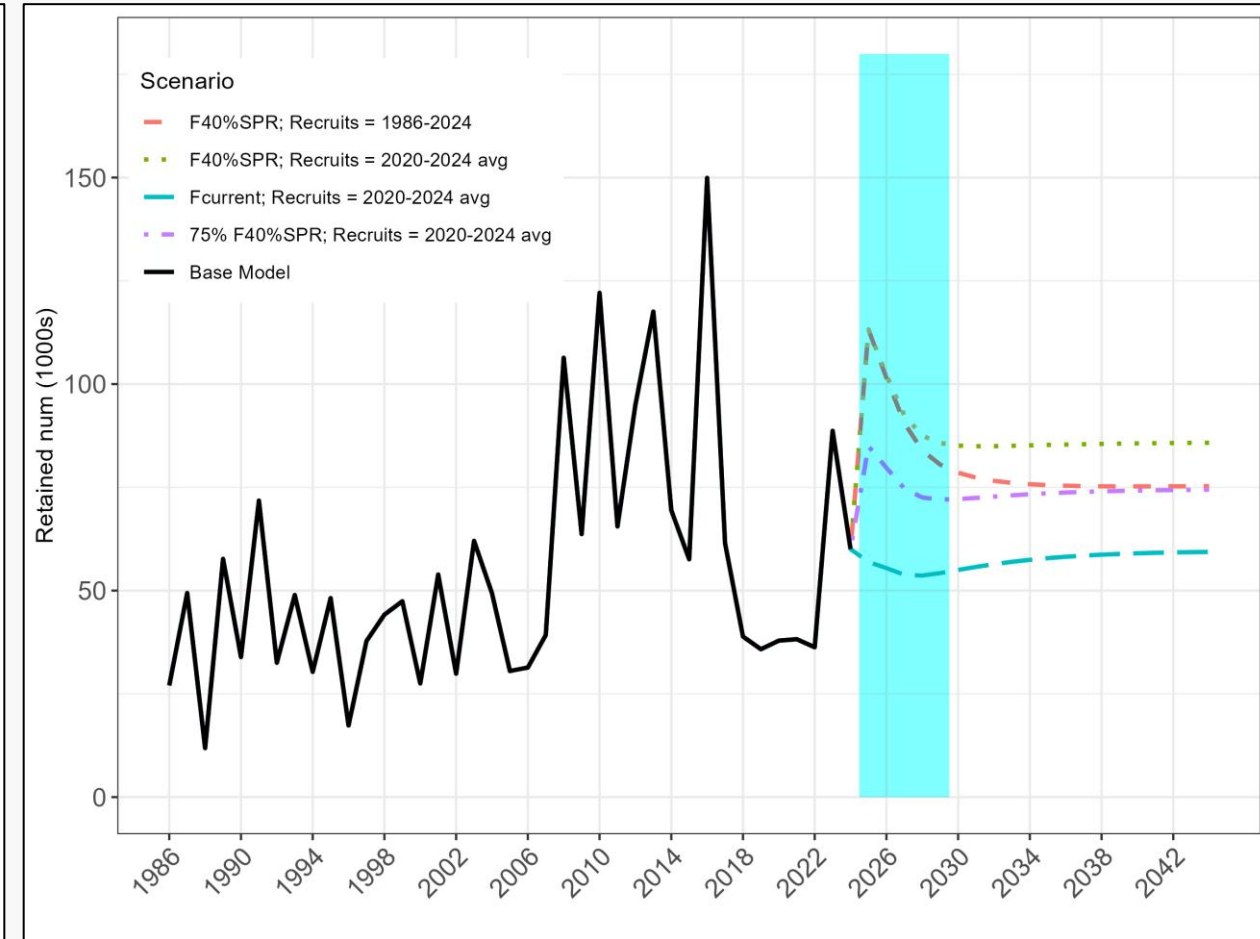
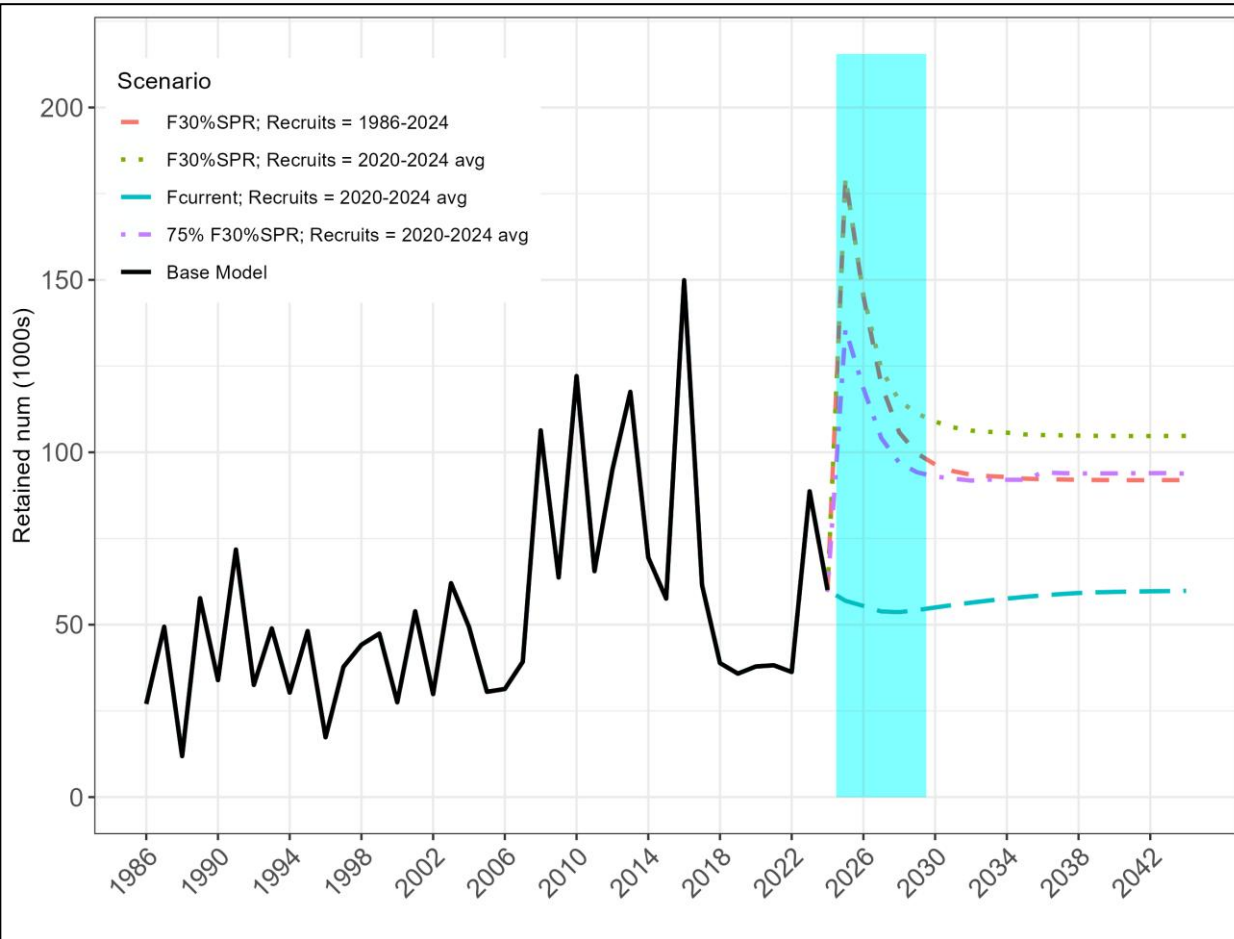
Constant F Projection: Retained Yield (lbs.)

AW Report Figure 4.73



Constant F Projection: Retained Yield (000s)

AW Report Figure 4.72



Constant F Projection: Retained Yield (lbs.)

AW Report Table 4.19

F _{30%SPR} Long-Term Projections						F _{30%SPR} Short-Term Projections				
Year	Age-0 Recruits	F	SSB	Retained Yield	Retained Num	Age-0 Recruits	F	SSB	Retained Yield	Retained Num
2025	2,148.93	0.229	1,098.320	474,501	180,733	2,448.48	0.229	1,098.320	474,495	180,731
2026	2,148.93	0.229	879.571	391,917	146,774	2,448.48	0.229	883.079	394,511	147,869
2027	2,148.93	0.229	730.788	313,153	119,436	2,448.48	0.229	746.092	318,423	122,269
2028	2,148.93	0.229	637.676	265,442	104,935	2,448.48	0.229	667.239	277,113	110,467
2029	2,148.93	0.229	589.817	244,981	98,588	2,448.48	0.229	632.402	263,080	106,444
2030	2,148.93	0.229	565.137	236,158	95,548	2,448.48	0.229	617.618	258,978	105,059
2031	2,148.93	0.229	551.677	232,121	93,977	2,448.48	0.229	611.254	258,190	104,625
2032	2,148.93	0.229	543.855	230,198	93,104	2,448.48	0.229	608.374	258,447	104,521
2033	2,148.93	0.229	539.213	229,322	92,612	2,448.48	0.229	607.102	259,004	104,540
2034	2,148.93	0.229	536.386	228,955	92,326	2,448.48	0.229	606.531	259,561	104,591

Units:

Recruits in thousands

SSB in metric tons

Retained Yield in pounds

Retained Num in numbers



Constant F Projection: Retained Yield (lbs.)

AW Report Table 4.20

F_{current} Short-Term Projections						75% F_{30%SPR} Short-Term Projections				
Year	Age 0 Recruits	F	SSB	Retained Yield	Retained Num	Age 0 Recruits	F	SSB	Retained Yield	Retained Num
2025	2,448.48	0.072	1,098.320	149,434	56,932	2,448.48	0.172	1,098.320	356,321	135,733
2026	2,448.48	0.072	1,049.180	148,782	55,441	2,448.48	0.172	943.152	317,531	118,738
2027	2,448.48	0.072	1,037.880	144,058	53,833	2,448.48	0.172	844.351	274,487	104,221
2028	2,448.48	0.072	1,034.770	141,132	53,641	2,448.48	0.172	781.040	247,796	96,958
2029	2,448.48	0.072	1,040.260	141,303	54,238	2,448.48	0.172	749.438	237,315	94,204
2030	2,448.48	0.072	1,050.700	142,908	54,996	2,448.48	0.172	734.913	233,816	93,146
2031	2,448.48	0.072	1,063.030	144,887	55,733	2,448.48	0.172	728.430	232,904	92,762
2032	2,448.48	0.072	1,075.120	146,781	56,388	2,448.48	0.172	725.537	232,910	92,646
2033	2,448.48	0.072	1,086.240	148,466	56,960	2,448.48	0.172	724.428	233,252	92,650
2034	2,448.48	0.072	1,096.040	149,905	57,448	2,448.48	0.172	724.160	233,671	92,701

Units:

Recruits in thousands

SSB in metric tons

Retained Yield in pounds

Retained Num in numbers



Constant F Projection: Retained Yield (lbs.)

F _{40%SPR} Long-Term Projections						F _{40%SPR} Short-Term Projections				
Year	Age-0 Recruits	F	SSB	Retained Yield	Retained Num	Age-0 Recruits	F	SSB	Retained Yield	Retained Num
2025	2,148.93	0.143	1,098.32	297,113	113,184	2,448.48	0.143	1,098.32	297,111	113,183
2026	2,148.93	0.143	969.886	271,928	101,506	2,448.48	0.143	973.393	273,649	102,219
2027	2,148.93	0.143	881.159	241,041	90,556	2,448.48	0.143	896.950	244,574	92,399
2028	2,148.93	0.143	815.686	218,226	83,937	2,448.48	0.143	846.250	225,616	87,503
2029	2,148.93	0.143	774.938	206,147	80,493	2,448.48	0.143	820.353	218,053	85,722
2030	2,148.93	0.143	750.504	199,935	78,533	2,448.48	0.143	808.737	215,701	85,106
2031	2,148.93	0.143	735.557	196,535	77,340	2,448.48	0.143	804.101	215,309	84,950
2032	2,148.93	0.143	725.981	194,541	76,570	2,448.48	0.143	802.542	215,580	84,967
2033	2,148.93	0.143	719.804	193,357	76,073	2,448.48	0.143	802.471	216,072	85,057
2034	2,148.93	0.143	715.792	192,653	75,751	2,448.48	0.143	803.040	216,591	85,169

Units:

Recruits in thousands

SSB in metric tons

Retained Yield in pounds

Retained Num in numbers



Constant F Projection: Retained Yield (lbs.)

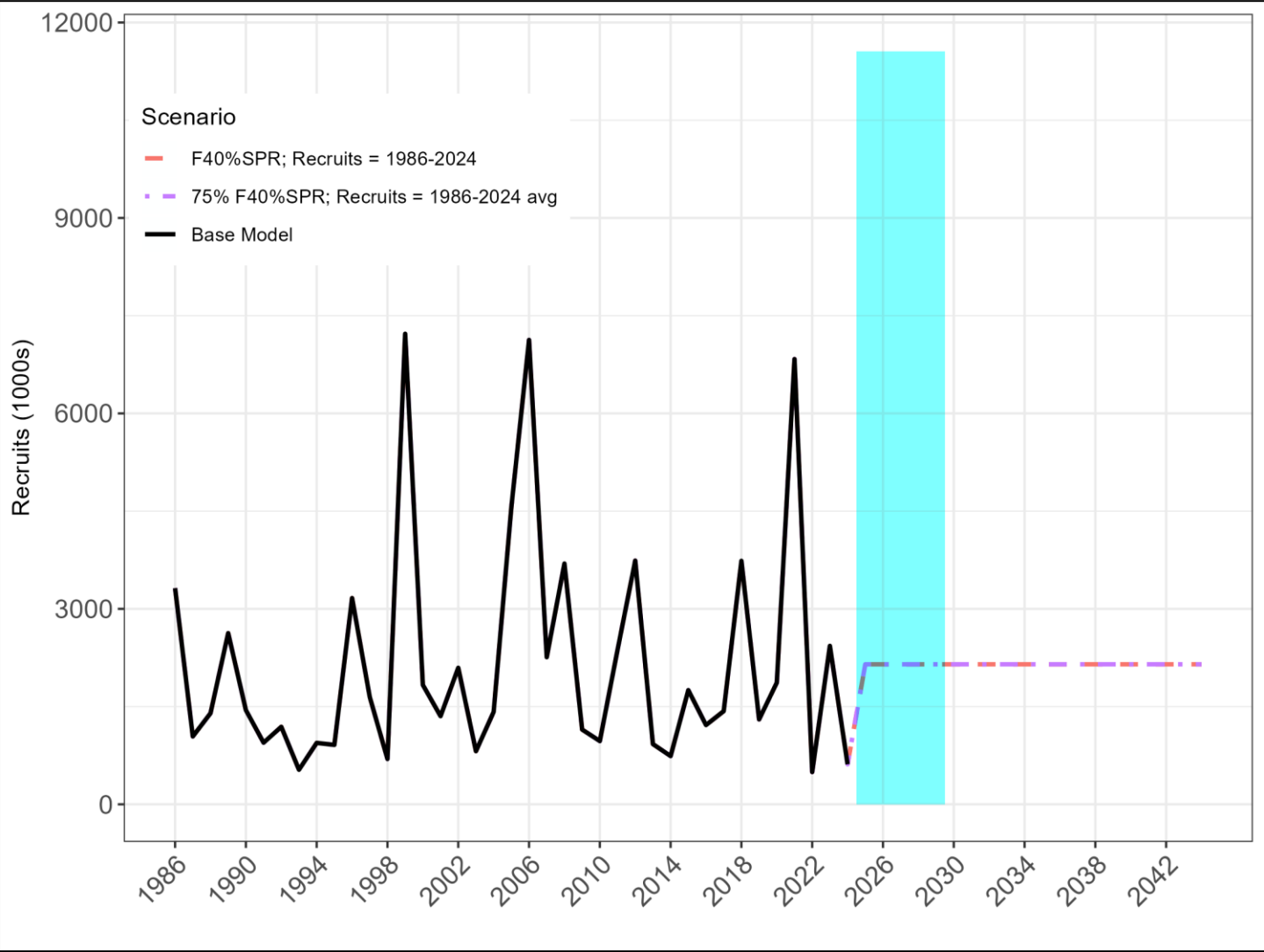
75% F _{40%SPR} Short-Term Projections					
Year	Age 0 Recruits	F	SSB	Retained Yield	Retained Num
2025	2,448.48	0.107	1,098.320	222,988	84,951
2026	2,448.48	0.107	1011.370	213,730	79,736
2027	2,448.48	0.107	965.949	198,965	74,737
2028	2,448.48	0.107	936.101	188,994	72,534
2029	2,448.48	0.107	922.480	185,533	72,059
2030	2,448.48	0.107	918.702	185,167	72,157
2031	2,448.48	0.107	919.715	185,897	72,438
2032	2,448.48	0.107	922.495	186,899	72,755
2033	2,448.48	0.107	925.850	187,894	73,060
2034	2,448.48	0.107	929.159	188,777	73,331

Units:

Recruits in thousands
 SSB in metric tons
 Retained Yield in pounds
 Retained Num in numbers



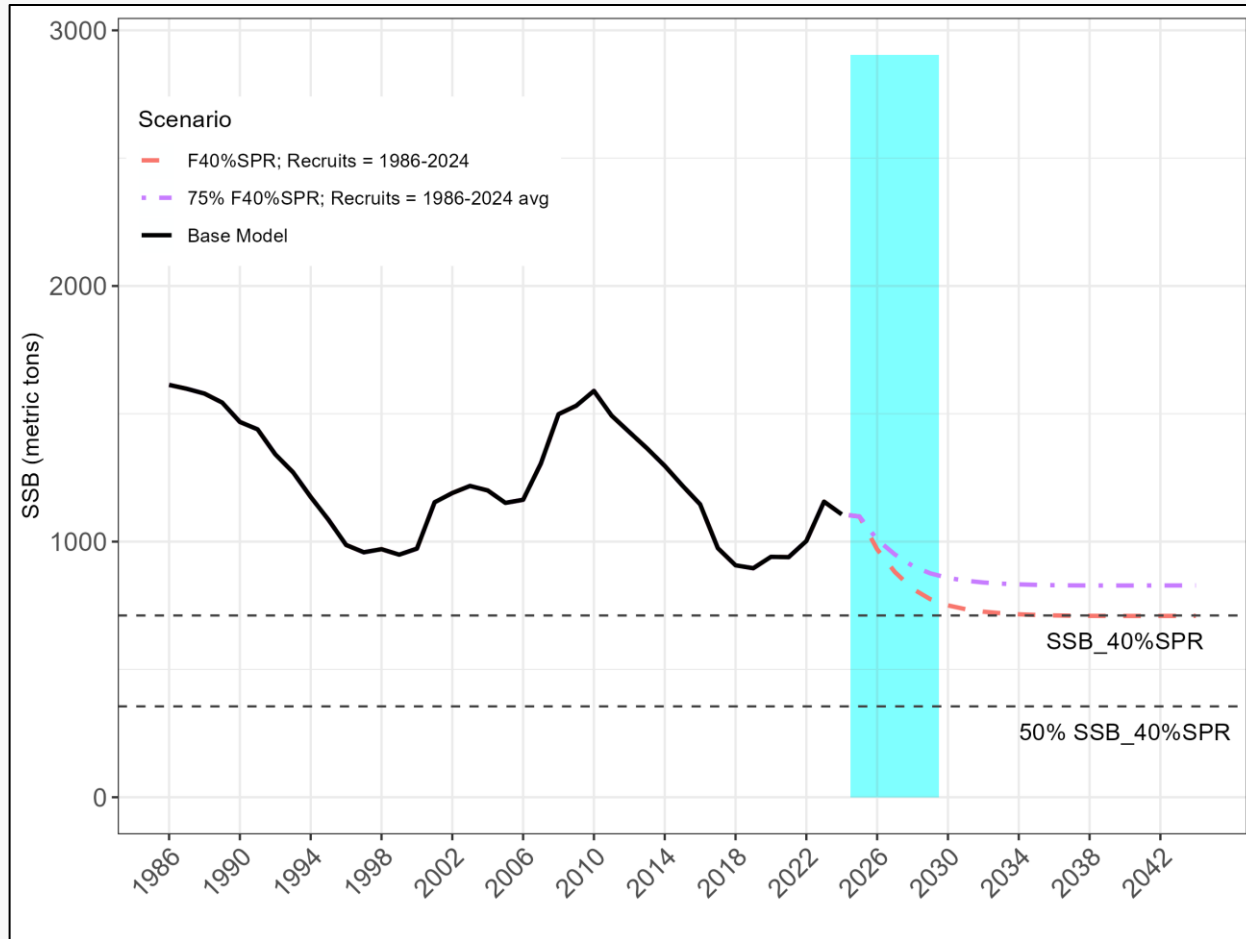
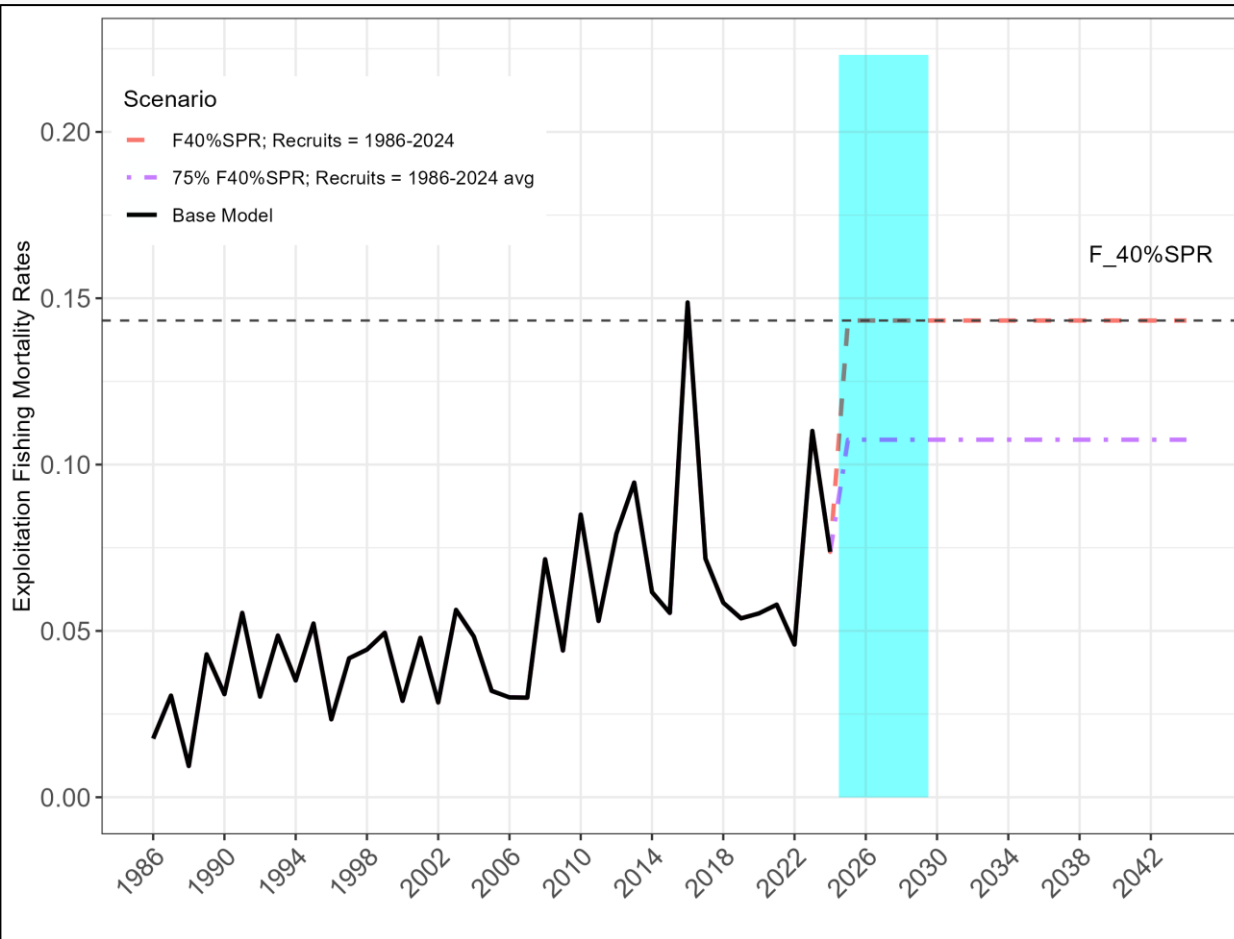
Constant F Projection: Recruitment



Avg recr 1986-2024: 2,148.9



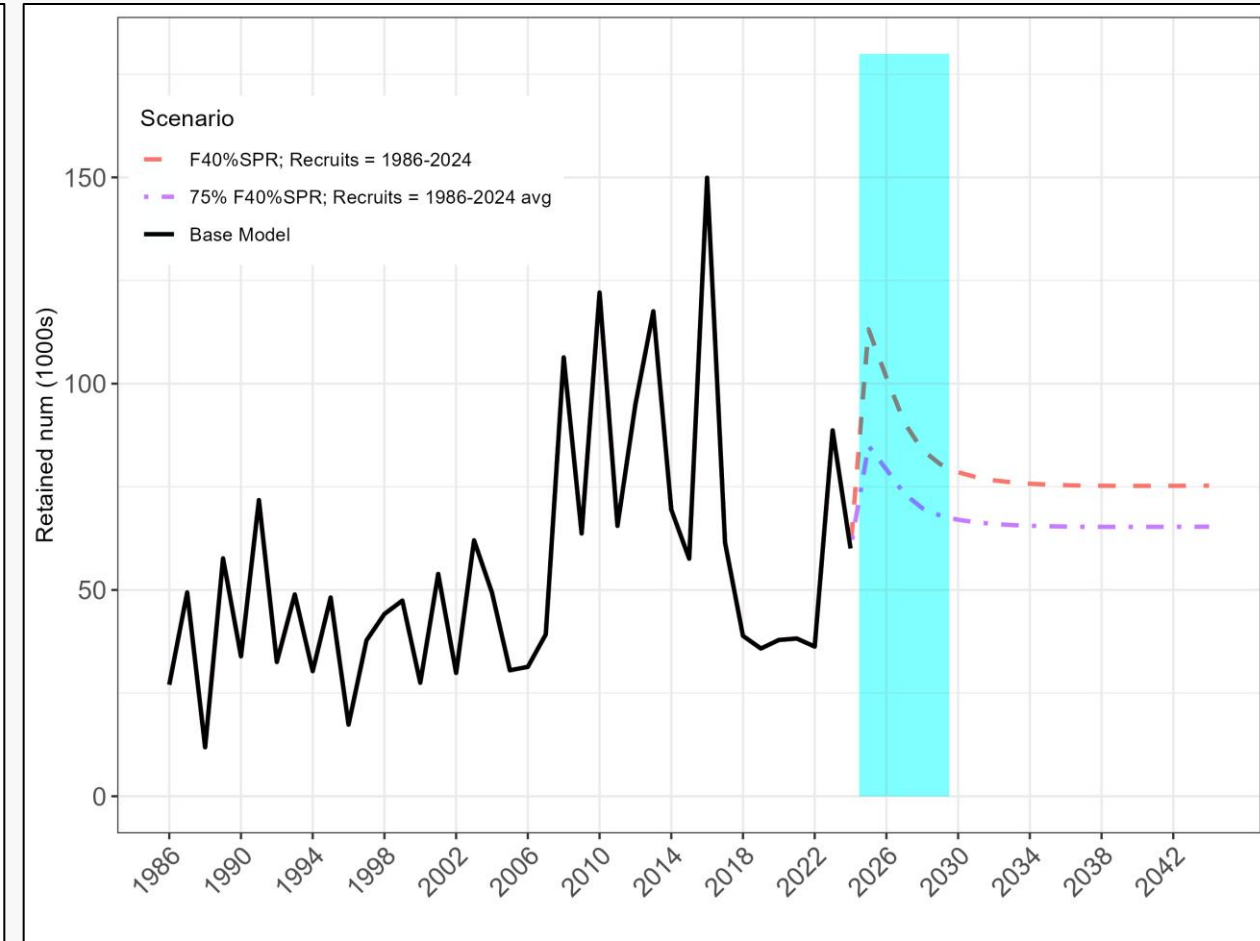
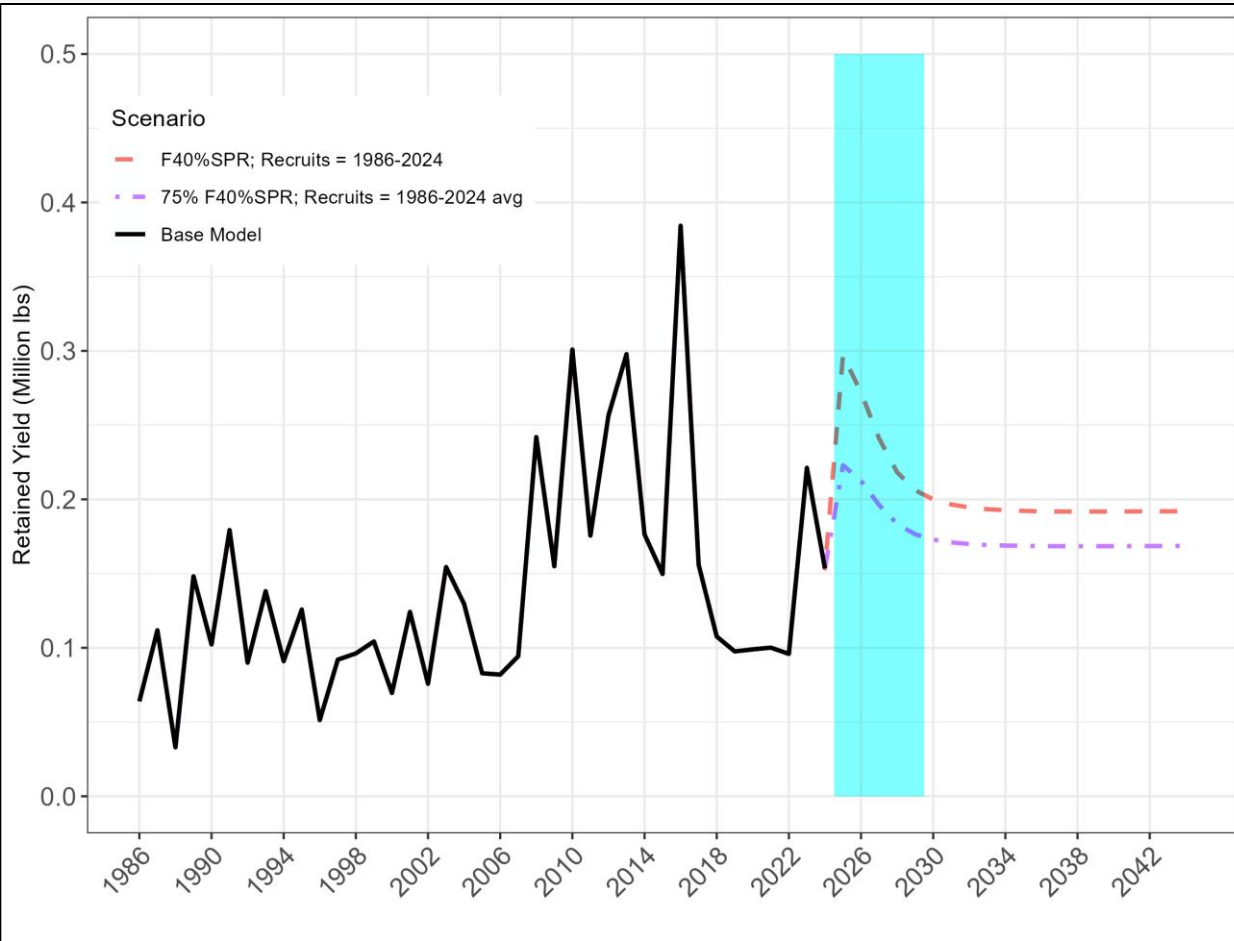
Constant F Projection: F scenarios and SSB



- $F_{40\%SPR} = 0.143 \text{ yr}^{-1}$
- $F_{75\%_F40\%SPR} = 0.107 \text{ yr}^{-1}$



Constant F Projection: Retained Yield



Constant F Projection: Retained Yield (lbs.)

F _{40%SPR} Short-Term Projections						75% F _{40%SPR} Short-Term Projections				
Year	Age-0 Recruits	F	SSB	Retained Yield	Retained Num	Age 0 Recruits	F	SSB	Retained Yield	Retained Num
2025	2,148.93	0.143	1,098.32	297,113	113,184	2,148.99	0.107	1,098.320	222,991	84,952
2026	2,148.93	0.143	969.886	271,928	101,506	2,148.99	0.107	1,007.860	212,411	79,193
2027	2,148.93	0.143	881.159	241,041	90,556	2,148.99	0.107	949.931	196,231	73,330
2028	2,148.93	0.143	815.686	218,226	83,937	2,148.99	0.107	905.067	183,405	69,820
2029	2,148.93	0.143	774.938	206,147	80,493	2,148.99	0.107	875.921	176,444	68,038
2030	2,148.93	0.143	750.504	199,935	78,533	2,148.99	0.107	858.048	172,893	67,024
2031	2,148.93	0.143	735.557	196,535	77,340	2,148.99	0.107	847.108	170,993	66,401
2032	2,148.93	0.143	725.981	194,541	76,570	2,148.99	0.107	840.104	169,900	65,997
2033	2,148.93	0.143	719.804	193,357	76,073	2,148.99	0.107	835.620	169,262	65,734
2034	2,148.93	0.143	715.792	192,653	75,751	2,148.99	0.107	832.742	168,885	65,562

Units:

Recruits in thousands

SSB in metric tons

Retained Yield in pounds

Retained Num in numbers



Thank You!

