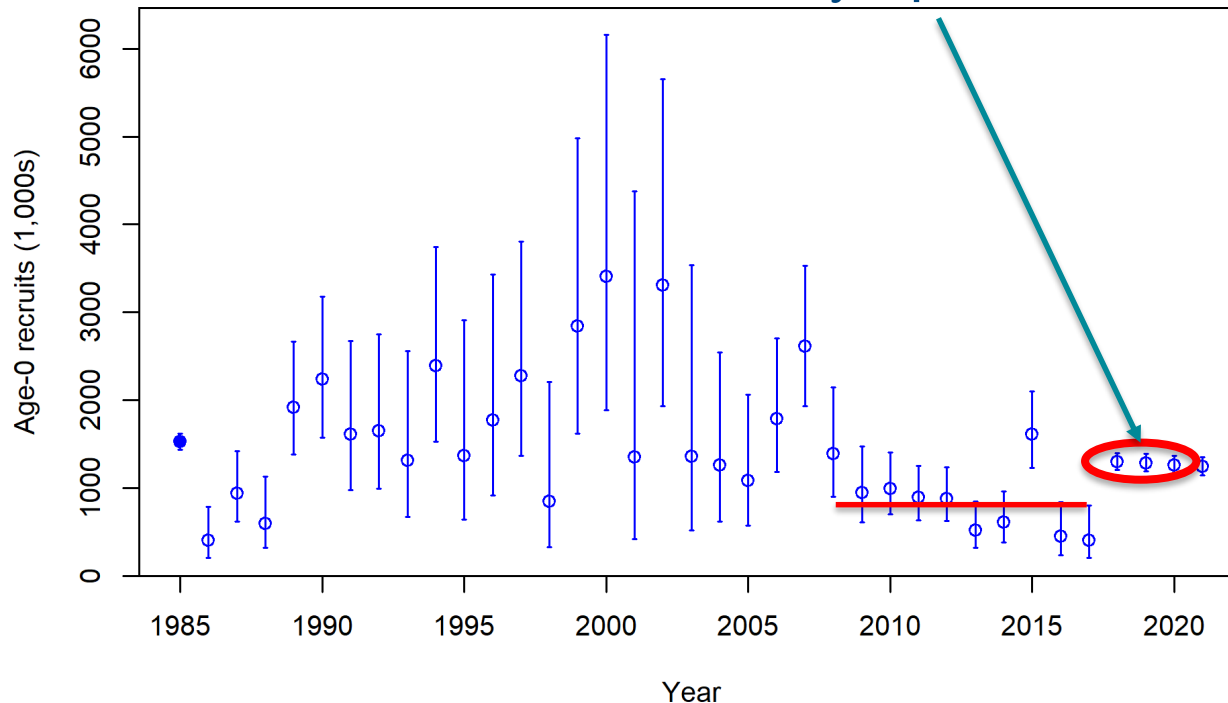# SEDAR 68 – Gulf Scamp (*Mycteroperca phenax*)

Operational Assessment - Additional Projections

SSC Review

March 7-9, 2023

NOAA FISHERIES
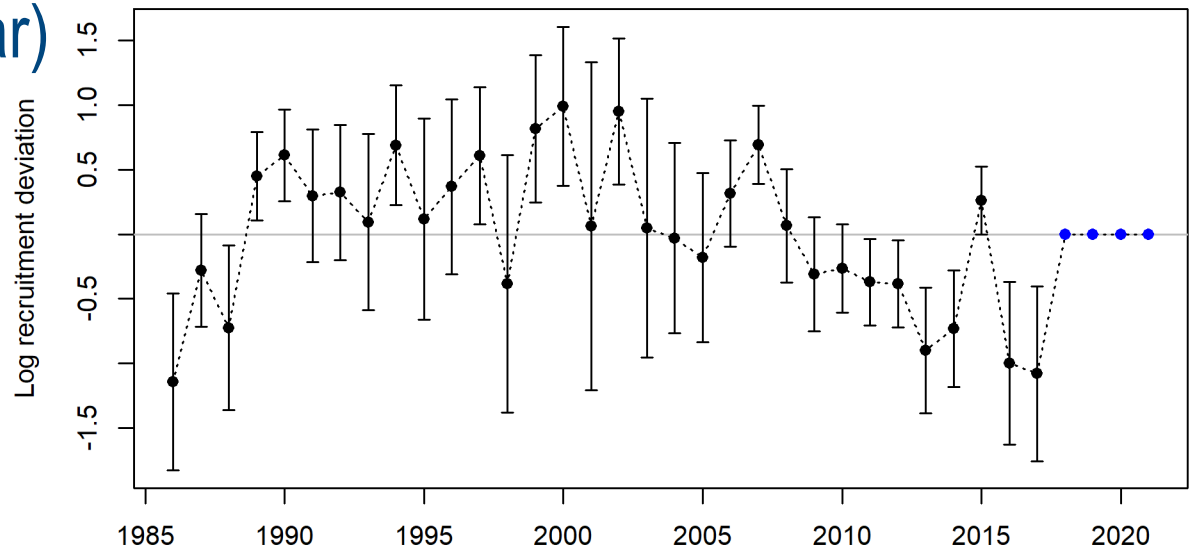
SEFSC

Gulf Branch

Recruitment assumption for OFL projections

- The SSC recommended using mean recruitment over the last 10 years of estimated recruitment (2008-2017)
  - Model-derived estimates from the spawner-recruit curve between 2018 and 2020 were overly optimistic in Base Model

Recent recruitment modeling issue

- SEDAR 68 OA Base Model did not estimate recruitment deviations through terminal year (2020); stopped in 2017 due to lag in encountering Scamp in data sets

  - For 2018-2020, Stock Synthesis predicted recruitment estimates from the spawner-recruit curve (~1.2 million Scamp each year)
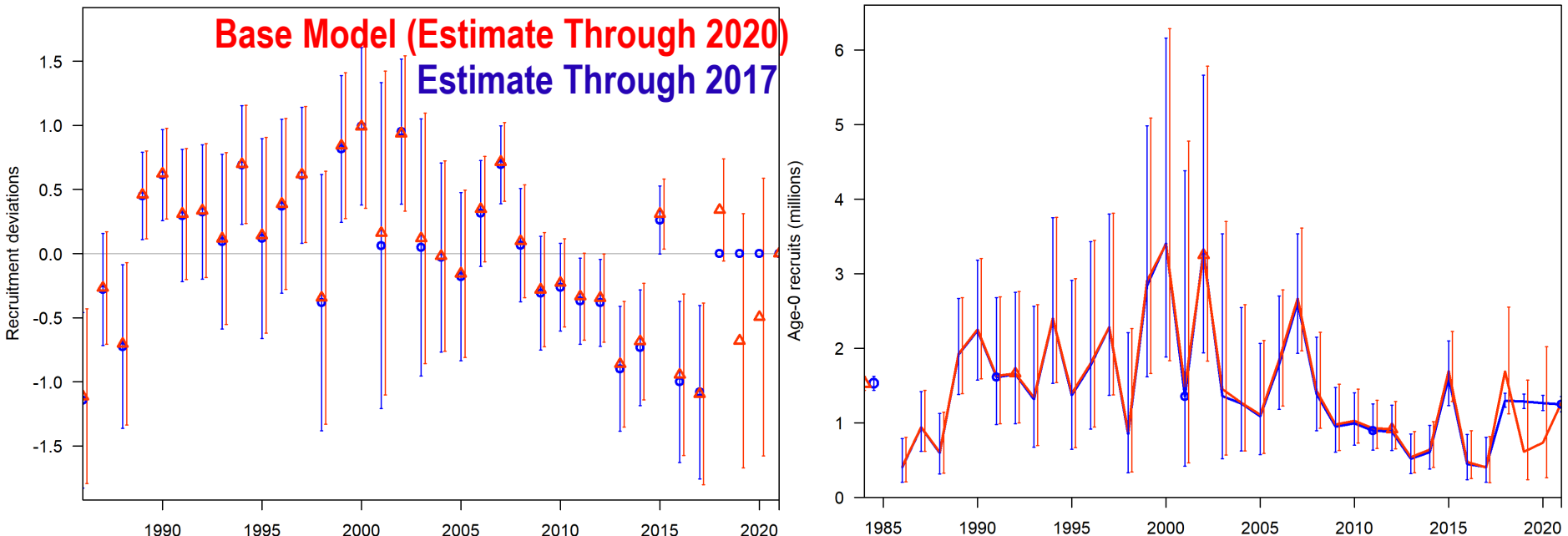
Recent recruitment difference

- When projecting with recent mean recruitment, the SEDAR 68 OA Base Model did not converge
  - For 2018-2020, Stock Synthesis replaced recruitment estimates with the recent mean, which was much lower

- Estimated parameters differed, with 12 parameters differing by ≥ 5% from base model estimates
  - Recruitment deviations
  - 2020 fishing mortality for recreational fleets
  - Charter/private length-based selectivity

Modification for recent recruitment

- For OFL projection, the SEDAR 68 OA Base Model was modified to estimate recruitment deviations through 2020 to enable projections

  - 2019 and 2020 estimates highly uncertain

Projection settings

Parameter	Value	Comment
Relative F	Average from 2018-2020	Average relative fishing mortality (apical F) over terminal three years of model
Selectivity	Average from 2018-2020	Fleet specific selectivity estimated over terminal three years of model
Retention	Average from 2018-2020	Fleet specific retention estimated over terminal three years of model
Recruitment (catch advice)	Average from 2008-2017	Average recruitment over the last ten years where estimated
Interim Landings (2021-2022)	29.14/27.98 mt (Comm. Vertical Line); 30.13/27.02 mt (Comm. Longline); 96.07/75.24 1,000 of fish (Charter Private); 3.13/2.46 1,000s of fish (Headboat)	Landings provided for 2021; For 2022, used 3-year average of landings (2019-2021)
Allocation ratio	None	

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Start 2023: OFL projection (mp gutted weight)

Year	Recr (1,000s)	F	F/ FSPR40	SSB	SSB/ SSBSPR40*	SSB/ MSST*	SSB ratio	OFL	OY
2023	900	0.117	1	1,076	0.877	1.169	0.285	0.286	0.257
2024	900	0.117	1	1,027	0.837	1.116	0.272	0.276	0.248
2025	900	0.117	1	991	0.808	1.077	0.263	0.267	0.241
2026	900	0.117	1	966	0.787	1.050	0.256	0.261	0.235
2027	900	0.117	1	949	0.773	1.031	0.252	0.256	0.231
2028	900	0.117	1	936	0.762	1.016	0.248	0.253	0.228

- Assuming recent mean recruitment where:

  - MSY proxy = yield when fishing at 40%SPR ($F_{40\%SPR}$)

  - OY = Optimum Yield = 0.9 * MSY proxy

- Lower recruitment translates to lower SSB and status ratios

*Benchmarks unchanged from the long-term projection deriving recruitment from the spawner-recruit curve

Start 2024: OFL projection (mp gutted weight)

Year	Recr (1,000s)	F	F/ FSPR40	SSB	SSB/ SSBSPR40*	SSB/ MSST*	SSB ratio	OFL	OY
2024	900	0.117	1	977	0.796	1.061	0.259	0.262	0.236
2025	900	0.117	1	947	0.772	1.029	0.251	0.256	0.230
2026	900	0.117	1	929	0.757	1.009	0.246	0.251	0.226
2027	900	0.117	1	917	0.747	0.997	0.243	0.248	0.223
2028	900	0.117	1	909	0.741	0.988	0.241	0.246	0.221

- Starting projections in 2024

- Assuming landings in 2023 same as 2022

  - Based on 2019-2021 average

*Benchmarks unchanged from the long-term projection deriving recruitment from the spawner-recruit curve

Start 2024 & CP update: OFL projection (mp gutted weight)

Year	Recr (1,000s)	F	F/ FSPR40	SSB	SSB/ SSBSPR40*	SSB/ MSST*	SSB ratio	OFL	OY
2024	900	0.117	1	1,009	0.822	1.096	0.268	0.271	0.244
2025	900	0.117	1	974	0.794	1.059	0.258	0.263	0.237
2026	900	0.117	1	952	0.776	1.034	0.252	0.257	0.232
2027	900	0.117	1	936	0.763	1.017	0.248	0.253	0.228
2028	900	0.117	1	925	0.754	1.005	0.245	0.250	0.225

- Starting projections in 2024 and updated 2021 charter-private landings

  - Landings reduced from 96,068 to 83,595 fish (data correction for charter in West Florida in all waves of 2021)

  - Updated 2019-2021 average landings

*Benchmarks unchanged from the long-term projection deriving recruitment from the spawner-recruit curve

Start 2024 & CP update: ABC projection (mp gutted weight)

Year	Recr (1,000s)	F	F/ FSPR40	SSB	SSB/ SSBSPR40*	SSB/ MSST*	SSB ratio	Yield
2024	900	0.088	0.75	1,009	0.822	1.096	0.268	0.203
2025	900	0.088	0.75	1,002	0.817	1.089	0.266	0.203
2026	900	0.088	0.75	1,004	0.818	1.091	0.266	0.203
2027	900	0.088	0.75	1,009	0.822	1.096	0.268	0.204
2028	900	0.088	0.75	1,015	0.827	1.103	0.269	0.205

- Assuming recent mean recruitment where:
  - MSY proxy = yield when fishing at 40%SPR ($F_{40\%SPR}$)
  - ABC = 0.75 of $F_{40\%SPR}$

*Benchmarks unchanged from the long-term projection deriving recruitment from the spawner-recruit curve

Questions?

Thank you for your attention!