PROCEAN RESULTS 8/06/2002 12H30

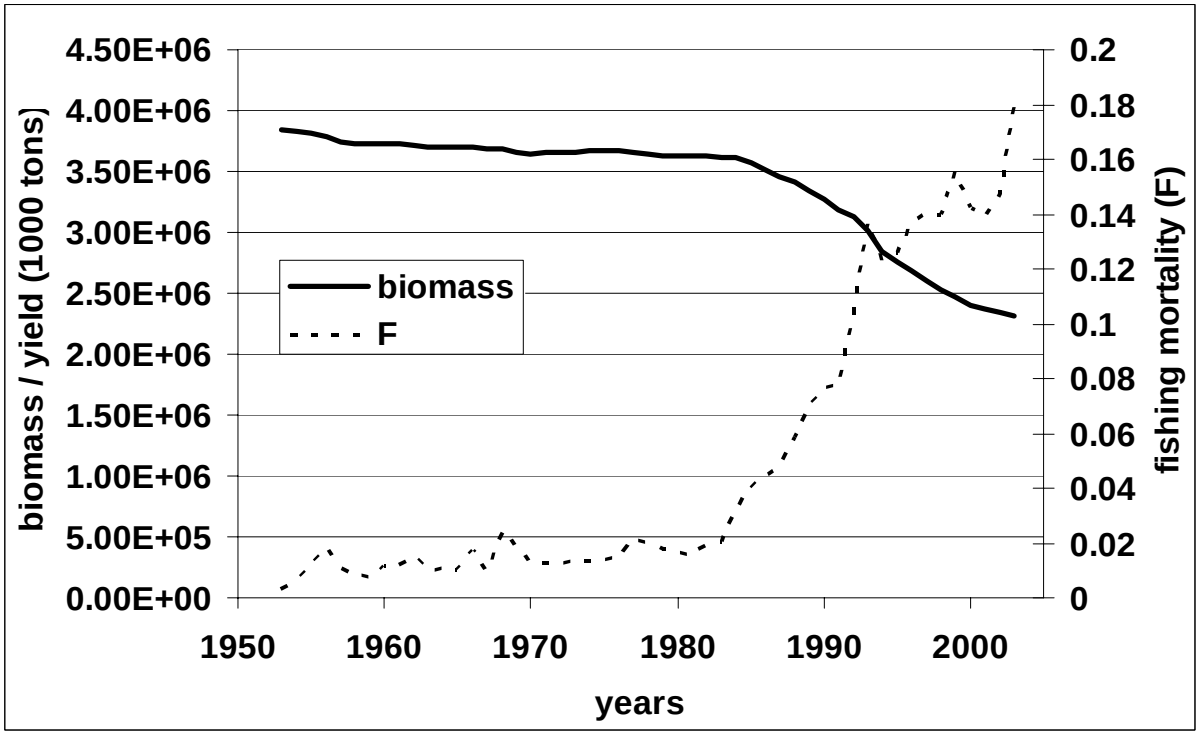
In a one way trip situation, the shape parameter m is very poorly determined. We keeped it fixed at **m=1.5**.

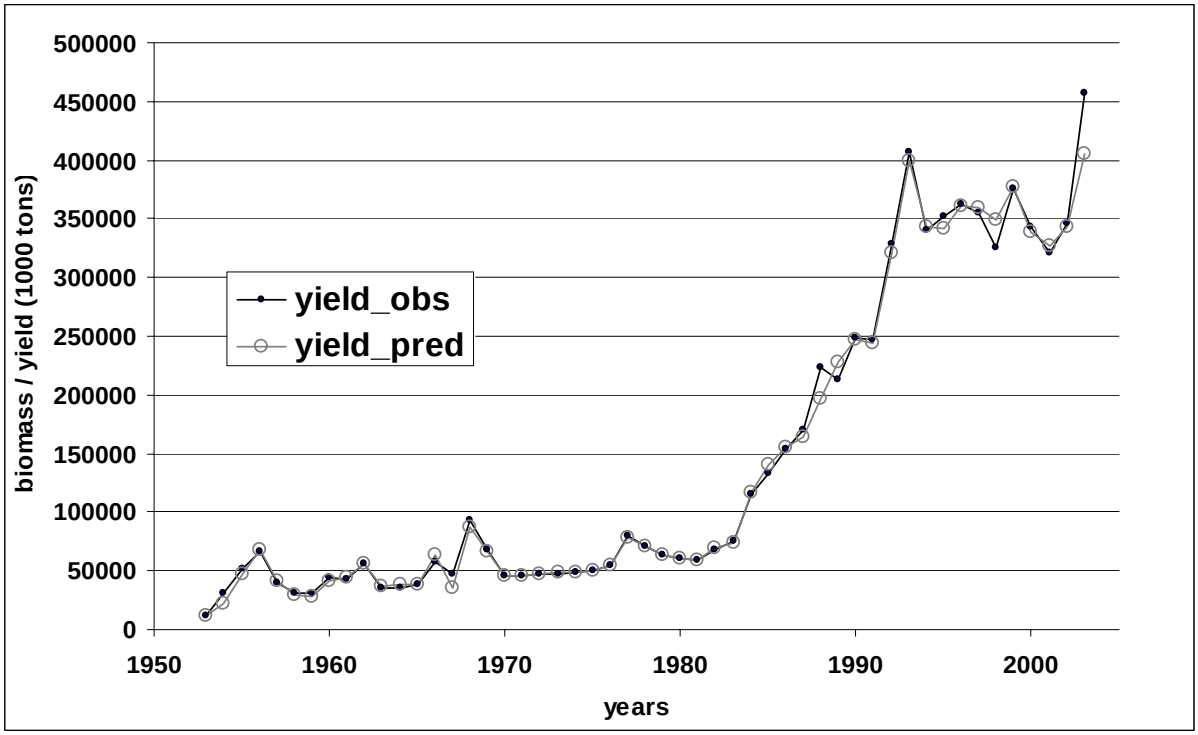
Normal prior on MSY and FMSY
meanMSY=350000 tons and FMSY=1
σ_{MSY}=50000 and σ_{FMSY}=0.05

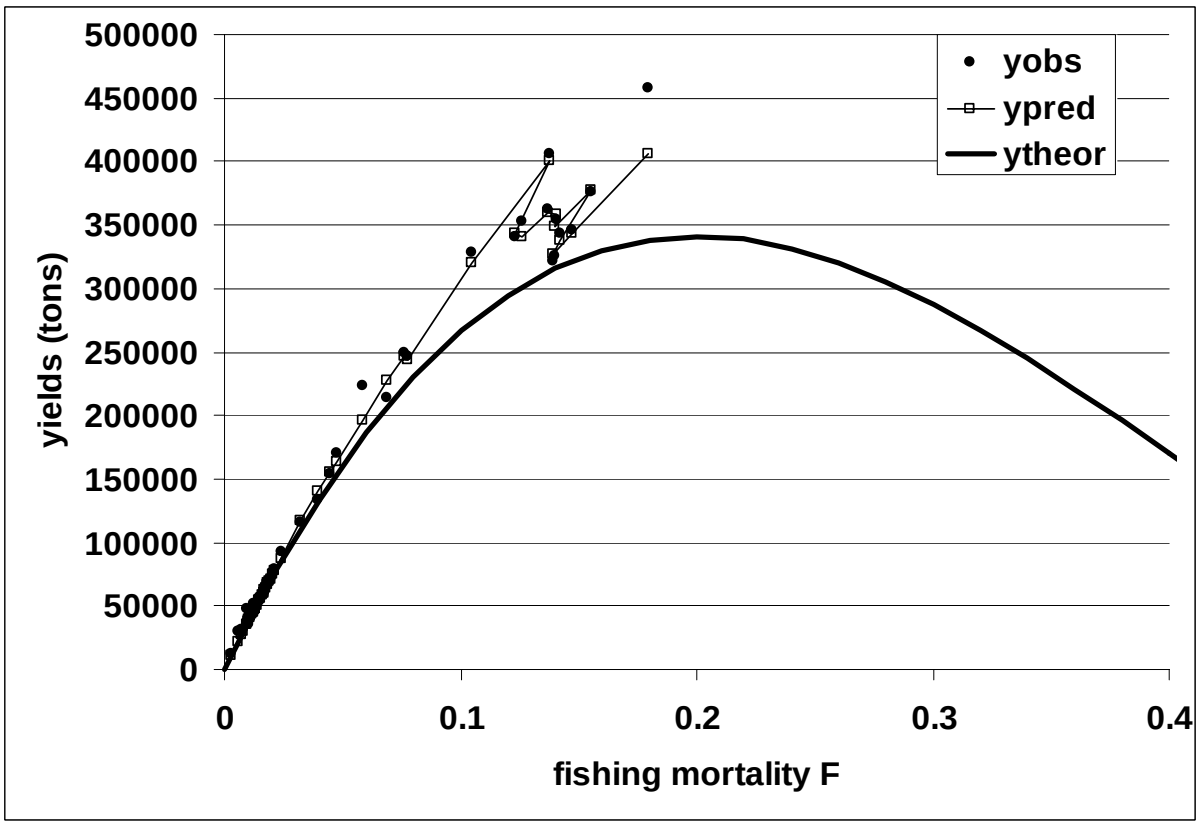
Table 1 : main population dynamics parameter estimates

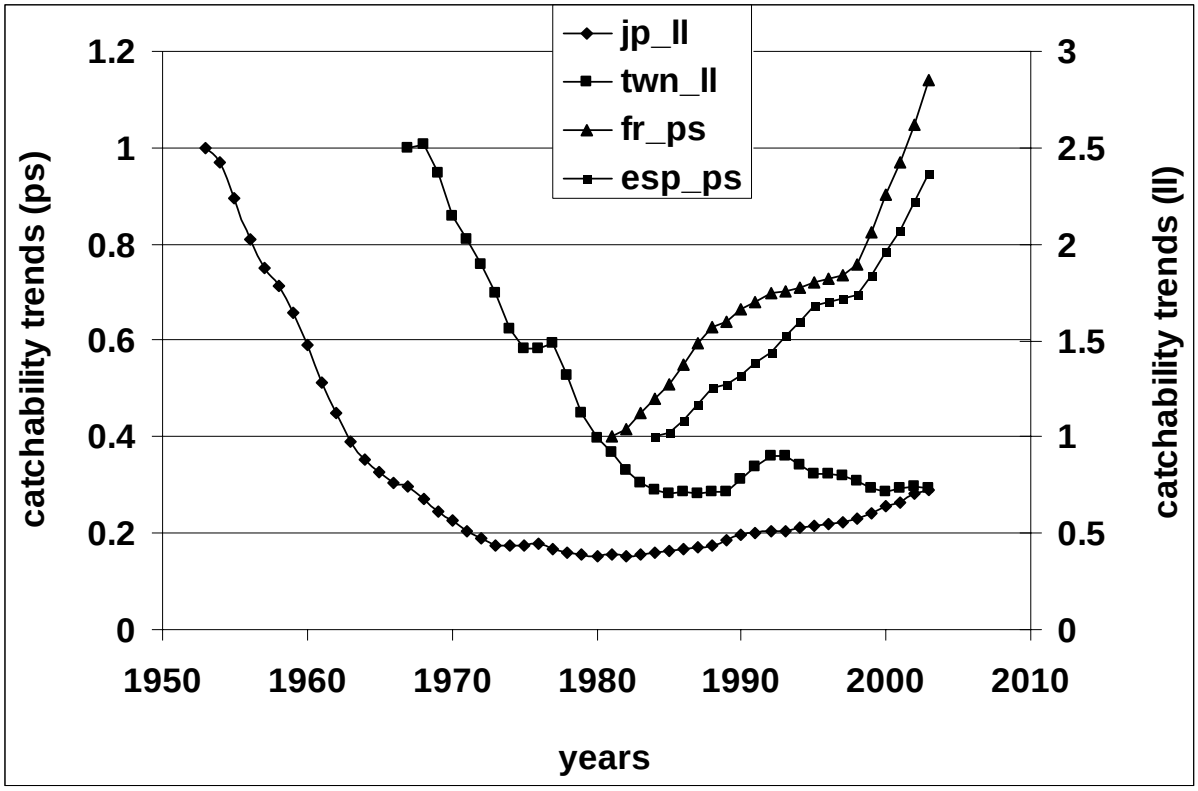
r	**m**	**K**
0.6	1.5 (fixed)	3.84E+06

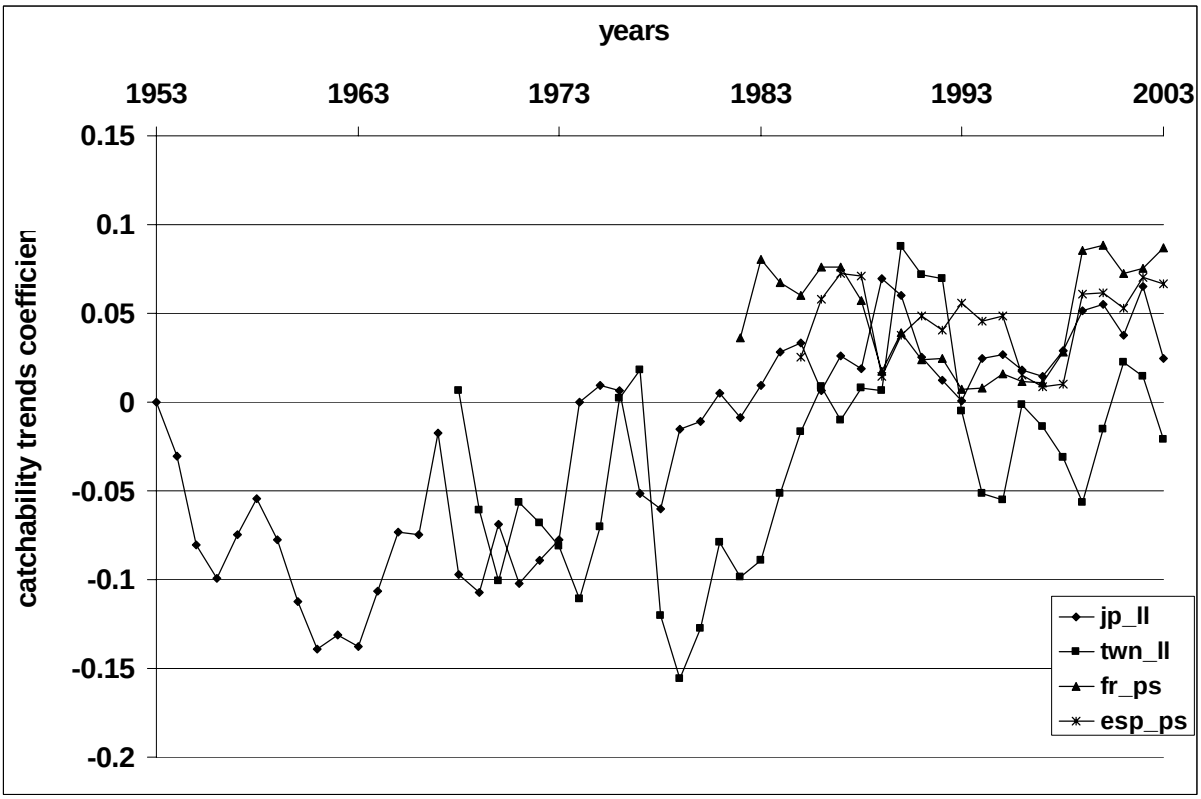
MSY	341127
f_{2003} / fMSY	0.897

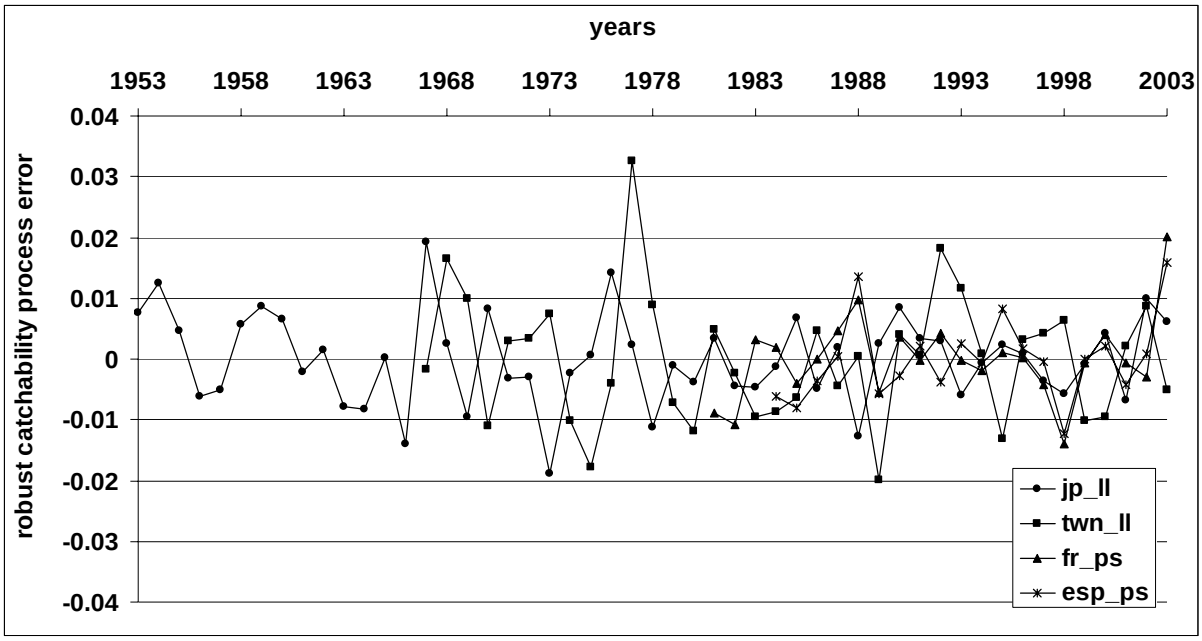



biomass / yield (1000 tons)
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
1950
1960
1970
1980
1990
2000
years
yield_obs
yield_pred


yields (tons)
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
0
0.1
0.2
0.3
0.4
fishing mortality F
yobs
ypred
ytheor


jp_ll
twn_ll
fr_ps
esp_ps
catchability trends (ps)
catchability trends (ll)
1.2
1
0.8
0.6
0.4
0.2
0
3
2.5
2
1.5
1
0.5
0
1950
1960
1970
1980
1990
2000
2010
years


years
1953
1963
1973
1983
1993
2003
catchability trends coefficien
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
jp_ll
twn_ll
fr_ps
esp_ps



- In the various runs conducted by changing the variances of the priors (cf. 2002 meeting), data are well fitted by the model. The fishery seems to be just below the fMSY, **catches being in a desequilibrium situation far over the MSY value**.

- The MSY value seems to be relatively robust to the priors.

- The ratio f_{2003} / *fMSY* decreases rapidly when priors are relaxed indicating that the current position relatively to F_{MSY} is poorly determined.

- The estimated fishing mortality is increasing slowly during the first historical period of the fishery before the purse seine fishery appearance in the early eighties, then it increases dramatically until the present days with a slight slow down or even a plateau in the late nineties if priors are relaxed. Strong fishing mortality is estimated in 2003.

- Estimated catchability time series for both longliners and purse seiners exhibit a very typical shape which is robust to the priors. A strong decrease at the beginning of the time serie folowed by a very stable plateau characterizes longliners catchability and a continuous increase characterizes the purse-seiners.

- The robust catchability process error can be interpreted as residuals. According to the assumptions of the model, it does not exhibit any trend and enables to take into account extreme data values such as the high catchabilities in 2003.