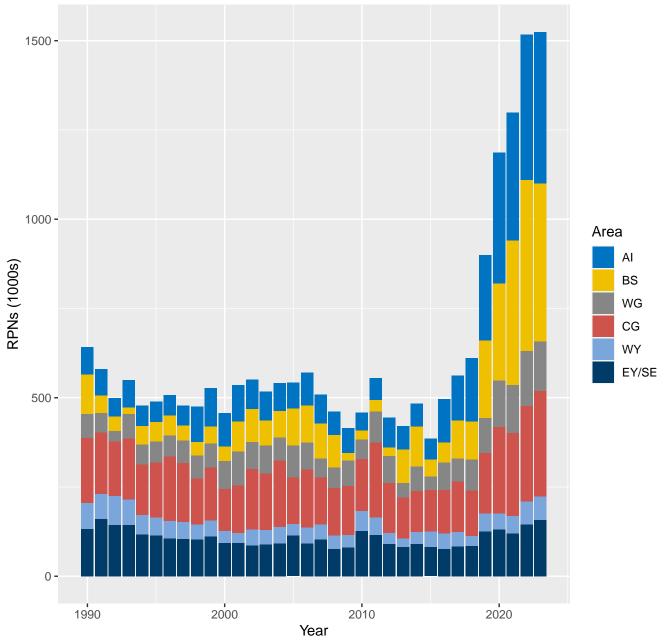
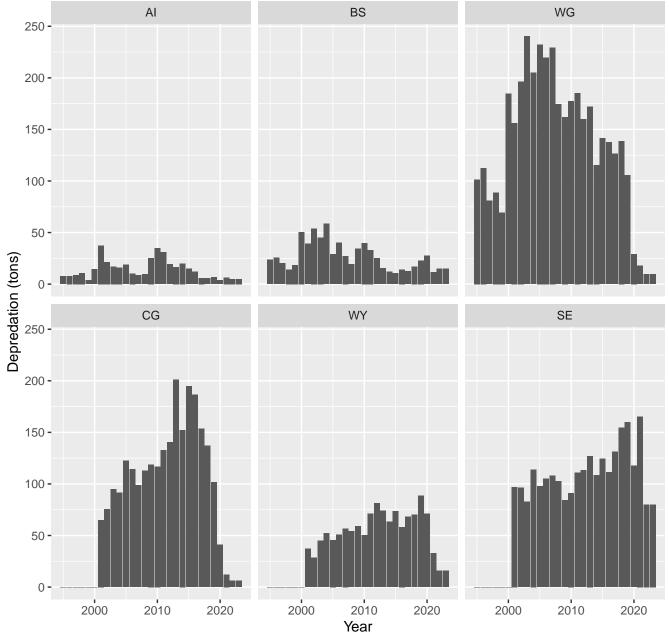


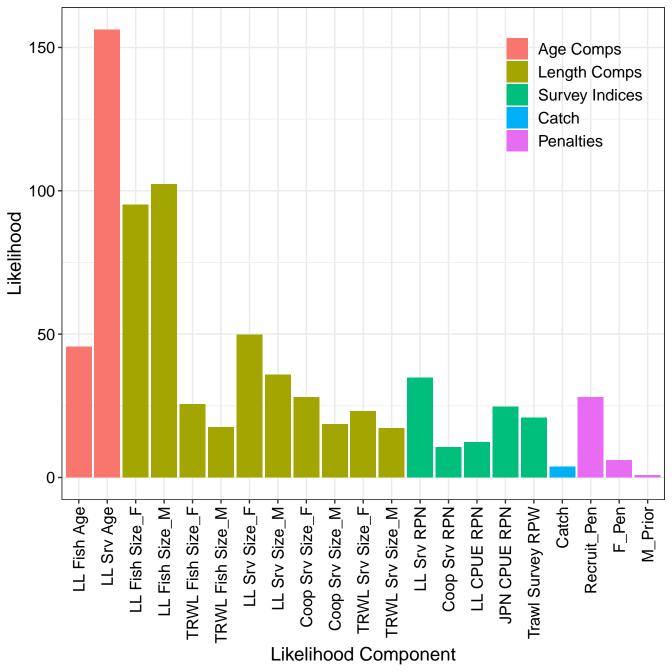
AFSC Longline Survey Relative Population Numbers (RPNs) by NPFMC Area

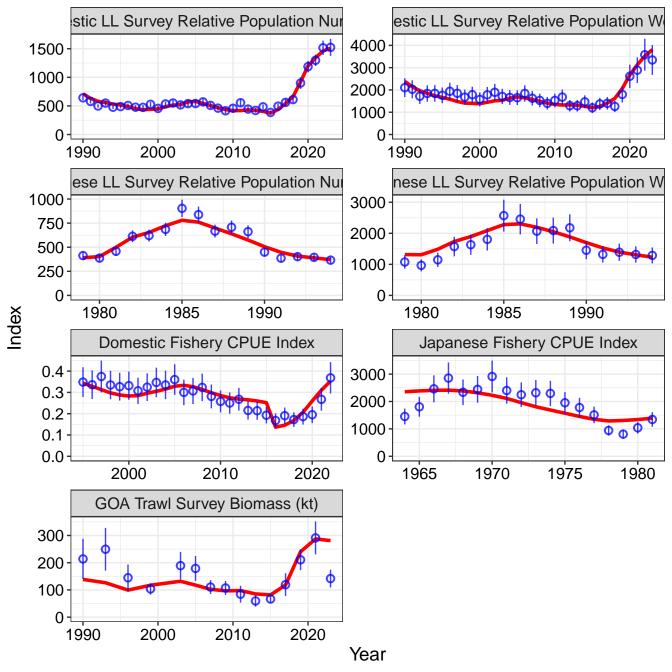


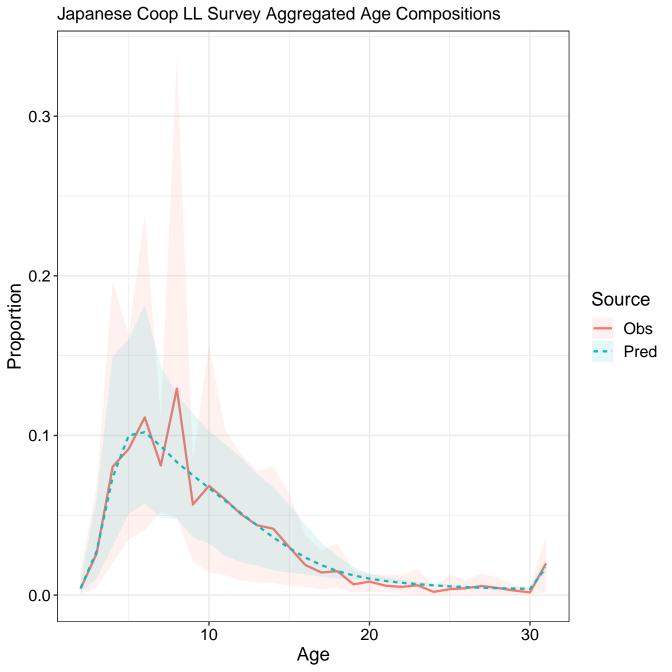
Impact of Whale Depredation Corrections on Longline Survey RPNs 1100 -900 -RPNs (1000s) Whale Correction Corrected 700 -Uncorrected 500 -300 -2000 2010 2020 1990 Year

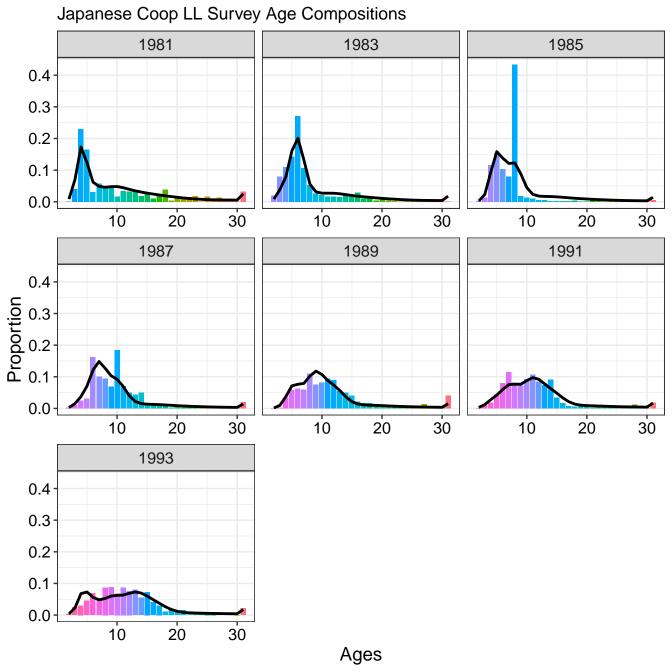
Fishery Whale Depredation

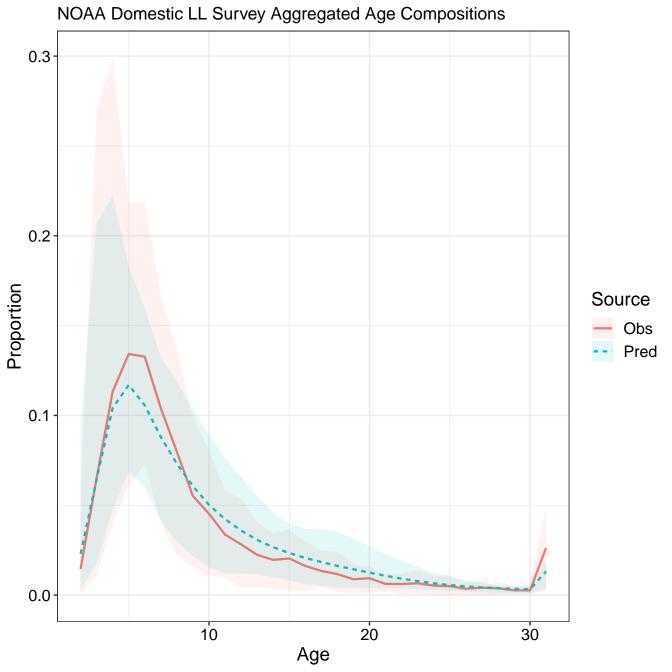


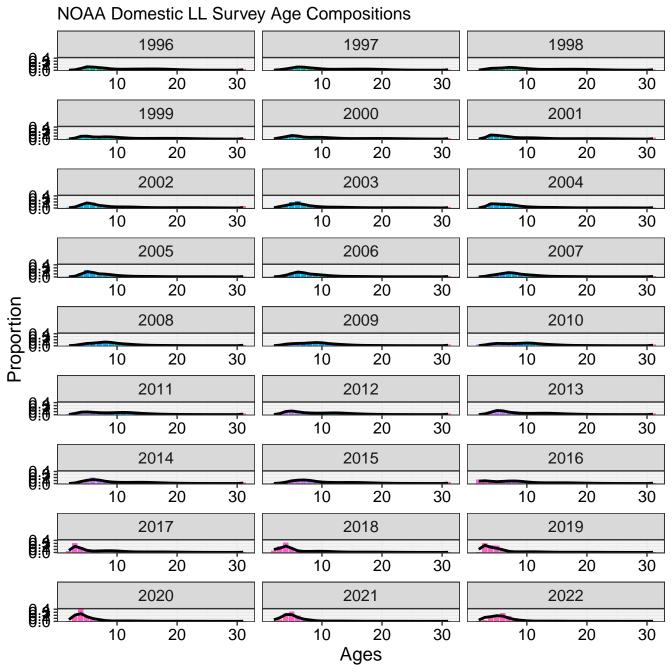


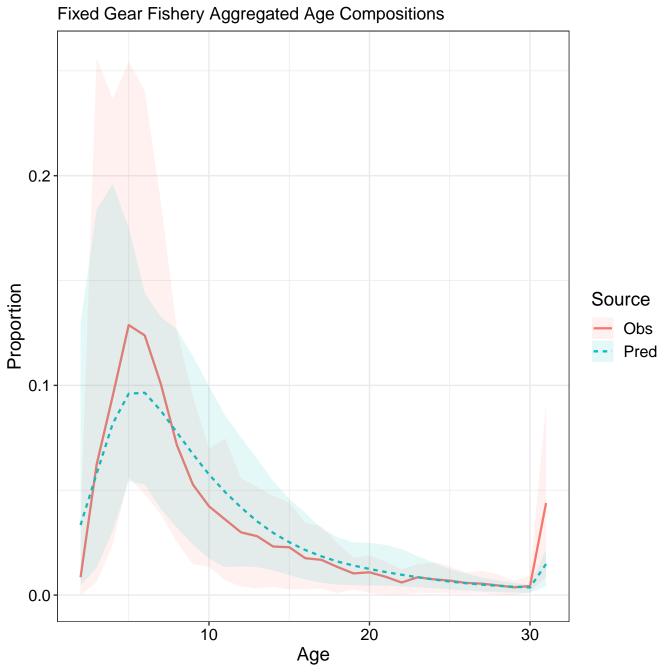


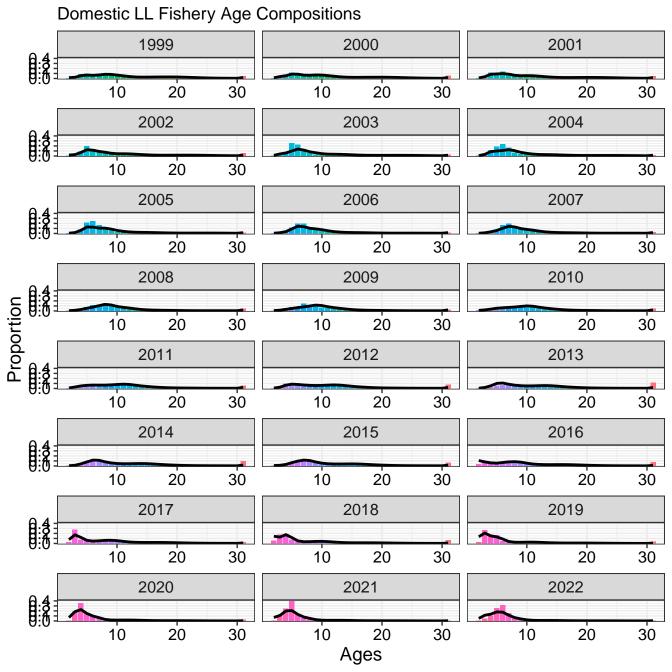


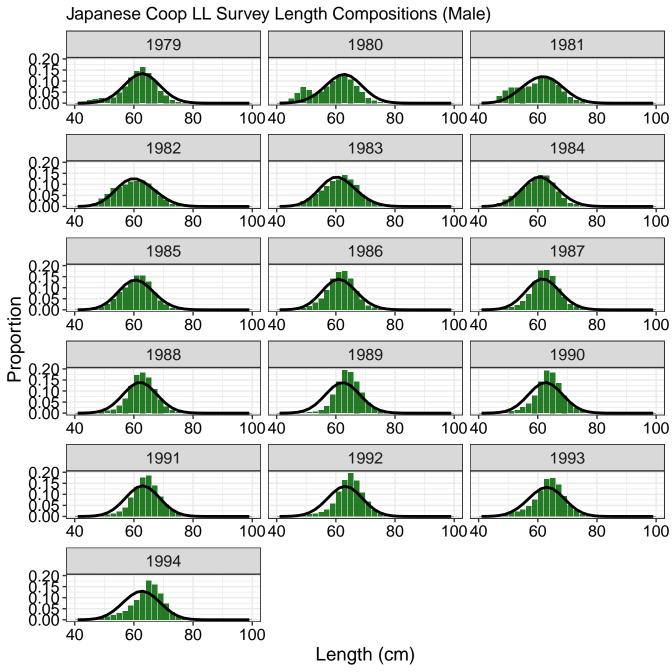


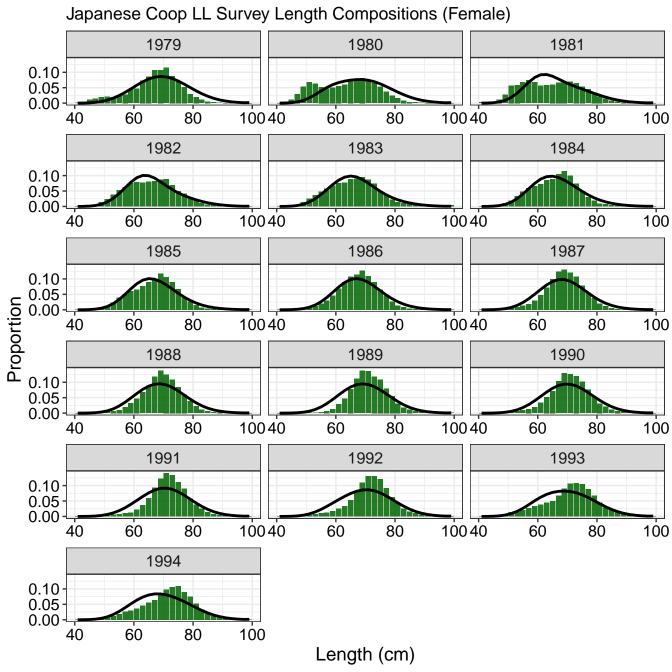


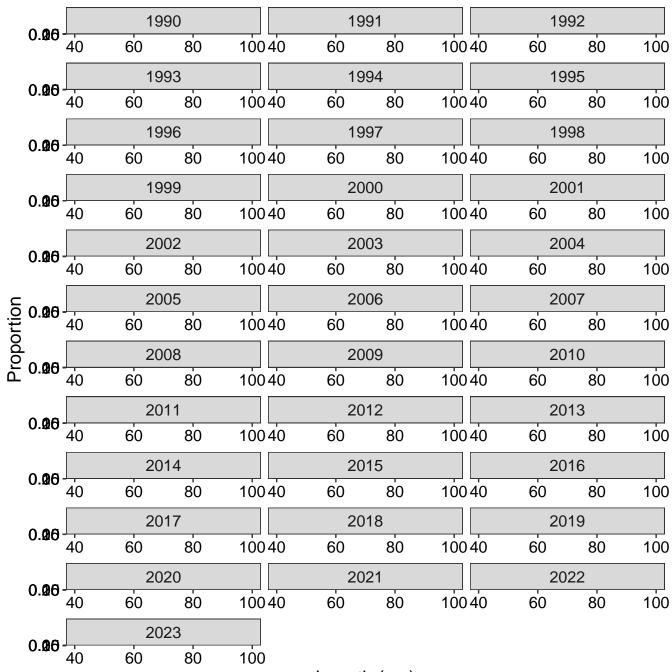


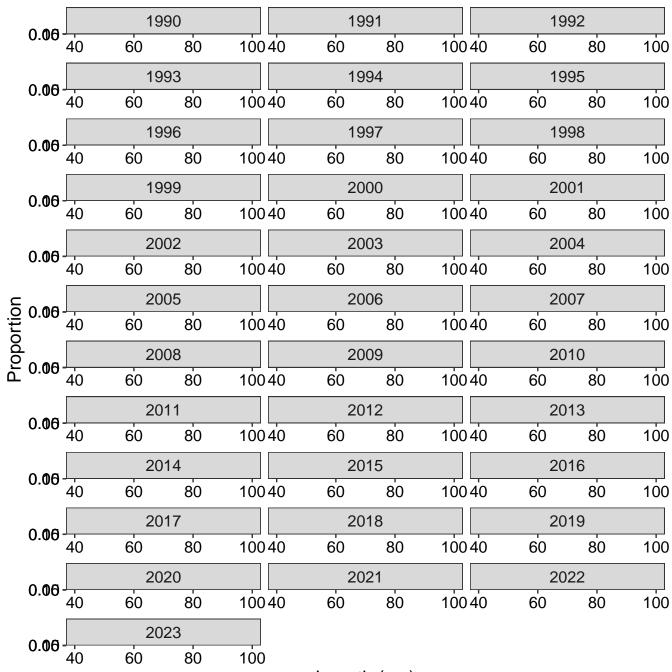




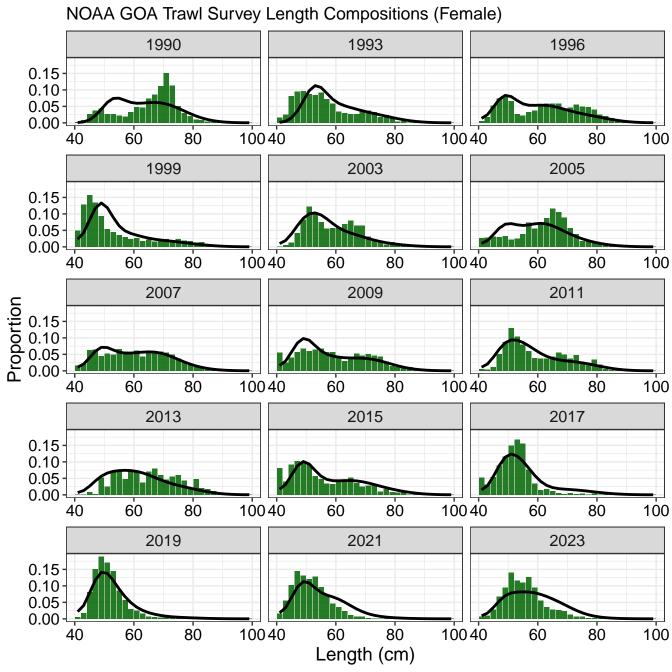


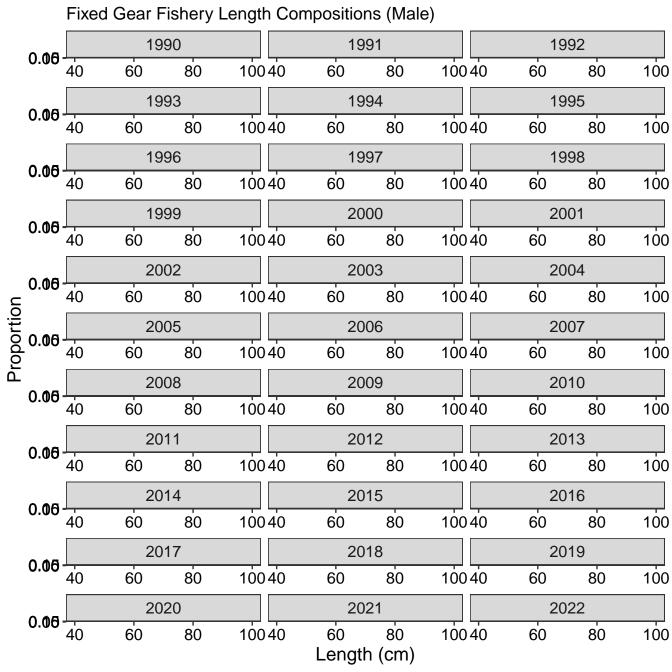


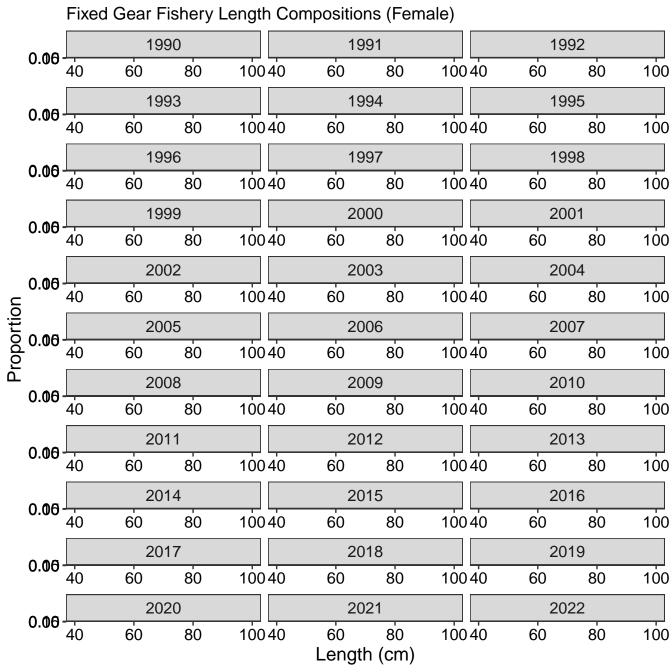


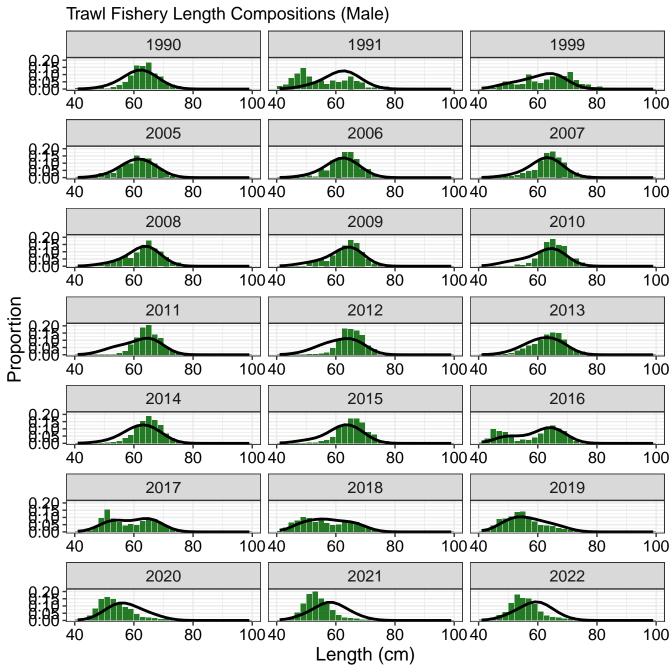


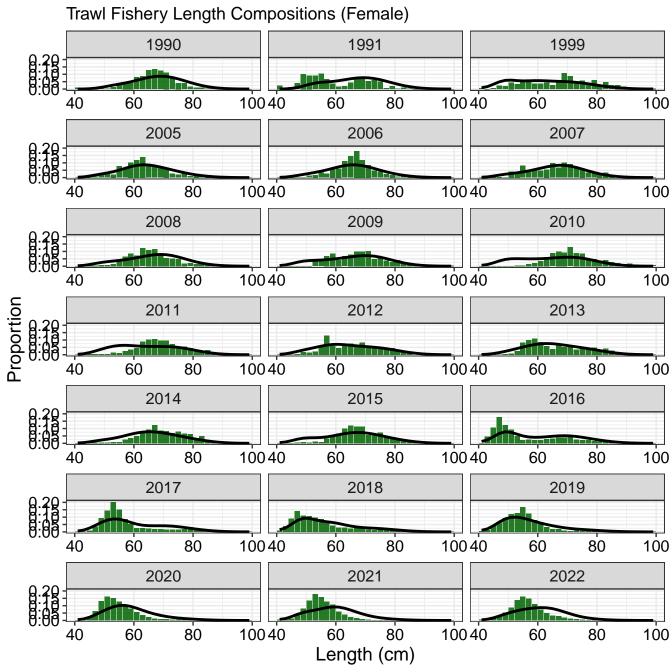
NOAA GOA Trawl Survey Length Compositions (Male) 0.20 0.15 0.10 0.05 -0.00 -0.20 0.15 0.10 0.05 0.00 Proportion 0.20 0.15 0.10 0.050.00 -0.20 0.15 0.10 0.05 0.00-0.20 0.15 0.10 0.05 -0.00 -Ages



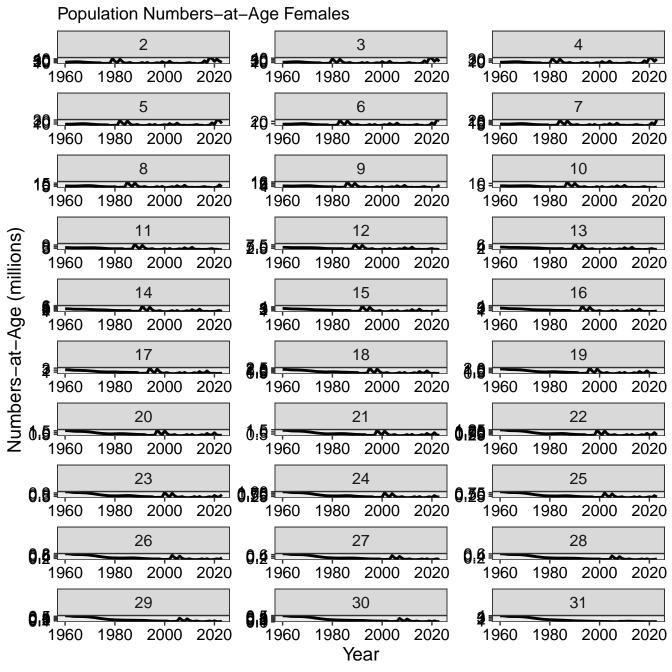


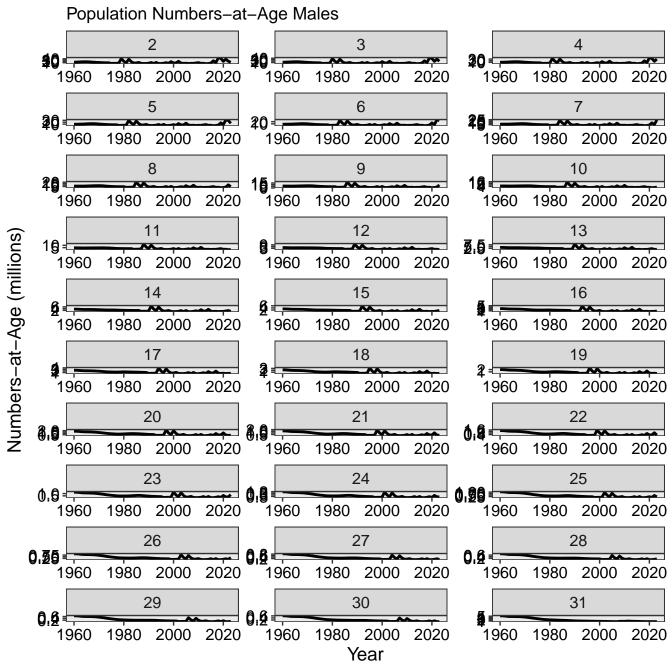






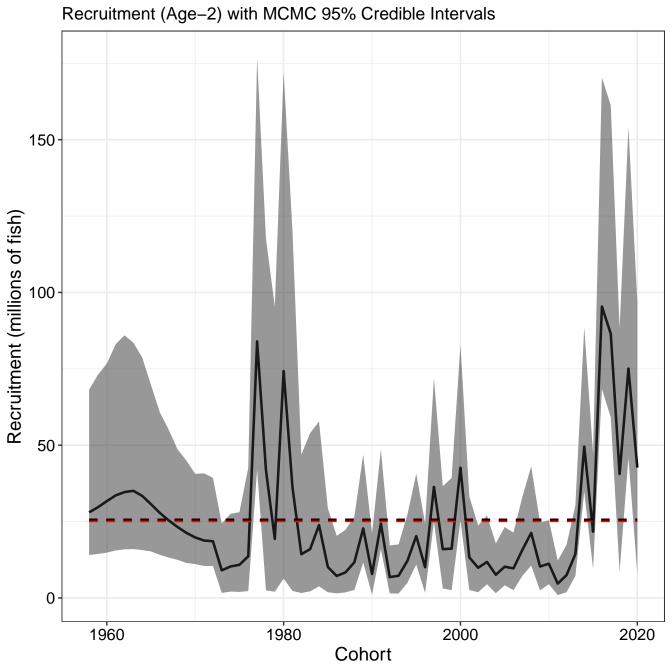
Biomass and SSB with MCMC 95% Credible Intervals **Biomass** Spawning Stock Biomass 1200 400 900-300 Biomass (kt) 600 200 B40% 300-100-B35% 1960 1980 2000 2020 1960 1980 2000 2020 Year



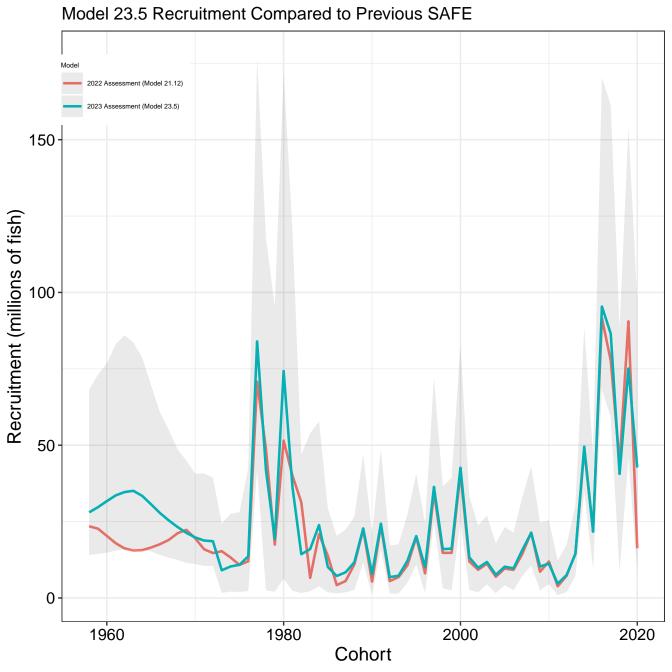


Population Proportion of Abundance by Age and Sex Sex Female Male

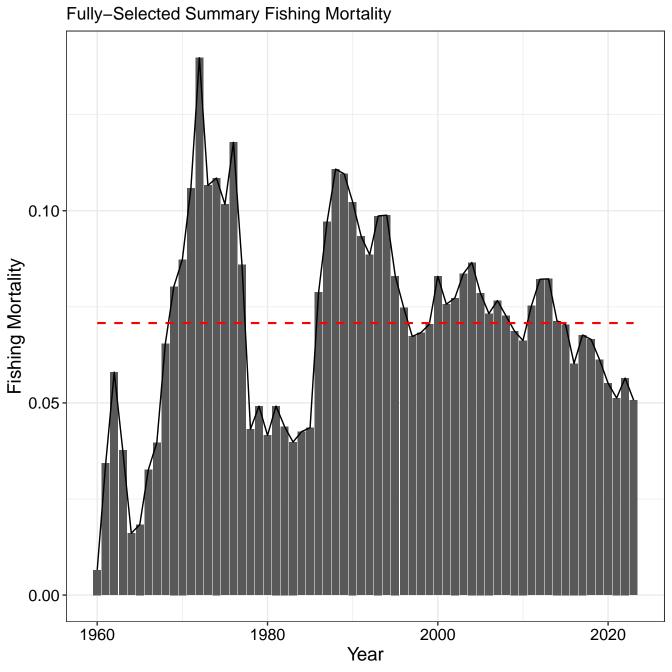




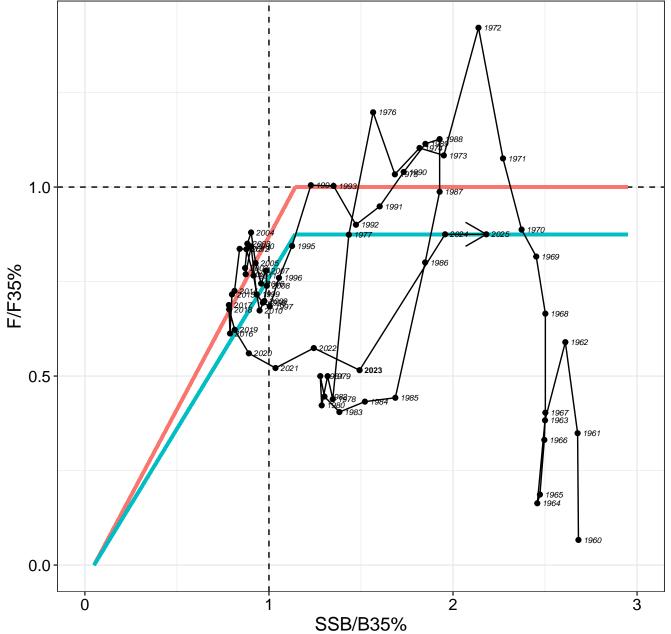
SSB and Subsequent Year Class Size 75-Age-2 Recruits (millions) 50-2018 1966 1966 1967 1972 1972 1970 1970 1970 25-2015 200895 1976 1982 1983 1975₁₉₇₄ 1988 1990 1973 ₁₉ 20122004 199₈992 SSB (kt)

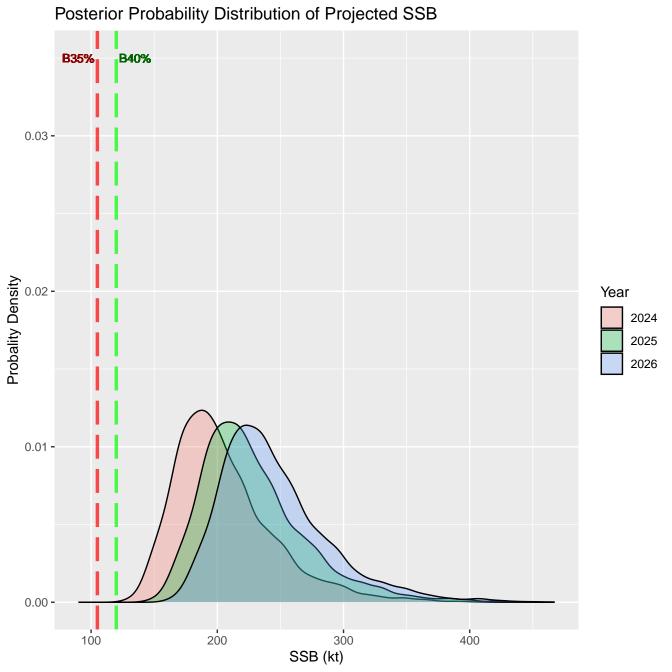


Estimated Selectivity for Each Modeled Fleet ed Gear Fishery (1960–199 ted Gear Fishery (1995–201 Fixed Gear Fishery (2016+) 1.00 0.75 0.50 0.25 0.00 Domestic LL Survey (1990- A Domestic LL Survey (201 Japanese LL Survey 1.00 Sectivity 0.75 0.50 0.25 0.00 10 20 30 NOAA GOA Trawl Survey Trawl Fishery 1.00 Sex 0.75 Female 0.50 Male 0.25 0.00 10 20 30 10 20 30 Ages

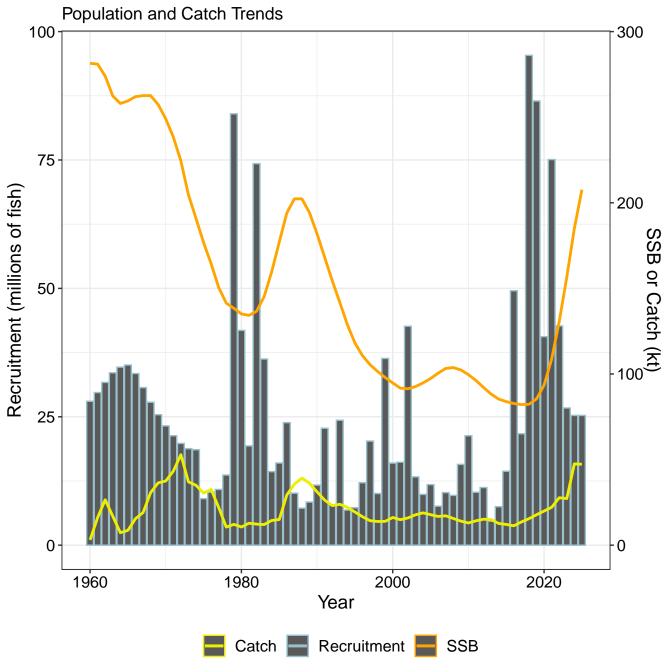


Phase–Plane Diagram of Management Trajectory

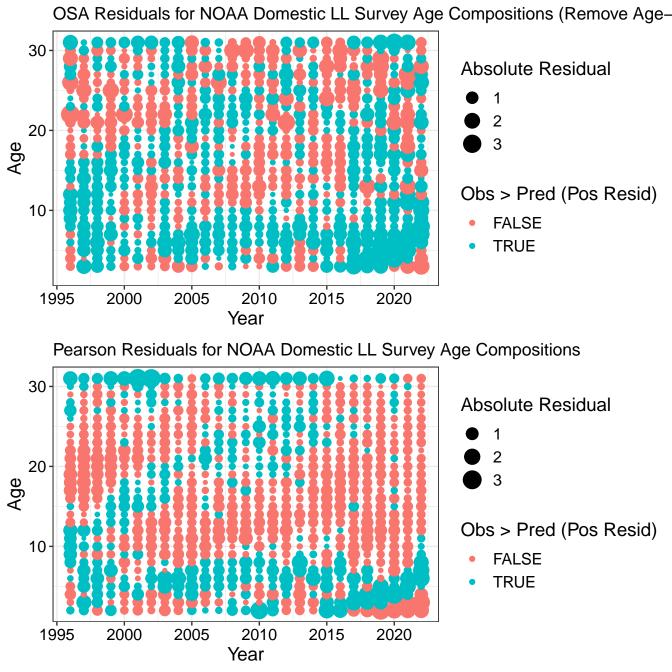




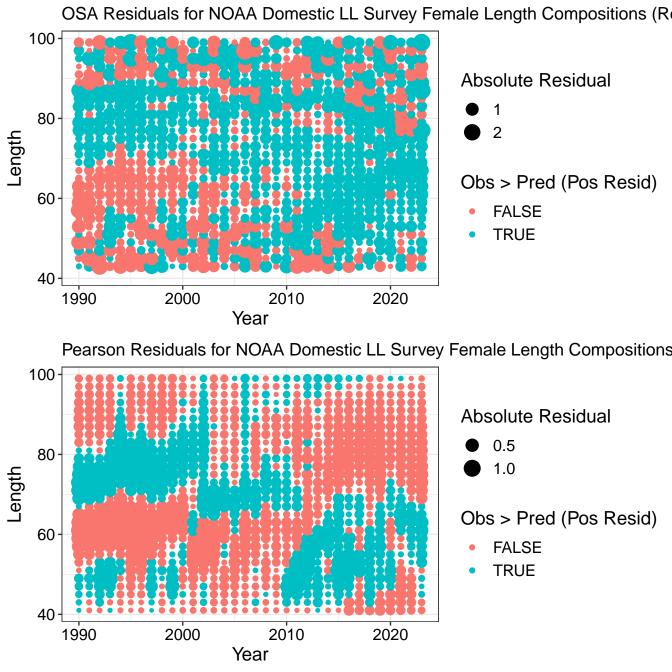
Contribution to 2024 SSB by Year Class 1.00 0.75 **Proportion Mature** 0.50 0.25 0.00 2024 Female Abundance (millions) SSB (kt) 0.25 0.20 Proportion SSB 0.15 0.10 0.05 0.00 Year Class

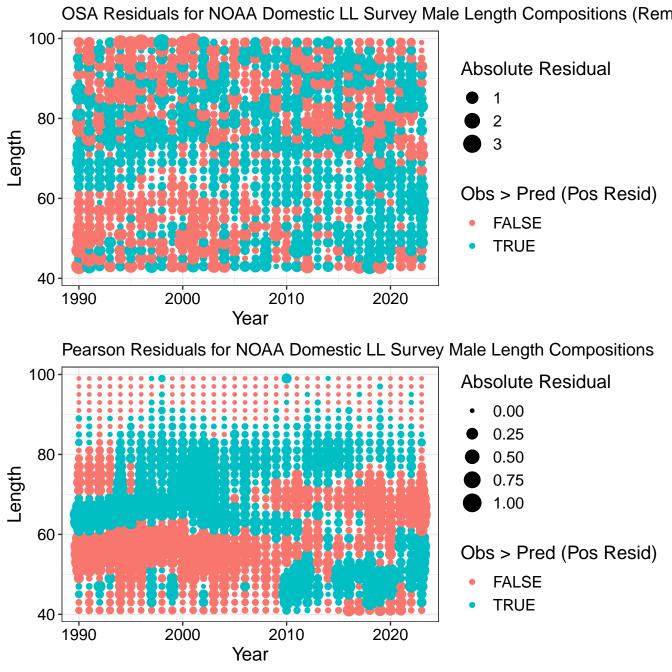


OSA Residuals for Fixed Gear Fishery Age Compositions (Remove Age-2) 30 Absolute Residual 20 Age Obs > Pred (Pos Resid) 10 **FALSE TRUE** 2020 2000 2005 2010 2015 Year Pearson Residuals for Fixed Gear Fishery Age Compositions 30 Absolute Residual 20 2 Age Obs > Pred (Pos Resid) 10-**FALSE TRUE** 2015 2000 2005 2010 2020 Year

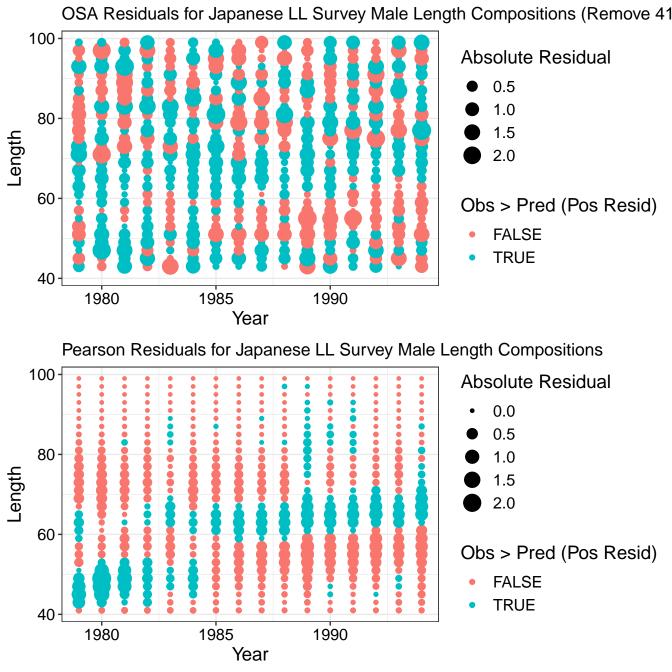


OSA Residuals for Japanese LL Survey Age Compositions (Remove Age-2) Absolute Residual 30 20 10-Obs > Pred (Pos Resid) **FALSE TRUE** 1985 1990 Year Pearson Residuals for Japanese LL Survey Age Compositions 30 **Absolute Residual** 20 Age Obs > Pred (Pos Resid) 10-**FALSE TRUE** 1985 1990 Year

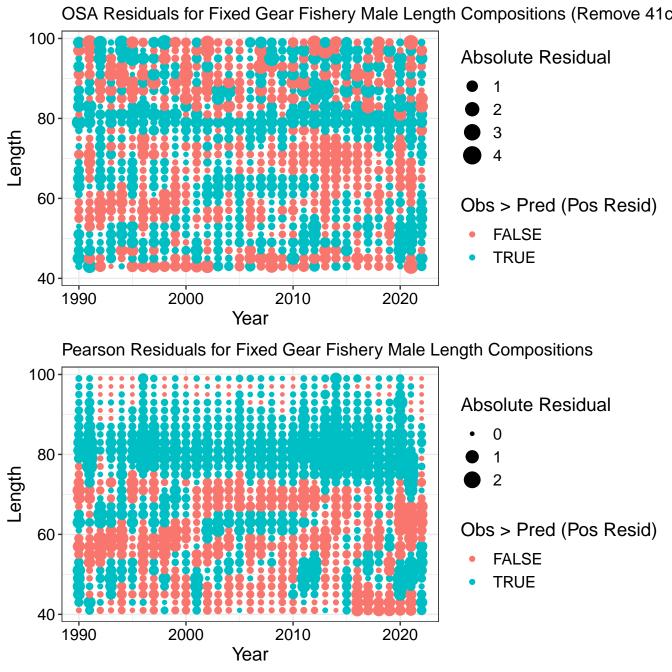




OSA Residuals for Japanese LL Survey Female Length Compositions (Remove 100-Absolute Residual 0.5 1.0 80 1.5 Length 2.0 2.5 60-Obs > Pred (Pos Resid) **FALSE TRUE** 40 1980 1985 1990 Year Pearson Residuals for Japanese LL Survey Female Length Compositions 100-Absolute Residual 0.5 1.0 80 1.5 Length 2.0 60 Obs > Pred (Pos Resid) **FALSE TRUE** 40 1980 1985 1990 Year

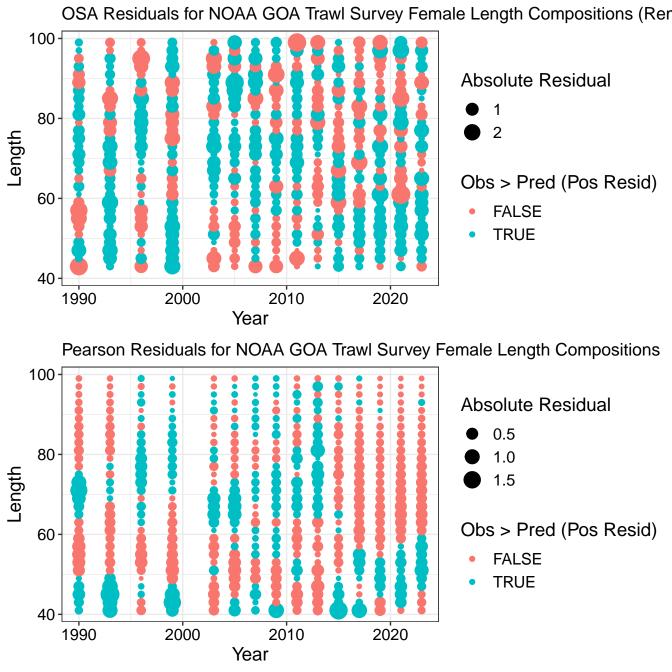


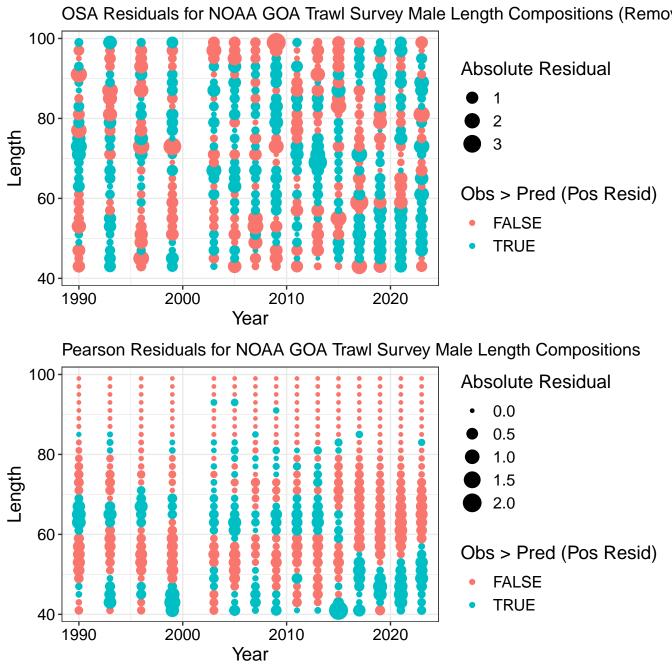
OSA Residuals for Fixed Gear Fishery Female Length Compositions (Remove 4 100-**Absolute Residual** 80-Length Obs > Pred (Pos Resid) 60 **FALSE TRUE** 40 2020 2000 2010 1990 Year Pearson Residuals for Fixed Gear Fishery Female Length Compositions 100 **Absolute Residual** 0.5 1.0 80 1.5 Length 2.0 60 Obs > Pred (Pos Resid) **FALSE TRUE** 40 -2020 2000 2010 1990 Year



OSA Residuals for Trawl Fishery Female Length Compositions (Remove 41cm B 100 **Absolute Residual** 80 Length Obs > Pred (Pos Resid) 60 **FALSE TRUE** 40 2000 2010 2020 1990 Year Pearson Residuals for Trawl Fishery Female Length Compositions 100 **Absolute Residual** 0.4 8.0 80 Length 1.2 1.6 60 Obs > Pred (Pos Resid) **FALSE TRUE** 40 1990 2000 2010 2020 Year

OSA Residuals for Trawl Fishery Male Length Compositions (Remove 41cm Bin 100-Absolute Residual 80 Length Obs > Pred (Pos Resid) 60 **FALSE TRUE** 40 2000 2010 2020 1990 Year Pearson Residuals for Trawl Fishery Male Length Compositions 100 **Absolute Residual** 0.0 0.5 80 1.0 Length 1.5 60 Obs > Pred (Pos Resid) **FALSE TRUE** 40 1990 2000 2010 2020 Year





Trends in Abundance by Age Group on the Domestic Longline Survey 750 **-**Number of Otoliths Aged Age Group 500 -2–11 12-21 22+ 250 **-**0 -1995 2000 2005 2010 2015 2020

Year