OMMEG interpretation of the ASCOBANS conservation objective

Matthieu Authier & colleagues
2023-04-24

Observatoire Pelagis

UAR 3462 CNRS La Rochelle Université

Regional agreements
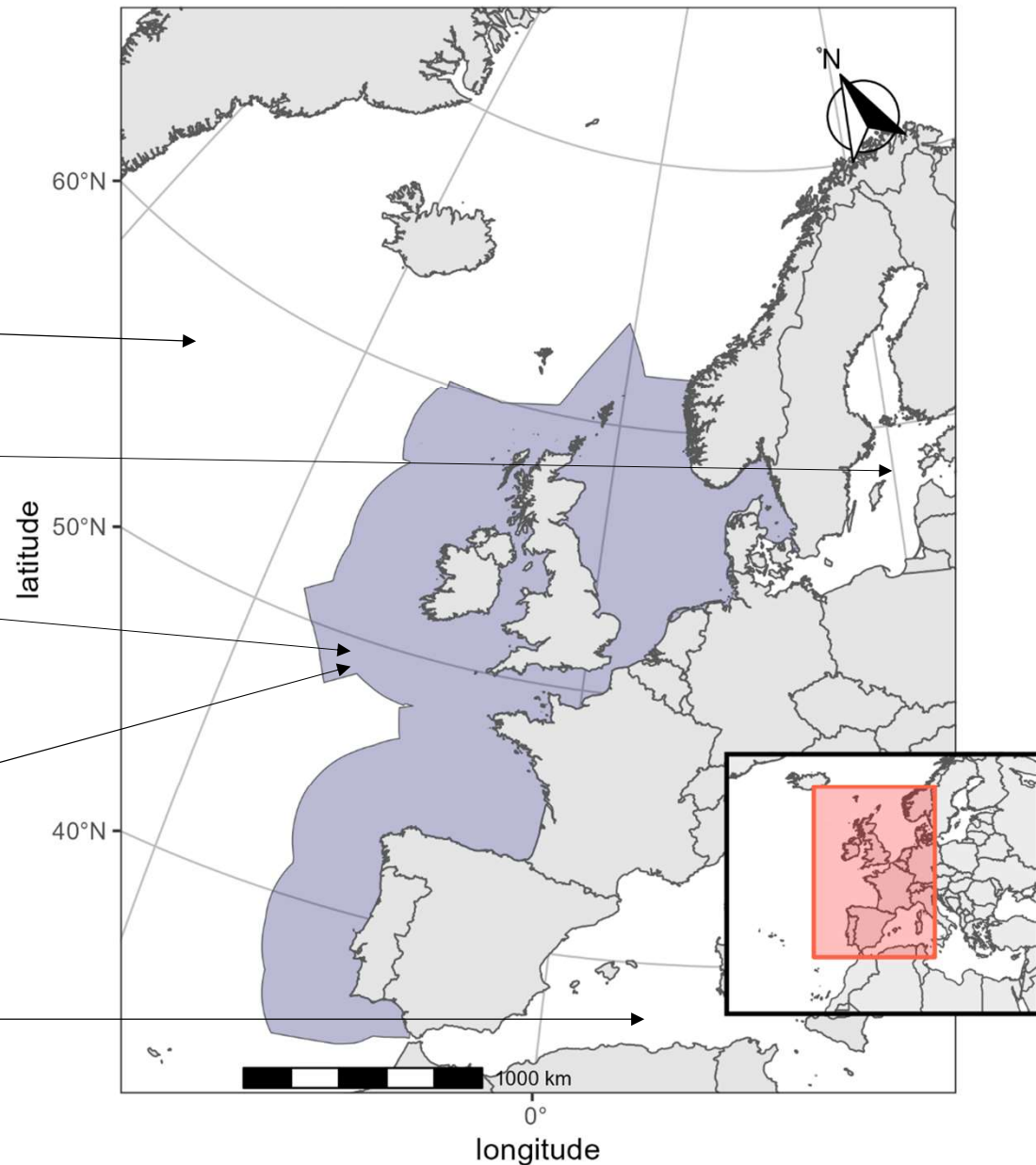
ICES (fisheries management)

HELCOM (Baltic)

OSPAR (Northeast Atl)

ASCOBANS (Northeast Atl)

ACCOBAMS (Mediterranean)

ICES CIEM

HELCOM

ASCOBANS

ACCOBAMS

OSPAR request to ICES (2014)

Marine Strategy Framework Directive (EC 56/2008)

European Union

« Marine Strategy Framework » Directive (2008/56/EC)

Biodiversity descriptor (D1):

D1C1 – The mortality rate per species from incidental by-catch is below levels which threaten the species, such that its **long-term viability** is ensured.

Regional coordination to be achieved through Regional Sea Conventions such as OSPAR or HELCOM

OSPAR request to ICES (2014)

Marine Strategy Framework Directive (EC 56/2008)

"ICES has provided advice [in 2009] to the European Commission under [now repealed] EU Regulation 812/2004 on setting targets for limits on bycatch using an approach known as the Catch Limit Algorithm. Key choices need to be made at the societal/policy level for this advice to be further developed and ICES has offered to help organize a workshop to consider these choices."

→ Need for a conservation objective

Conservation Objectives

Marine mammal populations should be at their Optimum Sustainable Population (US MMPA)

Optimum Sustainable Population:

a population should recover to or be maintained at or above 50% of carrying capacity

with 0.95 probability

over 100 years

Conservation Objectives

Marine mammal populations should be at their Optimum Sustainable Population (US MMPA)

Optimum Sustainable Population:

a population should recover to or be maintained at or above 50% of carrying capacity

with 0.95 probability

over 100 years

Lower bound

Confidence (1 – risk)

Time horizon

Conservation Objectives in Europe

ASCOBANS

BONN convention - ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) → Resolution 3.3

a)   "the aim of ASCOBANS can be interpreted as "to restore and/or maintain biological or management stocks of small cetaceans at the level they would reach when there is the lowest possible anthropogenic influence""

b)   "a suitable short-term practical sub-objective" "to restore and/or maintain stocks/populations to **80% or more of the carrying capacity**"

Conservation Objectives in Europe

BONN convention - ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) → Resolution 3.3

a)   "the aim of ASCOBANS can be interpreted as "to restore and/or maintain biological or management stocks of small cetaceans at the level they would reach when there is the lowest possible anthropogenic influence""

Lower bound

b)   "a suitable short-term practical sub-objective" "to restore and/or maintain stocks/populations to **80% or more of the carrying capacity**"
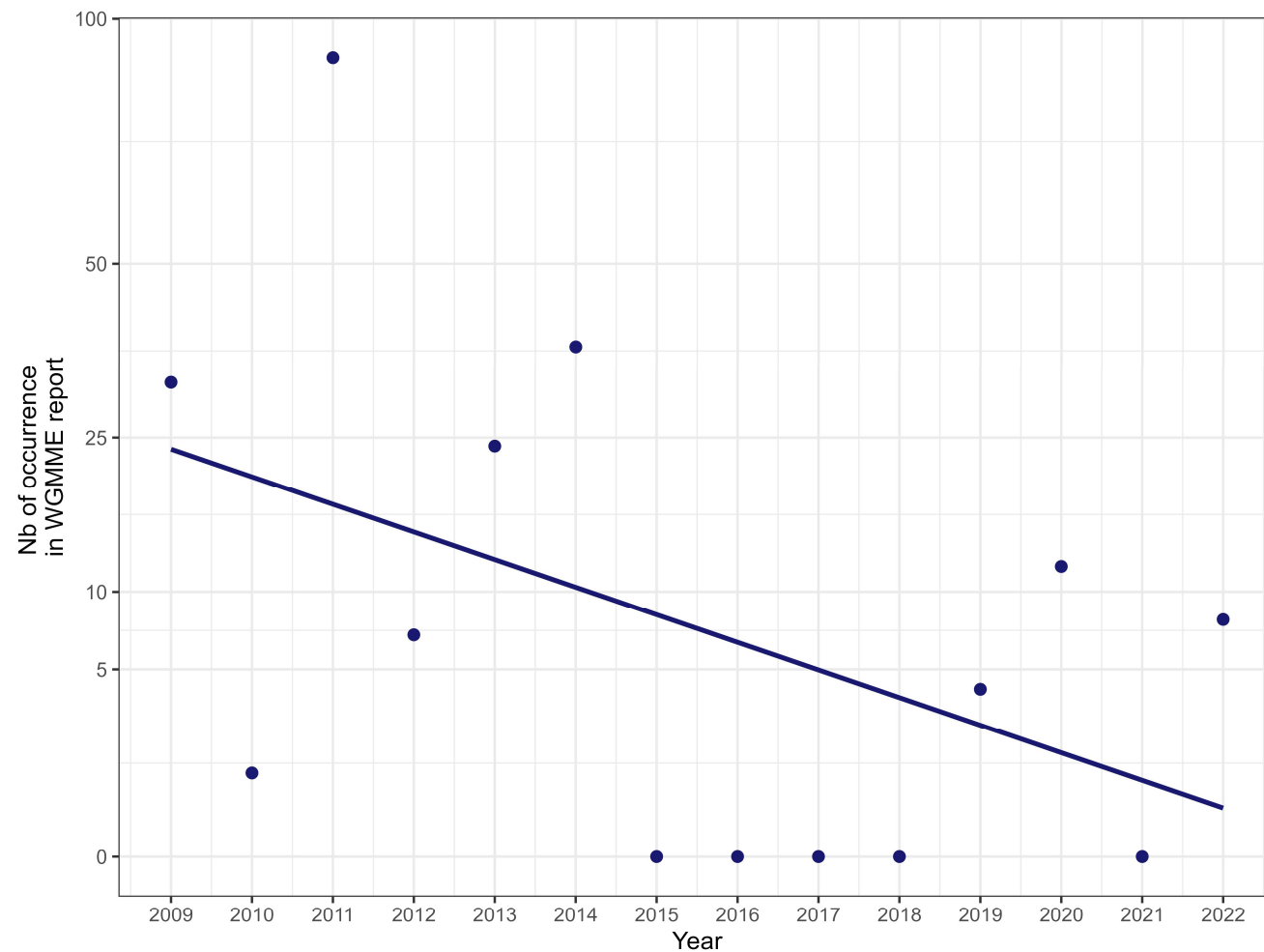
Time horizon ?

Confidence or risk?

WGMME reports

Frequencies of
regular
expression

[conservation
objective]

since 2009
advice to EC

→ Decline in
mention

OSPAR

Oslo-Paris Convention (1992) for the Protection of the Marine Environment of the North-East Atlantic

The 16 Contracting Parties are

Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom,

together with the European Union

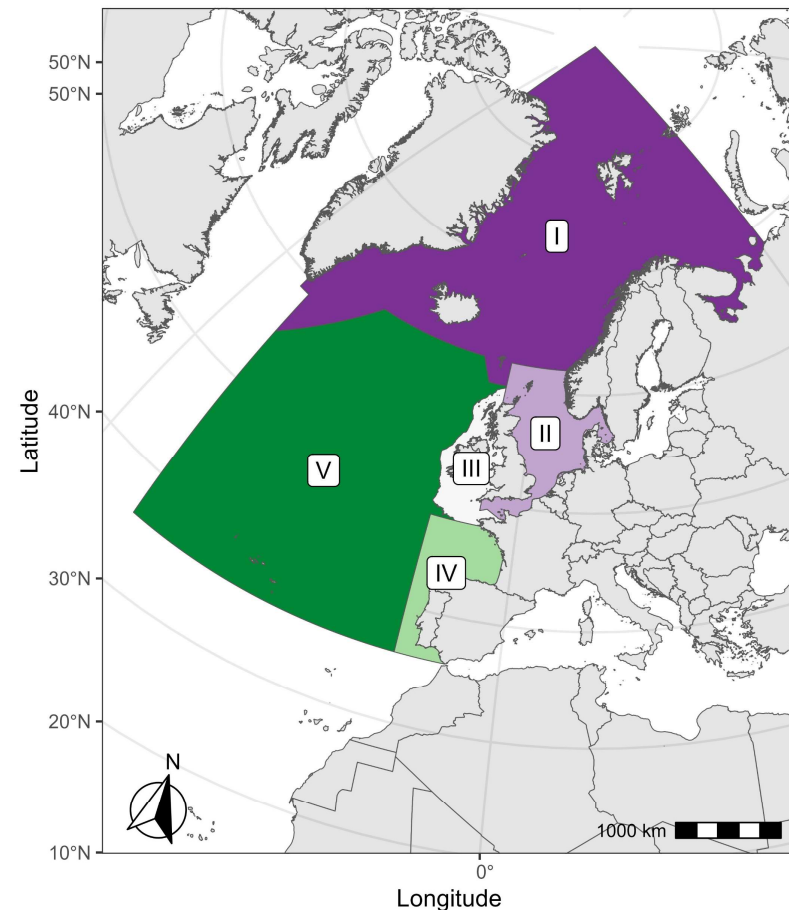The Convention came into force in 1998.

OSPAR

Every 10 years or so, OSPAR issues a Quality Status Report

Intermediate assessment 2017

OSPAR has one agreed common indicator on marine mammal by-catch: M6

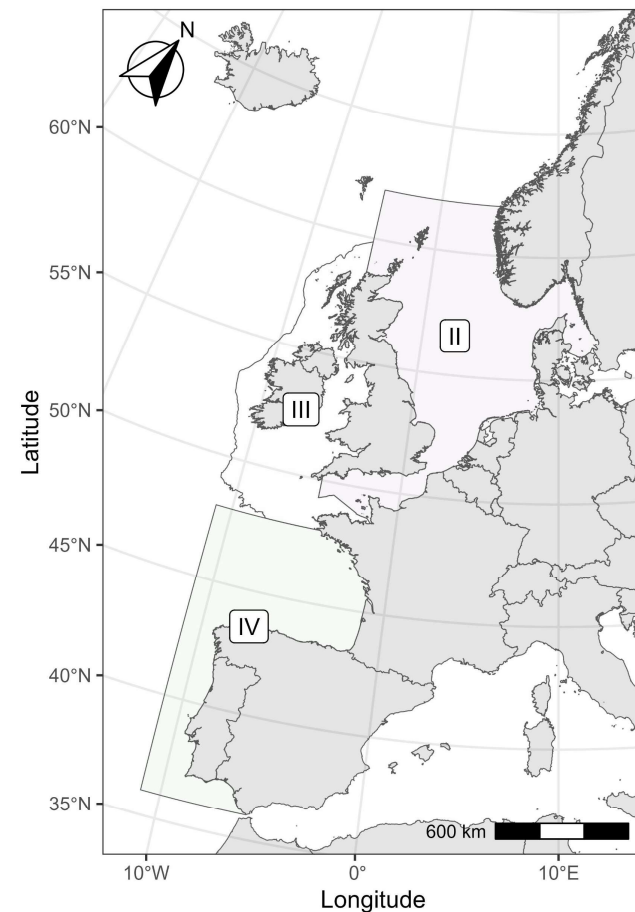(initially M6 was 'Harbour porpoise bycatch')

OSPAR

→ M6 common to Contracting Parties in Regions II, III and IV

https://oap.ospar.org/en/ospar-assessments/quality-status-reports/

No assessment of harbour porpoise by-catch in IA 2017 because of a lack of threshold for by-catch
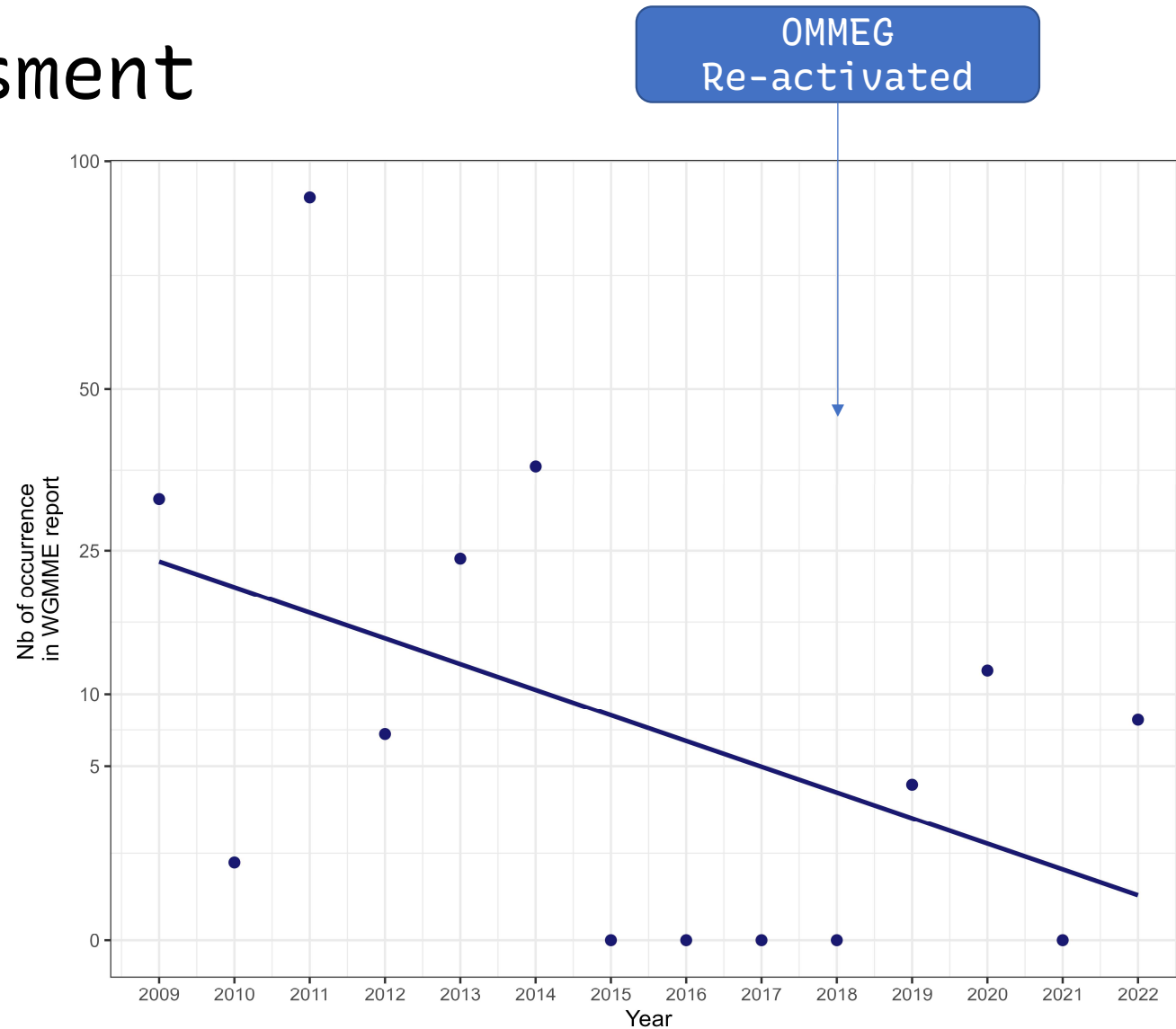
→ Assessment in 2023 (QSR2023)

By-catch assessment

Since 2009, no progress on conservation objective specification in the Northeast Atlantic

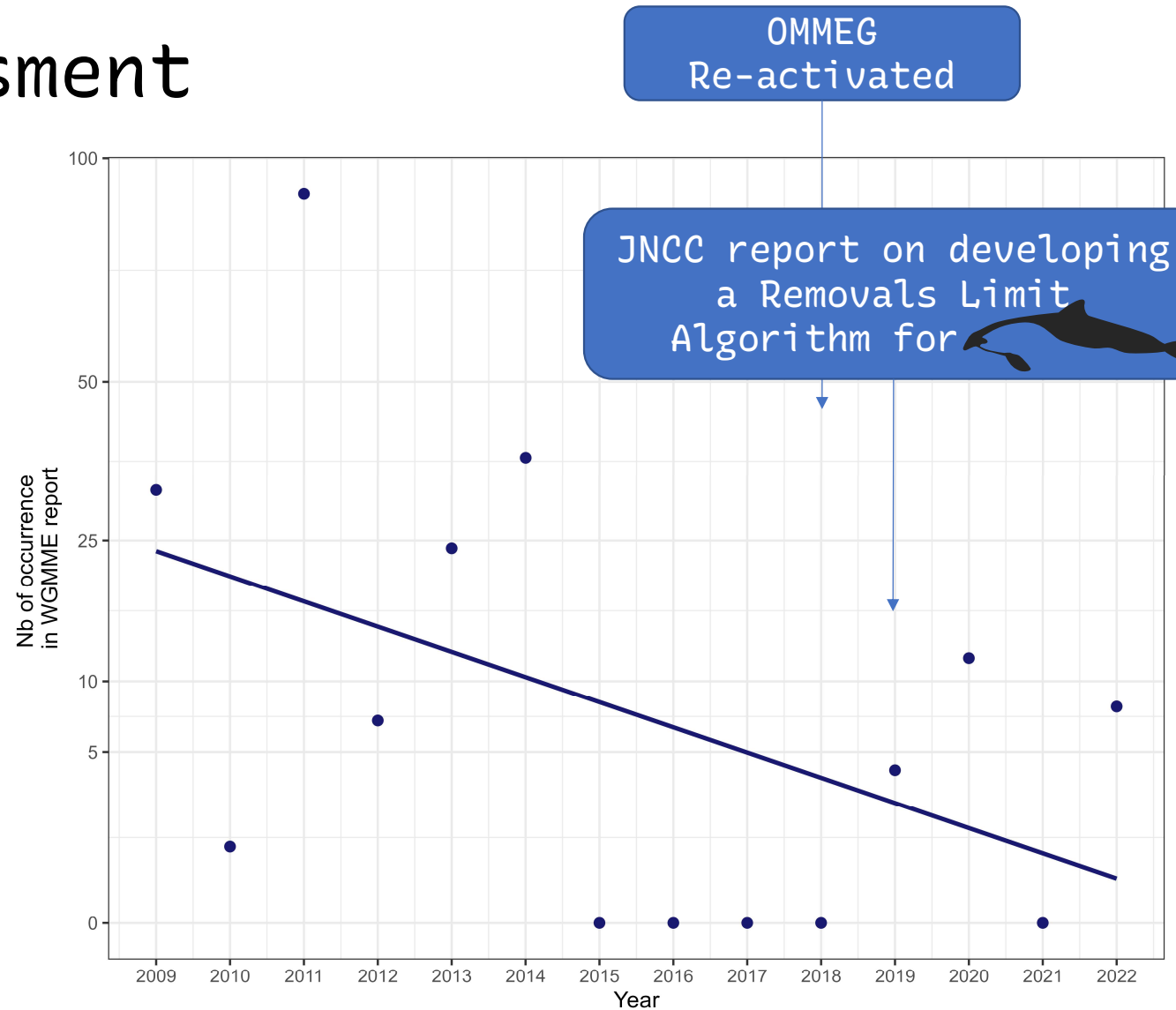2015: ASCOBANS workshops (?)

OMMEG
Re-activated

By-catch assessment

Since 2009, no progress on conservation objective specification in the Northeast Atlantic

Hammond et al. (2019):
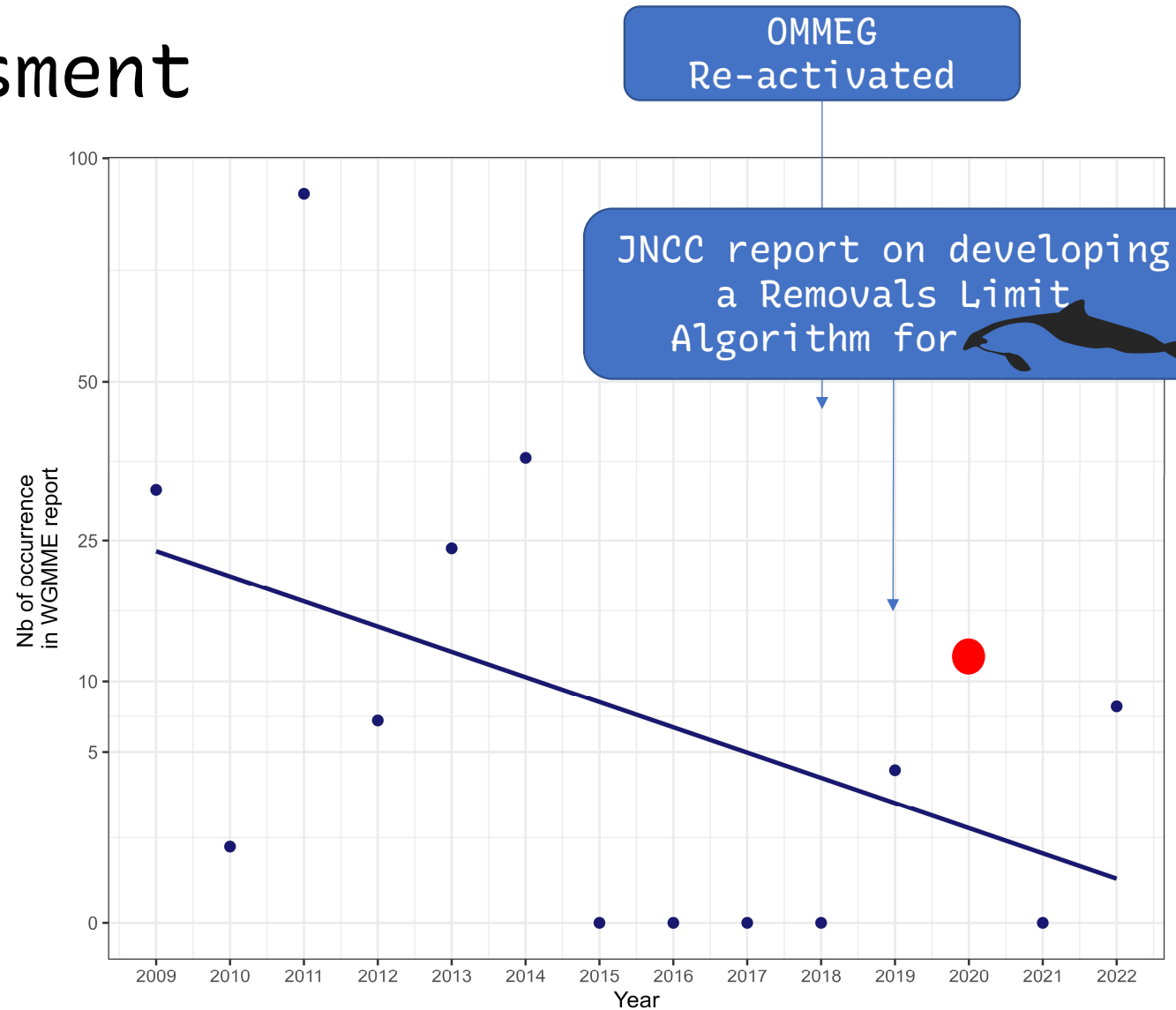
80% of K over 100 years with probability 0.5

2019: Joint OSPAR-HECLOM workshop on by-catch

By-catch assessment

Since 2009, no progress on conservation objective specification in the Northeast Atlantic

2020: infringement procedures against SE, FR and ES for failing to implement the strict protection of marine mammals

OMMEG
Re-activated

JNCC report on developing a Removals Limit Algorithm for

Control rule: PBR

Marine mammal populations should be at their Optimum
Sustainable Population (US MMPA)

Using simulations, Wade (1998) showed that, under
reasonable assumptions, these values allow OSP

$r_{\max}$ = 4%,

$N_{\min}$ = 20% quantile of log-normal distribution of N_{SCANS}

F_R = 0.5

in the formula

$$\text{PBR} = \frac{r_{\max}}{2} \times N_{\min} \times F_R$$

Tuned to the US
MMPA

Conservation Objective

ASCOBANS target is 80% of K

WGMME (2020) agreed to compute a PBR for common dolphins

and noted that PBR was not aligning with EU conservation
objectives

Conservation Objective

ASCOBANS target is 80% of K

WGMME (2020) agreed to compute a PBR for common dolphins

and noted that PBR was not aligning with EU conservation objectives

From 2021, OMMEG held a series of meeting to discuss M6 and thresholds for by-catch, building on previous work

(in particular Wade 1998, ASCOBANS, Winship 2009; and Hammond *et al.* 2019)

OSPAR Quality Status Report

OSPAR Marine Mammal Expert Group (OMMEG)

Expert group decided to use in spring 2021 the Conservation Objective:

a population should recover to or be maintained at or above 80% of carrying capacity

with 0.80 probability

over 100 years

Lower bound

Confidence (1 – risk)

Time horizon

Management Strategy Evaluation

a population should recover to or be maintained at or above 80% of carrying capacity

with 0.80 probability

over 100 years

In late 2020, LRUniv undertook to develop an R-package for Management Strategy Evaluation of marine mammal removals (Genu et al. 2021)


```
in R:
remotes::install_gitlab(
    host = "https://gitlab.univ-lr.fr",
    repo = "pelaverse/RLA"
)
```

Tuning PBR

a population should recover to or be maintained at or above 80% of carrying capacity

with 0.80 probability

over 100 years

r_{max} = 4%,

N_{min} = 20% quantile of log-normal distribution of N_{SCANS}

$\mathbf{F_R = 0.1}$

in the formula

$$\text{PBR} = \frac{r_{\text{max}}}{2} \times N_{\text{min}} \times F_R$$

QSR 2023: By-catch assessment

https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/

« The assessment is underpinned by a conservation objective attempting to capture European ambition for by-catch levels, subject to adjustment for future assessments to accommodate new evidence. »

→ Why we are here today…

OSPAR timeline

Meeting of Bio-Diversity Committee (BDC)

Spring 2021 : Agreement on conservation objective and methods to use

Autumn 2021 : Values for removals limits produced

Spring 2022 : Values for removals limits provisionally agreed pending caveats in M6 assessment for QSR 2023

Summer 2022 : text for M6 assessment for QSR 2023 agreed
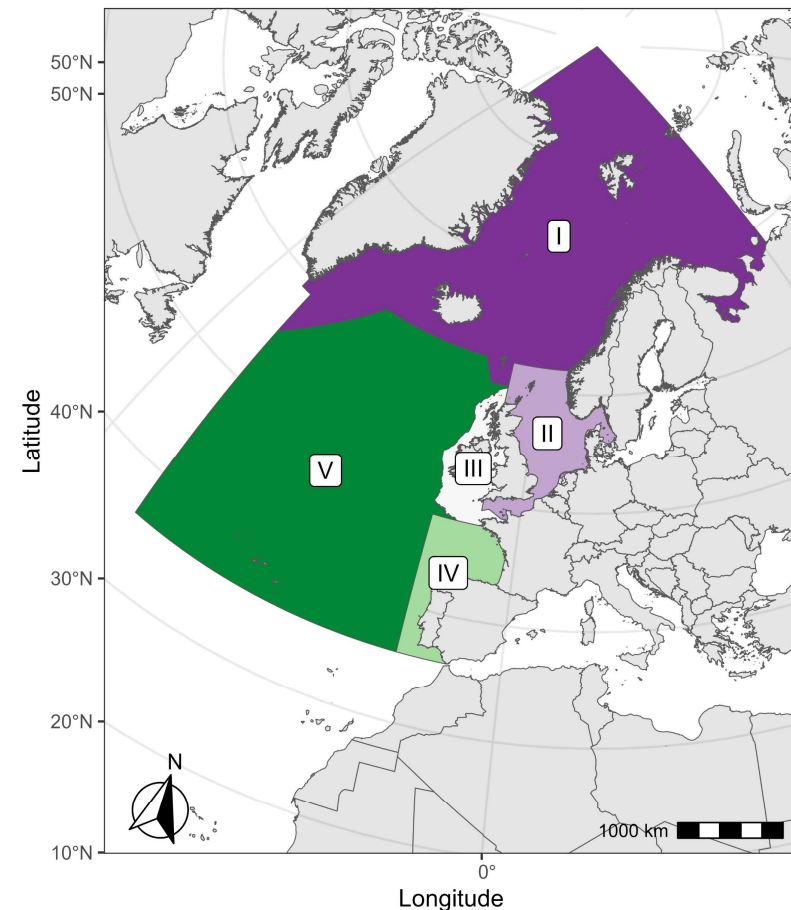
Thanks for your attention

OSPAR

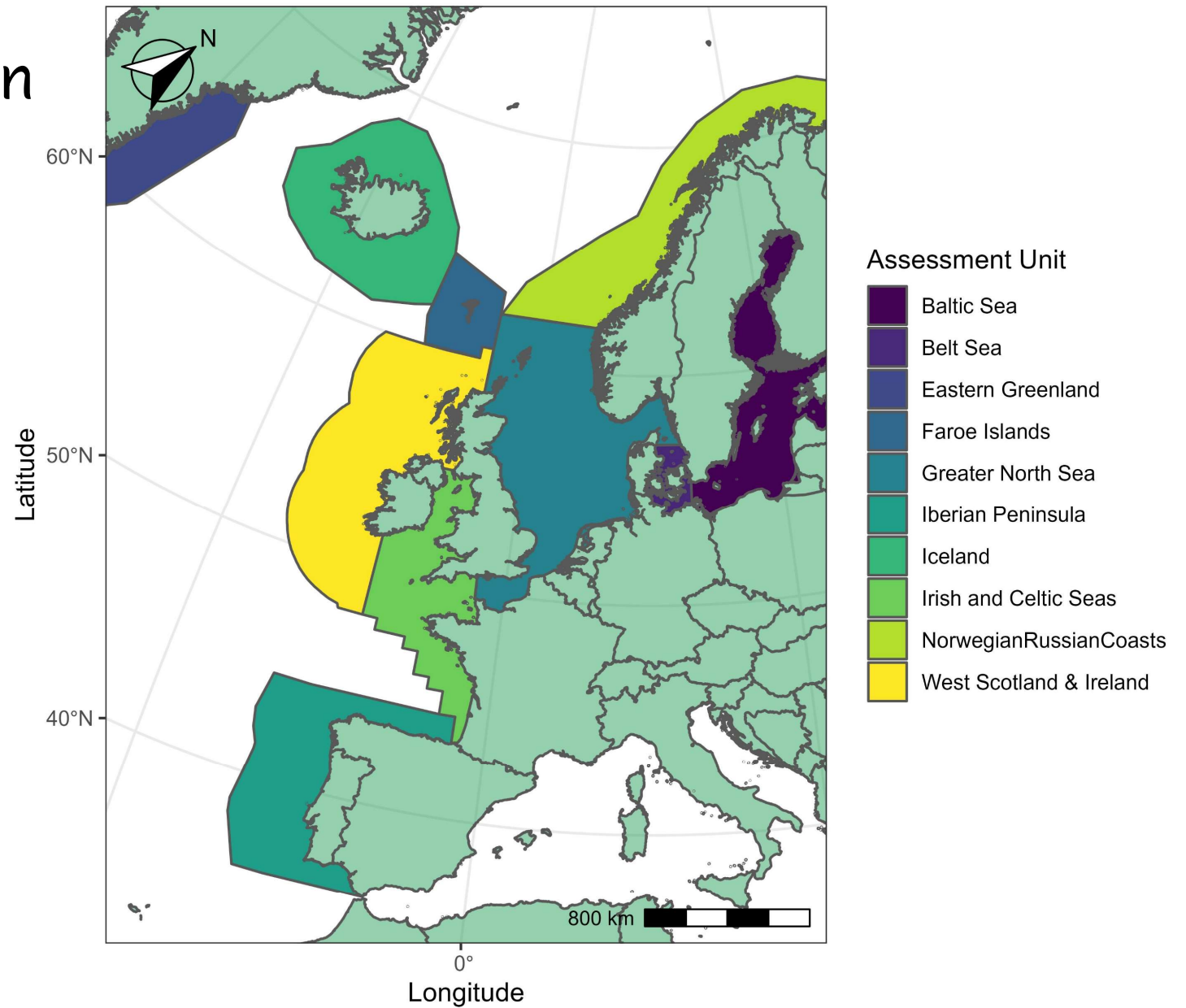Every 10 years or so, OSPAR issues a Quality Status Report

QSR 2023:

https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/

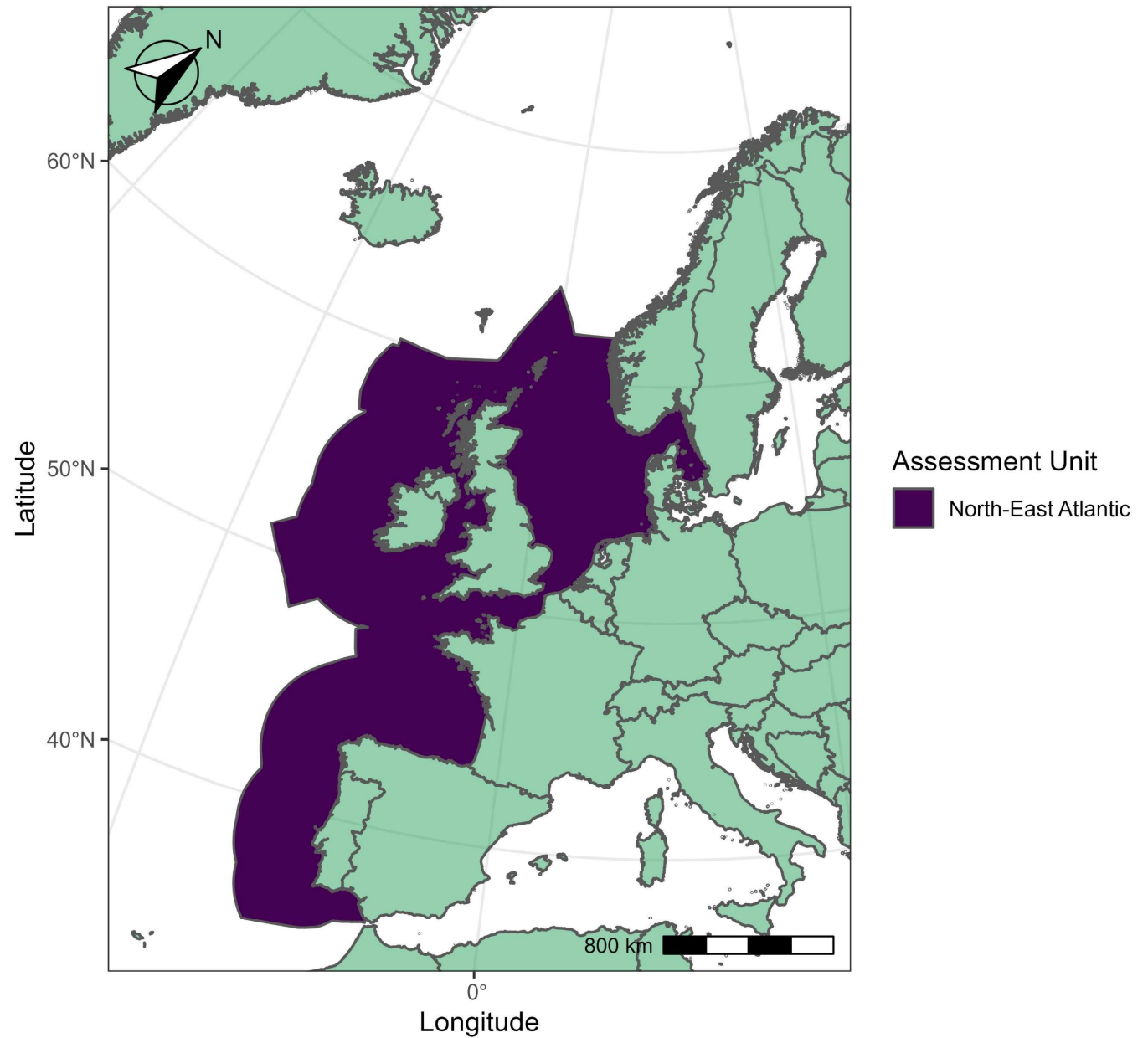# Agreement on assessment units

Harbour porpoise

Assessment Unit

- Baltic Sea
- Belt Sea
- Eastern Greenland
- Faroe Islands
- Greater North Sea
- Iberian Peninsula
- Iceland
- Irish and Celtic Seas
- NorwegianRussianCoasts
- West Scotland & Ireland

Agreement on assessment units

Common dolphin

Assessment Unit

North-East Atlantic

Agreement on methods (OSPAR 2021)

For Harbour porpoise in the North Sea AU:
 Removals Limit Algorithm (RLA)

All other AUs:
 (modified) Potential Biological Removal

For Common dolphin in the Northeast Atlantic:
 (modified) Potential Biological Removal

RLA

For Harbour porpoise in the North Sea AU:
Removals Limit Algorithm (RLA)

All other AUs:
(modified) Potential Biological Removal

For Common dolphin in the Northeast Atlantic:
(modified) Potential Biological Removal

(modified) PBR

1 – Compute $N_{\min}$ from the best available abundance estimate N and its coefficient of variation cv

        if $N_{\min} < 2500$, $m\text{PBR} = 0$

        if $N_{\min} \geq 2500$, go to step 2

2 – Values for $R_{\max}$ and F_R

        If no information on the target small cetacean population $\begin{cases} R_{\max} = 0.04 \\ F_R = 0.1 \end{cases}$

        If well-studied population and no biases in parameters $\begin{cases} R_{\max} = 0.04 \\ F_R = 0.35 \end{cases}$

3 – Plug-in the values of $N_{\min}$, $R_{\max}$ and F_r to compute the threshold

$$m\text{PBR} = N_{\min} \times 0.5 \times R_{\max} \times F_R$$

Management Strategy Evaluation

Reproducible methods


```r
in R:

remotes::install_gitlab(
   host = "https://gitlab.univ-lr.fr",
   repo = "pelaverse/RLA"
)
```