



Cynllun Gweithredu Thematig Natura 2000: Sbwriel Morol

Natura 2000 Thematic Action Plan: Marine Litter

Rhaglen Natura 2000 LIFE yng Nghymru
LIFE Natura 2000 Programme for Wales



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Natural Resources Wales
Cambria House
29 Newport Road
Cardiff
CF24 0TP

0300 065 3000 (Mon-Fri, 8am - 6pm)

enquiries@naturalresourceswales.gov.uk
www.naturalresourceswales.gov.uk

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October 2015

1. Cyflwyniad

Rhaglen Natura 2000 LIFE yng Nghymru

Mae 92 Ardal Cadwraeth Arbennig (ACA) ac 20 Ardal Gwarchodaeth Arbennig (AGA) Cymru'n cynnwys 123 o nodweddion cynefinoedd a rhywogaethau dynodedig. Gyda'i gilydd, y rhain yw rhwydwaith Natura 2000.

Mae Rhaglen Natura 2000 LIFE yng Nghymru wedi datblygu blaen-gynllyn strategol i reoli ac adfer Natura 2000 yng Nghymru. Drwy weithio â rhanddeiliaid mae wedi pennu'r prif heriau sy'n wynebu'r safleoedd, y rhywogaethau a'r cynefinoedd hyn a warchodir gan Ewrop, a nodi'r camau gweithredu sydd eu hangen, y blaenoriaethau, y costau a'r cyfleoedd cyllido i fynd i'r afael â nhw. Cafodd y rhaglen ei chynnal gan Cyfoeth Naturiol Cymru a'i hariannu gan gynllun LIFE+ Nature yr Undeb Ewropeaidd.

Y pwrpas yw galluogi Cymru i wneud cynnydd sylweddol tuag at sicrhau bod rhywogaethau a chynefinoedd Natura 2000 mewn cyflwr ffafriol a helpu i gyflawni ei hymrwymiaidau o dan Gyfarwyddeb Cynefinoedd ac Adar yr Undeb Ewropeaidd. Mae'r Rhaglen yn ceisio darparu llwyfan hefyd i sicrhau rhagor o gyllid ar gyfer prosiectau sy'n gysylltiedig â Natura 2000 o bob ffynhonnell bosibl, ac i integreiddio cyllid Natura 2000 mewn offerynnau ariannol a meysydd polisi eraill.

Mae manylion llawn Rhaglen Natura 2000 LIFE a rhwydwaith *Natura 2000 yng Nghymru yn Ffeithiau a Ffigurau, Rhaglen Natura 2000 LIFE yng Nghymru: Adroddiad 1*.

Cynlluniau Gweithredu Thematig

Mae Rhaglen Natura 2000 LIFE wedi creu 11 Cynllun Gweithredu Thematig, pob un yn ymdrin â chamau gweithredu strategol blaenoriaeth i fynd i'r afael â'r prif broblemau a'r risgiau¹ a nodwyd fel y rhai sy'n cael effaith andwyol ar nodweddion Natura 2000 ledled y rhwydwaith.

Y Cynlluniau Gweithredu Thematig yw:

- Mynediad a hamdden
- Llygredd aer: Gwaddodi nitrogen
- Newid yn yr hinsawdd a chwalu cynefinoedd
- Llygredd dŵr gwasgaredig
- Rheoli perygl llifogydd ac erydu arfordirol
- Rheoli pori a da byw
- Rhywogaethau a phathogenau estron goresgynnol
- Newidiadau gan ddyn i amodau hydrologig
- Sbwriel y môr
- Pysgodfeydd morol
- Rheoli coetiroedd

¹ Problemau (neu bwysau) yw adweithiau andwyol i nodweddion Natura 2000 sy'n digwydd ar hyn o bryd ar neu yng nghyffiniau ACA neu AGA sy'n rhwystro'r rhywogaeth neu'r cynefin dynodedig rhag cyrraedd cyflwr ffafriol. Risgiau (neu fygythiadau) i nodweddion Natura 2000 sy'n debygol o ddigwydd erbyn 2020.

Y brif gynulleidfa ar gyfer y Cynlluniau Gweithredu yw rheolwr, pobl sy'n gwneud penderfyniadau a chyllidwyr yn Cyfoeth Naturiol Cymru, Llywodraeth Cymru a sefydliadau partner allweddol.

Mae'r camau gweithredu i'w gweld yn y tabl yn Adran 9. Camau yw'r rhain y gellir eu cyflawni ar lefel genedlaethol neu ranbarthol, i ategu camau gweithredu ar safleoedd o fewn Cynlluniau Gwella â Blaenoriaeth. Maent yn ceisio mynd i'r afael â rhwystrau sylfaenol, a'u hachosion lle bo'n bosibl, a datblygu fframwaith strwythurol sy'n cefnogi ac yn hyrwyddo trefniadau rheoli priodol yn lleol. Mae'r camau gweithredu'n cynnwys y rhai sydd eu hangen i fynd i'r afael â bylchau mewn tystiolaeth sy'n atal dealltwriaeth lawn o anghenion rheoli.

Gall rhai camau gweithredu strategol gynnig ffrydiau gwaith newydd a mentrau mawr; mae eraill yn cyd-fynd i raddau helaeth â pholisïau, strategaethau a rhaglenni gwaith sy'n bodoli eisoes neu sydd wrthi'n cael eu datblygu.

Cafodd y camau gweithredu strategol eu nodi yn ystod gweithdai a gynhaliwyd gyda gweithwyr proffesiynol arbenigol yn y maes, o Cyfoeth Naturiol Cymru a sefydliadau eraill. Roeddynt yn seiliedig hefyd ar grynodedbau o gamau gweithredu ar safleoedd a oedd yn deillio o'r Cynlluniau Gwella â Blaenoriaeth a'r Gronfa Ddata Camau Gweithredu (gweler isod). Cafodd y rhain eu hadolygu a'u dilysu gan weithgor bychan a buont yn destun proses ymgysylltu a thrafod gyda rhanddeiliaid hefyd. Gweler Adran 8 am ragor o fanylion.

Y camau gweithredu strategol yw'r rhai a nodwyd sydd eu hangen i gael y nodweddion i gyflwr ffafriol. Maent yn amodol ar y graddau y mae adnoddau ar gael ac ar gytundeb rhanddeiliaid. Nid ydynt yn cynrychioli cynllun gweithredol sydd wedi'i ariannu'n llawn nac wedi ymrwymo'n llawn iddo. Fodd bynnag, y bwriad yw defnyddio'r camau gweithredu i lywio amrywiaeth o gynlluniau gweithredol a rhaglenni gwaith yn y dyfodol.

Er bod y camau gweithredu strategol yn canolbwyntio ar gyfres Natura 2000, gellir defnyddio llawer ohonynt yn eang a gallent fod o fudd i Safleoedd o Ddiddordeb Gwyddonol Arbennig a helpu i warchod bioamrywiaeth a chryfhau'r ecosystem yn yr amgylchedd ehangach.

Cynlluniau Gwella â Blaenoriaeth a Chronfa Ddata Camau Gweithredu

Mae Rhaglen Natura 2000 LIFE wedi cynhyrchu Cynlluniau Gwella â Blaenoriaeth ar gyfer pob safle Natura 2000 yng Nghymru. Mae'r cynlluniau hyn yn nodi'r prif broblemau a risgiau sy'n effeithio ar nodweddion Natura 2000 ac yn disgrifio'r camau gweithredu â blaenoriaeth, wedi'u costio, sydd eu hangen i gael a chynnal nodweddion y safle mewn cyflwr ffafriol. Mae'r cynlluniau'n defnyddio gwybodaeth o Gronfa Ddata Camau Gweithredu Cyfoeth Naturiol Cymru sy'n cynnwys yr holl gamau gweithredu (blaenoriaeth uchel, canolig, isel) ar gyfer safleoedd Natura 2000. Datblygwyd y camau gweithredu gan Swyddogion Cadwraeth Cyfoeth Naturiol Cymru ar y cyd â rhanddeiliaid a phartneriaid. Cafodd cynnwys y Gronfa Ddata ei ymestyn a'i ddiweddarau'n llawn yn ystod 2014/5.

2. Introduction

LIFE Natura 2000 Programme for Wales

There are 123 designated habitat and species features on the 92 Special Areas of Conservation (SACs) and 20 Special Protection Areas (SPAs) in Wales. Together these comprise the Natura 2000 network.

The LIFE Natura 2000 Programme for Wales has developed a strategic forward plan to manage and restore Natura 2000 in Wales. Working with stakeholders it has determined the key challenges facing these European protected sites, species and habitats and identified the actions required, priorities, costs and funding opportunities to address them. The Programme was run by Natural Resources Wales (NRW) and funded by the European Union scheme LIFE+ Nature.

The purpose is to enable Wales to make significant progress towards bringing Natura 2000 species and habitats into favourable condition and help meet its commitments under the European Habitats and Birds Directives. The Programme also aims to provide a platform to seek further funding for Natura 2000 related projects from all potential sources, and to integrate Natura 2000 funding into other financial instruments and policy areas.

Full details about the LIFE Natura 2000 Programme and the Natura 2000 network in Wales can be found in the *LIFE Natura 2000 Programme for Wales: Fact and Figures Report*.

Thematic Action Plans

The LIFE Natura 2000 Programme has created 11 Thematic Action Plans, each of which detail priority strategic actions to address major issues and risks² which have been identified as having an adverse impact on Natura 2000 features across the network.

The Thematic Action Plans are as follows:

- Access and recreation
- Air pollution: Nitrogen deposition
- Climate change and habitat fragmentation
- Diffuse water pollution
- Flood and coastal erosion risk management
- Grazing and livestock management
- Non-native invasive species and pathogens
- Man-made changes to hydraulic conditions
- Marine litter
- Marine fisheries
- Woodland management

The primary audience for the Actions Plans are managers, decision makers and fund holders within Natural Resources Wales, the Welsh Government and key partner organisations.

² Issues (or pressures) are adverse impacts to Natura 2000 features which are currently taking place on or around SACs or SPAs which act as barriers to the designated habitat or species features reaching favourable condition. Risks (or threats) are impacts to Natura 2000 features which are likely to occur by 2020.

The strategic actions are set out in the table in Section 9. These are actions which may be delivered at national or regional level, to complement the site-level actions within Prioritised Improvement Plans (PIPs). They seek to address fundamental barriers and where possible their root causes, and to develop a structural framework which supports and promotes appropriate management at a local level. Actions include those needed to address evidence gaps which are hindering full understanding of management needs. Some strategic actions may propose new work streams and larger-scale initiatives; others align closely to existing or developing policies, strategies and work programmes.

The strategic actions were identified during workshops held with professionals with expertise in the field, from Natural Resources Wales and other organisations. These were also informed by summaries of site level actions derived from the PIPs and the? Actions Database (see below). These were reviewed and validated by a small working group and also subject to a process of engagement and discussion with stakeholders. See Section 8 for more details.

The strategic actions are those which have been identified as being required to bring features into favourable condition. They are subject to resource availability and stakeholder agreement. They do not represent a fully funded or committed operational plan. However, the intention is that the actions will be used to inform a range of operational plans and work programmes in the future.

While the strategic actions are focused on the Natura 2000 series, many have a broad applicability and may also be of benefit to Sites of Special Scientific Interest and other biodiversity conservation and ecosystem resilience work in the wider environment.

Prioritised Improvement Plans and Actions Database

The LIFE Natura 2000 Programme has produced Prioritised Improvement Plans (PIPs) for all Natura 2000 sites in Wales. The PIPs identify the main issues and risks affecting the Natura 2000 features on the site and describe costed, prioritised actions required to achieve and maintain the site features in favourable condition.

The PIPs draw information from the Natural Resources Wales Actions Database which hold all actions (high, medium, low priority) for Natura 2000 sites. Actions were developed by Natural Resources Wales Conservation Officers in association with stakeholders and partners. The content of the Database was fully extended and updated during 2014/5.

3. Background

Work carried out by the LIFE Natura 2000 Programme for Wales in 2014/15 has identified marine litter as a priority issue/risk affecting marine Natura 2000 features in Wales³. This is consistent with the most recent round of UK level biodiversity reporting; the 10th UK 'Article 12 report'⁴ and 'Article 17 report'⁵ show that marine pollution, which includes marine litter, is having or has the potential to have adverse impacts on the condition status of a variety of features across Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

Marine litter has been defined as “*any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment*”⁶. The term is used to describe items of human origin which are:

- deliberately discarded into the sea or rivers or on beaches;
- indirectly reach the sea from land-based sources e.g. through waterways, domestic or industrial outfalls, storm water or winds; or
- accidentally lost (e.g. materials lost at sea in bad weather)^{6,7}.

Whilst sources of litter are difficult to trace, most marine litter found in UK waters is thought to come from land based sources rather than from shipping, fishing or other maritime activities^{8,9}. Management of marine litter is therefore reliant on appropriate management of land-based activities and changes in human behaviour, to avoid inappropriate disposal of waste and prevent littering at source^{9,10}.

The Marine Conservation Society (MCS) carries out annual beach litter surveys in the UK and their data indicates that the density of marine litter on Wales' beaches has increased over the period of 2011 to 2014¹¹. The most commonly reported litter category in both the 2014 and 2013 beach litter surveys was “unknown” (41% and 34% respectively¹²). This category is used to classify small plastic pieces whose source cannot be identified. The second most common was litter from the public (34% and 34% respectively) which included plastic bags, drinks bottles and food containers¹². Surveying of marine litter on the seabed and in the water column is less common, but evidence suggest that litter tends to accumulate in certain geographical locations as a result of wind and currents⁹.

Whilst attention on cleaning up litter tends to focus on beaches, where marine litter is most visible and easily accessed, figures from the North Sea indicates that this represents just

³ Natural Resources Wales 2015. LIFE Natura 2000 Programme for Wales Summary Report.

⁴ Joint Nature Conservation Committee 2013. 10th Report by the United Kingdom under Article 12 on the implementation of the Directive on the conservation of wild birds (2009/147/EC) from January 2008 to December 2012. JNCC, Peterborough.

⁵ Joint Nature Conservation Committee 2013. Summary of conclusions & qualifiers – 3rd UK Habitats Directive Reporting 2013. JNCC, Peterborough.

⁶ UNEP, 2009. Marine Litter: A Global Challenge. Nairobi: UNEP. 232 pp.

⁷ Williams and Micallef 2009. Beach management: Principles and Practices, Earthscan, 454pp.

⁸ OSPAR Commission and UNEP 2009. Marine Litter: preventing a sea of plastic. 9 February 2009.

⁹ UK Government 2012. Marine Strategy Part One: UK Initial Assessment and Good Environmental Status.

¹⁰ http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index_en.htm

¹¹ Marine Conservation Society 2014. Beachwatch Results 2014.

¹² National Assembly for Wales 2015. Research Service Quick Guide: Marine Litter. April 2015 and National Assembly for Wales 2014. Research Service Quick Guide: Marine Litter. April 2014.

15% of the marine litter that enters the sea¹³; the vast majority (~70%) ends up on the seabed.

There is limited understanding of the impacts of marine litter on the condition of marine Natura 2000 features, however, there is potential for adverse effects. The most obvious concern is for marine mammals and seabirds, through entanglement and ingestion^{6,9}. Entanglement can result in drowning, injury or restricted movement (which may in turn lead to starvation or increased predation). Ingestion can lead to physical damage to the digestive tract, blockage and subsequent starvation or the release of toxins into the animal's body¹². Marine litter (e.g. fishing line, string and domestic plastic waste) is also known to be used by birds as a nesting material which presents a hazard to both adults and chicks¹⁴. Threats to other Natura 2000 features (habitats) from marine litter include smothering of the seabed⁹ and physical damage to benthic communities (e.g. movement of litter on or near the seafloor)⁶.

Marine litter can travel great distances with prevailing ocean wind and current patterns and as such also presents a mechanism for the transport of invasive species⁶. Given that most marine litter consists of material that degrades slowly (e.g. plastics), if at all, the presence and continued input of these items is likely to result in a gradual build-up in the marine and coastal environment and accumulation in food chains¹⁵.

Marine litter can also have wider environmental, economic, human health and aesthetic impacts¹². From a human health perspective, medical litter and sewage related debris are obvious hazards, but there are also potential impacts through bioaccumulation of toxins through the food chain¹². From an economic perspective, impacts of marine litter can both increase the costs associated with marine and coastal activities, and reduce the economic benefits derived from them¹⁶. For example, marine litter can have a detrimental effect on visitor experience in terms of reduced aesthetics and water quality, and ultimately a reduction in tourism and leisure related income in coastal areas¹⁷. Significant economic impacts of marine litter on other sectors have also been reported. For example, costs to the commercial fishing sector due to the effects of marine debris including snagged nets, lost catch and fouling of propellers¹⁸.

Targets set out in the UK's Programme of Measures (under the Marine Strategy Framework Directive, MSFD) focus on achieving a reduction in visible litter and the introduction of monitoring (based on trends) in order to improve our understanding of the problem. Good quantitative and qualitative knowledge of the sources of marine litter is essential to enable quantitative targets to be set in the future and to develop appropriate management measures to prevent, reduce and control problems caused by marine litter⁶.

¹³ UNEP 2005. Marine Litter, an analytical overview.

http://www.unep.org/regionalseas/marinelitter/publications/docs/anl_oview.pdf

¹⁴ RSPB Press Research 2009. Plastic bags a threat to marine wildlife. 30th September 2009; Votier et al. 2011. The use of plastic debris as nesting material by a colonial seabird and associated entanglement mortality. *Marine Pollution Bulletin* 62: 168-172.

¹⁵ Galloway 2015. Micro- and Nano-plastics and Human Health. *Marine Anthropogenic Litter*. Editors: Bergmann, et al. Springer Open. DOI 10.1007/978-3-319-16510-3.

¹⁶ Newman et al. 2015. The Economics of Marine Litter. *Marine Anthropogenic Litter*. Editors: Bergmann, et al. Springer Open. DOI 10.1007/978-3-319-16510-3.

¹⁷ Keep Wales Tidy 2011. Policy Paper on Marine Litter.

http://keepwalestidy.org/research/5637marine_litter_policy_paper.pdf

¹⁸ Hall 2000. Impacts of marine debris and oil.

<http://www.kimointernational.org/WebData/Files/Karensreport.pdf>

4. Issues and risks

Of the 112 Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) that make up the Natura 2000 network in Wales, 21 sites (11 SACs and 10 SPAs) have marine features (habitats and species)¹⁹. Under the Habitats Regulations 1994, Habitats Directive Annex I “marine” includes both subtidal and intertidal habitats, and Annex II “marine” species are defined as those dependent on the marine environment for all or part of their lifecycle²⁰; there are 10 marine habitats and 6 marine species in Wales. SPAs with marine components are defined as sites with qualifying Birds Directive Annex I species or regularly occurring migratory species that are dependent on the marine environment for all or part of their lifecycle, where these species are found in association with intertidal or subtidal habitats²¹; there are 30 marine bird species in Wales.

Under the Habitat Regulations 2010 (as amended), the term 'European Marine Site' (EMS) refers to those marine areas of both SACs and SPAs which are protected under the EC Habitats and Birds Directives. These areas range from entirely subtidal to exclusively intertidal, and vary in size from large (e.g. Pen Llŷn a'r Sarnau SAC) to relatively small (e.g. Kenfig SAC)²². The network of EMSs in Wales is outlined in Table 1; three of these EMSs are cross-border sites with England: the Severn Estuary, Dee Estuary and Liverpool Bay.

Issues and risks from marine litter for the Wales only SACs and SPAs were identified through the LIFE Natura 2000 Programme and summarised in the site level Prioritised Improvement Plans (PIPs). Issues and risk from marine litter for the cross-border SACs and SPAs are reported in the Site Improvement Plans (SIPs)²³ which were produced in partnership with IPENS (*Improvement Programme for England's Natura 2000 sites*)²⁴.

The LIFE Natura 2000 Programme data shows that marine litter is having (or has the potential to have) an impact on 19 out of total 123 habitat or species features (15%) and on features in 7 out of 112 Natura 2000 sites (6%) in Wales. At the EMS level this corresponds to 19 of the 46 marine habitats and species features (41%) (Table 2), and 7 of the 21 sites (33%) with marine features (Table 1).

At all these sites, marine litter was identified as a risk to features (i.e. it has the potential to impact on the condition of features). This is because whilst there is evidence of detrimental effects of marine litter, for example on individuals of a protected species, there is as yet little evidence of a link between marine litter and feature condition in Wales. Table 2 provides a summary of the marine features (as defined above) most frequently identified as having the potential to be impacted by marine litter. Detail on the marine features identified as having the potential to be impacted by marine litter by site is provided in Appendix A.

In total 19 instances of risks related to marine litter were recorded across the Natura 2000 series, all of these instances referred to potential impacts at the whole site scale (rather than for individual management units within sites).

¹⁹ http://jncc.defra.gov.uk/pdf/MN2KPG16_13_MN2KDefs.pdf

²⁰ UKSACswithMarineComponents_20150727_LIVE_WEB.xls; JNCC website

²¹ UKSPAswithMarineComponents_20150518_LIVE_WEB.xls; JNCC website

²² <http://jncc.defra.gov.uk/page-4215>

²³ <http://publications.naturalengland.org.uk/category/5458594975711232>

²⁴ <https://www.gov.uk/government/publications/improvement-programme-for-englands-natura-2000-sites-ipens/improvement-programme-for-englands-natura-2000-sites-ipens>

Table 1. Natura 2000 sites in Wales with features identified as having the potential to be affected by marine litter.

| Natura 2000 sites |
|--|
| Cardigan Bay SAC / Bae Ceredigion SAC |
| Carmarthen Bay and Estuaries SAC / Bae Caerfyrddin ac Aberoedd SAC |
| Dee Estuary SAC / Aber Dyfrdwy SAC |
| Pembrokeshire Marine / Sir Benfro Forol SAC |
| Pen Llŷn a'r Sarnau SAC |
| Severn Estuary / Môr Hafren SAC |
| Severn Estuary / Môr Hafren SPA |

Table 2. List of the marine Natura 2000 features identified as having the potential to be affected by marine litter

This table includes the number of Natura 2000 sites in which the feature is protected, and the number and percentage of sites in which the feature was identified as having the potential to be impacted by marine litter.

| Feature | Designation | Number of sites feature is protected | Potential to be affected by marine litter | |
|---|-------------|--------------------------------------|---|------------|
| | | | Number of sites | % of sites |
| Grey seal | SAC | 3 | 3 | 100 |
| Bottlenose dolphin | SAC | 2 | 2 | 100 |
| Estuaries | SAC | 6 | 5 | 83 |
| Shallow inlets and bays | SAC | 4 | 3 | 75 |
| Glasswort and other annuals colonising mud and sand | SAC | 4 | 3 | 75 |
| Intertidal mudflats and sandflats | SAC | 7 | 5 | 71 |
| Atlantic salt meadows | SAC | 7 | 5 | 71 |
| Lagoons | SAC | 3 | 2 | 66 |
| Reefs | SAC | 5 | 3 | 60 |
| Sea caves | SAC | 5 | 2 | 40 |
| Otter | SAC | 3 | 1 | 33 |
| Twaite shad | SAC | 3 | 1 | 33 |
| Sea lamprey | SAC | 5 | 1 | 20 |
| Subtidal sandbanks | SAC | 6 | 1 | 17 |
| Gadwall | SPA | 1 | 1 | 100 |
| Greater white fronted goose | SPA | 1 | 1 | 100 |
| Dunlin | SPA | 3 | 1 | 33 |
| Common shelduck | SPA | 3 | 1 | 33 |
| Common redshank | SPA | 4 | 1 | 25 |

The data refers to sites where the activity is a current issue or a potential risk. This includes high, medium and low priority issues/risks. The information is derived from the LIFE Natura 2000 Programme data held in the NRW Actions Database. Sourced September 2015.

Marine litter was identified as having the potential to impact on marine mammal features - grey seal and bottlenose dolphin – at all sites in which they are protected. The principal concern for marine mammals is entanglement, which can result in drowning, injury or restricted movement (which may in turn lead to starvation or increased predation)²⁵. Marine litter can therefore have serious effects on individuals but while as yet there is no evidence of a link between marine litter and feature condition in Wales, which is why many of the actions identified for this risk are investigations. Intertidal SAC features were also frequently identified as having the potential to be impacted by marine litter. As with marine mammals, the links between marine litter and feature condition are also unclear but there is the potential for impacts through smothering or scouring.

²⁵ Pinn, E (2010) Charting Progress 2 Healthy and Biological Diverse Seas Feeder Report: Section 3.7: Cetaceans. Published by Department for Environment Food and Rural Affairs on behalf of UKMMAS. In: UKMMAS (2010) Charting Progress 2 Healthy and Biological Diverse Seas Feeder Report (Eds. Frost, M & Hawkrige, J).

5. Policy and legislative context

There is a broad framework of policy and legislation at the international, UK and Welsh level which drives and supports the management of Natura 2000. The primary European legislation is the Habitats Directive and the Birds Directive which promote the conservation and management of natural habitats and wild species. Key UK legislation includes the Habitats Regulations, Wildlife and Countryside Act, and the Countryside and Rights of Way Act. Wales is developing a new approach to integrated and sustainable natural resource management, through for example, the Environment (Wales) Bill and the Nature Recovery Plan. Further information is provided in the *LIFE Natura 2000 Programme Facts and Figures Report*.

Marine litter is a key challenge for the marine environment, but its generation and prevention are linked to a variety of human activities and policy areas including waste and wastewater management, product design, shipping, fisheries policies, consumption and behavioural patterns¹⁰. It is important to note that marine litter transcends national borders. The Marine Strategy Framework Directive (MSFD) requires Member States to prepare national strategies to manage their seas and achieve Good Environmental Status (GES). It includes the dedicated binding legal instrument for assessing, monitoring, setting targets and reaching good environmental status with regard to marine litter in the EU (Descriptor 10, D10). GES with regards to marine litter is described as the state in which properties and quantities of marine litter do not cause harm to the coastal and marine environment.

The MSFD has been transposed in UK law through the Marine Strategy Regulations 2010. The UK characteristics of GES for D10 are: “*The amount of litter, and its degradation products, on coastlines and in the marine environment is reducing over time and levels do not pose a significant risk to the coastal and marine environment, either as a result of direct mortality such as through entanglement, or by way of indirect impacts such as reduced fecundity or bioaccumulation of contaminants within food chains*”⁹.

Other key policies and legislation relevant to marine litter in Wales are summarised below.

International

- **OSPAR Convention 1992** – one of the requirements of the OSPAR Convention is to assess the quality of the marine environment and each of its compartments (i.e. water, sediments and biota), as well as anthropogenic inputs which may affect the quality of the marine environment. In order to fulfil this commitment for marine litter OSPAR has developed three indicators covering beach litter, seabed litter and plastic particles in the stomachs of seabirds (fulmars). These indicators have been adopted under the UK’s Programme of Measures for implementation of the MSFD.

Following concerns about increasing levels of marine litter in the North-east Atlantic, OSPAR developed a **Regional Action Plan on Marine Litter (RAP) 2014**²⁶. The RAP lists actions for contracting parties to consider implementing, encompassing actions to combat sea-based litter, land-based sources of marine litter, removal measures, education and outreach. It supports existing measures (e.g. the Fishing for Litter initiative), encourages the take up of new measures and ensures integration with existing instruments, e.g. Waste Framework, Landfill Directive or Port Reception Facilities Directive (see below).

²⁶ <http://www.ospar.org/documents?v=34422>

- **London Convention 1972** – (also called *the Convention for the Prevention of Marine Pollution from Dumping of Wastes*) covers the control of dumping of wastes at sea. Annex I lists wastes and other matters which must not be dumped at sea and based on recognition of the risks of entanglement or and ingestion by marine organisms includes plastic materials. The Convention is applicable to wastes from land-based sources that are loaded onto ships for the deliberate purpose of dumping them at sea and to dredged spoils; it does not address wastes that have been generated during normal shipping operations.
- **MARPOL 73/78 Convention** – (also known as the *International Convention for the Prevention of Pollution from Ships*) focusses on controlling pollution from the shipping sector. The Convention has six annexes which deal with specific types of potential pollutant from ships; Annex 5 is the most relevant for marine litter¹³. The annexes set out regulations on the types and quantities of waste that ships may discharge into the sea, taking into account the ecological sensitivity of different sea areas. Annex V has been in force since 1988. The disposal of plastics is generally prohibited.

European

- **Marine Strategy Framework Directive (2008/56/EC)** – is a dedicated binding legal instrument with regard to marine litter in the EU (further details provided at the beginning of this section, see above).
- **Port Reception Facilities Directive for Ship-generated Waste and Cargo Residues (2000/59/EC)** – aligns EU law with the obligations of the MARPOL Convention (see above)²⁷. This Directive outlines the responsibilities of the various operators involved in delivery of ship-generated waste at EU ports, including the provision of port reception facilities for ship-generated waste and cargo residues that are not allowed to be discharged into the sea.

There are also a number of EU laws that are indirectly related to the control and reduction of marine litter and its impacts on the environment, for example:

- **Water Framework Directive (2000/60/EC)** – aims to achieve good ecological status for surface waters (including coastal water) by 2015. Whilst litter itself is not a criterion for good ecological status (and is not directly monitoring), if marine litter results in a particular biological criterion not being met, then Member States are required to take action. In practice, action is likely to be taken under the MSFD.
- **Waste Framework Directive (2008/98/EC)** – provides the basis for EU waste management legislation, setting out key definitions, principles and requirements for environmentally responsible waste management²⁸. It requires that waste be managed “...without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals...” Member States are required to adopt waste management plans and develop waste prevention programmes, with objectives and measures aimed at breaking the link between economic growth and the environmental impacts associated with the generation of waste²⁹.

²⁷ <http://ec.europa.eu/transport/modes/maritime/studies/doc/2015-ex-post-evaluation-of-dir-2000-59-ec.pdf>

²⁸ http://www.ieep.eu/assets/1258/IEEP_2013_How_to_improve_EU_legislation_to_tackle_marine_litter.pdf

²⁹ <http://ec.europa.eu/environment/waste/prevention/legislation.htm>

- **Landfill Directive (1999/31/EC)** – the purpose of the Directive is to establish technical requirements for the operation of landfills with the aim of reducing their impact on the environment, including the pollution of surface water, and to limit the final disposal of waste through landfill. As part of this, landfill location must consider the proximity of water bodies and coastal waters, and landfill design must aim to avoid pollution of soils and waters (including coastal and marine) from the landfill (including from wind-blown waste).²⁵

UK

- **Environment Protection Act 1990** – makes leaving or depositing litter (unless lawful authorisation or consent has been granted) and sets out the standards that land managers (primarily local authorities) are expected to meet in keeping their land clear of litter, including in relation to beaches. It provides local authorities with powers to take enforcement action against littering.
- **Waste (England and Wales) Regulations 2011 and Amendment (2012)** – implements the revised EU Waste Framework Directive (see above) which sets requirements for the collection, transport, recovery and disposal of waste.

Wales

- **Towards Zero Waste Strategy 2009** – sets out the Welsh Government’s high level policies and targets for the management of waste in Wales. This Strategy is supported by Wales’ Waste Prevention Programme³⁰ which describes the outcomes, policies, targets and outline work programme to address waste prevention from businesses and households. The Waste Prevention Programme delivers the requirement for Member States to develop waste prevention programmes and mandates some of its scope and content under the EU Waste Framework Directive (see above).
- **Single Use Carrier Bags Charge (Wales) Regulations 2010** – requires retailers to charge a minimum of 5p for a single use carrier bag. The latest Waste and Resources Action Programme (WRAP) UK figures show that the consumption of single use carrier bags in Wales has reduced by 79% since the introduction of the regulations, and the 5p charge widely seen by the Welsh public as being a positive and successful measure⁹.

The list of drivers above is indicative of existing policy and legislation which is key to the management of marine litter at the international, European, UK and Wales levels, however other legal drivers are also relevant. For example, the **Well-being of Future Generations (Wales) Act 2015**, in terms of social and economic well-being and development. The **UK Marine Policy Statement 2012** and the developing **Wales National Marine Plan** in terms of cross-sector management of marine activities that have the potential to introduce marine litter. The **Shellfish Waters Directive 2006** and the **Bathing Waters Directive 2006** in terms of water quality. Various sector specific regulations e.g. **Common Fisheries Policy (CFP) (Regulation (EC) No 2371/2002)** and the **Fisheries Control Regulation (Regulation (EC) No 1224/2009)**, and the **UK Merchant Shipping (Prevention of Pollution by Garbage) Regulations 1988**.

³⁰ <http://gov.wales/docs/desh/publications/131203waste-prevention-programme-document-en.pdf>

6. Current mechanisms and planned actions on sites to 2020

The LIFE Natura 2000 Programme identified and costed actions to address issues/risks relating to marine litter for Natura 2000 sites for the period to 2020. These actions are held in full in the NRW Actions Database and summarised in Prioritised Improvement Plans. The site level actions identified within the Prioritised Improvement Plans (PIPs), Site Improvement Plans (SIPs) and NRW Action Database for addressing potential impacts of marine litter on N2K features identified the following mechanisms categories:

- **Direct management** (60% of actions) is the most frequently identified mechanism for addressing marine litter impacts. This mechanism predominantly refers to action require by Local Authorities (LA) to support and help implement measures to remove litter from beaches (e.g. third party collections and LA beach cleaning), ensuring that approaches are sensitive to features. Actions highlight potential value in the development of a process for data recording to inform management, and in working with local groups / schools to coordinate projects.
- **Investigation** actions (32% of actions) principally relate to improving the evidence base to underpin better management and reduce both sources of marine litter and impacts on features. This includes investigations to develop better understanding of local sources of marine litter and its disposal, and identification or high risk areas for marine litter. Almost all of these actions are linked to Natural Resources Wales and the Welsh Government.
- **Targeted education, awareness raising and liaison** actions (8% of actions) include, for example, developing opportunities to reduce litter at source (locally), including site level awareness raising campaigns and working with local businesses for litter reduction.

The responsibility for the delivery of management actions identified through the LIFE Natura 2000 Programme predominantly lies with LAs, in line with their legislative responsibilities (see Section 5 for further details). However, a broad range of organisations contribute to activities aimed at reducing marine litter and its impact on marine environment. Whilst these actions are not specifically linked to Natura 2000 sites or features, they may be delivering benefits for them.

For example, the Marine Conservation Society (MCS) runs a national beach cleaning and litter surveying programme, Beachwatch, helping people around the UK to care for their coastline³¹ and runs other campaigns aimed at reducing litter at its source including *Break the Bag Habit* aimed at stopping single-use carrier bags, and *Hang on to your Tackle* – encouraging anglers to reduce litter. MCS also promote the evidence from their activities to decision and policy makers.

Keep Wales Tidy (KWT) also works with volunteers to clean up rivers and coastal areas, and in 2000 launched the Coast Care Programme (CCP) with support from the Welsh Government³². The CCP aims to work with the people of Wales to encourage involvement, challenge and change littering behaviour, and support Coast Care groups who volunteer

³¹ <http://www.mcsuk.org/beachwatch/>

³² <http://www.keepwalestidy.org/coastcare>

throughout the year to run beach cleans. KWT also works with Dŵr Cymru Welsh Water on specific sewage campaigns (e.g. *Let's Stop the Block* campaign).

A number of local initiatives also exist targeting marine litter, for example fishing and diving for litter projects, the majority of which rely on volunteer input and external funding. There are also examples of current initiatives in Wales targeted at addressing sources and impacts of marine litter, including:

- **Llŷn Marine Ecosystems Project (LMEP)** (2015-16) – is investigating the extent and nature of marine litter in Pen Llŷn a'r Sarnau, to identify where effort can be best targeted to address marine litter. This project will be working with local fishing communities to investigate: how much litter is seen at sea and caught in fishing gear; challenges related to disposing of waste; and fishermen's views on litter.

Gwynedd Council's successful NRW competitive fund application (2016-2018) will take forward litter-related actions for Pen Llŷn a'r Sarnau SAC building on the findings from the initial phase. The LMEP will look to work with local groups and businesses to address the presence of litter and establish more regular litter monitoring to enhance national understanding of litter on beaches. The project will also explore opportunities to reduce the amount of litter produced at source, improve recycling and initiate change in people's attitudes and behaviours with respect to litter.

- **Anglesey Area of Outstanding Natural Beauty / Coastal Path Litter Initiative** – is exploring how marine litter problem around Anglesey can be tackled more effectively and consistently into the long term, and involves volunteers monitoring. An integral part of this project is identifying which beaches are most affected by beach litter and establishing targeted monitoring for a selection of beaches that reflect varying degrees of littering.

7. Rationale for strategic actions

Despite the broad range of policy and legislation focussed on, or contributing, to the management of marine litter in Wales' marine waters, recent evidence highlights that the quantity of marine litter on Wales' beaches continues to increase¹¹.

Key challenges in managing marine litter across the marine Natura 2000 sites, in Wales' waters more generally, and indeed globally, arise principally due to:

- limited knowledge on the sources and types of marine litter, and the hotspots which generate pressures from marine litter;
- limited understanding of the sensitivity of marine Natura 2000 features to different forms of marine litter and of impacts on marine Natura 2000 features in terms of feature condition (notwithstanding the direct impacts on the individual level e.g. in terms of entanglement); and
- the need for joined up, cross-border approach given the significant distances that marine litter can travel via rivers, and prevailing ocean wind and current patterns.

There is recognition that current and future measures to reduce marine and coastal litter have the potential to deliver ecological, economic and social benefits⁹. These include, but are not limited to, reduced impacts on the marine habitats and species, increased amenity and tourism value, and reduction in risk to human health e.g. from micro plastics in the food chain. Whilst some actions have been identified at the site level through the LIFE Natura 2000 Programme for addressing marine litter, the majority of these are focussed on removing litter from specific beaches rather than on identifying and targeting sources of marine litter to prevent introduction to the marine environment and this is an area where further attention is required.

Section 9 describes the strategic actions which would be required to manage and address impacts from marine litter on Natura 2000 features in Wales. The table also identifies where strategic actions could meet objectives of other policies and work programmes.

The focus for the development of the strategic actions has been on identifying gaps in current management, for example gaps in the evidence base to underpin management of the Natura 2000 network or in policy / legislation needed to deliver desired outcomes. Strategic actions have been developed to address these gaps to improve management and decision making, and ultimately the condition of Natura 2000 features across Wales.

8. Development of strategic actions

The strategic actions to manage and address the impacts and potential impacts of marine litter on features have been developed through a process of engagement, in combination with analysis of the LIFE Natura 2000 Programme data. At an initial NRW workshop (November 2014), participants were asked to consider existing management approaches for marine litter, and to identify new strategic actions which could address impacts regionally or at a Welsh or UK level. These proposals were then reviewed by a small working group.

The draft strategic actions were made available for comment to a wider audience through a series of three workshops during the summer of 2015. The first workshop was open to sector leads from the Welsh Government, while the second and third workshops (held on the 19 and 25 August 2015, in Garwnant and Bangor respectively) were attended by representatives of interested organisations in Wales, from, for example, the third sector, local authorities, and other user groups. There were 84 attendees.

The drafts were also available on request to others not able to attend the events. Feedback received from a wide range of stakeholders (including from marine industry, environmental non-governmental organisations and European Marine Site Officers), was then used by the working group to finalise the strategic actions.

The strategic actions are intended to be SMART (Specific, Measurable, Assignable, Realistic and Time-related) and therefore information has been provided on estimated costs and time-scales where possible. One or more proposed delivery organisations are also listed against each action. The intention is that the organisation proposed as lead would drive the action forward, collaborating with other partners and stakeholders as necessary.

The following table in Section 9 describes the strategic actions which would be required to manage and address impacts from marine litter on Natura 2000 features. The table also identifies where strategic actions could meet objectives of other policies and work programmes.

9. Strategic actions for Natura 2000 in Wales: Marine litter

The following represent a list of proposed actions which are needed to make progress towards favourable condition of Natura 2000 (N2K) features. They do not represent a fully funded or committed operational plan.

| | Action | Detail | Priority | Link to existing work programmes | Proposed lead organisation | Proposed partner organisation(s) | Cost | Timetable |
|---|--|--|----------|--|--|--|--------|-----------|
| 1 | Implement the Marine Strategy Framework Directive Programme of Measures and Programme of Monitoring for Descriptor 10 (Marine Litter). | Implement the MSFD Programme of Measures. Measures have been set out for delivering targets for Good Environmental Status by 2020. Implement the Programme of Monitoring to develop the evidence base to improve our understanding of the marine litter and its impacts on the marine environment, and determine whether or not we are achieving GES. | High | Programme of Measures and Programme of Monitoring for D10 and other linked descriptors (e.g. biodiversity). OSPAR Regional Action Plan on Marine Litter. | Welsh Government | Local Authorities Marine Conservation Society / WEL Keep Wales Tidy Marine users and industries | N/A | 2016 |
| 2 | Develop a Welsh litter strategy for N2K sites building upon the MSFD measures to address marine litter in collaboration with key partners. | Strategy to:- <ul style="list-style-type: none"> Clarify roles and responsibilities (advisory and delivery roles). Identify and review measures for addressing marine litter (e.g. litter prevention measures, fishing for litter projects, port waste management regulations, education and awareness raising etc.) that can be applied at the Welsh scale. Consider options for strategic coordination and expansion of beach clean efforts and existing litter monitoring programmes. | High | MCS beach cleans and litter monitoring. Fishing for litter (e.g. Llŷn Marine Ecosystems Project) OSPAR Regional Action Plan on Marine Litter. Anglesey Area of Outstanding Natural Beauty and Wales Coast Path Anglesey Project | Welsh Government Local Authorities Natural Resources Wales | Local Authorities Marine Conservation Society and other NGOs ¹ Keep Wales Tidy Marine users and industries Resilience Forums | £50k + | Ongoing |
| 3 | Develop an evidence base to support the management of marine litter and the marine litter N2K strategy. | Studies to investigate the sources, pathways and hotspots of marine litter, and sensitivities of marine features and the wider marine environment (e.g. risk to wildlife through entanglement, entrapment and ingestion and interference with biological production and smothering of seabed habitats). | High | CEFAS Litter Pathways Project. MCS beach litter data (OSPAR beach litter monitoring survey). Cetaceans Stranding Investigation Programme. | Natural Resources Wales Welsh Government | Local Authorities Marine Conservation Society and other NGOs ¹ Marine users & industries Cetaceans Stranding Investigation Programme | TBC | Ongoing |
| 4 | Form a virtual NRW marine litter group to coordinate monitoring and measures. | There is an increasing amount of work on marine litter being taken forward across NRW (e.g. under the MSFD, WFD and other drivers). A virtual marine litter group would help to ensure coordination of activities and advice, and help to progress projects. | Medium | | Natural Resources Wales | | | 2017 |

¹ Wales Environment Link, Seawatch Foundation, Whale and Dolphin Conservation Society

Appendix A: Natura 2000 sites and features identified as having the potential to be affected by marine litter.

Data was derived from the NRW Actions Database following work by the LIFE Natura 2000 Programme. High, medium and low priority issues and risks are included, recorded for whole sites.

A cross (X) indicates where a feature has been identified as having the potential to be affected by marine litter; grey shading means that the feature is not designated at that site; white cells show features which are designated but have not been identified as being affected (or with the potential to be affected) by marine litter. Data from September 2015.

| Feature | Designation | Cardigan Bay / Bae Ceredigion SAC | Cardarthen Bay & Estuaries / Bae Caerfyrddin ac Aberoedd SAC | Dee Estuary / Aber Dyfrdwy SAC | Pembrokeshire Marine / Sir Benfro Forol SAC | Pen Llŷn a'r Samau SAC | Severn Estuary / Môr Hafren SAC | Severn Estuary / Môr Hafren SPA |
|--|-------------|---|---|--------------------------------------|---|---------------------------|------------------------------------|------------------------------------|
| Annual vegetation of drift lines | SAC | | | X | | | | |
| Atlantic salt meadows | SAC | | X | X | X | X | X | |
| Bottlenose dolphin | SAC | X | | | | X | | |
| Dune grassland | SAC | | | X | | | | |
| Estuaries | SAC | | X | X | X | X | X | |
| Glasswort & other annuals colonising mud and sand | SAC | | X | X | | X | | |
| Grey seal | SAC | X | | | X | X | | |
| Humid dune slacks | SAC | | | X | | | | |
| Intertidal mudflats & sandflats | SAC | | X | X | X | X | X | |
| Lagoons | SAC | | | | X | X | | |
| Otter | SAC | | | | | X | | |
| Reefs | SAC | | | | X | X | X | |
| River lamprey | SAC | | | | | | X | |
| Sea caves | SAC | | | | X | X | | |
| Sea lamprey | SAC | | | | | | X | |
| Shallow inlets and bays | SAC | | X | | X | X | | |
| Shifting dunes | SAC | | | X | | | | |
| Subtidal sandbanks | SAC | | X | | X | X | | |
| Twaite shad | SAC | | | | | | X | |
| Bewick's swan | SPA | | | | | | | X |
| Dunlin | SPA | | | | | | | X |
| Gadwall | SPA | | | | | | | X |
| Redshank | SPA | | | | | | | X |
| Russian white-fronted goose | SPA | | | | | | | X |
| Shelduck | SPA | | | | | | | X |