Department
for Environment
Food & Rural Affairs

Marine Strategy Framework Directive (MSFD)

Update, measures and assessment

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Key messages

- What is the Marine Strategy Framework Directive?
- Programme of measures published on 17 December 2015
- Next steps - assessment of our seas

The UK Marine Strategy

- UK vision: ‘clean, healthy, safe, productive and biologically diverse oceans and seas’ as set out in the 2011 UK Marine Policy Statement
- MSFD: requirement to put in place measures to achieve Good Environmental Status (GES) in their marine waters by 2020.
- UK Marine Strategy is a living document that sets out:
- an assessment of the state of UK seas, defines GES and the targets and indicators used to assess GES;
- the monitoring programmes used to demonstrate progress towards GES; and
- the measures needed to achieve or maintain GES.

What does our Strategy cover?

GES Descriptors

No.	Descriptor
1	Biological diversity
2	Non-indigenous species
3	Commercial fish & shellfish
4	Food webs
5	Eutrophication
6	Seafloor integrity
7	Hydrographical conditions
8	Contaminants
9	Contaminants in seafood
10	Litter
11	Energy, incl. underwater noise

Where are we in the process?

2012

- Published Marine Strategy Part One: Initial assessment, characteristics of Good Environmental Status, and targets and indicators ✓

2014

- Published Marine Strategy Part Two: Marine Monitoring Programmes ✓
- Initial development of Programme of Measures ✓

2015

- Consultation on Programme of Measures (Jan to April 2015) ✓
- Published Marine Strategy Part Three: Programme of Measures (Dec 2015) ✓

2016

- Implementation of Programme of Measures (Dec 2016)

2018

- Publish updated assessment of UK seas (Jul 2018)

UK programme of measures

- Published on 17 December 2015: Marine strategy part three: UK programme of measures
- Package of existing and planned measures to meet our targets and to help achieve GES.
- Monitoring programmes will provide information on progress. We will review approach where necessary.
- Coordinating with other countries.
- Report to Commission by March 2016.

Current position

- **Pelagic habitats, commercially exploited fish, eutrophication, hydrographical conditions, contaminants, and contaminants** in seafood measures are expected to ensure GES is maintained or achieved

- **Benthic habitats, marine mammals, birds and fish**, the measures will contribute to the maintenance or achievement of GES and that it would be premature to introduce new measures until we better understand the causes of declines and impact of measures

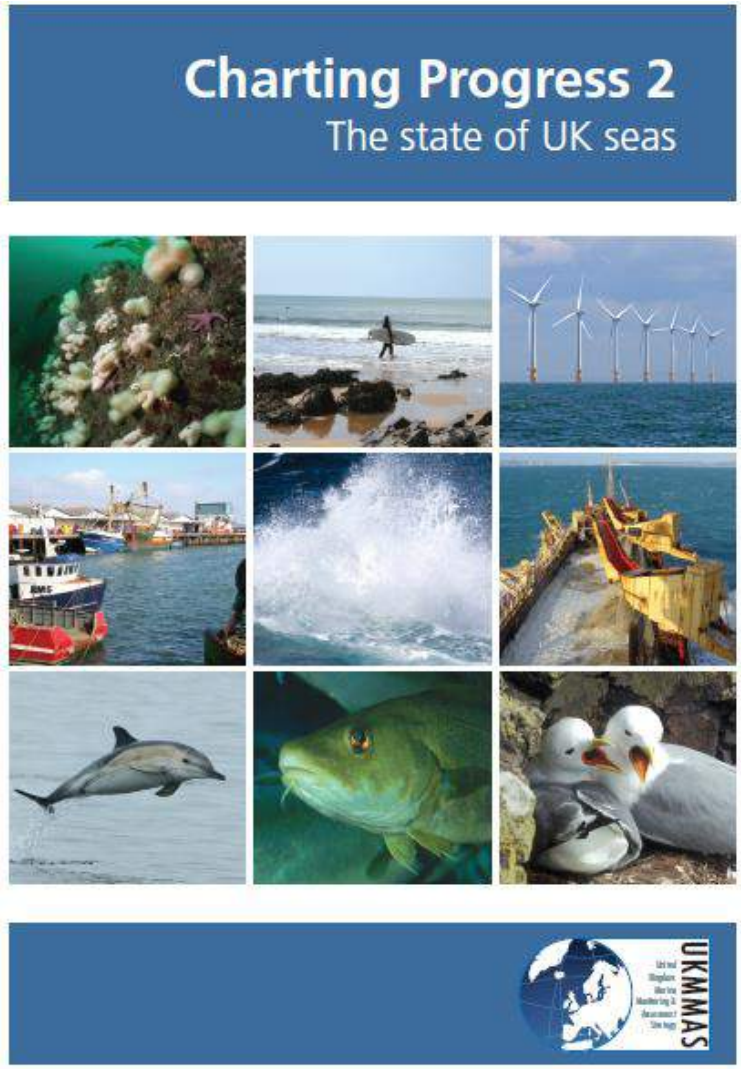
- **Non-native invasive species, marine litter and underwater noise**, existing measures will contribute towards the achievement of GES but more data is needed to develop effective targets and indicators before we can say whether additional measures are required

Recent developments

- 23 new Marine Conservation Zones (MCZs) will bring the total to 50 and a fifth of English waters
- consultations on Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)
- 24 UK stocks will be fished at or below maximum sustainable yield (MSY) in 2016, compared with 16 in 2015 – an increase of 8 (50%).
- 5p charge for single-use plastic carrier bags in England and promise of England litter strategy.
- Demersal (haddock, sole and plaice) landings obligations (discard ban)
- Secured funding for development of monitoring programmes for NIS and ambient noise

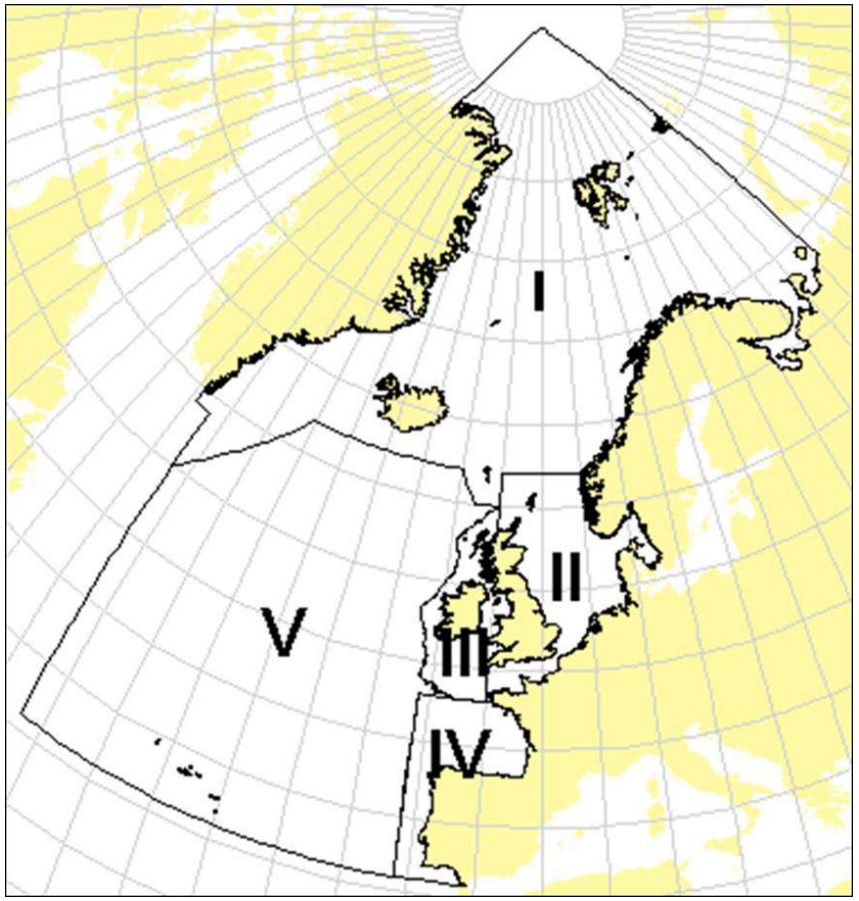
State of UK seas

- Assessment of UK seas by 2018
- Update of the initial assessment in the Marine Strategy Part One
- Status - indicator assessments – many more than in 2012
- Pressures and impacts
- Economic and social analysis and the cost of degradation



OSPAR Intermediate Assessment 2017

- Common indicators
- UK influence
- Trans-boundary impacts



Indicator assessment sheets

OSPAR COMMISSION

Trends in the levels of imposex in marine gastropods

Common Indicator: D8 Imposex and TBT; Status and trends in marine molluscs
D8: Concentrations of contaminants
D8.2: Effects on contaminants

Imposex is an indicator of impairment in reproductive performance in marine snails (gastropods), caused by an antifouling paint containing TBT that used to be used on boats. Following bans on TBT the assessment shows there has been a decrease in imposex levels, implying improved reproduction in gastropods.

Background

Antifouling paints are widely used on vessels of all sizes to prevent the growth of marine organisms. Around the beginning of the 1980s tributyltin (TBT) began to be used. This compound proved extremely effective at preventing the attachment of algal slimes and other organisms. By the mid-1980s oyster growers in France and Great Britain were becoming extremely concerned about poor growth in their stocks; e.g. oysters were misshapen and contained little meat, so were not marketable. The cause was TBT in anti-fouling paints applied mainly to pleasure vessels used in estuaries and moored in marinas close to the commercial shellfish beds. TBT is toxic to many marine organisms at very low concentrations and is unequivocally linked to impairment of reproductive performance in a number of molluscan species, with some female marine snails (gastropods) developing male sex characteristics in response to TBT exposure; this is termed 'imposex'. TBT ultimately affects many creatures, but marine gastropods are among the most sensitive, making them important indicator species. Over the past decade, a range of national and international measures has resulted in a continuous phase-out in the OSPAR area of TBT-containing paints. A global ban on TBT in anti-fouling systems on large vessels came into effect in 2008. Assessment criteria in the form of background assessment criteria (BAC) and environmental assessment criteria (EAC) have been derived by OSPAR for imposex measurement in a variety of gastropods, that represent the most sensitive species (OSPAR, 2004).

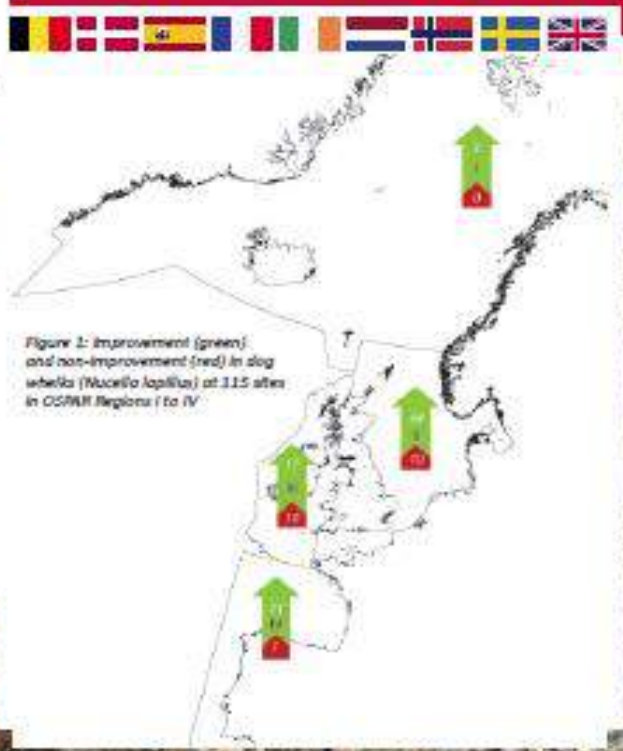


Figure 1: Improvement (green) and non-improvement (red) in dog whelks (Nucella lapillus) at 115 sites in OSPAR Regions I to IV

Results

The policy objective is continued reduction of levels of TBT in the marine environment, so that the exposure of marine gastropods and adverse imposex effects remain below agreed OSPAR environmental assessment criteria (EACs), and ultimately reduction to 'close to zero' levels. Imposex is currently monitored at 386 sites (Figure 3) on up to six marine gastropod species (assessment criteria are under development for one of species). There is a diversity of approaches to selecting target sampling stations, although there is an emphasis on stations which are in, or near to, harbours, ports and marinas where effects are most likely to occur. Currently the OSPAR EAC set for TBT-specific effects is met at most sites (~65%).
Improvement and non-improvement was measured at 145 sites using the Vas Deferens Stage Index (VDSI) – a 7-stage measurement based on degree of penis and Vas Deferens development in females. Improvement was detected at >80% of these sites, with non-improvement shown at 16% of locations, while at 4% of sites the status is at background and continues to be stable. Dog whelks are the most common monitoring species and Figure 1 shows their improvement and non-improvement at 115 sites in five OSPAR regions. Similarly, Figure 2 shows improvement and non-improvement in five marine gastropod species sampled at 107 sites in one OSPAR. Overall improvement is evident (Figures 1 and 2).

Going forward: challenges and issues

- Understanding links between pressures (human activities) and impacts
- Coherence with other countries
- Coherence with other policies e.g. WFD, CFP, CAP etc..
- Input from academic community
- Reduced resources
- New technologies e.g. earth observation centre of excellence.
- Better access to data and information