



**Cyfoeth  
Naturiol**  
Cymru  
**Natural  
Resources**  
Wales

# The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources.

Annex.

## Acronyms and Glossary of terms

Natural Resources Wales

Final Report

## About Natural Resources Wales

We look after Wales' environment so that it can look after nature, people and the economy.

Our air, land, water, wildlife, plants and soil – our natural resources - provide us with our basic needs, including food, energy, health and enjoyment.

When cared for in the right way, they can help us to reduce flooding, improve air quality and provide materials for construction. They also provide a home for some rare and beautiful wildlife and iconic landscapes we can enjoy and which boost the economy.

But they are coming under increasing pressure – from climate change, from a growing population and the need for energy production. We aim to find better solutions to these challenges and create a more successful, healthy and resilient Wales.

## Evidence at Natural Resources Wales

Natural Resources Wales is an evidence based organisation. We seek to ensure that our strategy, decisions, operations and advice to Welsh Government and others are underpinned by sound and quality-assured evidence. We recognise that it is critically important to have a good understanding of our changing environment.

We will realise this vision by:

- Maintaining and developing the technical specialist skills of our staff;
- Securing our data and information;
- Having a well resourced proactive programme of evidence work;
- Continuing to review and add to our evidence to ensure it is fit for the challenges facing us; and
- Communicating our evidence in an open and transparent way.

## The State of Natural Resources Report (SoNaRR) Report Contents

This document is one of six annexes to the State of Natural Resources Report.

Chapter 1	Introduction to the State of Natural Resources Report (SoNaRR): An assessment of sustainable management of natural resources
Chapter 2	Understanding drivers of change in natural resource use
Chapter 3	Summary of extent, condition and trends of natural resources and ecosystems in Wales
Chapter 4	Resilient Ecosystems
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Annex	Technical Annex for Chapter 3
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Annex	Acronyms and Glossary of terms

All of the SoNaRR documents can be downloaded from the NRW website:  
[www.naturalresources.wales/sonarr](http://www.naturalresources.wales/sonarr).

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Annex Table 1 Acronyms and abbreviations used in SoNaRR

Acronym / abbreviation	Full terminology
ADHD	Attention Deficit Hyperactivity Disorder
AHDB	Agriculture and Horticulture Development Board
AONB	Area of Outstanding Natural Beauty
ASNW	Ancient Semi Natural Woodland
AWI	Ancient Woodland Inventory
BAP	Biodiversity Action Plan
BID	Business Improvement District
C&D	Construction & Demolition
CABI	Centre for Agriculture and Biosciences International
CBD	Convention of Biological Diversity
CCRA	Climate Change Risk Assessment
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CEH	Centre for Ecology and Hydrology
CITES	the Convention on International Trade in Endangered Species of Wild Fauna and Flora
CO2	Carbon dioxide
CS	Countryside Survey (data)
DEFRA	Department for Environment, Food and Rural Affairs
EU	European
GB	Great Britain
GHG	Greenhouse gases
GMEP	Glastir Monitoring and Evaluation Programme
GVA	Gross Value Added
ICES	International Council for the Exploration of the Sea
INNS	Invasive Non-native Species
IPCC	Intergovernmental Panel on Climate Change
JNCC	Joint Nature Conservation Committee
LCA	Landscape Character Assessment
LIDAR	Light Detection and Ranging
LSOA	Lower Super Output Area (in relation to Index of Multiple Deprivation)
MCA	Marine Character Area
MSFD	Marine Strategy Framework Directive
MW	Megawatts
MWh	Megawatt hours
N2K	Natura 2000
NBN	National Biodiversity Network
NEA	National Ecosystem Assessment
NFI	National Forest Inventory
NOx	Nitrogen oxides
NRW	Natural Resources Wales

Acronym / abbreviation	Full terminology
NVZ	Nitrate Vulnerable Zone
ONS	Office for National Statistics
OSPAR	The Convention for the Protection of the Marine Environment of the North-East Atlantic. Name comes from the previous "Oslo Paris Conventions"
PAWS	Plantations on Ancient Woodland Sites
PM10	Particulate matter - large particles (10 microns)
PM2.5	Particulate matter - fine particles (2.5 microns)
ppb	Parts per billion
ppm	Parts per million
PSB	Public Service Board
RAW	Restored Ancient Woodland
SAC	Special Area of Conservation
SCA	Seascape Character Assessment
SMEs	Small-medium enterprises
SoNaRR	State of Natural Resources Report (or SoNaR report)
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDs	Sustainable Drainage Systems
TIM	The Integrated Model
UK	United Kingdom
UK NEA or UKNEA	UK National Ecosystem Assessment
UKCIP	UK Climate Impacts Programme
UKCP09	UK Climate Projections (09 refers to the projections being available from 2009)
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WFD	Water Framework Directive
WFG	Well-being of Future Generations
WG	Welsh Government
WGWE	Welsh Government Woodland Estate
WIMD	Welsh Index of Multiple Deprivation
WWF Cymru	World Wildlife Fund Cymru (Wales)

Annex Table 2 Description of units used in SoNaRR

Units	Description
$\mu\text{g}/\text{m}^3$	Micro-grams per metre cubed
km	Kilometre(s). 1 km <sup>2</sup> = 100 ha
ha	Hectare(s). 1 ha = 0.01 km <sup>2</sup>



Annex Table 3 Definitions of Natural Resources and Broad Habitats in SoNaRR

Category	Term	Definition
Natural Resource	Animals, plants and other organisms	The species that make up Wales' ecosystems that may or may not be important in the functioning of the ecosystems but nevertheless contribute to the overall biodiversity of Wales.
Natural Resource	Air Quality	Refers to the quality of the air around us in Wales and the emissions we produce including pollutants and radioactive substances.
Natural Resource	Water resources and hydrological processes	Water resources refers to the quantity of our freshwater resource available to support the environment, people and businesses. Hydrological processes are the natural processes of the water cycle, including evaporation, condensation, precipitation, infiltration and run-off. Marine and coastal hydrological processes include both tides and waves.
Natural Resource	Soils	Formed by the weathering of rocks and minerals and the accumulation of organic materials, which often takes hundreds to thousands of years. Soil formation is a continuous process although rates of loss can be much greater than formation and therefore should be treated as a non-renewable resource. Soils are the foundation of land, ecosystems and habitats.
Natural Resource	Geodiversity	Geodiversity is the range (diversity) of geological (e.g. rocks, minerals, structures, fossils) geomorphological (e.g. landforms, the physical landscape, natural physical processes) and soil features.
Broad Habitat	Mountains, moorland and heaths	Mountainous habitats are those above the climatic tree-line. Moorlands and heaths are predominantly open, unenclosed and extensive landscapes. This broad habitat includes upland and lowland heathlands (including dwarf shrub heath), moorlands, blanket bog, montane habitats (including ffridd), inland rock habitats (exposures) and stands of bracken in the lowlands. They are often interspersed with other habitats such as semi-natural grasslands (including acid grassland, Wales' most extensive upland habitat) (see semi-natural grasslands), woodlands and surface water. Coastal and dune heathlands are included under coastal margins.

Category	Term	Definition
Broad Habitat	Semi-natural grasslands	Semi-natural grasslands comprise a mixture of grasses and herbaceous plants, along with sedges, rushes, mosses and other low-growing species, often created by low-intensity, traditional farming or natural vegetation on poor soils or in exposed locations. They often contain a rich variety of grasses and herbs.
Broad Habitat	Enclosed farmland	Describes the agricultural land surrounded by hedges, wall, fences and other field boundaries. It includes arable crops, horticulture, orchards and temporary grasslands as well as agriculturally improved permanent grasslands, but excludes the ffridd, areas of enclosed semi-natural permanent grassland, scrub and farm woodland. Welsh agricultural land is dominated by grass. The largest components are permanent pasture, rough grazing (common land and sole rights) and grasslands which have been re-sown in the last 5 years.
Broad Habitat	Woodland	Land where the ecological condition is, or will be, strongly influenced by the tree canopy. In terms of land cover statistics (in the UK), woodland is currently defined as land with trees where the mature trees would cover more than 20 per cent by area. Large tracts are generally called forests, smaller units are described in a variety of terms such as woodlands, woods, copses and shelterbelts, but there is no minimum size for a woodland.
Broad Habitat	Freshwater	Freshwater-based ecosystems occur wherever rainfall, snowmelt or groundwater collects into flowing channels (rivers and streams), standing waters, or associated bogs, fens, grazing marshes, wetlands and floodplains (UK NEA, 2011, Chap 9). Groundwater is the water stored in soil and rocks. It provides baseflow to springs, rivers and wetlands (freshwater group). This broad habitat includes groundwater, wetlands, rivers and streams, and standing waters (lakes and ponds).
Broad Habitat	Urban	The built environment (UK NEA, 2011. Ch 10 Urban). This includes buildings, roads, gardens, parks and informal greenspaces, waste sites and any other structure or space installed for human activities (ONS, 2015).

Category	Term	Definition
Broad Habitat	Coastal margins	Habitats around the coastline of Wales including the three most extensive (sand dunes, saltmarsh and sea cliffs) and two others (saline or coastal lagoons and shingle). Other habitats found around Welsh coasts (urban, semi-natural grasslands, enclosed farmland, rocky shores, mudflats and sandflats, estuaries, etc.) are covered under other broad habitats.
Broad Habitat	Marine	Includes marine water quality (particularly bathing waters and shellfish waters) and the intertidal and subtidal inshore areas. The intertidal area covers the coastal area from the high water mark down to the low water mark that is inundated with seawater at some stage in the tidal cycle (UK NEA, 2011, Chap 12 Marine). The marine inshore area of the marine environment covers the Welsh area that is permanently immersed in seawater (considered to be subtidal) (UK NEA, 2011, Chap 12 Marine) from the low water mark out to 12 nautical miles.

Annex Table 4 Glossary of terms used in SoNaRR

Term	Definition	Source of definition
Acidification	A reduction in pH in soils, freshwater or marine water due to either natural or human causes (air pollution causing acid deposition in the environment is one of the main sources). This can lead to various knock-on chemical and ecological effects.	Kernan M, Batterbee RW, Curtis CJ, Monteith DT, Shilland EM. (eds) 2010. <i>Recovery of lakes and streams in the UK from the effects of acid rain. UK Acid Waters Monitoring Network 20 years interpretative report.</i> Environmental Change Research Centre. London: University College London.
Adaptive management	A systematic process for continually improving management policies and practices by learning from the outcomes of previously employed policies and practices. Manage adaptively, by planning, monitoring, reviewing and where appropriate, changing action.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report.</i> Cambridge: UNEP-WCMC. And Environment (Wales) Act 2016.
Aichi Biodiversity Targets	United Nations globally recognised set of targets with the aim of halting the loss of biodiversity to ensure ecosystems are resilient and continue to provide essential services.	Secretariat of the Convention on Biological Diversity 2010. <i>Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets. “Living in Harmony with Nature”.</i> Quebec: CBD and UNEP.
Area Statements	The Environment (Wales) Act specifies that statements for the purpose of facilitating the implementation of the national natural resources policy must be prepared and published by NRW. Each statement will correspond to a specific area of Wales and include reference to natural resources in the area, the benefits they provide and the priorities, risks and opportunities for sustainable management that need to be addressed.	Environment (Wales) Act 2016

Term	Definition	Source of definition
Asset	A thing (object or concept) of value that brings benefits or a series of benefits to people. It is a means of carrying forward value from one accounting period to another.	Natural Capital Committee. 2013. <i>The State of Natural Capital: Towards a framework for measurement and valuation</i> . Available from: <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/516707/ncc-state-natural-capital-first-report.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/516707/ncc-state-natural-capital-first-report.pdf</a> [Accessed 15 July 2016]
Benefits	An advantage or profit gained from something. In the context of SoNaRR, a benefit can be described as anything that any component or collective of natural resources does to sustain life and well-being on earth. It could be an environmental, cultural, social or economic benefit, and can be both measurable and non-measurable. We typically use the term "Ecosystem Services" to categorise these benefits, although we may equally think about the many ways natural resources contribute to the well-being goals.	Oxford University Press 2016. <i>Definition of Benefit</i> . <i>Oxford Dictionary</i> . Available from: <a href="http://www.oxforddictionaries.com/definition/english/benefit">http://www.oxforddictionaries.com/definition/english/benefit</a> . [Accessed 3rd August 2016]
Biodiversity	("biological diversity") The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems. Includes diversity within and between species, habitats and ecosystems.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Biogenic reefs	Habitats created by the animals themselves. Includes reefs created by corals, worms and mussels.	JNCC. 2014. <i>Annex 1 Reefs [online]</i> . Available from: <a href="http://jncc.defra.gov.uk/page-1448">http://jncc.defra.gov.uk/page-1448</a> . [Accessed 14 July 2016]
Blue Flag Award	An internationally recognised ecolabel, awarded to beaches and marinas for cleanliness, safety and high quality amenities.	Visit Wales. 2016. Award winning beaches [online]. Available from: <a href="http://www.visitwales.com/explore/coastline-beaches/award-winning">http://www.visitwales.com/explore/coastline-beaches/award-winning</a> . [Accessed 30th August 2016].

Term	Definition	Source of definition
Broad habitat	Used to classify different ecosystems for reporting. [For SoNaRR, these consist of: Mountains, moorlands and heaths; Semi-natural grasslands; Enclosed farmland; Woodlands; Urban; Freshwater; Coastal margins; Marine]	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Capital	Natural capital is the elements of the natural environment which provide valuable goods and services (such as clean air, clean water, food and recreation) to people.	Natural Capital Committee. 2015. <i>The State of Natural Capital: Protecting and improving natural capital for prosperity and wellbeing. Third report to the Economic Affairs Committee</i> .
Carbon footprint	Measures the total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product.	Carbon Trust. 2016. Carbon Trust website [online]. Available from: <a href="https://www.carbontrust.com/home/">https://www.carbontrust.com/home/</a> . [Accessed 2 <sup>nd</sup> August 2016].
Carbon sequestration (also storage and capture)	(also sequestering carbon, carbon storage, carbon capture) The uptake of carbon containing substances, in particular carbon dioxide to a storage reservoir (e.g. trees, soils) so reducing atmospheric carbon dioxide.	Allwood JM, Bosetti V, Dubash NK, Gómez-Echeverri L & von Stechow C. 2014. Glossary. In: IPCC. 2014. <i>Climate Change, 2014: Mitigation of Climate Change</i> . Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
Circular economy	A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.	WRAP 2016. <i>WRAP and the circular economy</i> [Online]. Available from: <a href="http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy">http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy</a> . [Accessed 2 <sup>nd</sup> August 2016].

Term	Definition	Source of definition
Climate change	A change in the state of the climate that can be identified by changes in the mean and/or variability of its properties, and that persists for an extended period, typically decades or longer.	Allwood JM, Bosetti V, Dubash NK, Gómez-Echeverri L & von Stechow C. 2014. Glossary. In: IPCC. 2014. <i>Climate Change, 2014: Mitigation of Climate Change</i> . Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
Coastal Squeeze	The process by which coastal habitats and natural features are progressively lost or drowned, between fixed coastal defences (seawalls or revetments) and rising sea levels.	Halcrow. 2012. <i>Lavernock Point to St Ann's Head Shoreline Management Plan SMP2</i> [online]. South Wales SMP. Available from: <a href="http://www.southwalescoast.org/">http://www.southwalescoast.org/</a> [Accessed 21/07/2016]
Communities First Cluster Areas	Communities First is a Community focussed programme that supports the Welsh Government's Tackling Poverty agenda. The programme concentrates on the 10% most deprived communities in Wales, as defined by the Welsh Index of Multiple Deprivation 2011. Each cluster is based on these areas and criteria have been established to determine which other, somewhat less deprived areas, are also included. There are 52 clusters in total.	Welsh Government. 2015. <i>Communities First Programme Frequently Asked Questions</i> [online]. Available from: <a href="http://gov.wales/topics/people-and-communities/communities/communitiesfirst/faqs/?lang=en">http://gov.wales/topics/people-and-communities/communities/communitiesfirst/faqs/?lang=en</a> . [Accessed 30th August 2016]
Compaction	Changing the nature of the soil such that there is a decrease in the volume of voids between soil particles or aggregates; it is manifest as an increase in bulk density and a severely compacted soil can become effectively impermeable. Some soils are naturally compacted, e.g. very heavy textured soils (fine textured).	European Commission. 2016. <i>Glossary of soil terms</i> . Joint Research Centre, European Soil Data Centre (ESDAC) [Online]. Available from: <a href="http://esdac.jrc.ec.europa.eu/resource-type/glossary">http://esdac.jrc.ec.europa.eu/resource-type/glossary</a> .



Term	Definition	Source of definition
	Man-made compaction is caused by the passage of heavy machinery and very intensive soil exploitation.	[Accessed 2nd August 2016]
Condition	(of a species or habitat) The capacity to yield services relative to its potential capacity. This is usually described in relation to a desired reference state (good or favourable condition) and is typically defined in terms of extent, distribution, structures and functions, and species composition for habitats and population size structure and habitat quality for species.	U UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Connectivity	The degree to which the landscape facilitates or impedes movement among resource patches.	Taylor PD, Fahrig L, Heinen K & Merriam G. 1993. Connectivity is a vital element of landscape structure. <i>Oikos</i> 68, 571-572.
Contaminated land	Under section 78A (2) of Part 2A of the Environmental Protection Act (1990), contaminated land is defined as: “any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that – (a) significant harm is being caused or there is a significant possibility of such harm being caused; or (b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused;”  “Contaminated land” is used to mean land which meets the Part 2A definition of contaminated land. Other terms, such as “land affected by contamination” or “land	Natural Resources Wales. 2016. <i>The state of contaminated land in Wales</i> [online]. Available from: <a href="https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf">https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf</a> [Accessed 7th September 2016]



Term	Definition	Source of definition
	contamination”, are used to describe the much broader categories of land where contaminants are present but usually not at a sufficient level of risk to be contaminated land.	
Critical load	Thresholds for the deposition of pollutants causing acidification and/or eutrophication above which significant harmful effects on sensitive UK habitats may occur.	JNCC. 2015. <i>JNCC Biodiversity indicators. B5a Air pollution, part of B5 Pressure from pollution. Pressure indicator</i> [online]. Available from: <a href="http://jncc.defra.gov.uk/page-4245-theme=default">http://jncc.defra.gov.uk/page-4245-theme=default</a> . [Accessed 22nd July 2016].
Deficits	The amount by which something is too small. In terms of well-being, this refers to where we aren't able to achieve benefits we would like to have; where there are negative impacts on benefits.	Oxford University Press 2016. <i>Definition of Deficit. Oxford Dictionary</i> [online]. Available from: <a href="http://www.oxforddictionaries.com/definition/english/deficit">http://www.oxforddictionaries.com/definition/english/deficit</a> [Accessed 3rd August 2016]. And SoNaRR Chapter 1
Degradation	(of an ecosystem) A persistent reduction in the capacity to provide ecosystem services.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Directives	A "Directive" is a legislative act that sets out a goal that all EU countries must achieve. However, it is up to the individual countries to devise their own laws on how to reach these goals. E.g. Water Framework Directive, Bathing Waters Directive, Habitats Directive (Habitats Directive - Annex I habitats, Annex II species)	Europa EU. 2016. <i>European Union - Regulations, Directives and other acts</i> [online]. Available from: <a href="http://europa.eu/eu-law/decision-making/legal-acts/index_en.htm">http://europa.eu/eu-law/decision-making/legal-acts/index_en.htm</a> . [Accessed 22nd July 2016]
Disbenefit	Any negative consequence (negative impact, cost, trade-off) which society and/or natural resources will bear from implementing measures to improve the environment.	Environment Agency. 2015. <i>Water for life and livelihoods</i> . River Basin Management Plans Glossary. DEFRA.

Term	Definition	Source of definition
Ecological footprint	An indicator of the total environmental burden that society places on the planet. It represents the area of land needed to provide raw materials, energy and food, as well as absorb pollution and waste created and is measured in global hectares.	Stockholm Environmental Institute and GHD. 2015. <i>Ecological and Carbon Footprints of Wales</i> . Update to 2011. July 2015.
Ecosystem	Communities of interacting animals, plants and other organisms and their non-living (physical and chemical) environment.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC. EEA. 2015. European ecosystem assessment - concept, data and implementation. Contribution to Target 2 Action 5 Mapping and Assessment of Ecosystems and their Services (MAES) of the EU Biodiversity Strategy to 2020. European Environment Agency Technical Report no. 6/2015. ISSN 1725-2237
Ecosystem accounting	See Natural Resource Accounts	
Ecosystem approach	(also "joined-up" approach or "integrated approach") A scientifically-based strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use. It recognises that humans and their cultural diversity are an integral part of many ecosystems.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Ecosystem services	Typically used to categorise the benefits people obtain from ecosystems. The four categories are: provisioning services e.g. food and water; regulating services e.g. flood and disease control; cultural services e.g. spiritual and recreational; and supporting services e.g. soil formation and nutrient cycling. See Chapter 5 for a detailed explanation.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.

Term	Definition	Source of definition
Eutrophication	The enrichment of water by nutrients, especially compounds of nitrogen and/or phosphorus, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned.	Urban Waste Water Treatment Directive (91/271/EEC)
Extent	(Chapter 3, in terms of "state" of natural resources) The scale, or area covered, by a natural resource or habitat.	Environment (Wales) Act 2016
Extinction debt	In ecological communities, the number or proportion of specialist species of a habitat expected to eventually become extinct after environmental disturbance such as habitat destruction, climate change or invasion of exotic species. In single species, the number or proportion of populations expected eventually to become extinct after habitat change.	Kuussaari M, Bommarco R, Heikkinen RK, Helm A, Krauss J, Lindborg R, Öckinger E, Pärtel M, Pino J, Rodà F, Stefanscu C, Teder T, Zobel M & Steffan-Dewenter I. 2009. Extinction debt: a challenge for biodiversity conservation. <i>Trends in Ecology and Evolution</i> , 24 (10), 564-571.
Flow Resources	Anything that replenishes itself without human intervention is considered to be a flow resource. An example of a flow resource would be either water, the wind, tide or solar energy, which can be converted into power.	No source – term used in SoNaRR
Fragmentation	(habitat fragmentation) Fragmentation is the result of transforming large habitat patches into smaller, more isolated fragments of habitat.	EEA. 2011. Landscape fragmentation in Europe. Joint EEA-FOEN report. European Environment Agency Report No 2/2011.
Geomorphology	Geomorphology is the study of landforms, their processes, form and sediments at the surface of the Earth. Study includes looking at landscapes to work out how the earth surface processes, such as air, water and ice, can mould the landscape. Landforms are produced by erosion or deposition, as rock and sediment is worn away by these earth-surface	British Society for Geomorphology 2016. <i>What is geomorphology?</i> [Online] Available from: <a href="http://www.geomorphology.org.uk/what-geomorphology-0">http://www.geomorphology.org.uk/what-geomorphology-0</a> . [Accessed 22nd July 2016].

Term	Definition	Source of definition
	processes and transported and deposited to different localities	
Grazing Prescription	Specific instructions within an agri-environment scheme contract or land management agreement to describe what a farmer is being asked to do in general terms, e.g. graze marshy grassland at no more than 0.5 Livestock Units (LSU) per ha per annum. Grazing regimes are what is actually applied to the piece of land (often in relation to a grazing prescription).	
Green Flag Award	UK-wide partnership, delivered in Wales by Keep Wales Tidy with support from the Welsh Government. The award recognises and rewards the best parks and green spaces in the country.	Keep Wales Tidy. 2016. <i>Green Flag Awards</i> [online]. Available from: <a href="http://www.keepwalestidy.org/greenflag">http://www.keepwalestidy.org/greenflag</a> [Accessed 15 July 2016]
Green infrastructure / greenspace	Green and blue natural and semi-natural spaces in and around urban areas. Component elements include parks, private gardens, agricultural fields, hedges, trees, woodland, green roofs, green walls, canals, rivers and ponds. The term covers all land containing these features, regardless of ownership, condition or size.	Landscape Institute 2013. <i>Green Infrastructure An integrated approach to land use. Landscape Institute Position Statement</i> . London.
Greenhouse gases	A group of gases that contribute either directly to climate change (including global warming) owing to their positive radiative forcing effect, or indirectly because they can produce increases in tropospheric ozone concentrations and this increases radiative forcing (warming of the atmosphere).	National Atmospheric Emissions Inventory. 2016. Overview of Greenhouse Gases [Online]. Available from: <a href="http://naei.defra.gov.uk/overview/ghg-overview">http://naei.defra.gov.uk/overview/ghg-overview</a> . [Accessed 5th August 2016].
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil. It provides baseflow to springs, rivers and wetlands and contributes to drinking water supplies	Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000)

Term	Definition	Source of definition
Habitat	An ecological or environmental space/area that is inhabited by a particular organism or ecological community. It is characterised primarily by its physical features (e.g. soil, climate, water quality etc.) and secondarily by the species of plants and animals that live there. See also "Broad habitat".	EEA. 2015. <i>European ecosystem assessment - concept, data and implementation. Contribution to Target 2 Action 5 Mapping and Assessment of Ecosystems and their Services (MAES) of the EU Biodiversity Strategy to 2020</i> . European Environment Agency Technical Report no. 6/2015. ISSN 1725-2237
Heat island	(and heat island effect) The tendency for urban areas to be hotter than surrounding rural, vegetated areas, especially at night in low-wind conditions. This is caused by hard surfaces absorbing heat during the day and releasing it at sunset – exacerbated where there is a lack of vegetation to cool the local atmosphere through evapo-transpiration.	Landsberg H. 1981. <i>The Urban Climate</i> . London: Academic Press.
Hydromorphological	Describes the hydrological and geomorphological processes and attributes of surface water bodies.	Natural Resources Wales. 2015. <i>River Basin Management Plan Overview Annex</i> .
Indicator	Indicators quantify information by synthesising different and multiple information into an observed value.	EEA. 2015. <i>European ecosystem assessment - concept, data and implementation. Contribution to Target 2 Action 5 Mapping and Assessment of Ecosystems and their Services (MAES) of the EU Biodiversity Strategy to 2020</i> . European Environment Agency Technical Report no. 6/2015. ISSN 1725-2237
Intervention	See Response.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.

Term	Definition	Source of definition
Invasive non-native species	Plants, animals, fungi and microorganisms whose introduction and/or spread outside their natural past or present ranges pose a risk to biodiversity or have other unforeseen negative consequences.	EEA. 2012. <i>Invasive alien species indicators in Europe. A review of streamlining European biodiversity (SEBI) Indicator 10</i> . European Environment Agency Technical Report No. 15/2012.
Leaching	(and leachate) Leachate is a generic term given to water that has come into contact with landfilled waste materials, and in doing so has dissolved contaminants from them. Leaching is the process of this happening.	Environment Agency. 2014. <i>Guidance for delivering the PPC (IPPC) regulations for leachate treatment</i> [online]. Available from: <a href="https://www.gov.uk/government/publications/treatment-of-landfill-leachate">https://www.gov.uk/government/publications/treatment-of-landfill-leachate</a> . [Accessed 2nd August 2016].
Local Authority municipal waste	Includes household and non-household waste that is collected and disposed of by local authorities. It includes regular household collections, specific recycling collections, special collections of bulky items, waste received at civic amenity sites and waste collected from non-household sources.	NRW. 2015. <i>Report on the Landfill Allowances Scheme (LAS) Wales 2014/15. Natural Resources Wales</i> [online]. Available from: <a href="https://naturalresources.wales/media/5528/las-report-2014_15_e.pdf">https://naturalresources.wales/media/5528/las-report-2014_15_e.pdf</a> . [Accessed 2nd August 2016].
Lower Super Output Area	(LSOA) Office for National Statistics geographical area. LSOAs are areas with a minimum of 1,000 people and maximum of 3,000 people at Census 2011.	Office for National Statistics. 2016. <i>Super Output Area (SOA), Census Geography</i> . Archived content [online]. Available from: <a href="http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/guide-method/geography/beginners-guide/census/super-output-areas--soas/index.html">http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/guide-method/geography/beginners-guide/census/super-output-areas--soas/index.html</a> . [Accessed 20/07/2016].



Term	Definition	Source of definition
National Natural Resources Policy	(NNRP) A document setting out the Welsh Ministers' general and specific policies for contributing to achieving sustainable management of natural resources in relation to Wales. The NNRP will use SoNaRR as the main evidence base.	Environment (Wales) Act 2016
Natura 2000 sites	Special Areas of Conservation are designated under the EU Habitats Directive (1992) and Special Protection Areas are designated under the EU Birds Directive (1979). Together these make up the Natura 2000 network. Also known as N2K sites.	NRW. 2015. <i>Inventory of Ecosystem Services provided by Natura 2000 in Wales: Summary report, LIFE Natura 2000 Programme for Wales.</i>
Natural resource accounts	(also known as ecosystem accounts, natural capital account) Recording the amount and value (monetary and non-monetary) of natural capital, generally at a national level.	Natural Capital Committee 2013. <i>The state of natural capital: Towards a framework for measurement and valuation.</i>
Natural Resource Management	Also known as NRM. An approach to maintaining or restoring the composition, structure, function, and delivery of services of natural and modified ecosystems for the goal of achieving sustainability. Based on an adaptive vision for future conditions taking ecology, socio-economics and cultural needs into account.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report.</i> Cambridge: UNEP-WCMC.
Natural resources	The living and non-living components of ecosystems.	Environment (Wales) Act 2016
Nitrate Vulnerable Zone (NVZ)	A Nitrate Vulnerable Zone (NVZ) is designated where land drains and contributes to the nitrate found in “polluted” waters	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary.</i> DEFRA.
Ozone	Ozone (O <sub>3</sub> ) is not emitted directly from any man-made source in any significant quantities. In the lower atmosphere, O <sub>3</sub> is primarily formed by a complicated series of chemical reactions initiated by sunlight. These reactions can be summarised as the sunlight-initiated oxidation of volatile organic compounds (VOCs) in the presence of nitrogen oxides (NO <sub>x</sub> ).	Air Quality in Wales. 2016. <i>Pollutants: Ozone and volatile organic compounds.</i> Website of the Welsh air quality forum. Available from: <a href="http://www.welshairquality.co.uk/moreinfo.php?n_action=pollutants&amp;t=1&amp;item=4&amp;lg=">http://www.welshairquality.co.uk/moreinfo.php?n_action=pollutants&amp;t=1&amp;item=4&amp;lg=</a> . [Accessed 22nd July 2016].

Term	Definition	Source of definition
Particulate Matter (PM)	(also known as particulate or particulate pollution) Airborne particulates are made up of a collection of solid and/or liquid materials of various sizes. It consists of both primary components released directly (from source) into the atmosphere, and secondary components, which are formed in the atmosphere from chemical reactions. Particulate matter equal to or less than 10µm in diameter is known as PM10, particulate matter equal to or less than 2.5µm in diameter is known as PM2.5.	Air Quality Expert Group. 2005. <i>Particulate Matter in the United Kingdom: Summary</i> . Defra, London. Available from: <a href="https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/pm-summary.pdf">https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/pm-summary.pdf</a> . [Accessed 22nd July 2016].
Permaculture	Comes from 'permanent agriculture' and 'permanent culture' - it is about living lightly on the planet, and sustaining human activities for many generations to come, in harmony with nature. Permanence is not about everything staying the same.	Permaculture Association 2016. <i>Permaculture. The basics [online]</i> . Available from: <a href="https://www.permaculture.org.uk/knowledge-base/basics">https://www.permaculture.org.uk/knowledge-base/basics</a> . [Accessed 21/07/2016].
Poaching	(of fields and river banks - related to trampling) Destruction of soil structure by livestock causing compaction and destroying parts of a field that they tread most often.	Whitmore AP. 2016. <i>Impact of livestock on soil. Sustainable Animal Production: Workshops, Discussions, Online resources [online]</i> . Available from: <a href="http://www.agriculture.de/cms1/conf6/ws4lives.htm">http://www.agriculture.de/cms1/conf6/ws4lives.htm</a> . [Accessed 21/07/2016].
Pollinators / pollination	Animals (generally bees and other insects) assisting in the pollination of plants (the sexual phase of reproduction for plants involving transportation of pollen).	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Pollution	(also pollutant) The direct or indirect introduction, as a result of human activity, of substances or heat into the air, water or land which: (i) may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems; (ii) result in damage to material property; or (iii) impair or interfere with amenities and	Natural Resources Wales. 2015. <i>River Basin Management Plan Overview Annex</i> .



Term	Definition	Source of definition
	other legitimate uses of the environment.	
Pollution incidents	Occurrences of pollution entering the air, land or water that are reported to NRW and cause an environmental impact.	NRW. 2016. <i>Intranet - Incidents and incident communications centre</i> . NRW internal link.
Polycyclic aromatic hydrocarbons	A group of several hundred chemically-related environmentally persistent organic compounds of various structures and varied toxicity. PAH's are produced during the incomplete combustion of organic substances such as coal, oil, gas and wood.	Public Health England. 2014. <i>Polycyclic Aromatic Hydrocarbons (Benzo[a]pyrene): General Information</i> . Available from: <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316535/benzoapyrene_BaP_polycyclic_aromatic_hydrocarbons_PAH_guidance.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316535/benzoapyrene_BaP_polycyclic_aromatic_hydrocarbons_PAH_guidance.pdf</a> . [Accessed 2nd August 2016].
Pressure	Human activities that have the potential to have adverse effects on the environment. See also Drivers (Chapter 2).	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary</i> . DEFRA.
Protected sites	(or protected areas) Areas that have been designated under EU and/or UK legislation for specific biological or geological features.	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary</i> . DEFRA.
Public Service Boards	A group (board) set up in each local authority area as defined in the Well-being of Future Generations (Wales) Act. The boards comprise of the local authority, the local health board for an area any of part of which falls within the local authority area, the Welsh fire and rescue authority for an area any part of which falls within the local authority area, and the Natural Resources Body for Wales (Natural Resources Wales, NRW).	Well-being of Future Generations (Wales) Act 2016.
Ramsar	A wetland area designated for its conservation value under the 1971 Convention on Wetlands of International Importance, especially as Waterfowl Habitat. The Ramsar Convention seeks to promote the	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary</i> . DEFRA.

Term	Definition	Source of definition
	conservation of listed wetlands and their wise use.	
Regulation(s)	(in a legal sense, not the same as regulation of processes and services) A "regulation" is a binding legislative act. It must be applied in its entirety across Wales, the UK or EU (depending on the scale the regulation applies to).	Europa EU. 2016. <i>European Union - Regulations, Directives and other acts</i> . Available from: <a href="http://europa.eu/eu-law/decision-making/legal-acts/index_en.htm">http://europa.eu/eu-law/decision-making/legal-acts/index_en.htm</a> . [Accessed 22nd July 2016]
Remediation	(of contaminated land sites) A broad range of actions which can be used to reduce the risk from contaminated land.	Natural Resources Wales. 2016. The state of contaminated land in Wales [online]. Available from: <a href="https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf">https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf</a> [Accessed 7th September 2016]
Resilience	(of ecosystems) The capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future.	See Chapter 4 of SoNaRR
Response	(management responses) Human action, including policies, strategies and interventions, to address specific issues, needs, opportunities or problems. These may be legal, technical, institutional, economic or behavioural operating at various spatial and time scales.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Risks	The likelihood of an outcome (usually negative) to the environment, or the potential impact of a pressure on the environment.	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary</i> . DEFRA.

Term	Definition	Source of definition
Sealing	(soils) Soil sealing means the permanent covering of an area of land and its soil by impermeable artificial material (e.g. asphalt and concrete), for example through buildings and roads. Only part of a settlement area is actually sealed, as gardens, urban parks and other green spaces are not covered by an impervious surface.	European Commission. 2016. <i>Soil sealing. Environment, Soil.</i> Available from: <a href="http://ec.europa.eu/environment/soil/sealing_guidelines.htm">http://ec.europa.eu/environment/soil/sealing_guidelines.htm</a> . [Accessed 29th July 2016]
Semi-natural habitats	Habitats in which the vegetation is mostly composed of native plant taxa, but where human land use and other activities play a key role in community development and maintenance. Examples are numerous, ranging across the spectrum of major habitat classes in Wales, including most forms of deciduous woodland, dwarf-shrub heathland, and many coastal formations. Habitat expressions least influenced by human activities are sometimes called 'near-natural'; at the other end of the spectrum certain degraded habitats, such as modified bog, are also treated as semi-natural.	Blackstock TH, Howe EA, Stevens JP, Burrows CR & Jones PS. 2010. <i>Habitats of Wales: a comprehensive field survey 1979-1997</i> . Cardiff: University of Wales Press.
State	(state of the ecosystem) In the context of SoNaRR, state refers to (collectively) the current extent and condition of the ecosystem.	
Status	(e.g. ecological/biological/conservation/chemical status) A specified way of classifying environmental condition. Status is usually specified within Directives against certain environmental standards for that Directive and using specific methodologies e.g. Water Framework Directive and Habitats Directive.	Environment Agency. 2015. <i>Water for life and livelihoods. River Basin Management Plans Glossary</i> . DEFRA.

Term	Definition	Source of definition
Stratification	Stratification of the ocean can be thought of as the vertical structuring of the water column by density. The density of seawater is primarily controlled by its temperature and salinity, thus stratification can be a combination of thermal (warmer water above cooler water) and saline (fresher water above saltier water). In simple terms the water column in any location is either mixed or stratified and whether it is one or the other has profound impacts on the ecosystem.	Dye, S. 2006. <i>Impacts of Climate Change on Shelf-Sea Stratification in Marine Climate Change Impacts Annual Report Card 2006</i> (Eds. Buckley PJ, Dye SR, Baxter JM). Summary Reports, MCCIP, Lowestoft [online] Available from: <a href="http://www.mccip.org.uk">www.mccip.org.uk</a> . [Accessed 2nd August 2016].
Sustainable management of natural resources	Using natural resources in a way and at a rate that maintains and enhances the resilience of ecosystems and the benefits they provide, in doing so, meet the needs of current generations without compromising the ability of future generations to meet their needs, and contribute to the achievement of the well-being goals set out in the Well-being of Future Generations Act. Also referred to as sustainable management.	Environment (Wales) Act 2016
Targets	A target is a clear expression of a policy priority, setting out exactly what the Government wants to have done and by when. Targets let those responsible for delivery know what needs to happen, so that they can plan, monitor and deliver the specified change.	Parliament 2010. <i>Targets as a policy tool: key issues for the 2010 Parliament</i> [online]. Available from: <a href="http://www.parliament.uk/business/publications/research/key-issues-for-the-new-parliament/value-for-money-in-public-services/targets-as-a-policy-tool/">http://www.parliament.uk/business/publications/research/key-issues-for-the-new-parliament/value-for-money-in-public-services/targets-as-a-policy-tool/</a> . [Accessed 22nd July 2016].
Taxonomic	Concerned with the classification of organisms.	Oxford University Press 2016. <i>Definition of Taxonomic</i> . <i>Oxford Dictionary</i> . Available from: <a href="http://www.oxforddictionaries.com/definition/english/taxonomic">http://www.oxforddictionaries.com/definition/english/taxonomic</a> . [Accessed 3rd August 2016].

Term	Definition	Source of definition
Threshold	(or tipping point) The point at which a small change in environmental conditions can result in a rapid change in an ecosystem. This is the point at which the change is likely to be irreversible.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Tranquillity	An untroubled state, which is peaceful, calm and free from unwanted disturbances. This can refer to a state of mind or a particular environment. Tranquillity can be measured in terms of the absence of unwanted intrusions, or by a balancing of positive and negative factors. These include the presence of nature, feeling safe, visually pleasing surroundings and a relaxing atmosphere.	Welsh Government. 2012. <i>Environmental noise - Tranquillity [online]</i> . Available from: <a href="http://gov.wales/topics/environmentcountryside/epq/noiseandnuisance/environmentalnoise/tranquillity/?lang=en">http://gov.wales/topics/environmentcountryside/epq/noiseandnuisance/environmentalnoise/tranquillity/?lang=en</a> . [Accessed 22nd July 2016].
Trends	(Chapter 3) A general direction in which something is developing or changing. In SoNaRR this refers to changes (positive or negative) seen over specified time periods in relation to extent and condition.	Oxford University Press 2016. <i>Definition of Trend Oxford Dictionary [online]</i> . Available from: <a href="http://www.oxforddictionaries.com/definition/english/trend">http://www.oxforddictionaries.com/definition/english/trend</a> . [Accessed 3rd August 2016].
Unconventional oil and gas	The term “unconventional” simply refers to the methods that are used, as well as the types of rock from which the oil and natural gas are produced. Unconventional oil and gas is oil or natural gas which is trapped in rocks which have a low permeability and require engineering intervention such as hydraulic fracturing to allow the gas to flow into the wellbore.	NRW.2016. NRW standard definition of unconventional oil and gas.
Vermicides	A substance that is poisonous to worms. Used in farming to kill intestinal worms.	Oxford University Press 2016. <i>Definition of Vermicide. Oxford Dictionary [online]</i> . Available from: <a href="http://www.oxforddictionaries.com/definition/english/vermicide">http://www.oxforddictionaries.com/definition/english/vermicide</a> . [Accessed 2nd July 2016].

Term	Definition	Source of definition
Well-being	A context- and situation-dependent state, comprising basic material for a good life, freedom and choice, health and bodily well-being, good social relations, security, peace of mind, and spiritual experience.	UK NEA. 2011. <i>UK National Ecosystem Assessment – Technical Report</i> . Cambridge: UNEP-WCMC.
Well-being of Future Generations (Wales) Act	This Act is about improving the social, economic, environmental and cultural well-being of Wales. It will make the public bodies listed in the Act think more about the long-term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach. This will help us to create a Wales that we all want to live in, now and in the future. To make sure we are all working towards the same vision, the Act puts in place seven well-being goals. Public Service Boards are required to put together Well-being Assessments to help implement action to improve well-being. Well-being Indicators will be used to measure success of actions.	Welsh Government 2016. <i>Well-being of Future Generations (Wales) Act. The Wales We Want website</i> [online]. Available from: <a href="http://thewaleswewant.co.uk/about/well-being-future-generations-wales-act-2015">http://thewaleswewant.co.uk/about/well-being-future-generations-wales-act-2015</a> . [Accessed 21/07/2016].
Welsh Index of Multiple Deprivation	Welsh Government's official measure of relative deprivation for small areas in Wales. It is designed to identify those small areas where there are the highest concentrations of several different types of deprivation. It is a National Statistic and is produced by statisticians at the Welsh Government.	Welsh Government. 2015. <i>Welsh Index of Multiple Deprivation: A guide to analysing indicator data</i> .