

# Octopus

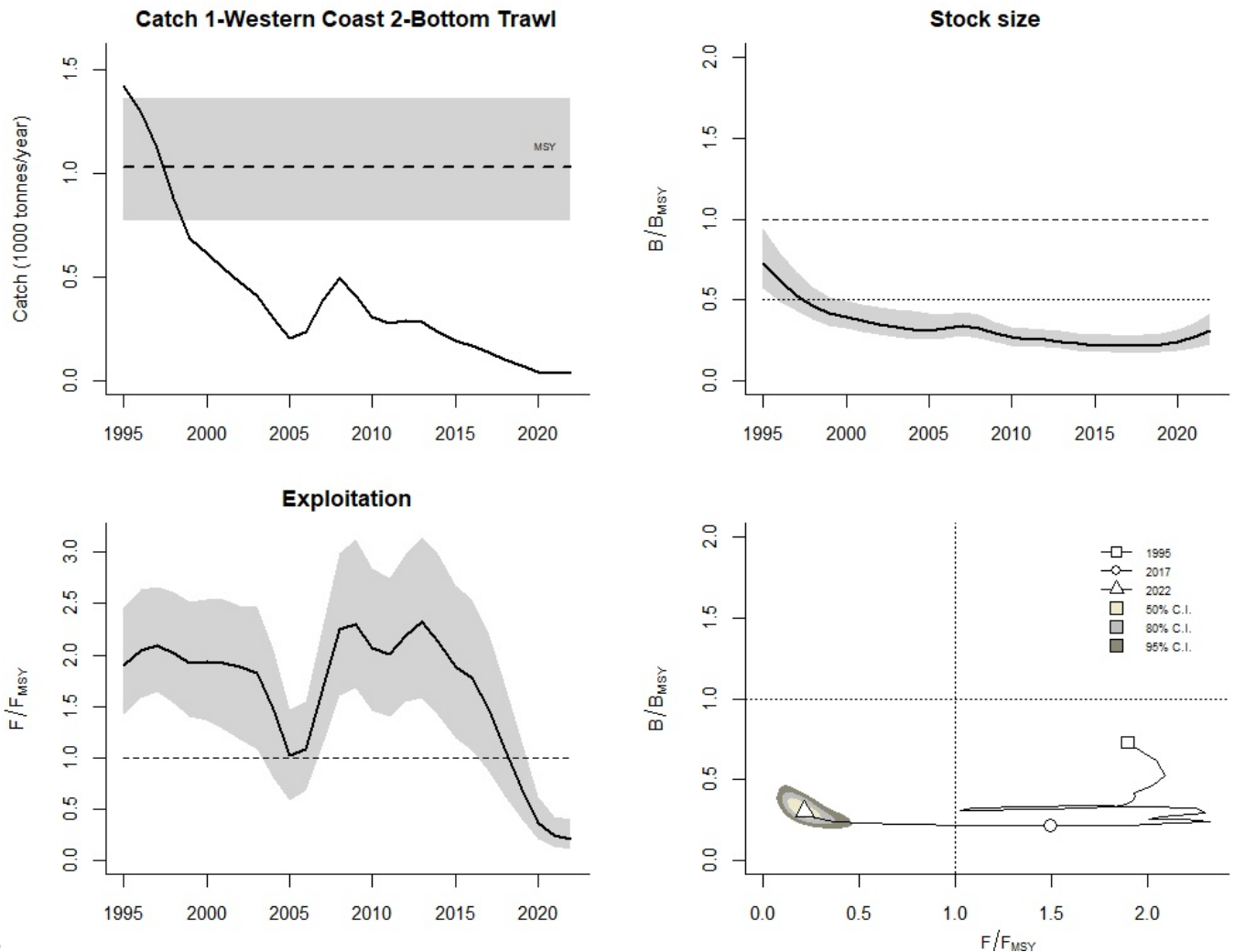
Species: *Octopus vulgaris*, Stock code: 1-Western Coast 2-Bottom Trawl

Region: Iberia

Marine Ecoregion: Portugal

Reconstructed catch data used from years 1995 - 2019

For figure captions and method see <http://www.seaaroundus.org/cmsy-method>



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## Results for management (based on BSM analysis)

$F_{msy} = 0.257$ , 95% CL = 0.175 - 0.377 (if  $B > 1/2 B_{msy}$  then  $F_{msy} = 0.5 r$ )

$F_{msy} = 0.145$ , 95% CL = 0.0987 - 0.212 ( $r$  and  $F_{msy}$  are linearly reduced if  $B < 1/2 B_{msy}$ )

$MSY = 1$ , 95% CL = 0.751 - 1.33;  $B_{msy} = 3.86$ , 95% CL = 2.65 - 5.85 (1000 tonnes)

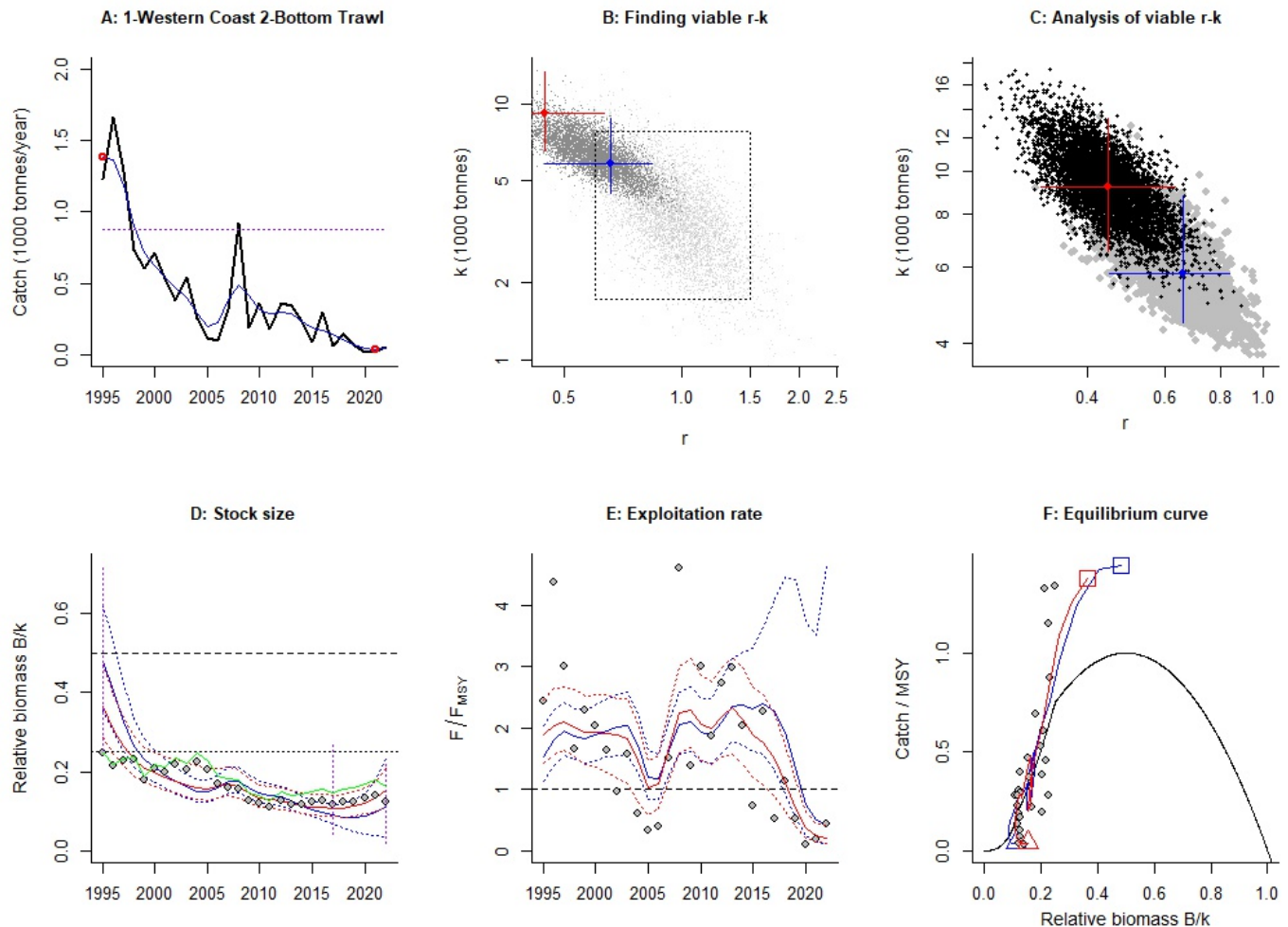
Biomass in last year = 1.1, 95% CL = 0.672 - 1.72 (1000 tonnes)

$B/B_{msy}$  in last year = 0.281, 95% CL = 0.197 - 0.396

Fishing mortality in last year = 0.0884, 95% CL = 0.0519 - 0.158

$F/F_{msy} = 0.611$ , 95% CL = 0.308 - 1.25

Comment:



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## Results of CMSY analysis conducted in JAGS

$r = 0.662$ , 95% CL = 0.455 - 0.837;  $k = 5.79$ , 95% CL = 4.47 - 8.73 (1000 tonnes)

MSY = 0.957, 95% CL = 0.752 - 1.25 (1000 tonnes/year)

Relative biomass last year = 0.128  $k$ , 95% CL = 0.0478 - 0.261

Exploitation  $F/(r/2)$  in last year = 1.09

## Results from Bayesian Schaefer model using catch and CPUE

$r = 0.514$ , 95% CL = 0.351 - 0.754;  $k = 7.72$ , 95% CL = 5.3 - 11.7

$r$ - $k$  log correlation = -0.731

MSY = 1, 95% CL = 0.751 - 1.33 (1000 tonnes/year)

Relative biomass in last year = 0.128  $k$ , 95% CL = 0.0478 - 0.261

Exploitation  $F/(r/2)$  in last year = 0.266

$q = 4.18$ , 95% CL = 2.86 - 6.05

Prior range of  $q = 1.04 - 18.3$

Relative abundance data type = CPUE

Prior initial relative biomass = 0.256 - 0.721 default

Prior intermediate relative biomass = 0.0562 - 0.298 in year 2005 default

Prior final relative biomass = 0.0324 - 0.248, default

Prior range for  $r = 0.6 - 1.5$  default, prior range for  $k = 1.77 - 7.81$  (1000 tonnes) default

Source for relative biomass:

DGRM