State and Development of European Fish Stocks

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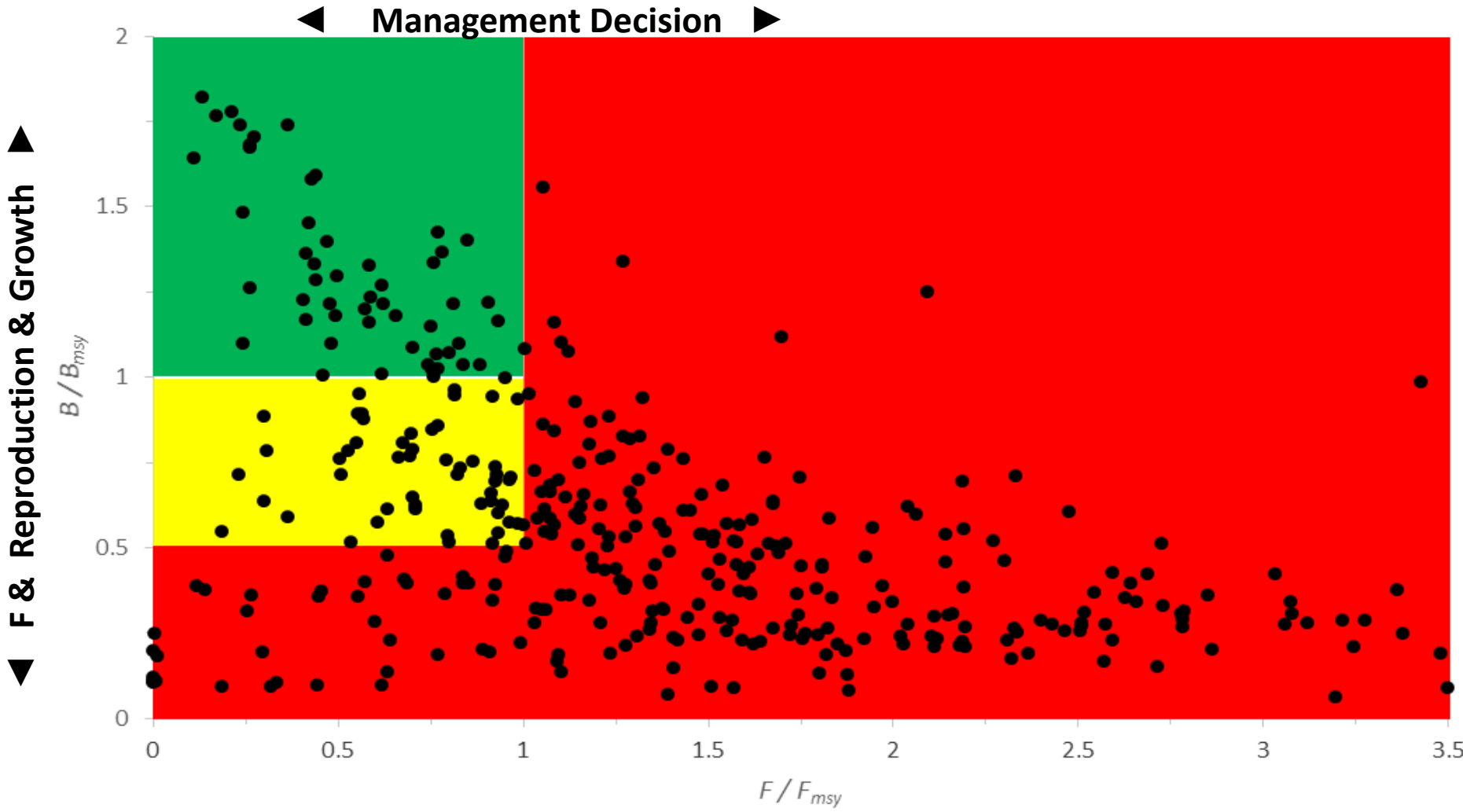
State and Development of the Biomass of Fish Stocks Managed by the CFP
Brussels, Belgium, 27 February 2017, European Parliament

Reminder of Symbols and Terms

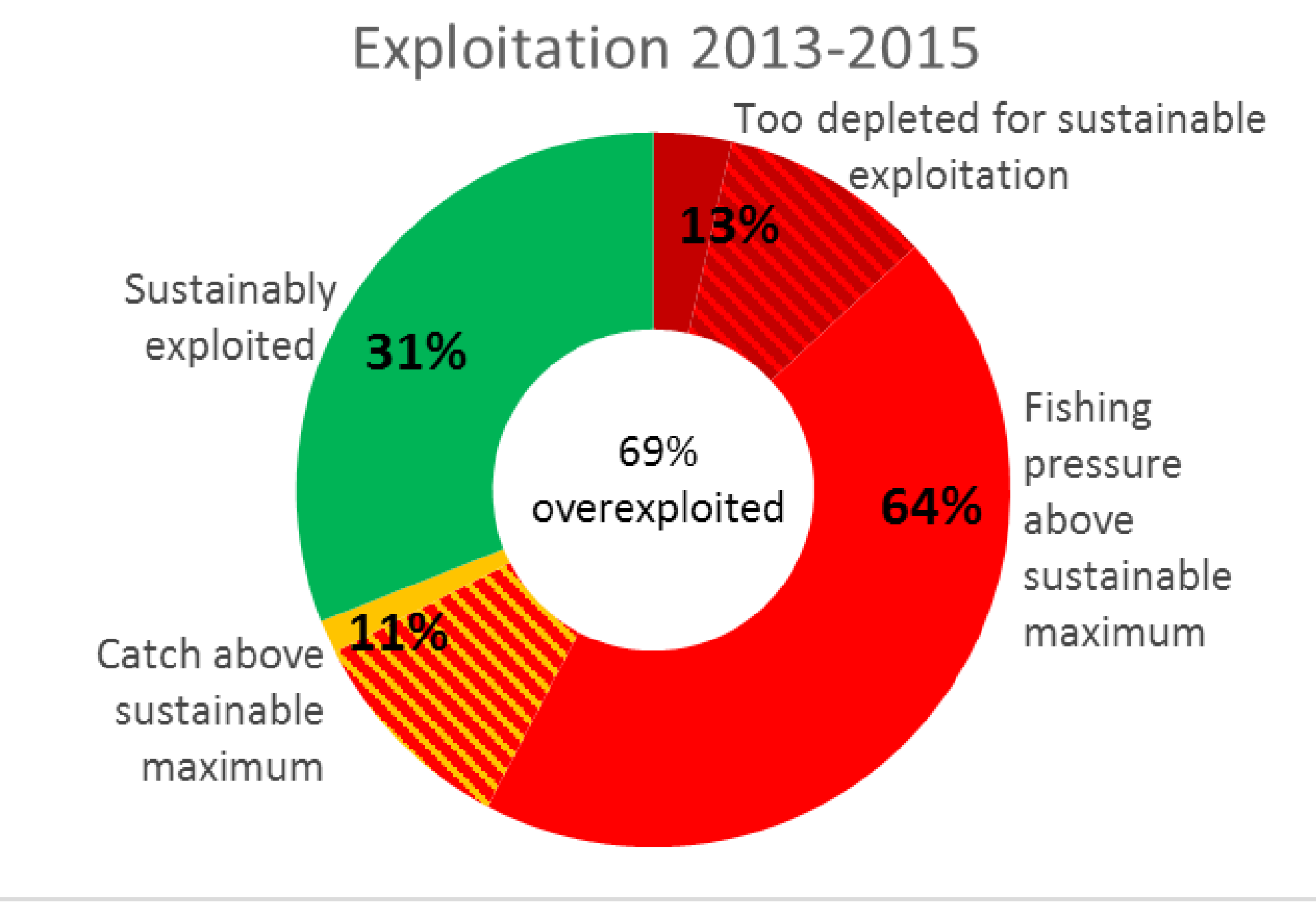
- *MSY* is the maximum sustainable yield, the maximum long-term catch
- *Bmsy* is the smallest biomass that can produce *MSY*
- *F* is the fishing mortality rate, the proportion of fish killed by fishing
- *Fmsy* is the fishing mortality rate resulting eventually in *Bmsy* and *MSY*
- *Bpa* is the border of safe biological limits, the biomass below which recruitment may be impaired

State of the Stocks

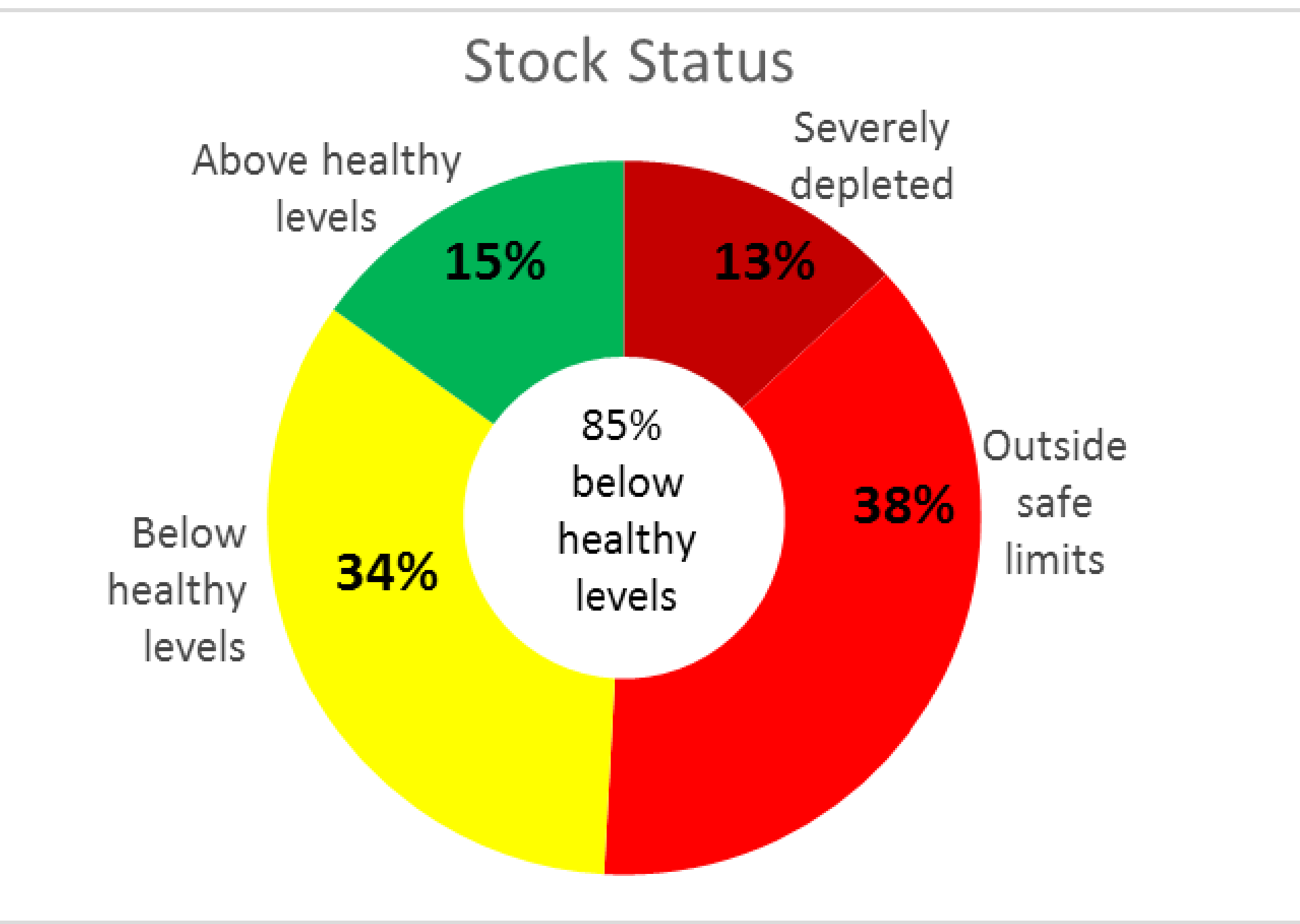
European Stocks in 2013-2015



Analysis of 397 stocks in European Seas and adjacent waters. Froese et al. 2016.



Exploitation of 397 stocks in European Seas in 2013-2015. Note overlapping of different types of overexploitation, and therefore the numbers do not add up to 100%. Froese et al. 2016

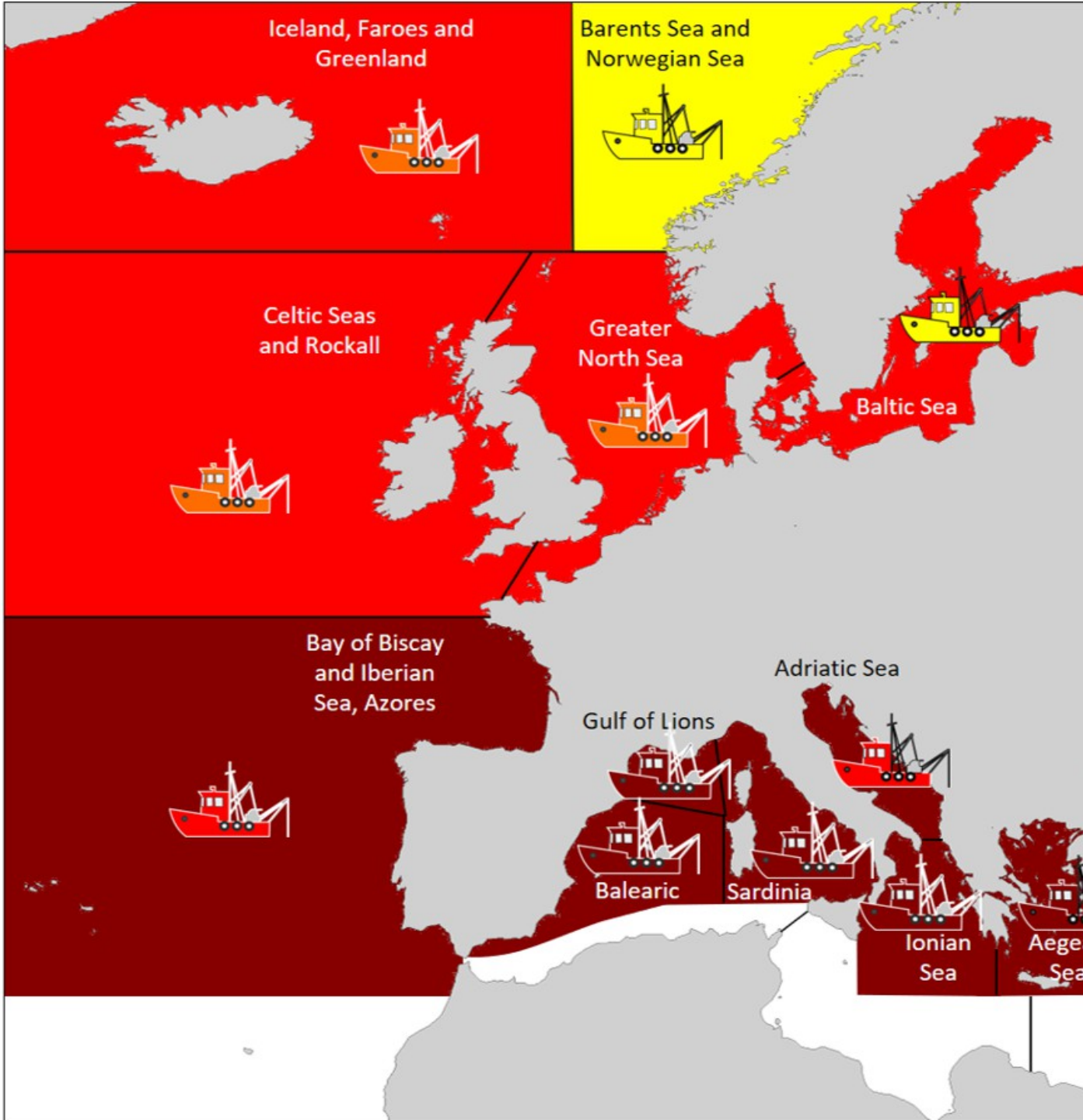


Status of 397 stocks in European Seas 2013-2015.

Froese et al. 2016

CFP compliance by Ecoregion 2013-2015

Froese et al. 2016



Stocks capable of MSY

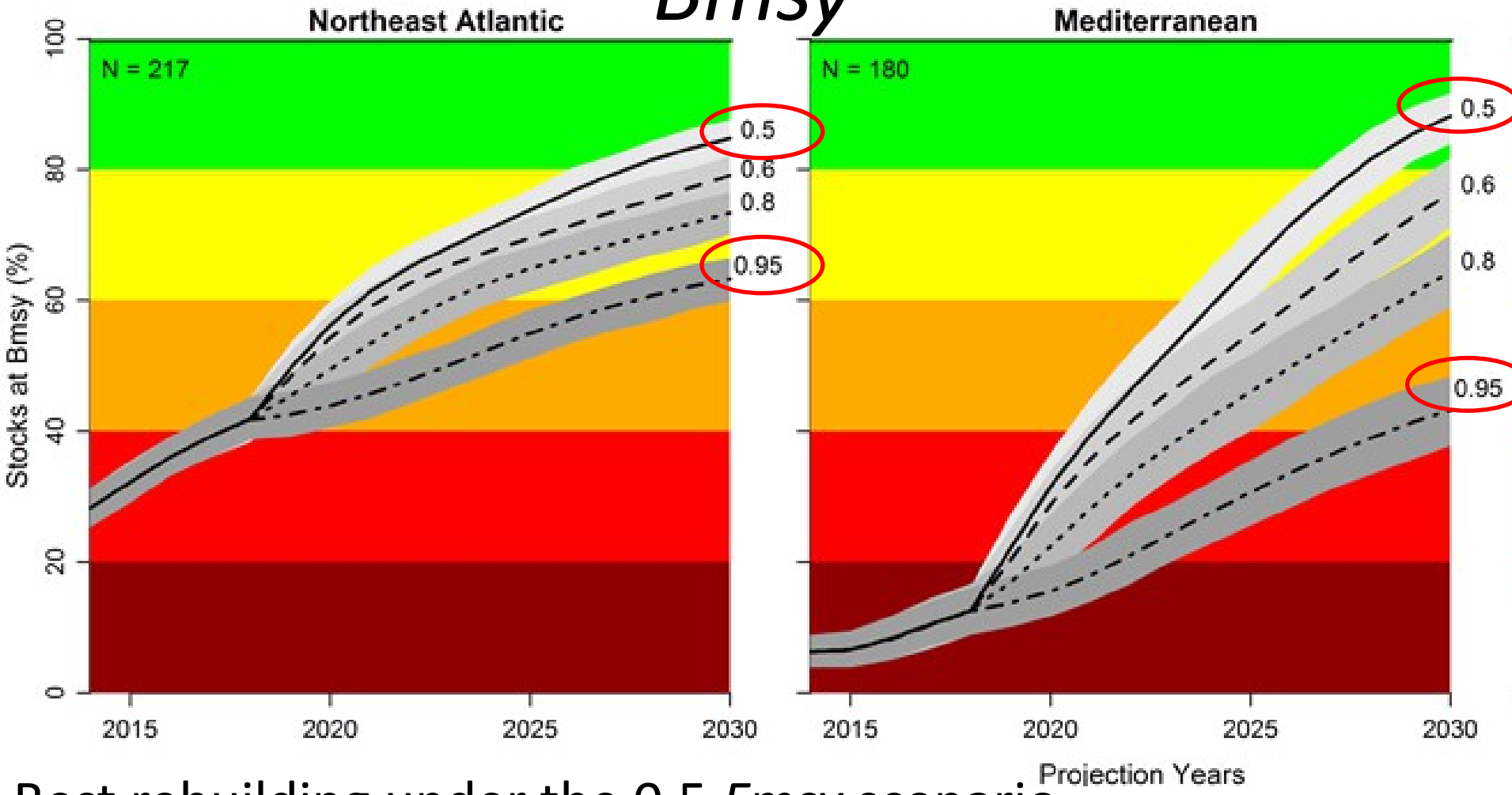
- =100%
- >=80%
- >=60%
- >=40%
- >=20%
- <20%

Sustainably exploited stocks

- =100%
- >=80%
- >=60%
- >=40%
- >=20%
- <20%

Development of the Stocks

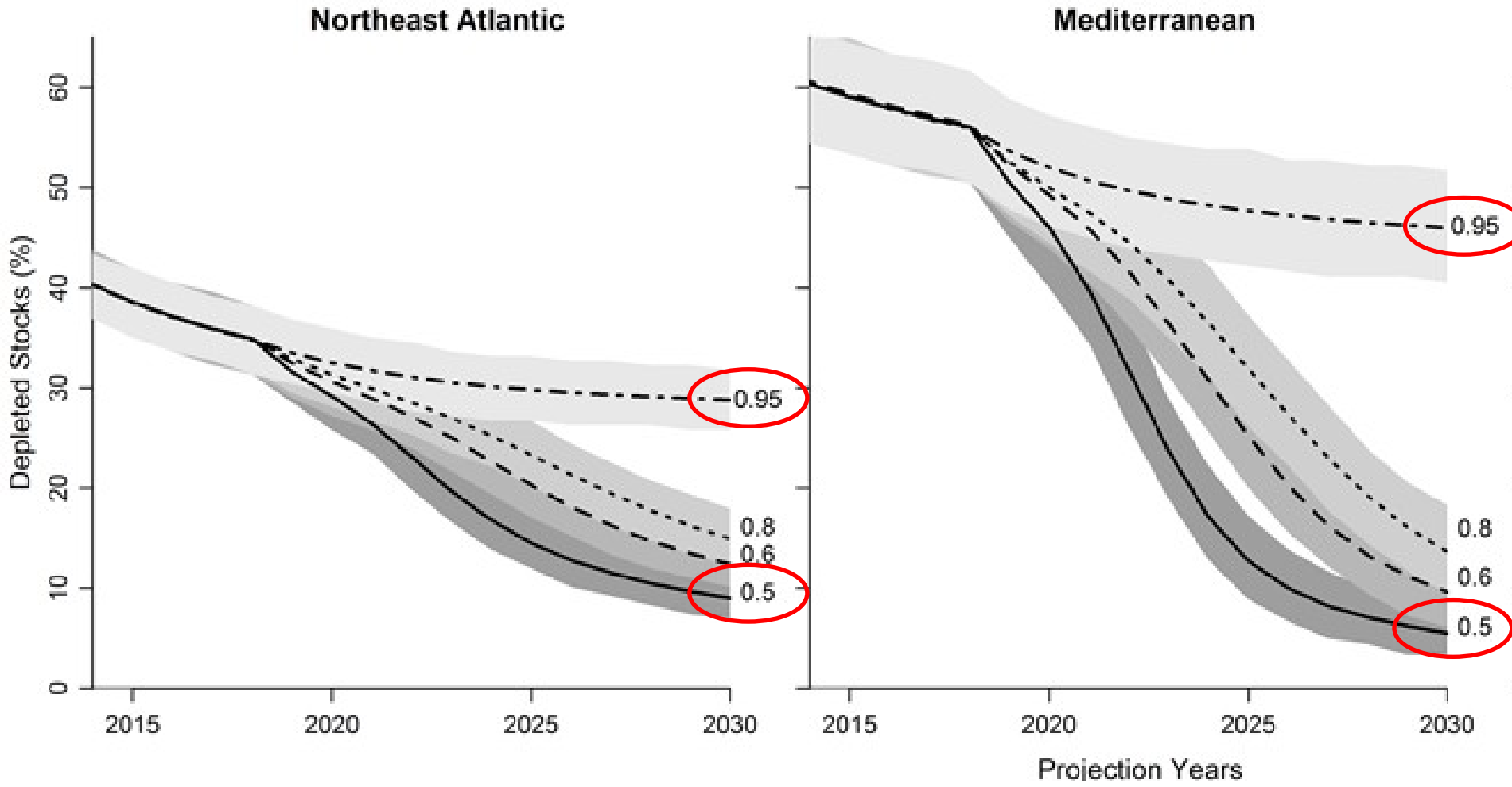
Percentage of Stocks at or above *Bmsy*



Best rebuilding under the 0.5 *Fmsy* scenario,
worst under the 0.95 *Fmsy* scenario

Froese et al. (in prep)

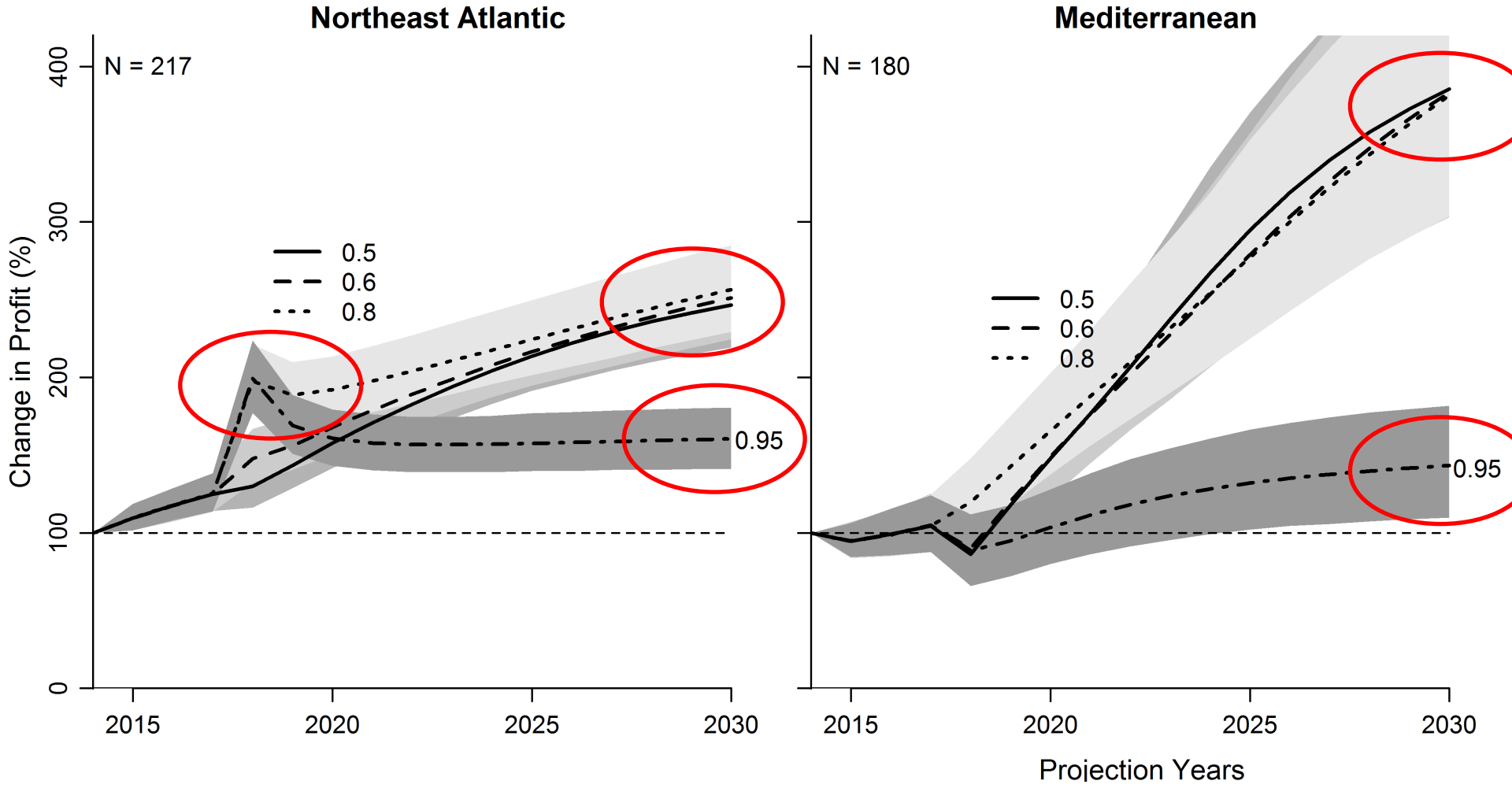
Percentage of Depleted Stocks



Best rebuilding under the 0.5 *Fmsy* scenario,

Froese et al. (in prep)

Profitability

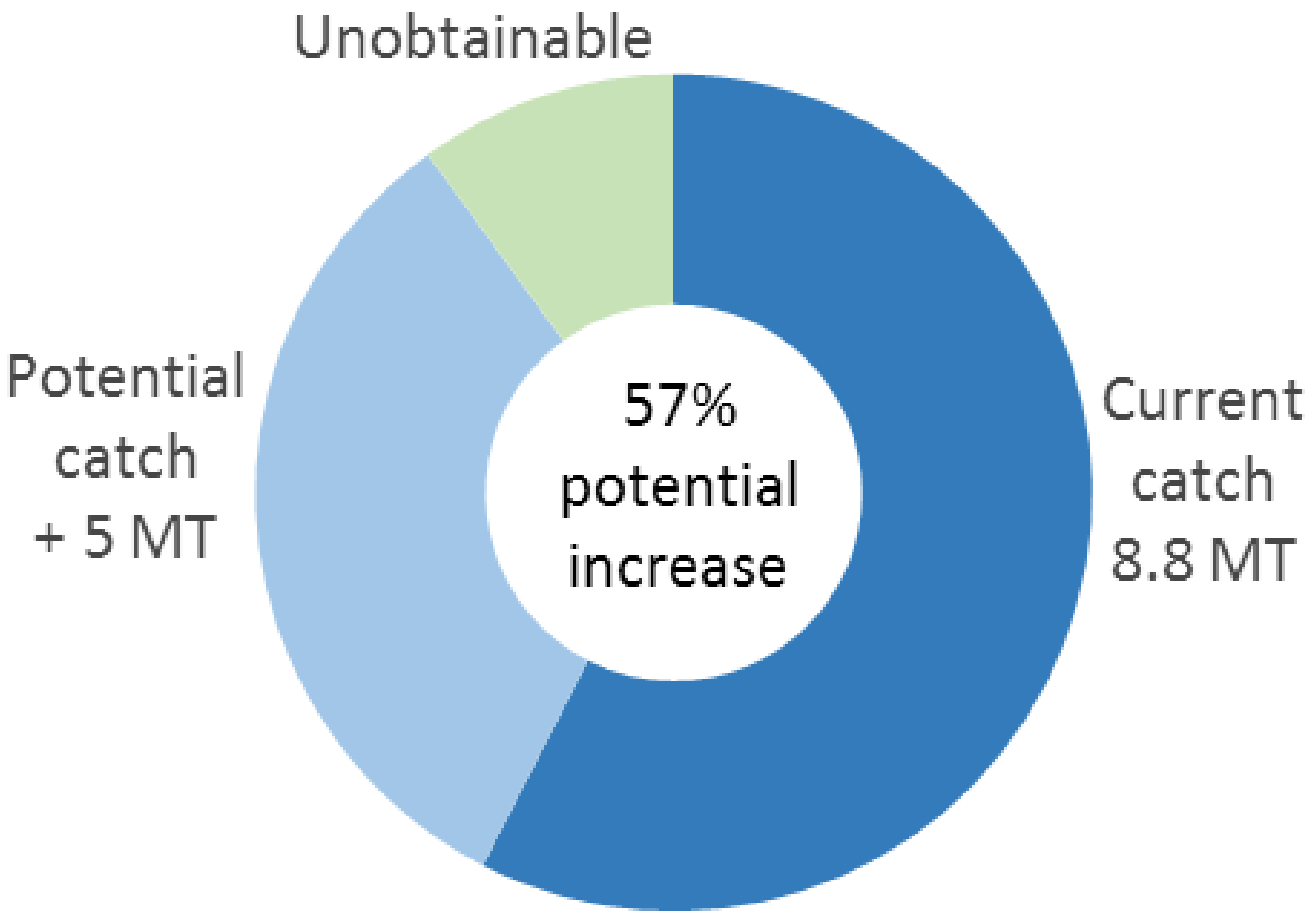


Good profits for the 0.5 – 0.8 *Fmsy* scenarios

Low profit for the 0.95 *Fmsy* scenario

Froese et al. (in prep)

Maximum Sustainable Catch



Analysis of current (2013 -2015) and potential catches for 397 stocks in European Seas. Because of trophic interactions, all stocks cannot support maximum yields simultaneously. Froese et al.

Conclusions

- Sustainable exploitation by 2015 has been achieved for only 1/3 of the stocks
- In 2015, biomass was above the *MSY* level in only 15% of the stocks
- Fastest rebuilding is achieved with *F* = 0.5 *Fmsy*
- High profitability is achieved with F = 0.5 - 0.8 *Fmsy*
- *F* = 0.95 *Fmsy* fails to rebuild depleted stocks and results in lowest profitability
- Sustainable catches can be 5 MT (> 50%) higher if stocks are rebuilt above *MSY* levels

Acknowledgements

- Stock status and exploitation were based on a study commissioned by Fundacion **OCEANA**: Froese, R., Garilao, C., Winker, H., Coro, G., Demirel, N., Tsikliras, A., Dimarchopoulou, D., Scarcella, G., Sampang-Reyes, A. (2016) Exploitation and Status of European Stocks. World Wide Web electronic publication, http://oceanrep.geomar.de/34476/

- Predictions for rebuilding of biomass, catch and profitability were based on Froese et al. (2017) Rebuilding European Fisheries, (in prep.), contact rfroese@geomar.de for more information.

Thank You