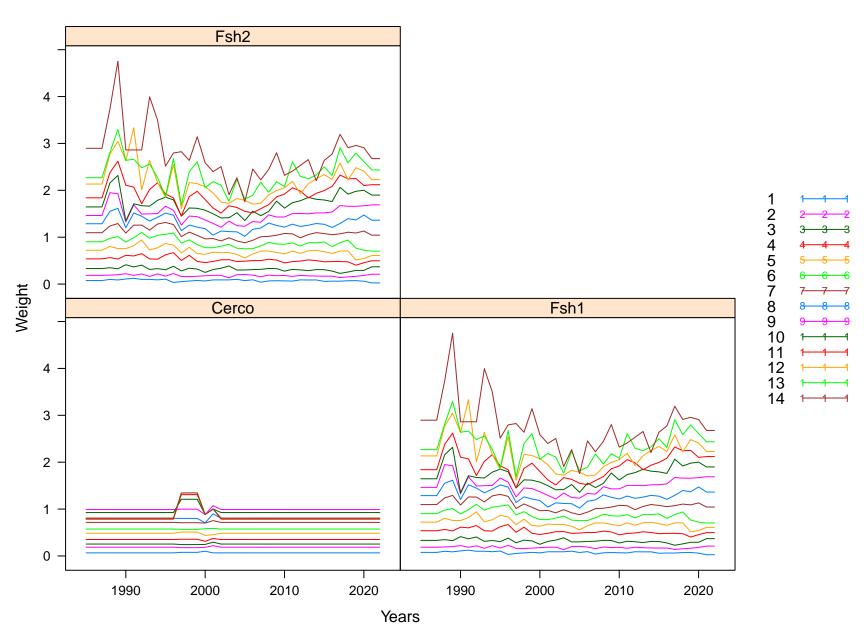
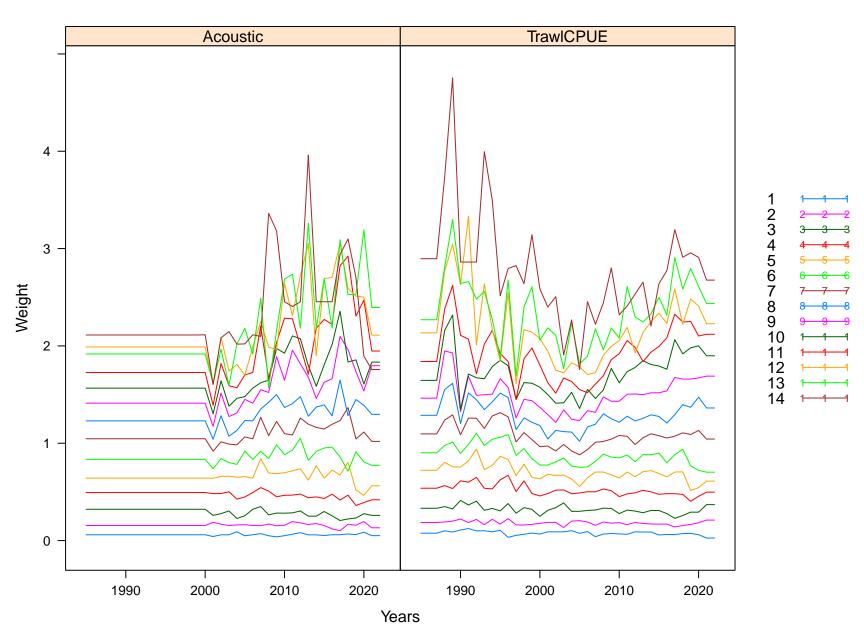
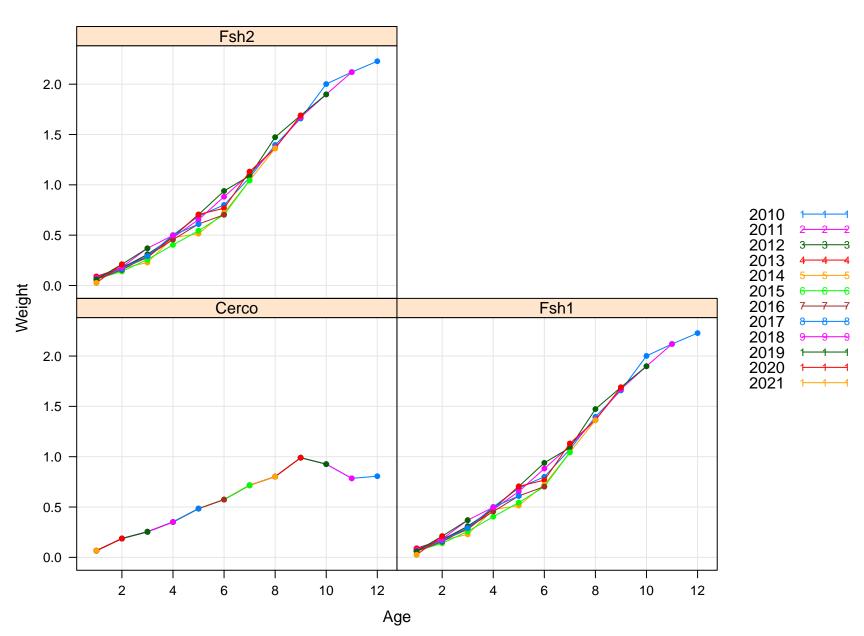
Weight at age in the fishery



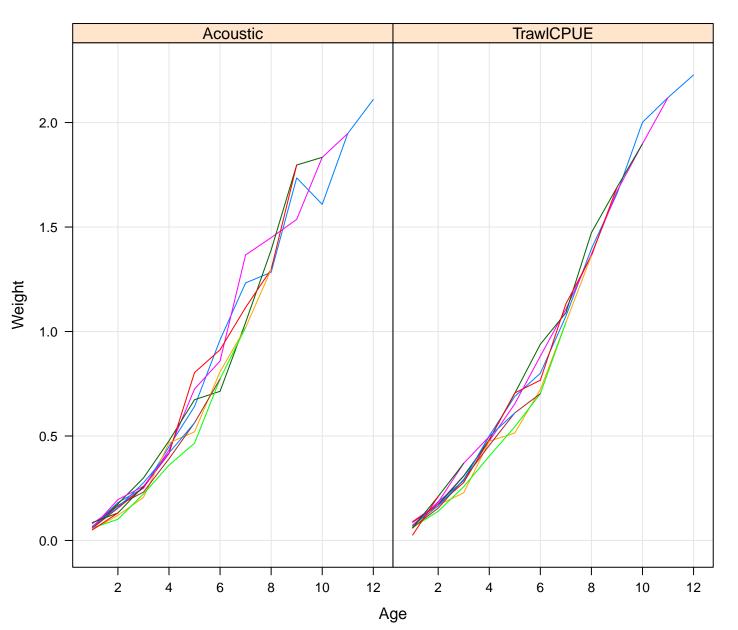
Weight at age in the survey



Weight at age by cohort in the fleet



Weight at age by cohort in the survey

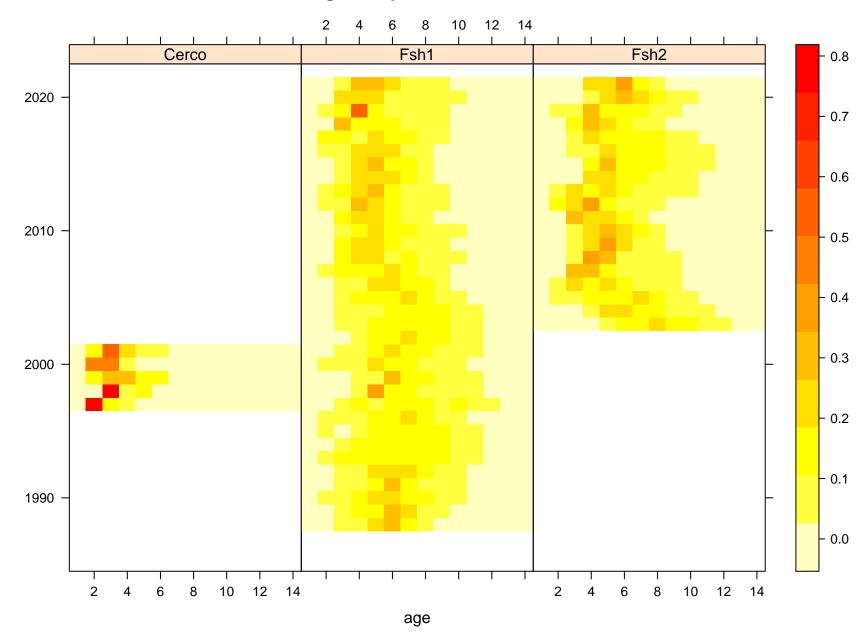




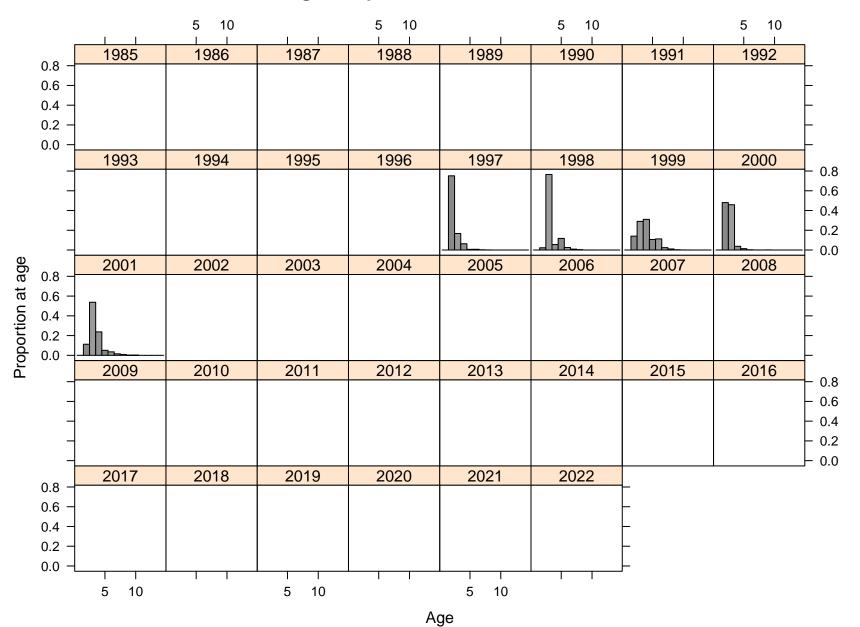
Age composition in fleets



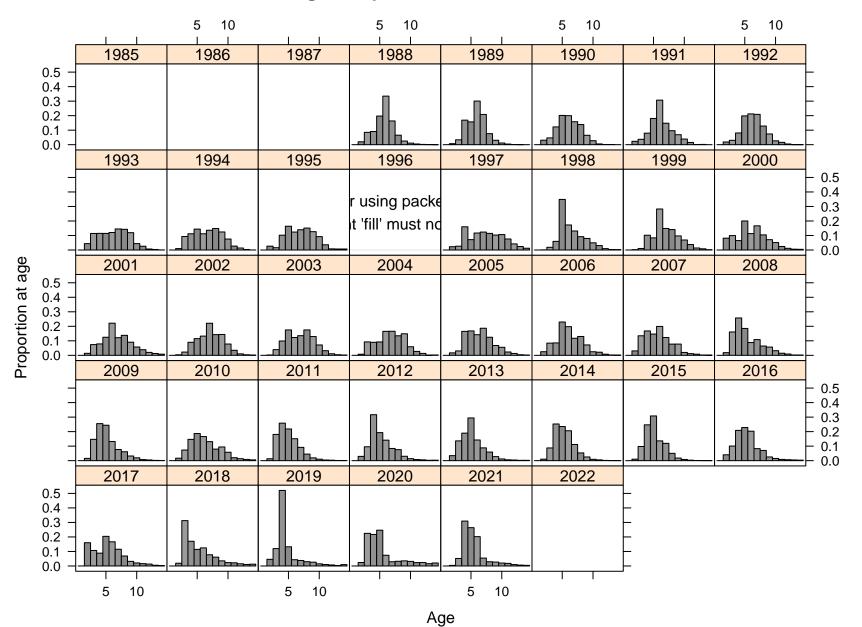
Age composition in fleets



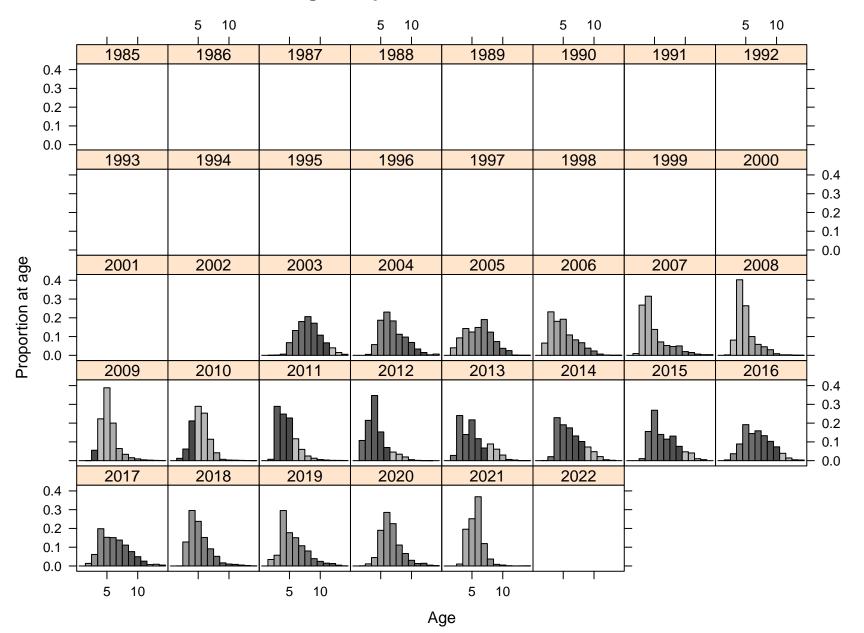
Age composition in fleets Cerco



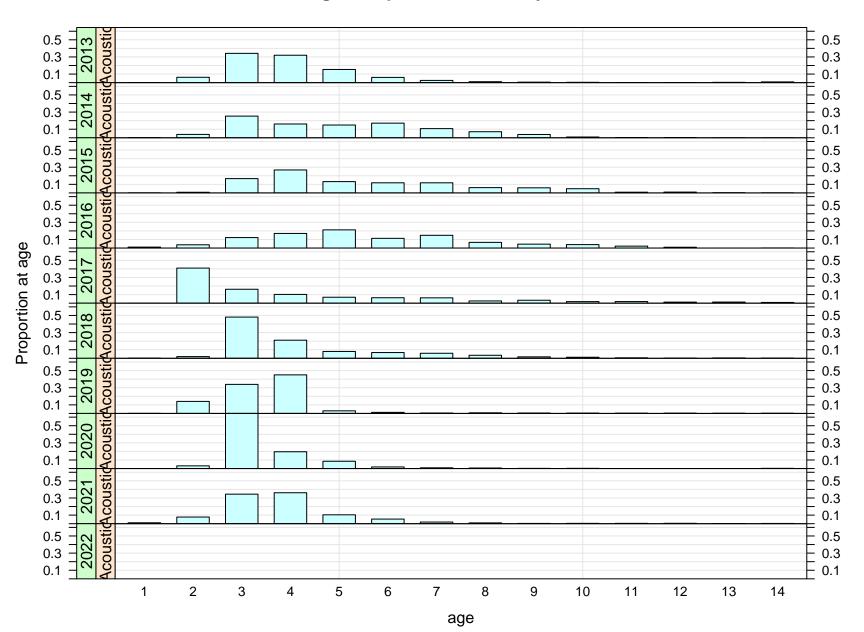
Age composition in fleets Fsh1



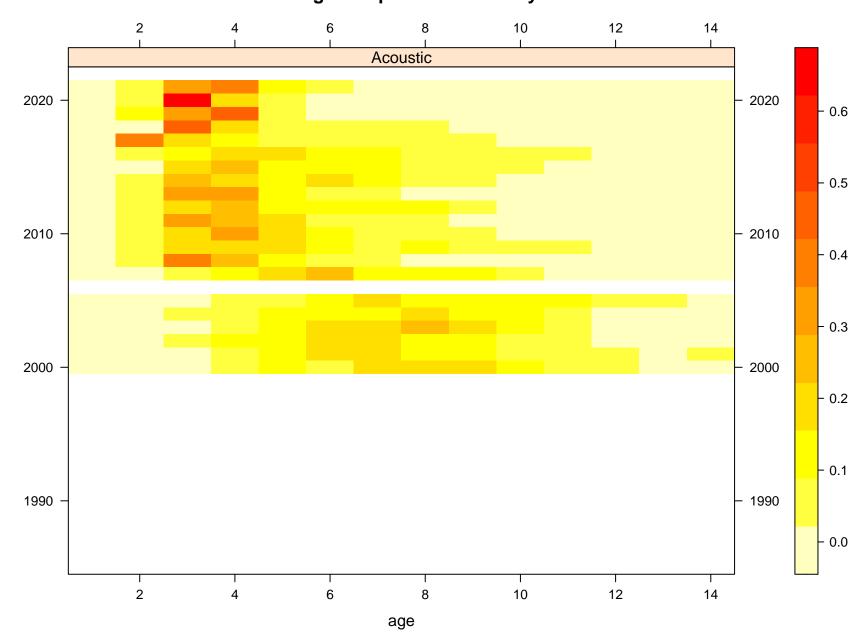
Age composition in fleets Fsh2



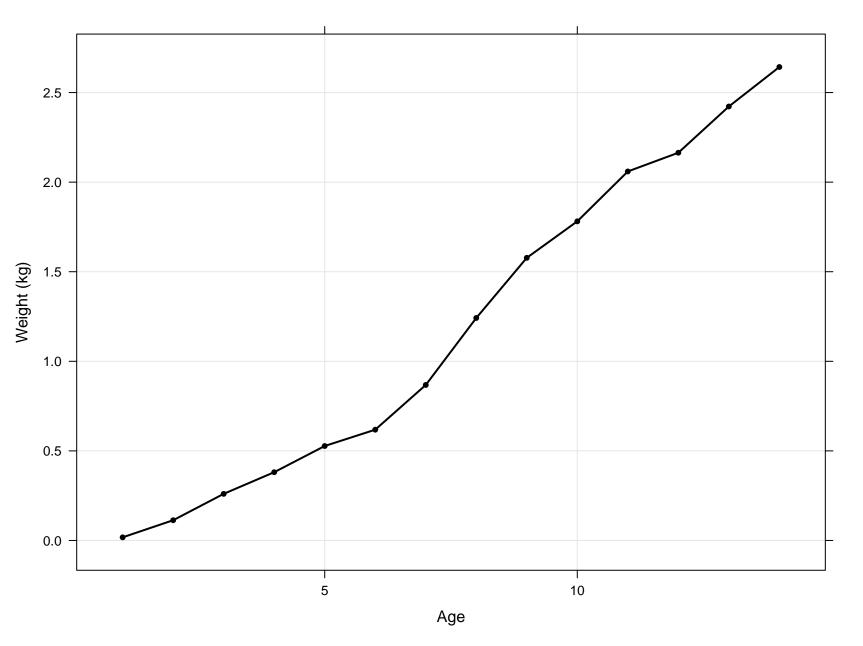
Age composition in surveys



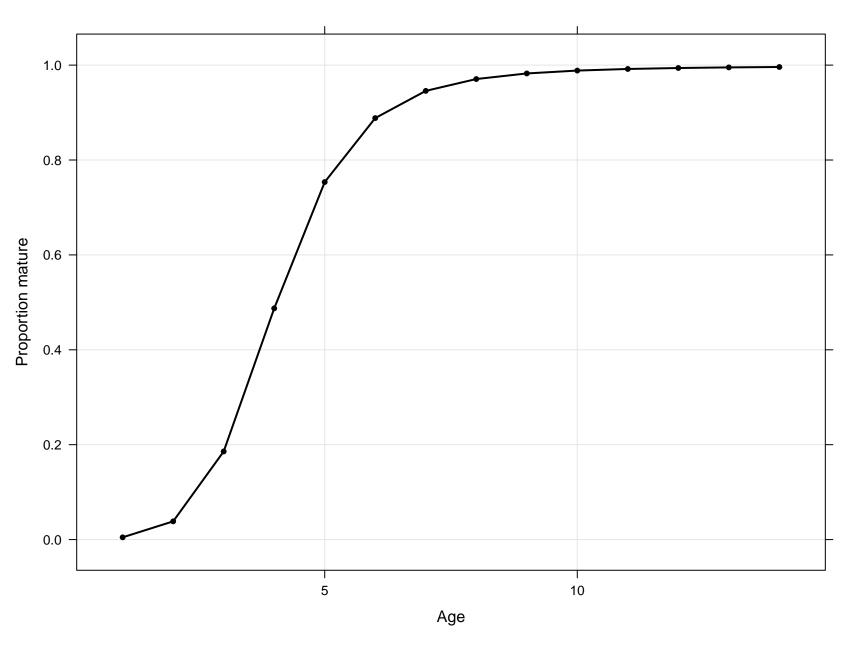
Age composition in surveys



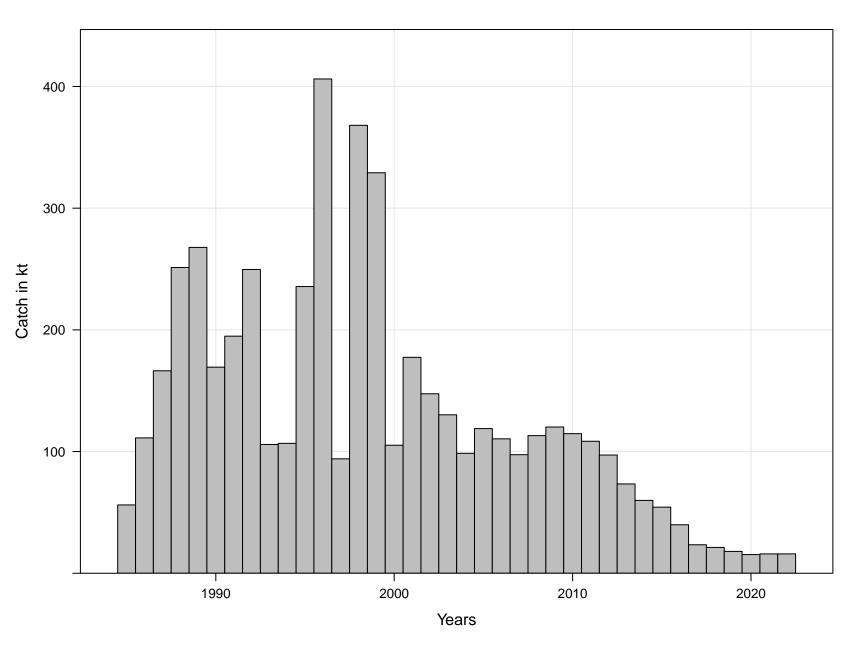
Weight in the stock



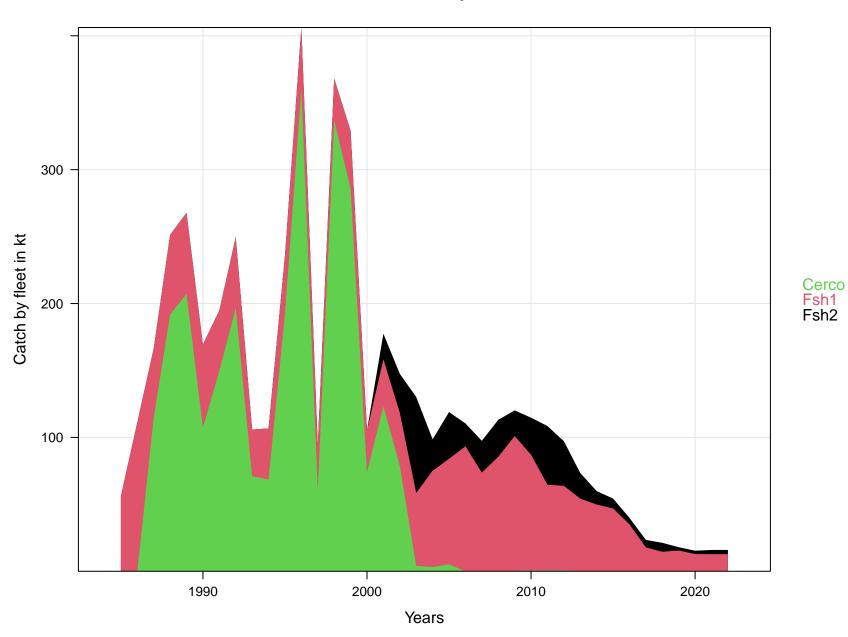
Maturity in the stock



Total catch

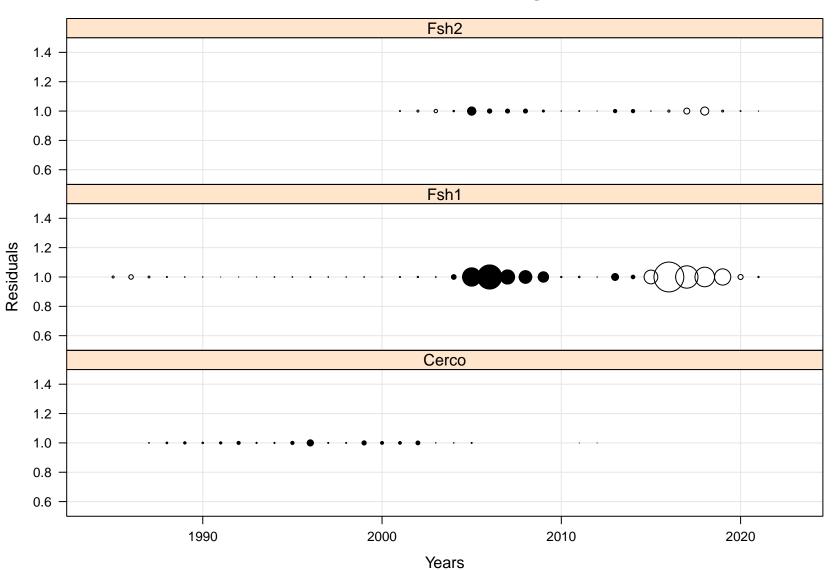


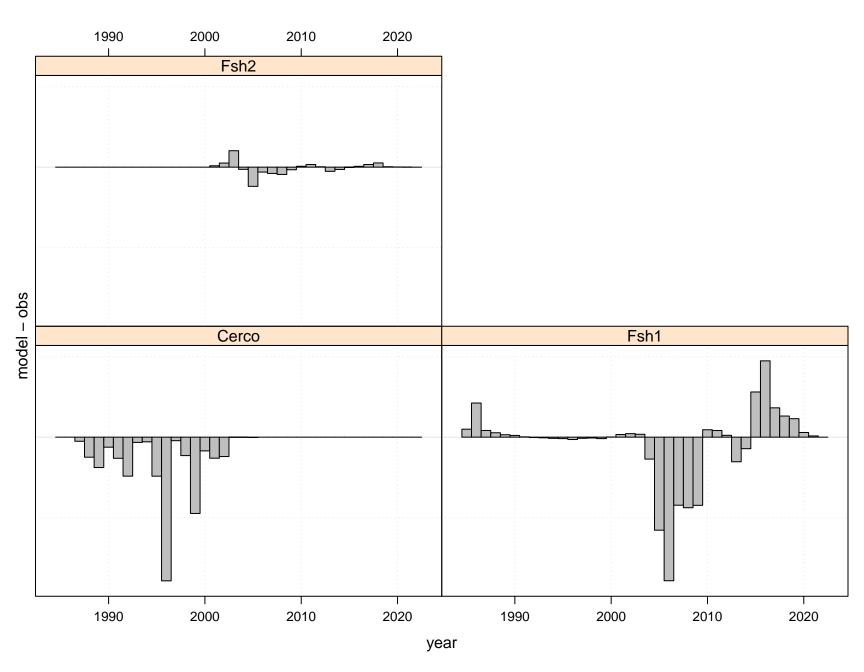
Total catch by fleet



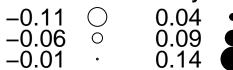
Catch residuals by fleet

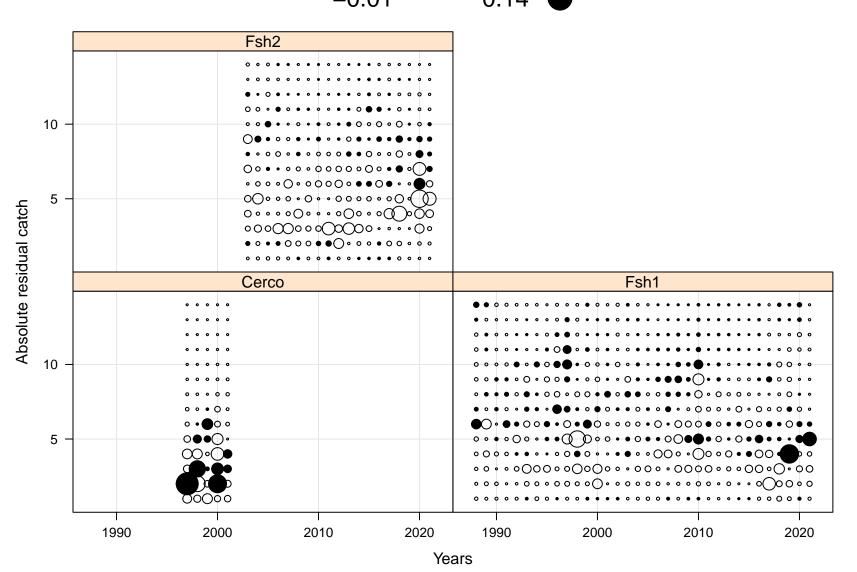
-0.12
-0.08
-0.03
0.05
0.1

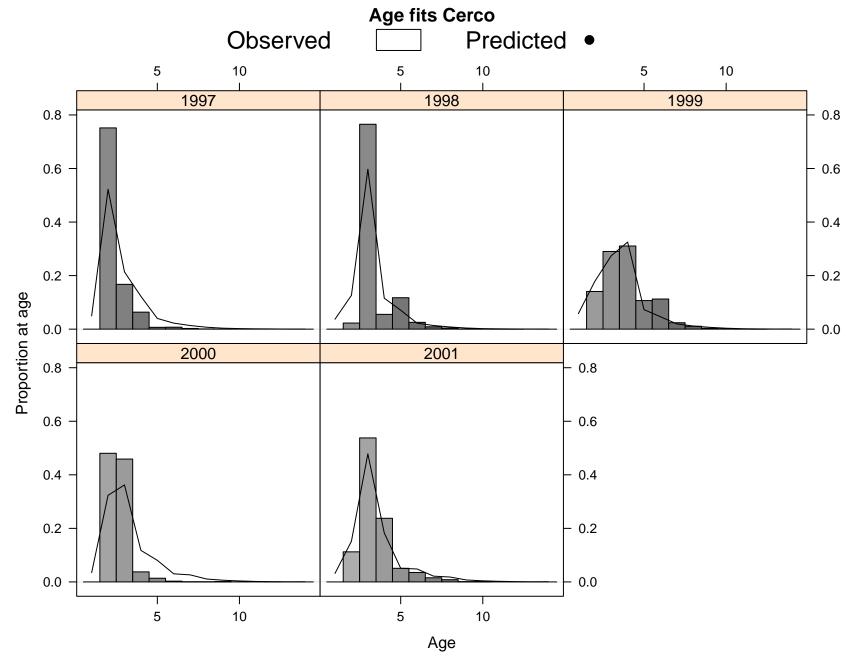




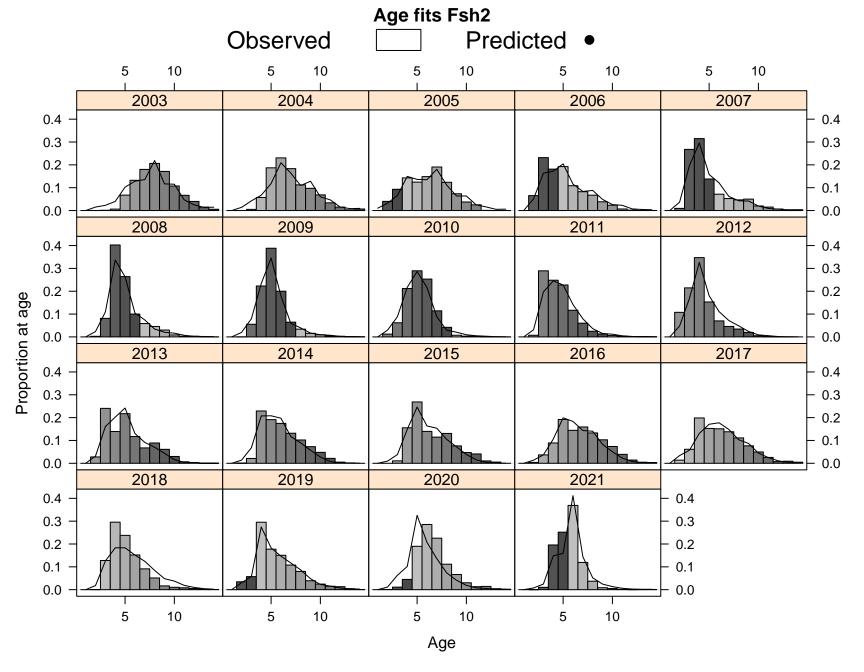
Absolute residual catch by fleet

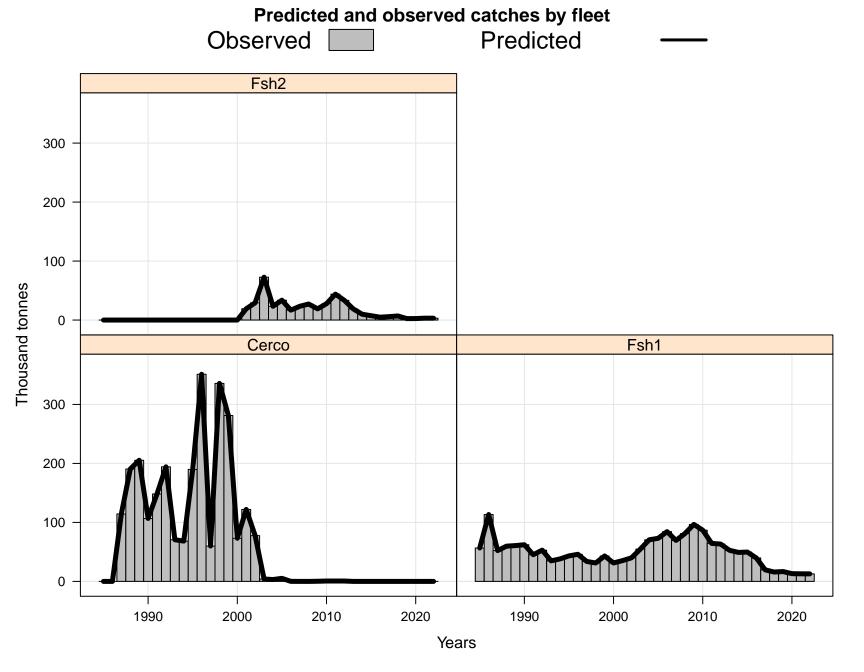


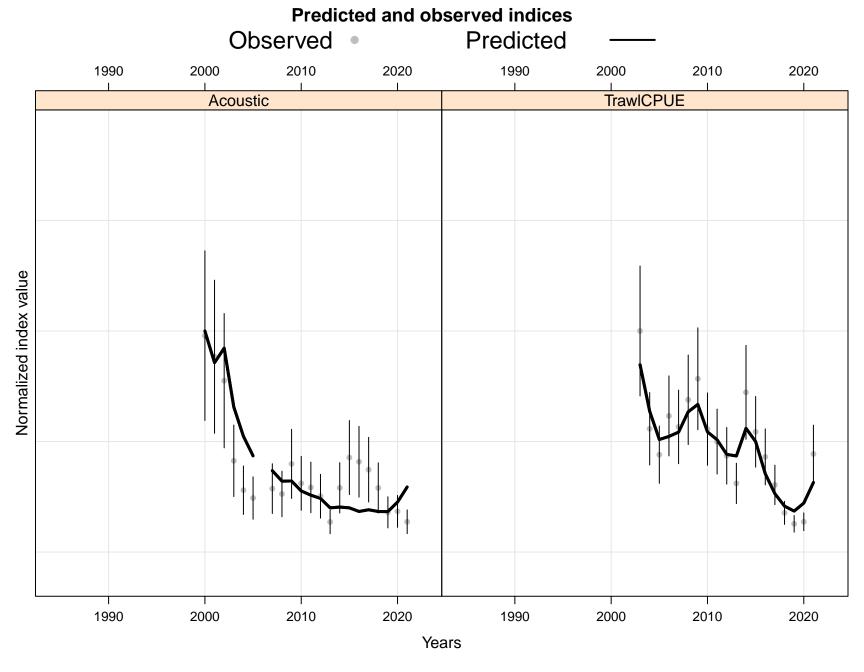




Age fits Fsh1 Observed Predicted • 5 10 5 10 5 10 5 10 5 10 5 10 5 10 1988 1989 1990 1991 1992 1993 1994 0.5 0.5 0.4 0.3 0.2 0.4 0.3 0.2 0.1 0.0 0.1 0.0 1995 1996 1997 1998 1999 2000 2001 0.5 0.5 0.4 0.4 0.3 0.2 0.1 0.3 0.2 0.1 0.0 0.0 Proportion at age 2005 2002 2003 2004 2006 2007 2008 0.5 0.4 0.3 0.2 0.5 0.4 -0.3 0.2 0.1 0.1 0.0 0.0 2009 2010 2011 2012 2013 2014 2015 0.5 0.4 0.5 0.4 0.3 0.2 0.1 0.0 0.3 0.2 0.1 0.0 2017 2019 2016 2018 2020 2021 0.5 -0.5 0.4 0.4 0.3 0.2 0.1 0.0 0.3 0.2 0.1 0.0 5 10 5 10 5 10 5 10 5 10 5 10 Age





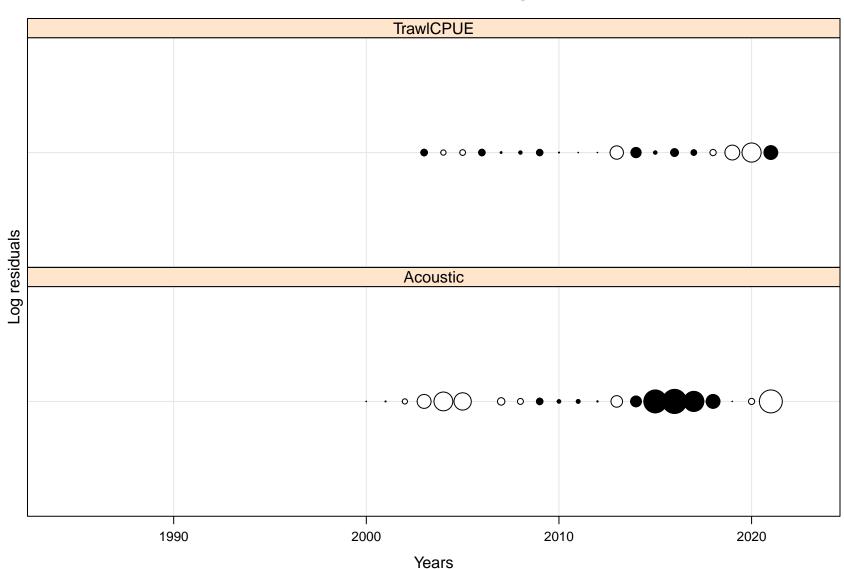


Age fits Acoustic Predicted Observed 5 10 5 10 5 10 5 10 5 10 5 10 2000 2002 2003 2001 2004 2005 0.6 0.6 0.4 - 0.4 0.2 - 0.2 0.0 - 0.0 2007 2008 2009 2010 2011 2012 0.6 -- 0.6 0.4 - 0.4 Proportion at age 0.2 - 0.2 0.0 - 0.0 2013 2014 2015 2016 2017 2018 0.6 0.6 0.4 - 0.4 0.2 - 0.2 0.0 0.0 2019 2020 2021 0.6 0.6 0.4 -0.4 0.2 0.2 0.0 0.0 5 10 5 10 5 10 Age

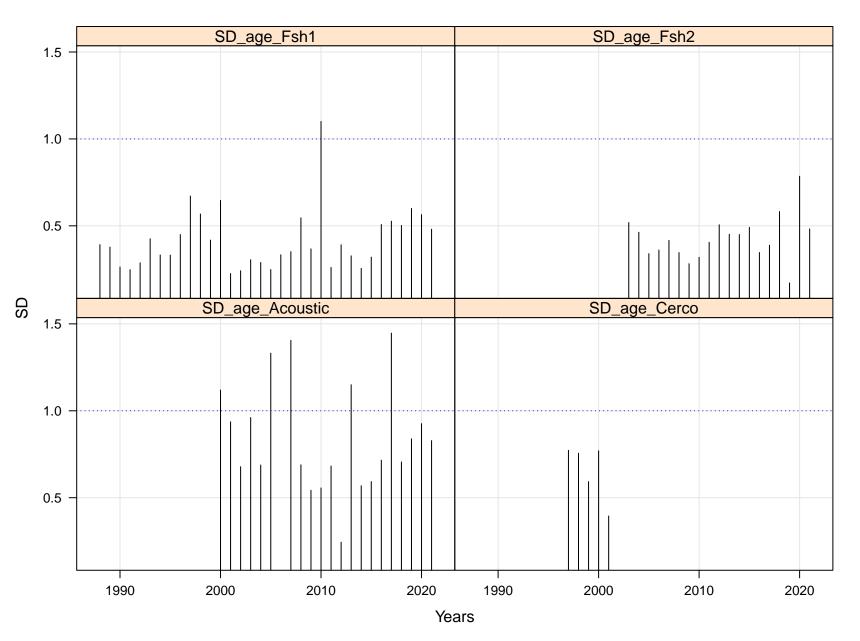
Standardized survey residuals

-3.86 -2.28 -0.7 0.88 2.46 4.04

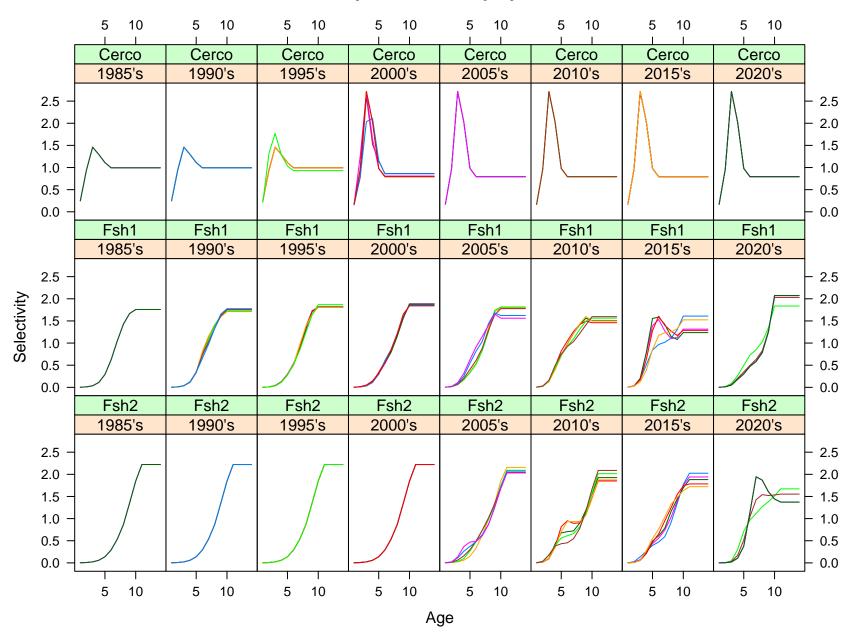
ė



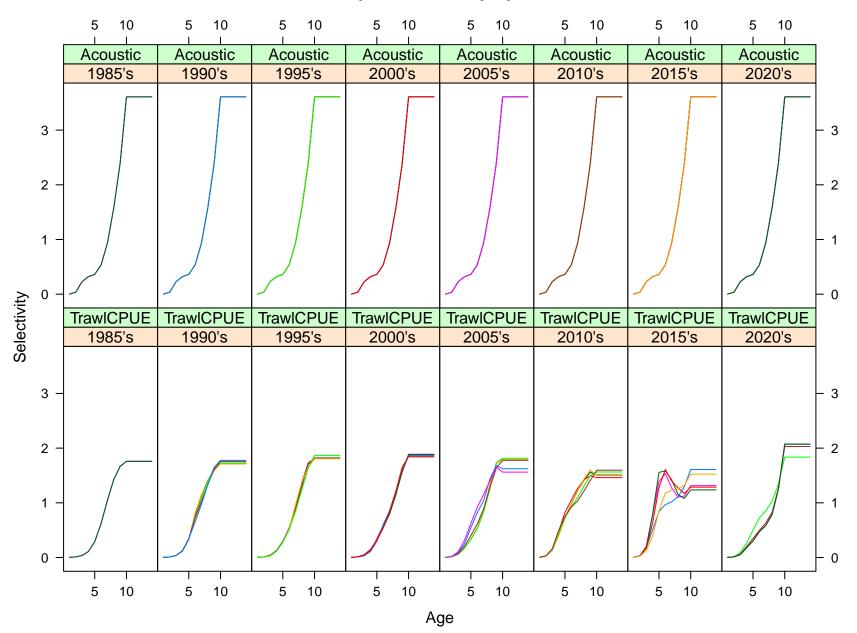
SD per input series



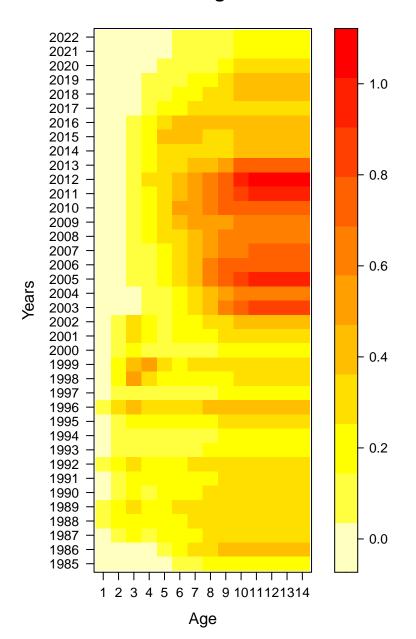
Selectivity of the Fishery by Pentad



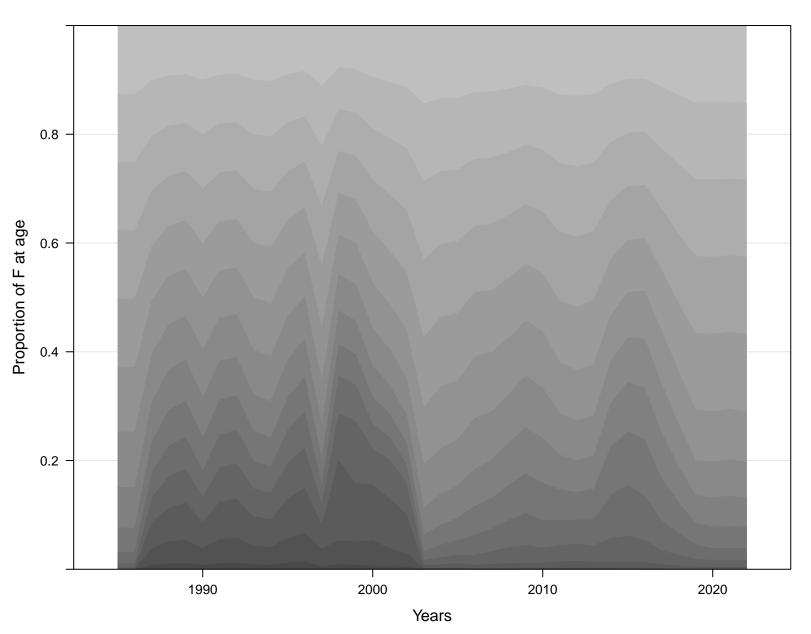
Selectivity of the survey by Pentad



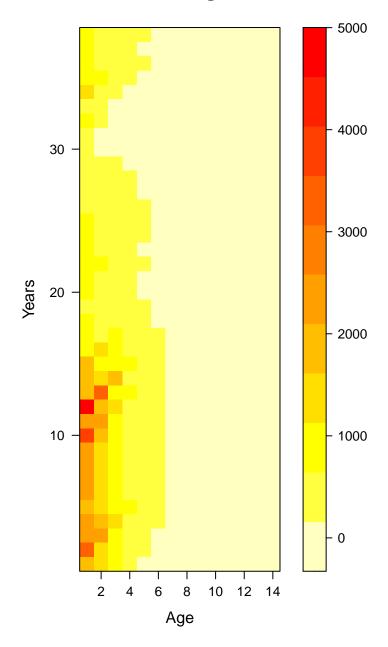
F at age



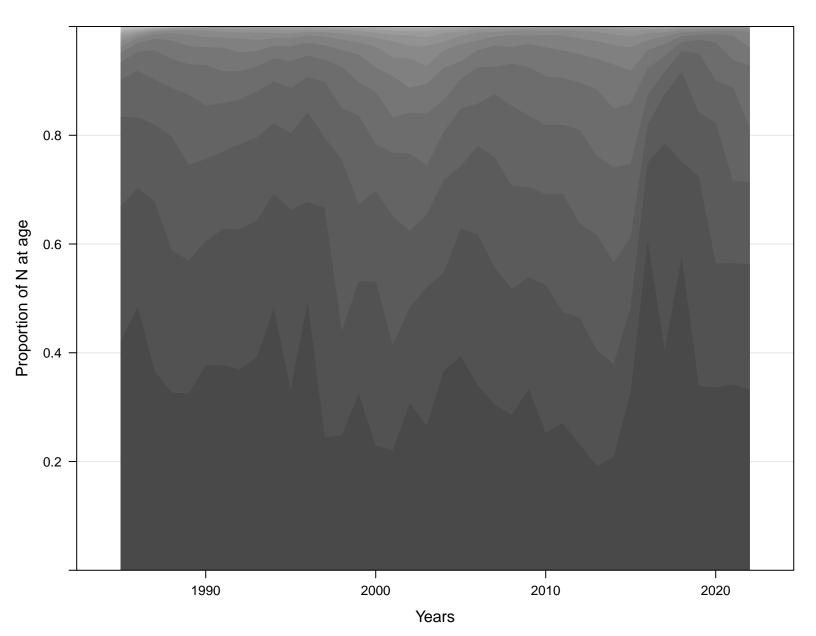
F proportion at age







Proportion at age

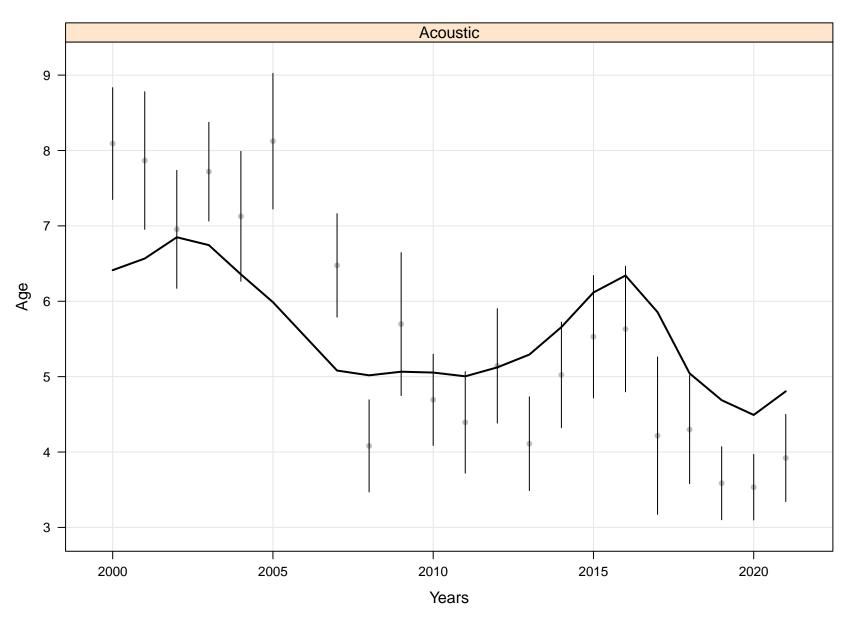


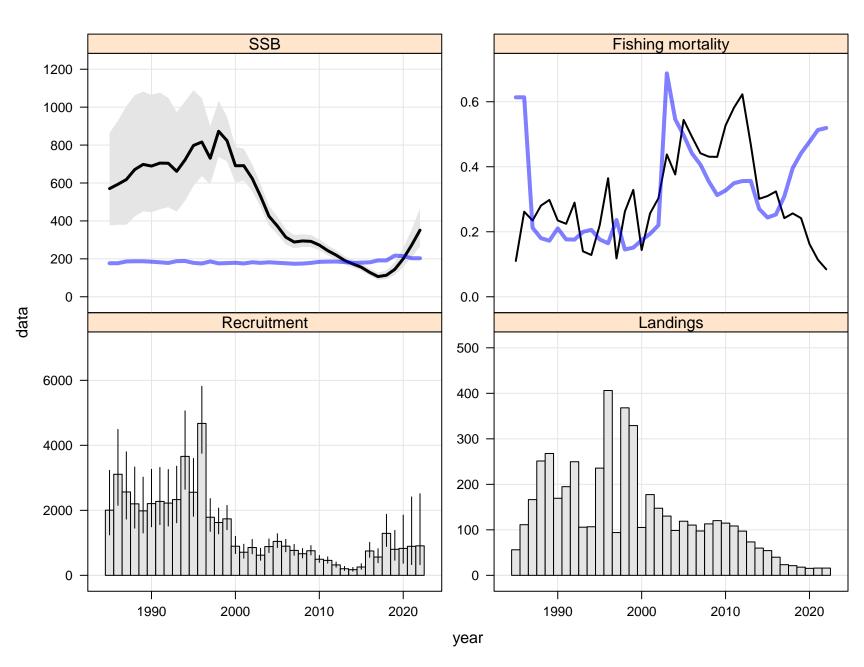
Fishery mean age Modelled Observed Fsh2 7 -3 -Age Cerco Fsh1 7 -

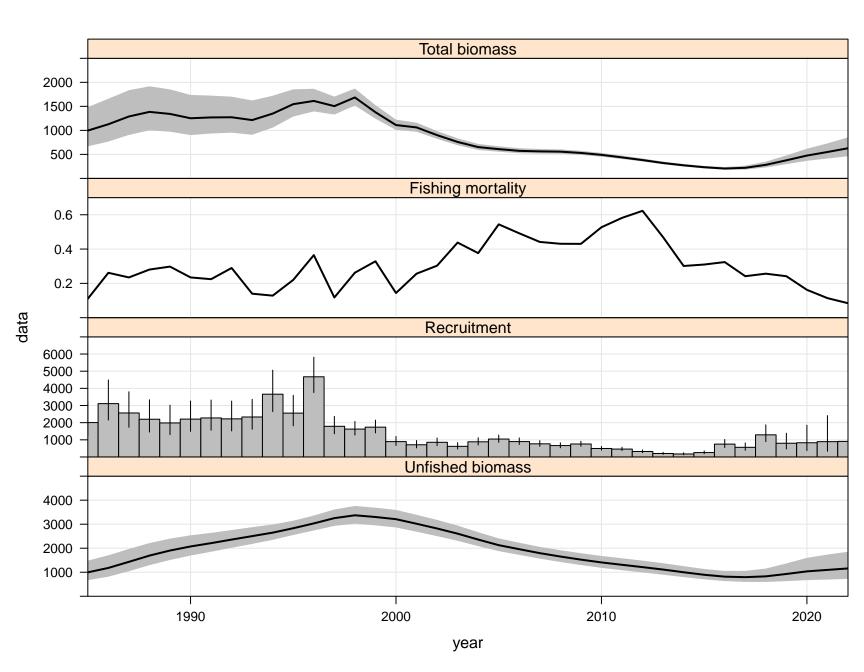
Years

Survey mean age

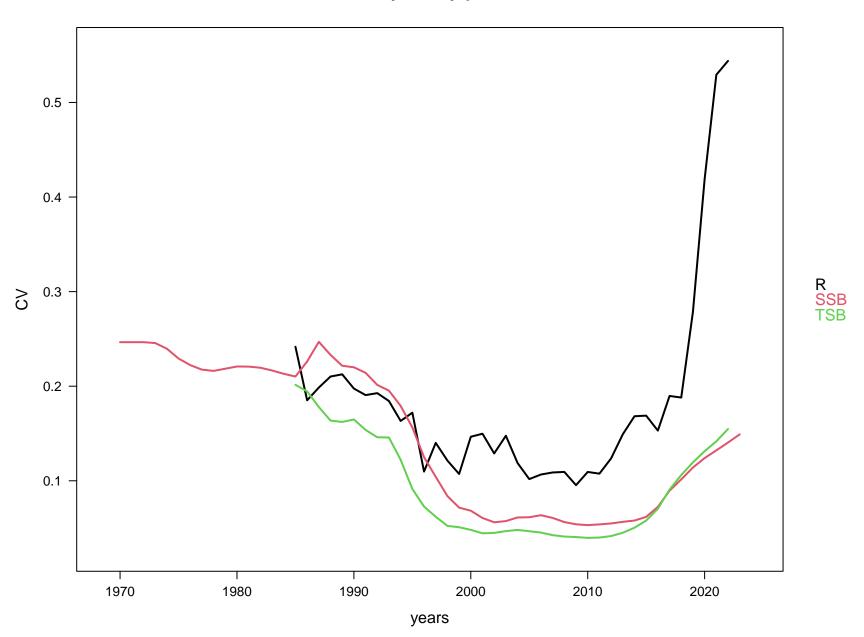
Observed • Modelled —





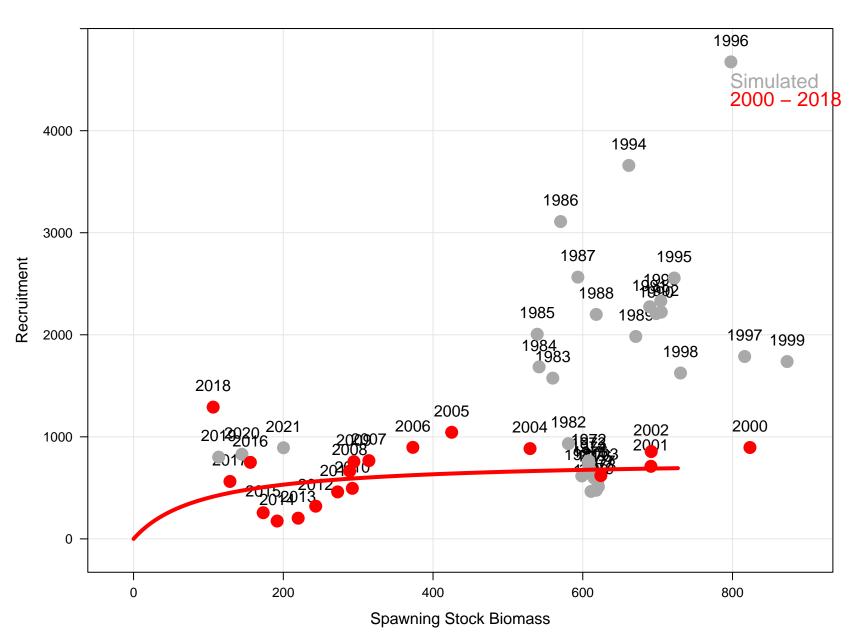


Uncertainty of key parameters



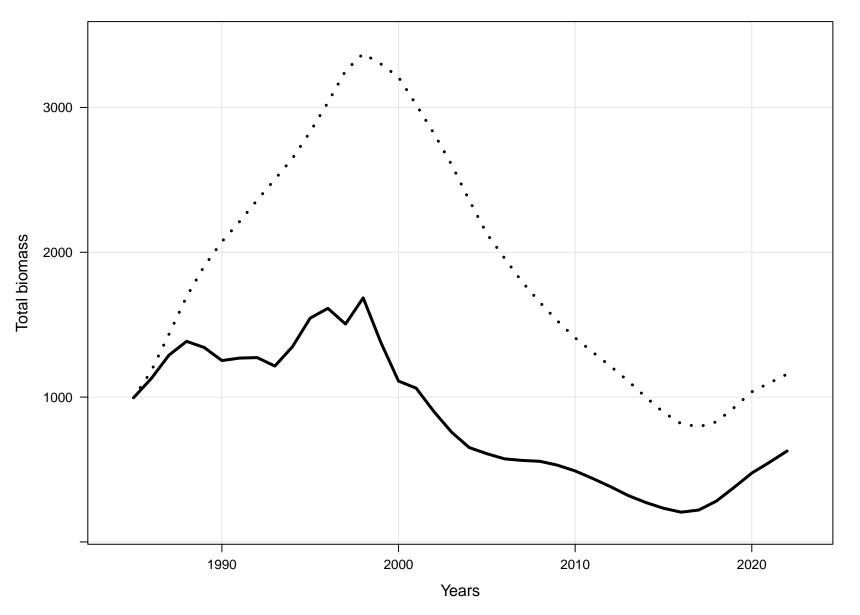
Mature - Immature fish Mature · · · · **Immature** 800 600 -Biomass in kt 400 200 2020 1990 2000 2010 Years

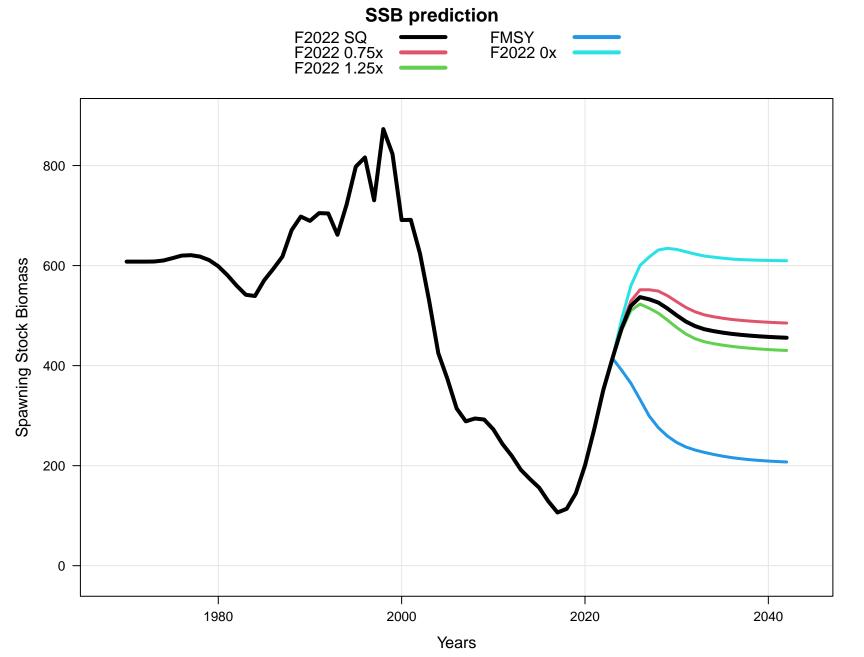
Stock Recruitment



Comparing fished with unfished biomass

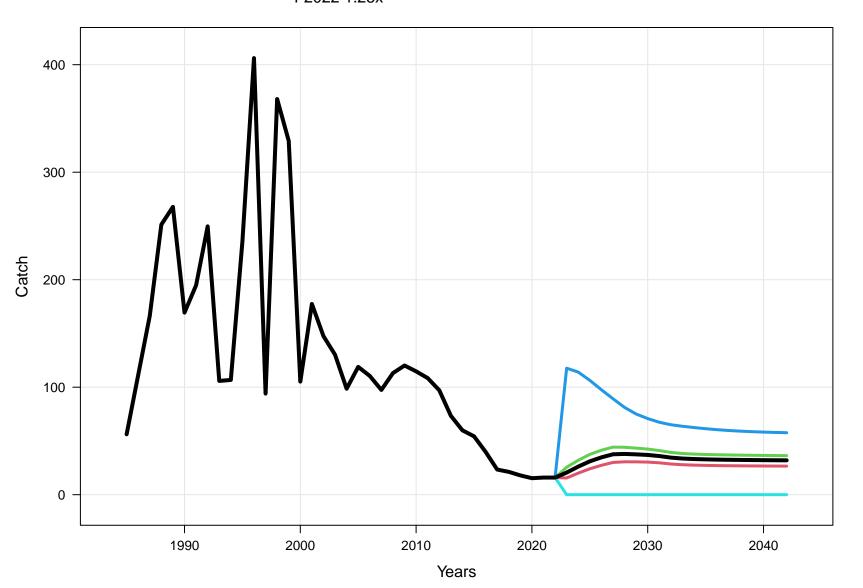
Fished — Unfished ……



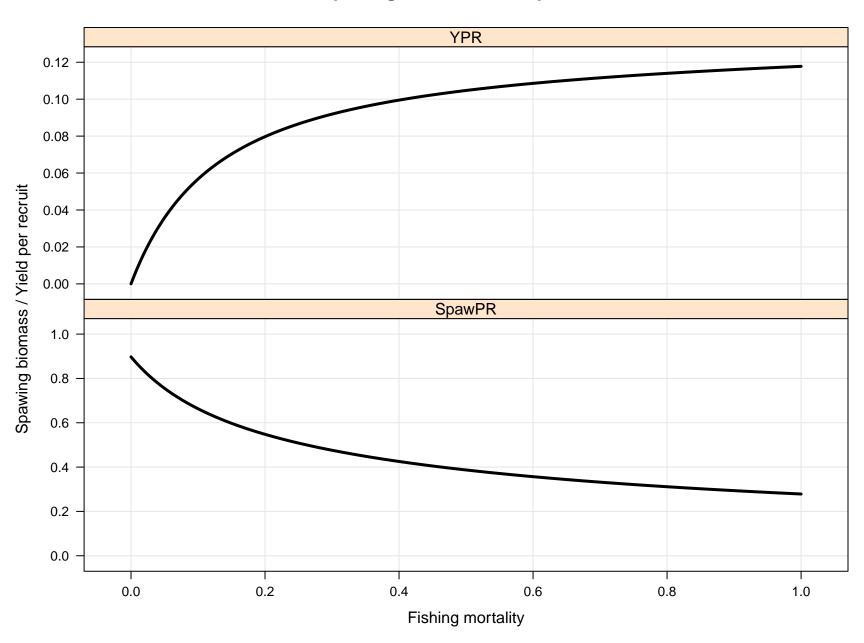




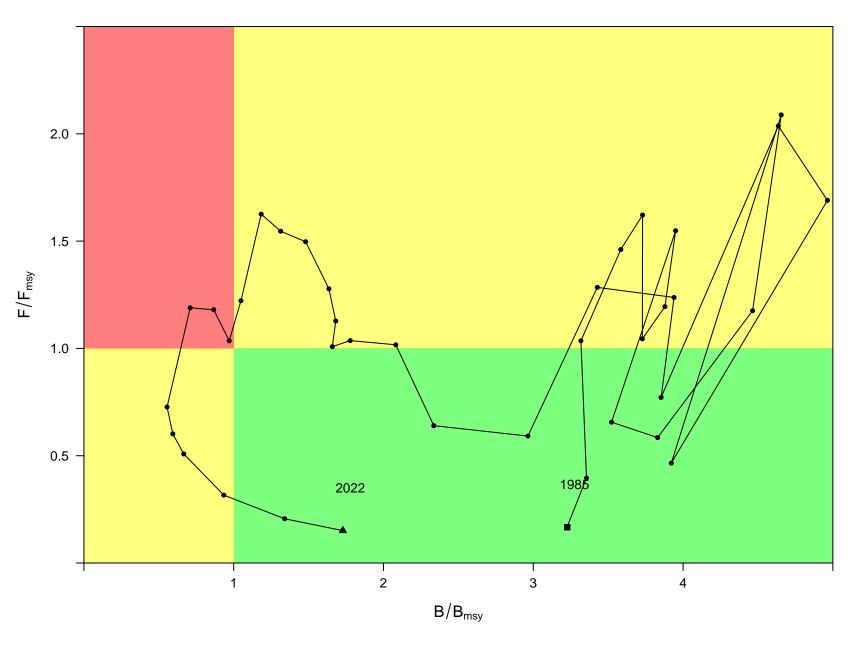


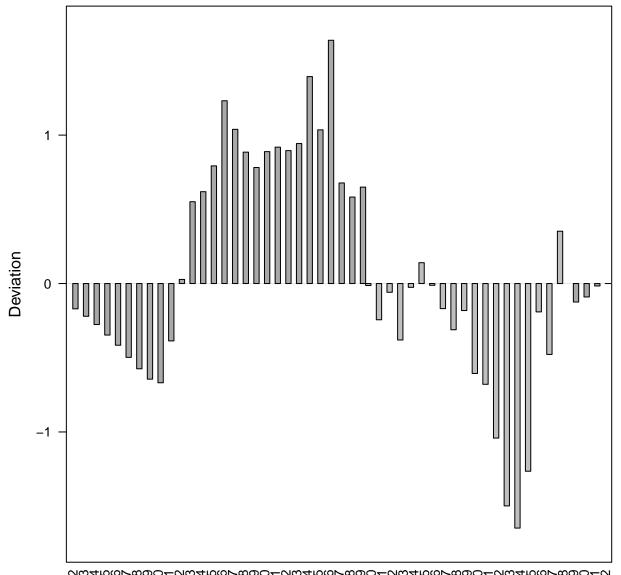


Yield and spawing stock biomass per recruit



Kobe plot





Simulated 2000 – 2018

