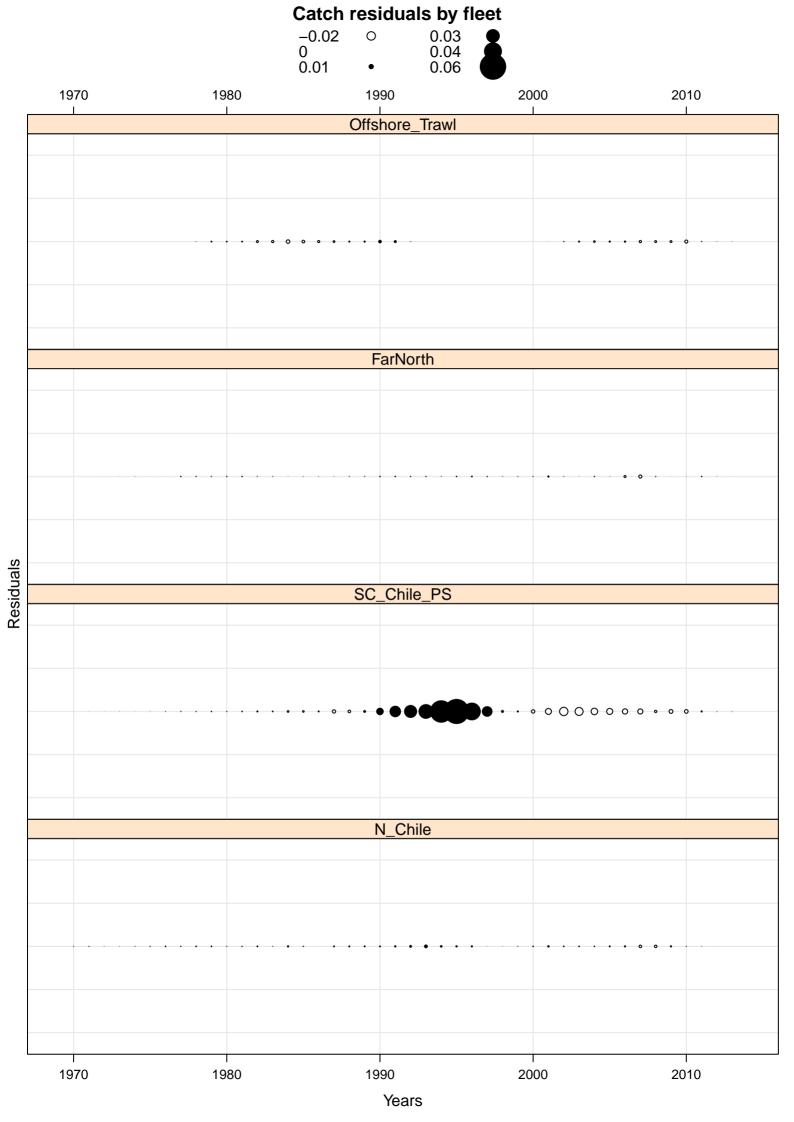
### Fit of catch data

**Total catch** 

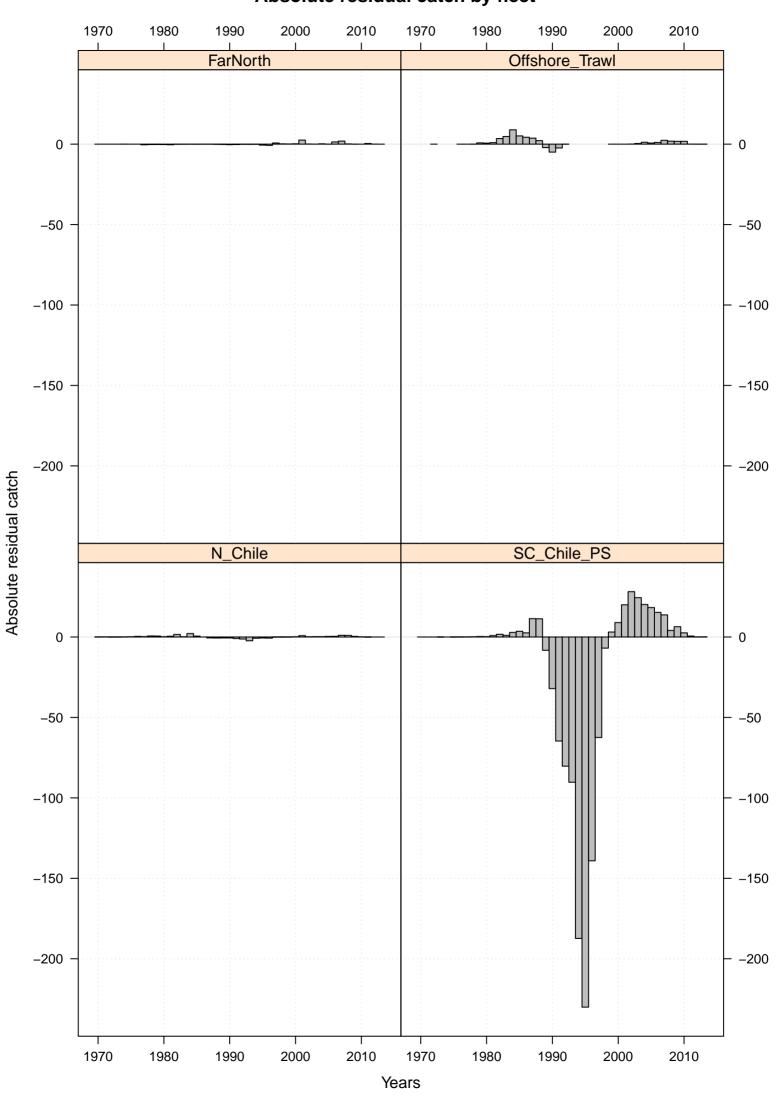


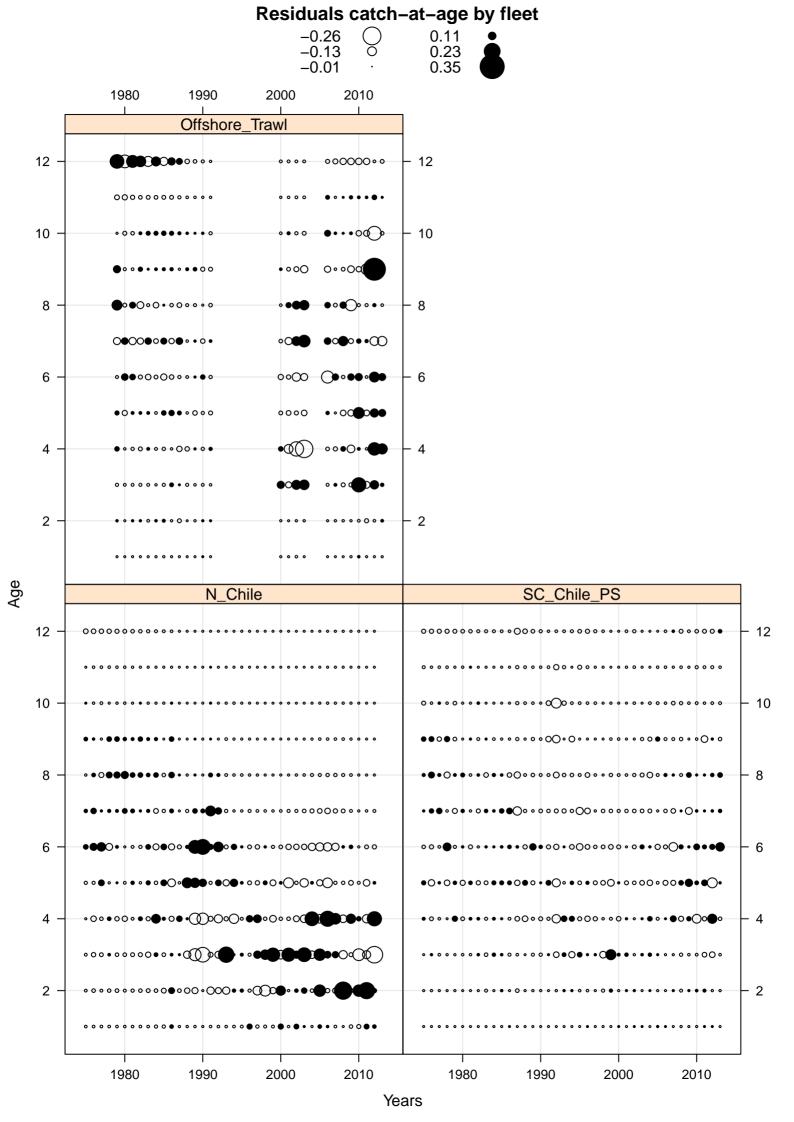
Total catch by fleet

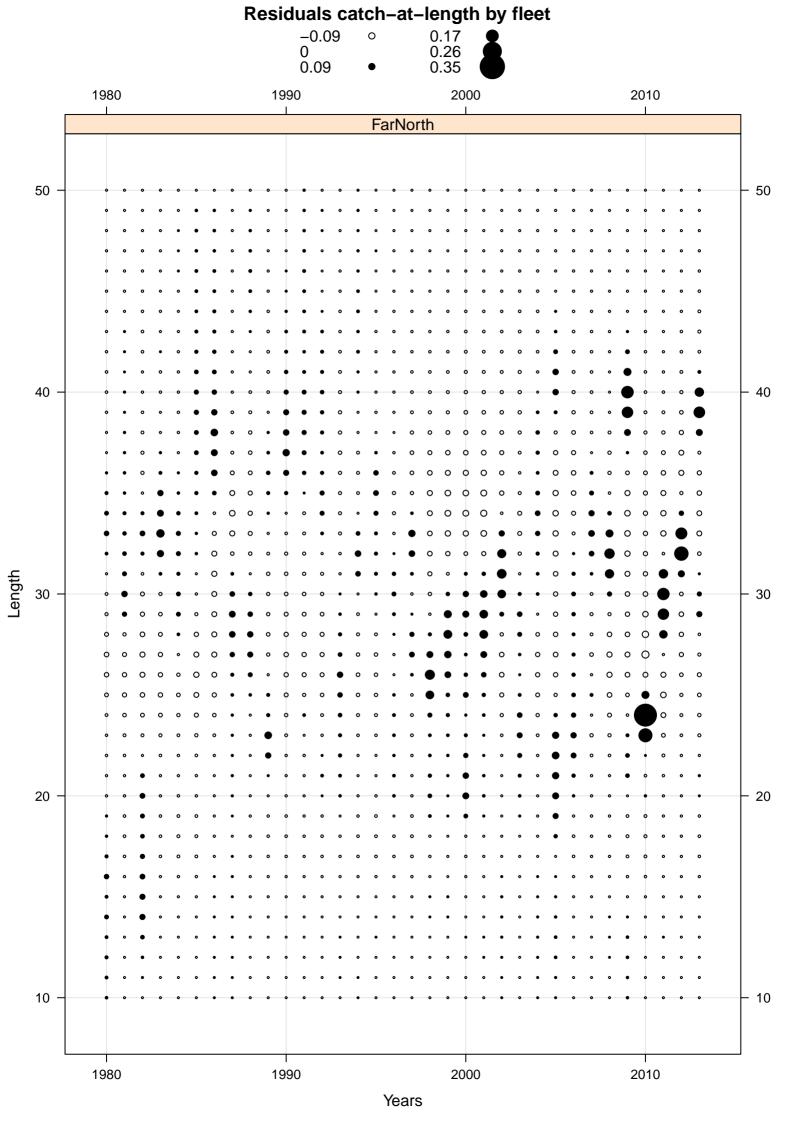


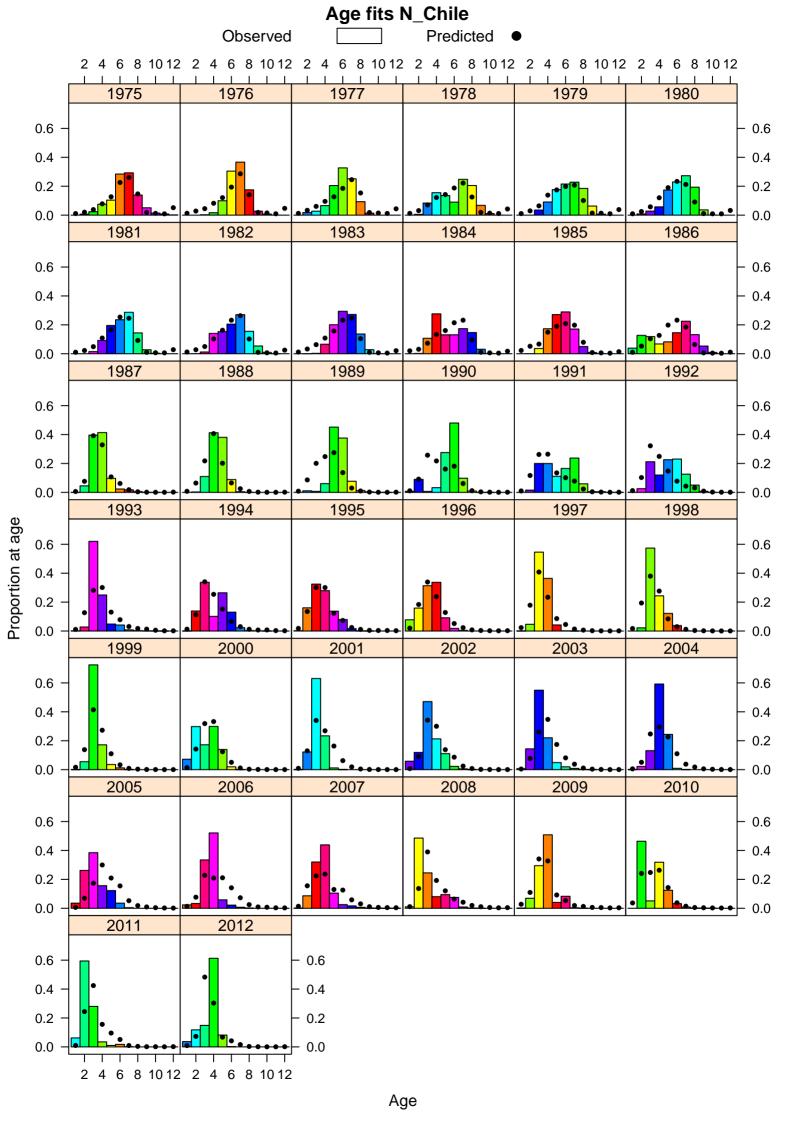


Absolute residual catch by fleet





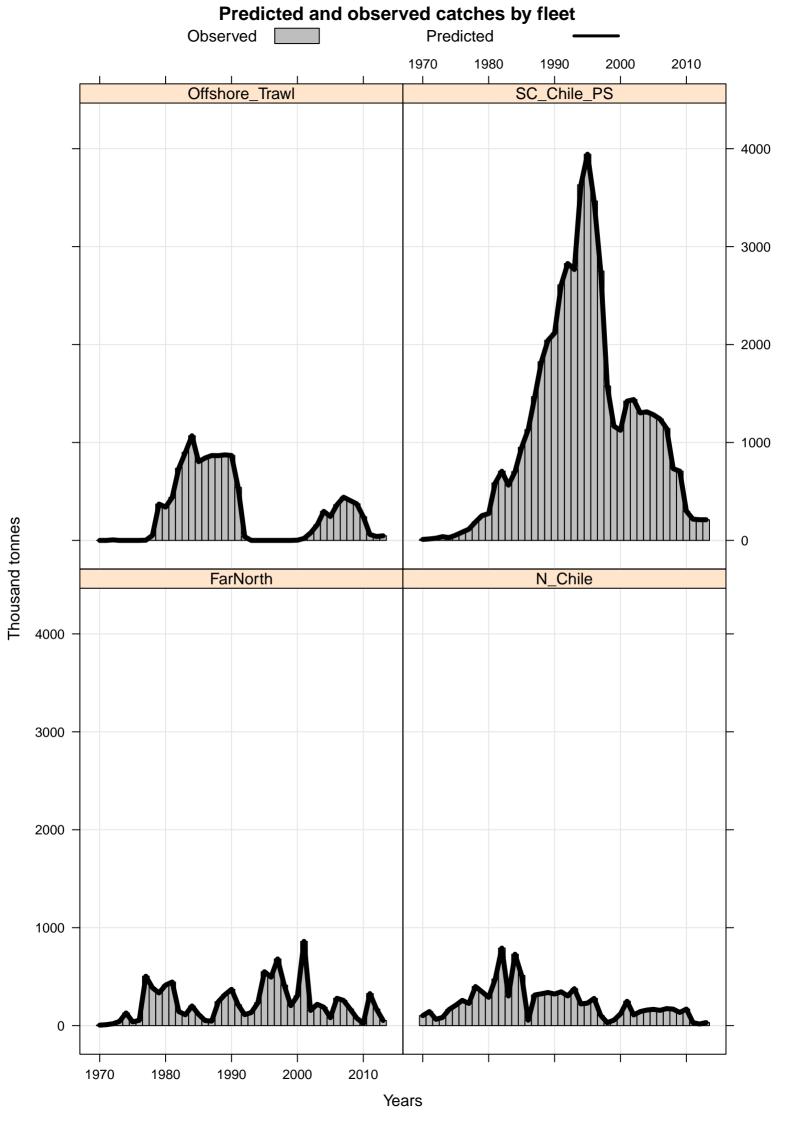




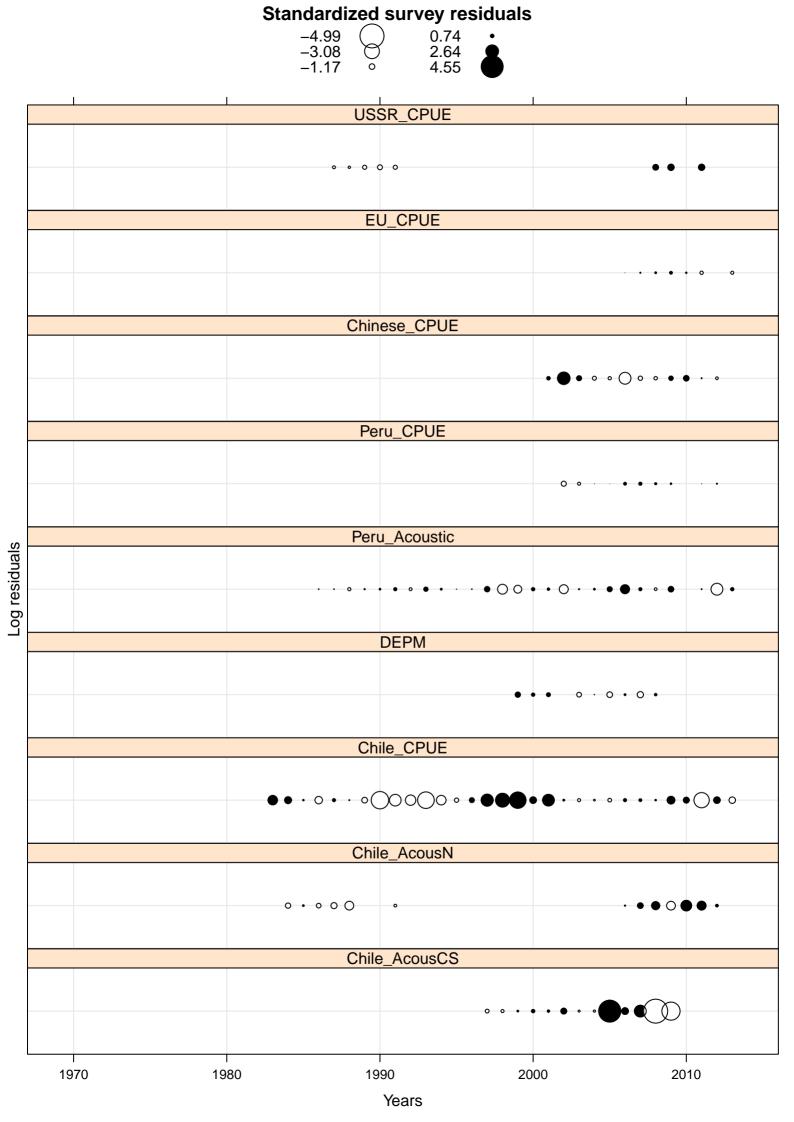
Age fits SC\_Chile\_PS Observed Predicted 8 10 12 2 4 6 8 10 12 2 4 6 8 10 12 2 4 6 8 10 12 2 4 6 2 4 6 8 10 12 2 4 6 8 10 12 1976 1977 1978 1980 1975 1979 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 1982 1983 1984 1981 1985 1986 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 1987 1990 1991 1988 1989 1992 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 1994 1996 1997 1998 1993 1995 Proportion at age 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2000 2001 2004 1999 2002 2003 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2005 2006 2007 2008 2009 2010 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2012 2011 2013 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2 4 6 8 10 12 2 4 6 8 10 12 2 4 6 8 10 12 Age

Age fits Offshore\_Trawl Observed Predicted 4 6 8 10 12 8 10 12 10 12 2 6 8 10 12 2 6 8 10 12 1979 1980 1981 1982 1983 0.5 0.5 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 1984 1985 1986 1987 1988 0.5 0.5 0.4 0.4 0.3 - 0.3 0.2 0.2 0.1 0.1 0.0 0.0 1989 1990 1991 2000 2001 0.5 0.5 Proportion at age 0.4 0.4 0.3 - 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2002 2003 2006 2007 2008 0.5 0.5 0.4 0.4 0.3 - 0.3 0.2 0.2 0.1 0.1 0.0 0.0 2010 2011 2012 2013 2009 0.5 0.5 0.4 0.4 0.3 0.3 0.2 0.2 0.1 0.1 0.0 0.0 6 8 10 12 2 6 8 2 2 6 8 10 12 6 8 10 12 4 2 4 6 8 10 12 4 10 12 4 Age

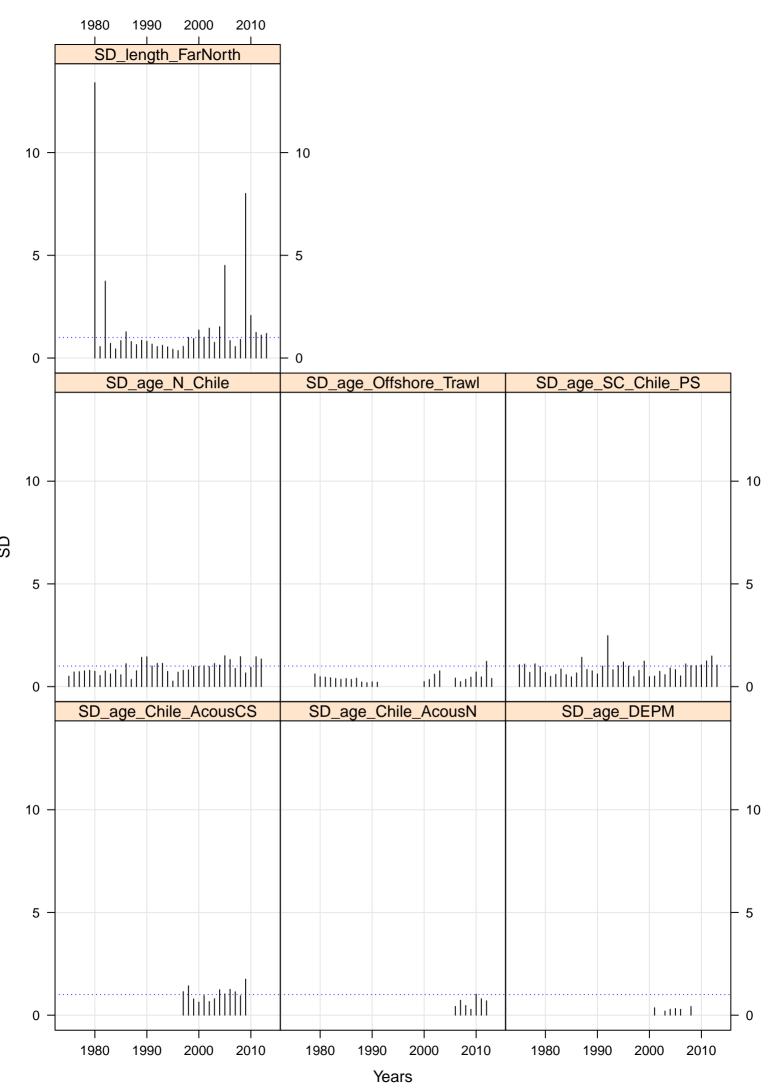
Length fits FarNorth Observed Predicted 10 20 30 40 10 20 30 40 50 1980 1981 1982 1983 1984 0.5 0.4 0.3 0.2 0.1 0.0 1985 1986 1987 1988 1989 0.5 0.4 0.3 0.2 0.1 0.0 1990 1994 1991 1992 1993 0.5 0.4 0.3 0.2 0.1 0.0 1996 1997 1995 1998 1999 Proportion at length 0.5 0.4 0.3 0.2 0.1 0.0 2000 2001 2002 2003 2004 0.5 0.4 0.3 0.2 0.1 0.0 2007 2009 2005 2006 2008 0.5 0.4 0.3 0.2 0.1 0.0 2010 2011 2012 2013 0.5 0.4 0.3 0.2 0.1 0.0 20 30 40 10 20 30 40 50 10 50 Length



# Fit of survey data

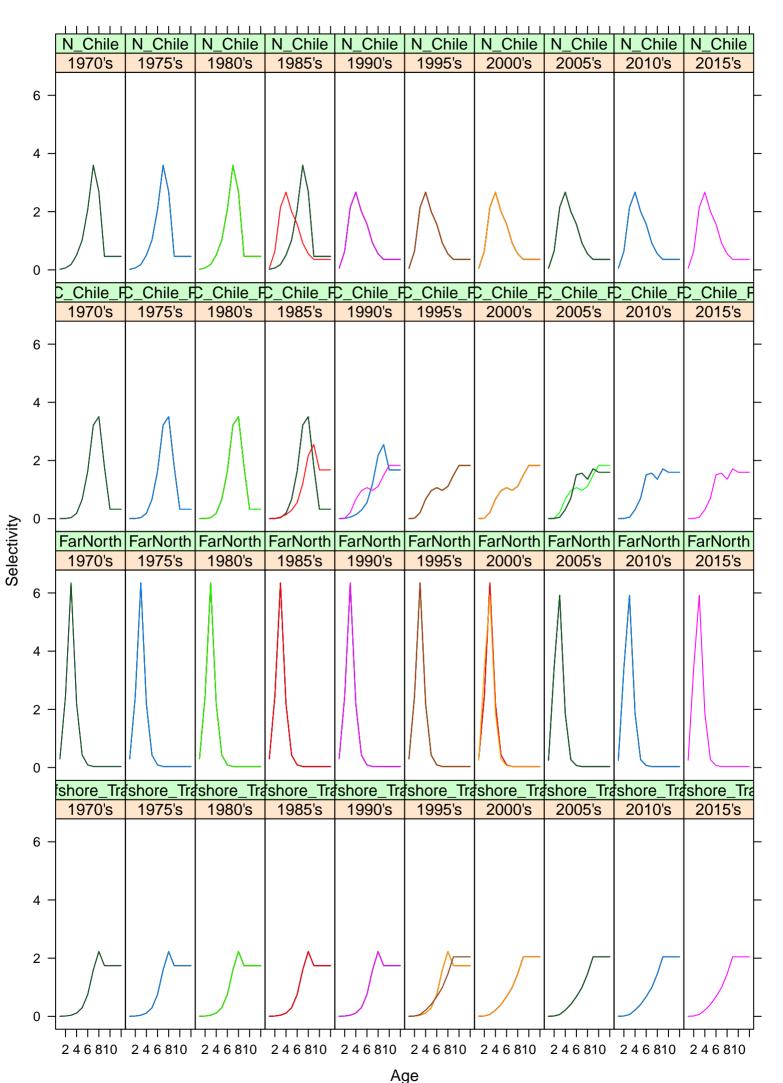


#### SD per input series

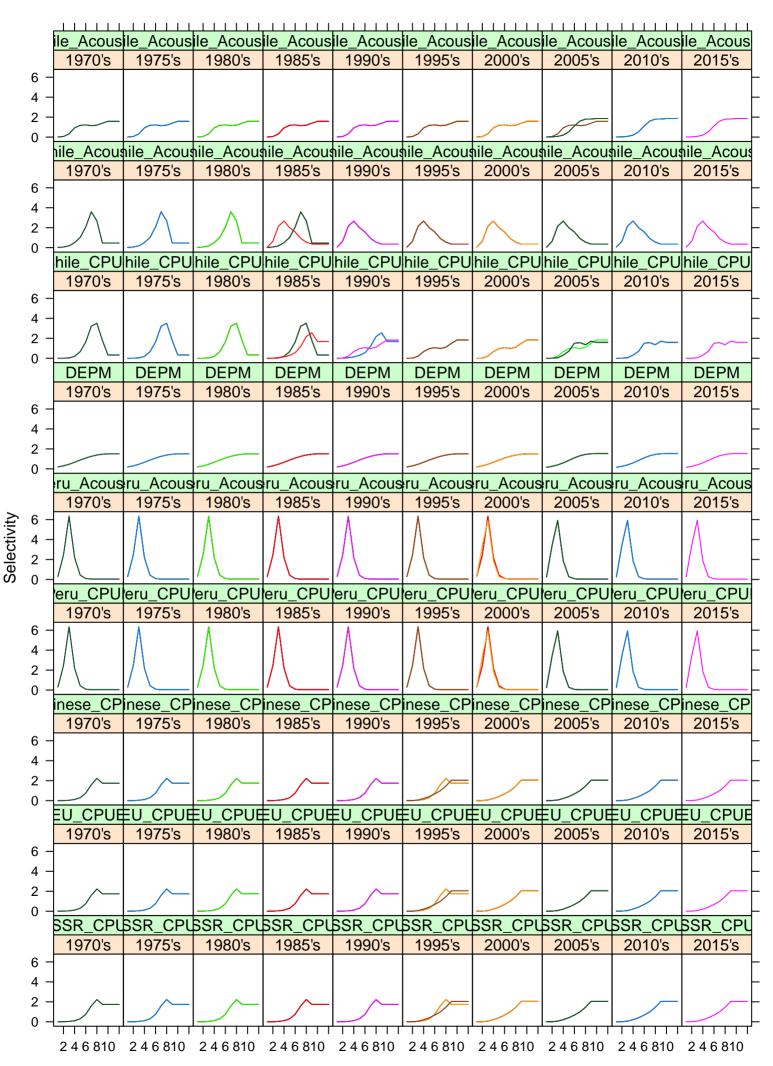


## Fleet & Survey sel & F

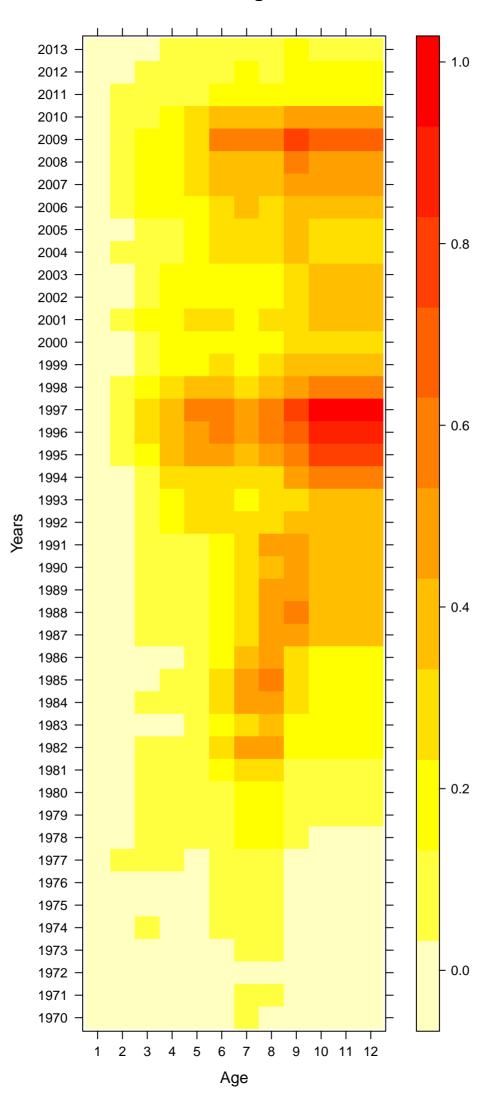
#### Selectivity of the Fishery by Pentad



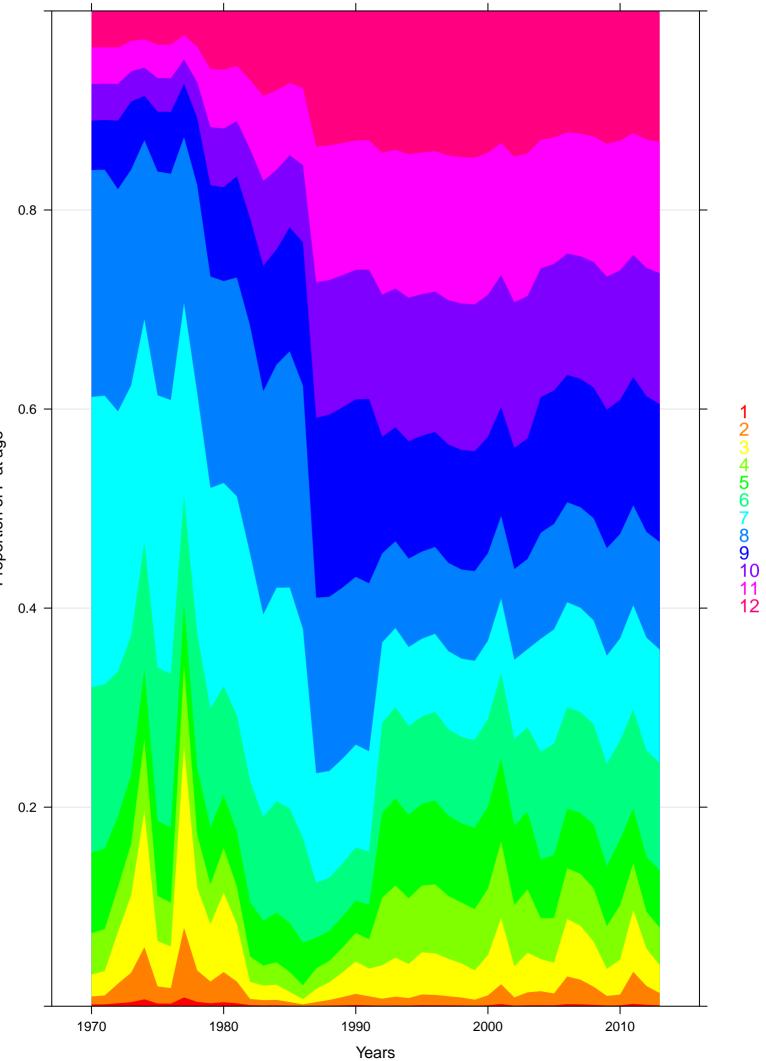
#### Selectivity of the survey by Pentad

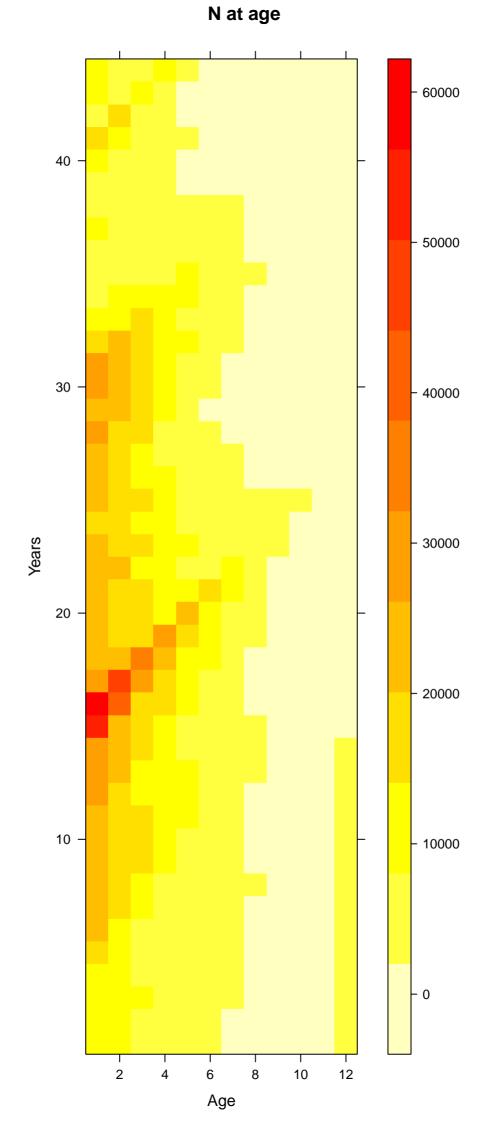


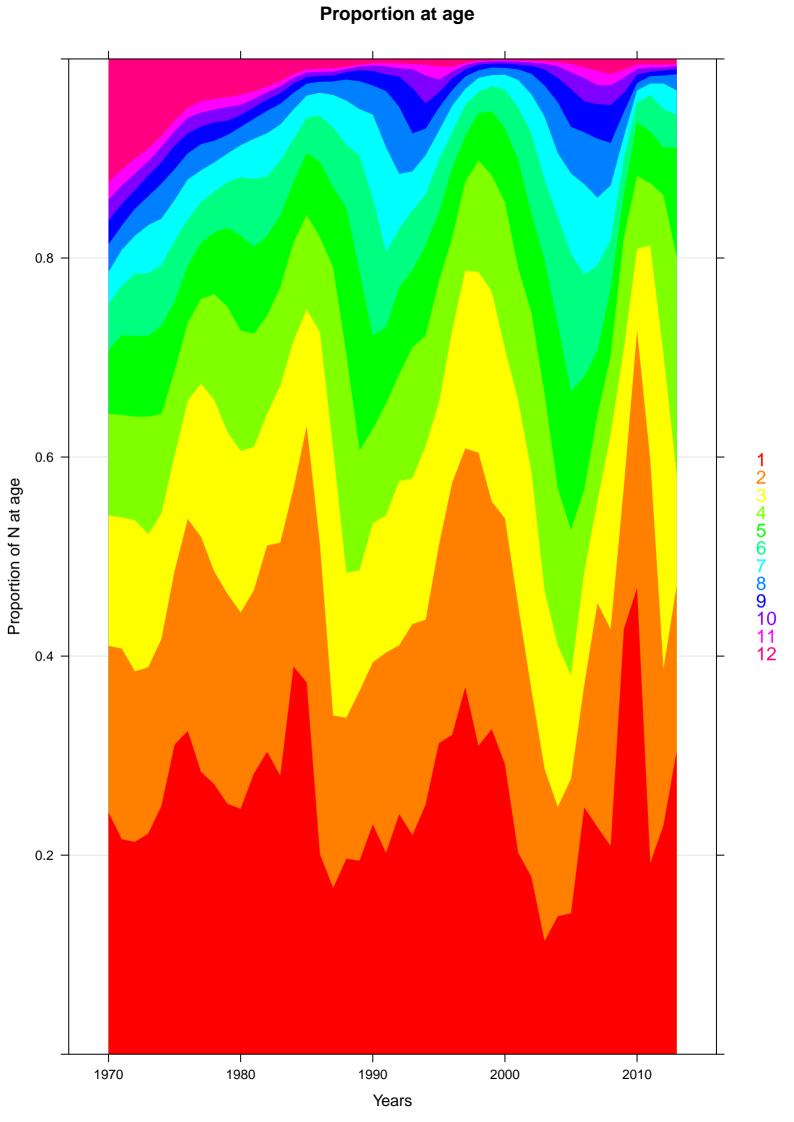




F proportion at age 8.0 0.6 1 2 3 4 5 6 7 8 9 10 11 12 Proportion of F at age 0.4



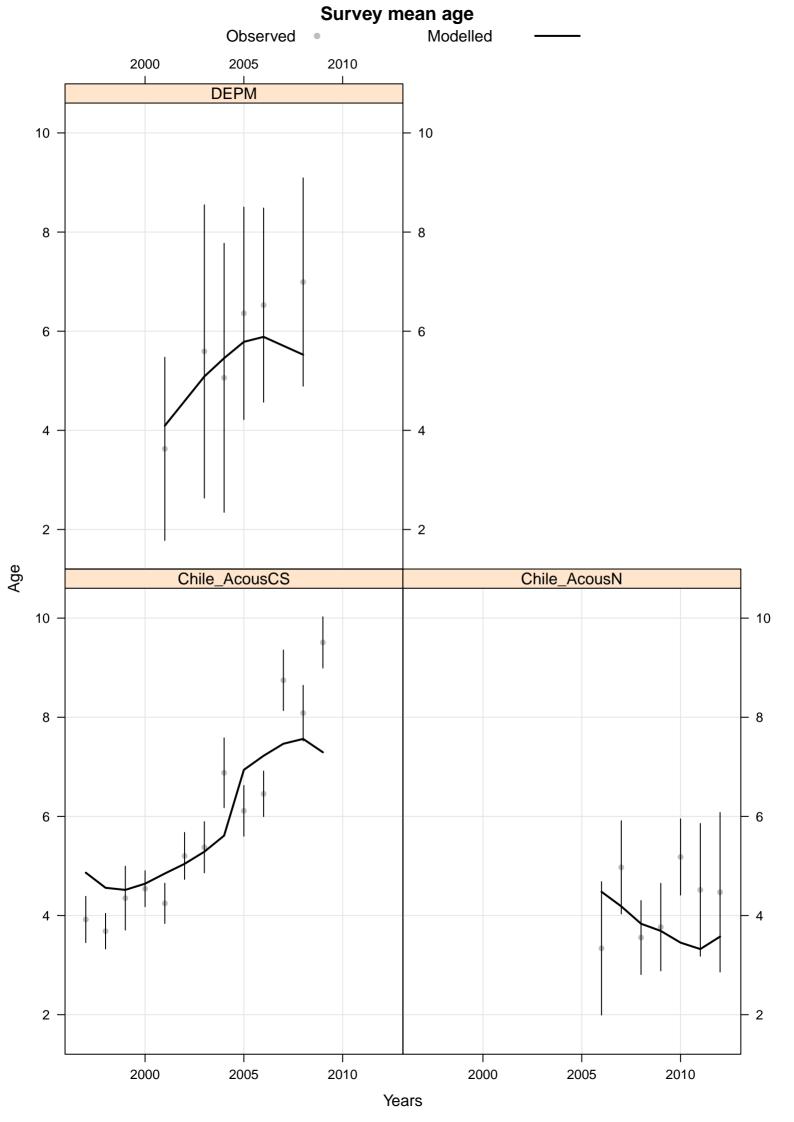




Modelled Observed SC\_Chile\_PS - 10 - 8 - 2 Age Offshore\_Trawl N\_Chile 10 8 6 4 2 1980 1990 2000 2010 Years

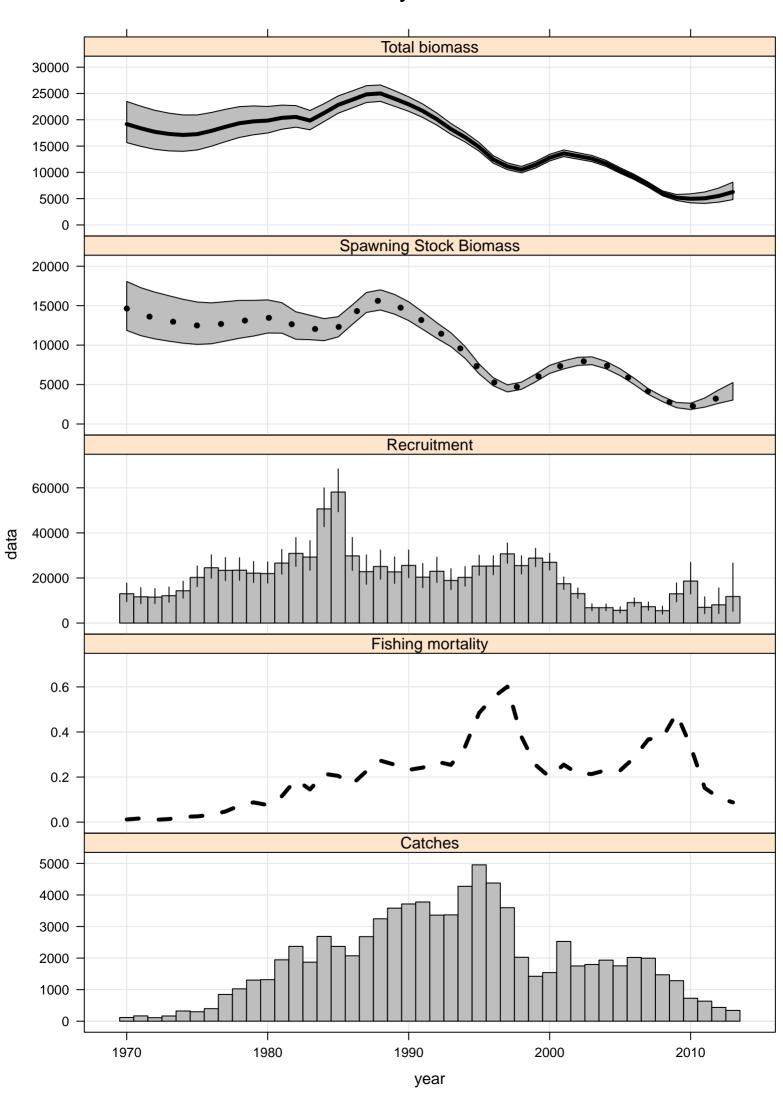
Fishery mean age

Fishery mean length
Modelled Observed FarNorth 35 Length (cm) 30 25 2010 1980 1990 2000 Years



## Stock summary

**Summary sheet** 



**Uncertainty of key parameters** 0.4 0.3 -SSB TSB R  $\lesssim$ 0.2 0.1 2010 1960 2000 1970 1980 1990 years

Mature - Immature fish **Immature** Mature 20000 15000 Biomass in kt 10000 -5000 0 1990 2000 2010 1970 1980 Years

Fished vs. unfished biomass Fished Unfished Total biomass Years