The Second State of Natural Resources Report (SoNaRR2020)

SoNaRR2020 Register coastal margins key pressures and opportunities

Natural Resources Wales

Final Report

Mae'r ddogfen hon hefyd ar gael yn Gymraeg

About Natural Resources Wales

Natural Resources Wales's purpose is to pursue sustainable management of natural resources. This means looking after air, land, water, wildlife, plants and soil to improve Wales's well-being, and provide a better future for everyone.

Evidence at Natural Resources Wales

Natural Resources Wales is an evidence-informed 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.

Title: **SoNaRR2020 Register coastal margins key pressures and opportunities**

Peer Reviews: Internal and external peer review

Restrictions: None

The Second State of Natural Resources Report (SoNaRR2020) contents

This document is one of a group of products that make up the second State of Natural Resources Report (SoNaRR2020). The full suite of products are:

Executive Summary. Foreword, Introduction, Summary and Conclusions. Published as a series of webpages in December 2020

The Natural Resource Registers. Drivers, Pressures, Impacts and Opportunities for Action for eight Broad Ecosystems. Published as a series of PDF documents and as an interactive infographic in December 2020

Assessments against the four Aims of SMNR. Published as a series of PDF documents in December 2020:

SoNaRR2020 Aim 1. Stocks of Natural Resources are Safeguarded and Enhanced

SoNaRR2020 Aim 2. Ecosystems are Resilient to Expected and Unforeseen Change

SoNaRR2020 Aim 3. Wales has Healthy Places for People, Protected from Environmental Risks

SoNaRR2020 Aim 4. Contributing to a Regenerative Economy, Achieving Sustainable Levels of Production and Consumption

The SoNaRR2020 Assessment of Biodiversity. Published in March 2021

Assessments by Broad Ecosystem. Published as a series of PDF documents in March 2021:

Assessment of the Achievement of SMNR: Coastal Margins

Assessment of the Achievement of SMNR: Enclosed Farmland

Assessment of the Achievement of SMNR: Freshwater

Assessment of the Achievement of SMNR: Marine

Assessment of the Achievement of SMNR: Mountains, Moorlands and Heaths

Assessment of the Achievement of SMNR: Woodlands

Assessment of the Achievement of SMNR: Urban

Assessment of the Achievement of SMNR: Semi-Natural Grassland

Assessments by Cross-cutting theme. Published as a series of PDF documents in March 2021:

Assessment of the Achievement of SMNR: Air Quality

Assessment of the Achievement of SMNR: Climate Change

Assessment of the Achievement of SMNR: Energy Efficiency

Assessment of the Achievement of SMNR: Invasive Non-native Species

Assessment of the Achievement of SMNR: Land use and Soils

Assessment of the Achievement of SMNR: Waste

Assessment of the Achievement of SMNR: Water Efficiency

Updated SoNaRR evidence needs. Published in March 2021

Acronyms and Glossary of terms. Published in December 2020 and updated in March 2021

Recommended citation for this section of the report:

Natural Resources Wales. 2020. State of Natural Resources Report (SoNaRR): SoNaRR2020 Register coastal margins key pressures and opportunities. Natural Resources Wales.

Coastal Margins
Natural Resource Register
SoNaRR2020

The Natural Resource Registers are an important output of SoNaRR2020.Their purpose is to distil the key pressures and opportunities identified within the chapters and to provide an accessible assessment of SMNR.

The Coastal Margins Natural Resource Register is made up of two additional documents:

1. SoNaRR2020 Register coastal margins assessment of SMNR

2. SoNaRR2020 Register coastal margins evidence

Table 1 Key Drivers, Pressures and Impacts on the Coastal Margins Ecosystem

Drivers	Pressures	Impacts
Climate Change	1. Changing Weather Patterns	1.1. Predicted to lead to the loss in extent of ecosystems from coastal squeeze, increased flooding, erosion and storm damage. Confidence Assessment: HIGH SMNR Aim 1 and 2 1.2. Increased risk to people, properties, infrastructure and agricultural land, terrestrial and freshwater habitats. Confidence Assessment: MEDIUM SMNR Aim 3 1.3. Likely to lead to changes to species composition and habitat distribution. Confidence Assessment: MEDIUM SMNR Aim 1

Drivers	Pressures	Impacts
Climate Change	2. Sea Level Rise	2.1. Predicted to lead to the loss in extent of ecosystems from coastal squeeze, increased flooding, erosion and storm damage. Confidence Assessment: HIGH SMNR Aim 1 and 2 2.2. Likely to lead to changes to species composition and habitat distribution. Confidence Assessment: MEDIUM SMNR Aim 1 2.3. Increased risk to people, properties, infrastructure and agricultural land, terrestrial and freshwater habitats. Confidence Assessment: MEDIUM SMNR Aim 3
Pollution	3. Air Pollution	3.1. Atmospheric nitrogen and ammonia deposition leading to increases in competitive grass species, accelerated succession and loss of pioneer, stress tolerant and open ground species. Confidence Assessment: MEDIUM SMNR Aim 1 and 2
Pollution	4. Water Pollution	4.1. Elevated nutrient levels and chemical contaminants are detrimental to the functioning of the system as a whole, and to condition of specific habitats and species. Greatest impacts relate to elevated nutrient levels within lagoons but saltmarsh is also associated with waterbodies with poor water quality. Confidence Assessment: LOW SMNR Aim 1 and 2
Land Use Change	5. Agricultural Intensification	5.1. Habitat loss, fragmentation and declines in condition and biodiversity. Confidence Assessment: MEDIUM SMNR Aim 2

Drivers	Pressures	Impacts
Land Use Change	6. Insufficient Management	6.1. Impacting extent and condition of coastal habitats and biodiversity. Confidence Assessment: MEDIUM SMNR Aim 2
Land Use Change	7. Built Development and Infrastructure	7.1. Development pressures primarily currently relate to leisure and tourism, such as caravan parks and golf courses. These lead to habitat loss, fragmentation and constriction of the coastal zone and hinterland affecting the potential for habitat rollback. Marine renewable energy is a threat. Confidence Assessment: MEDIUM SMNR Aim 2
Land Use Change	8. Unmanaged Access, Sport and Recreational Activity	8.1. Disturbance to species e.g. ground nesting birds. Confidence Assessment: MEDIUM SMNR Aim 1 8.2. Trampling and vehicle use can lead to erosion and declines in habitat extent and condition. Confidence Assessment: MEDIUM SMNR Aim 2
Land Use Change	9. Historic Inappropriate Afforestation	9.1. Habitat loss, constraints to natural dynamics and species loss. Confidence Assessment: MEDIUM SMNR Aim 2
Land Use Change	10. Physical Modifications	10.1. Preventing the natural functioning of the dynamic coastal habitats essential for maintaining extent and condition Confidence Assessment: HIGH SMNR Aim 2 10.2. Disruption to sediment supplies leading to habitat loss and interruption of natural succession. Confidence Assessment: HIGH SMNR Aim 2

Drivers	Pressures	Impacts
Land Use Change	11. Accelerated Succession	11.1. Loss of pioneer habitats and species dependant on them on Sand dunes. Confidence Assessment: HIGH SMNR Aim 1
INNS, Pests and Disease	12. INNS	12.1. Outcompete native species threatening diversity and acting as stabilisers on dune systems. Confidence Assessment: HIGH SMNR Aim 1

* Coastal squeeze: Where coastal habitats cannot migrate inland, due to the presence of a sea defence, sea-level rise and increased erosion would be likely to lead to 'coastal squeeze

Opportunities for Action

Aim 1: Stocks of Natural Resources are safeguarded and enhanced

Delivery of coastal adaptation through nature-based solutions

Deliver sustainable agriculture. Continuing to work with farmers and land managers by providing incentives and support to ensure sustainable agricultural management.

Protect, enhance and restore coastal margin habitats to improve resilience. Support protected site management to achieve good condition and landscape scale restoration to restore extent, condition, connectivity and biodiversity.

Improve source to sea catchment management of nutrients, chemicals, and pathogens.

Aim 2: Resilient Ecosystems

Protect, enhance and restore coastal margin habitats to improve resilience and safeguard services including natural flood defence and carbon sequestration.

Mitigation for the effects of climate change could be achieved through coastal adaptation and the implementation of nature-based 'green infrastructure' solutions, in line with Shoreline Management Plans (SMPs).

Tackle poor water quality. Integration of marine and terrestrial ecosystems via integrated coastal zone management and River Basin Management Plans (RBMPs)

Tackle poor air quality. Support delivery of strategic programmes, for example, the Clean Air Plan and Sustainable Farming Scheme to reduce and reverse critical level exceedance of ammonia.

Deliver sustainable agriculture. Continuing to work with farmers and land managers by providing incentives and support to ensure sustainable agricultural management.

Aim 3: Healthy Places for People

Consider making the awarding of farming subsidies dependant on good agricultural practice which will benefit air and water quality.

Overcome the challenge of managing conflicting interests of multiple stakeholders at the coastal margins to ensure the flood alleviation potential of the coastal margin habitats is realised.

Provide adequate long-term protection for existing saltmarsh

Restore saltmarsh habitat to boost carbon sequestration.

Deliver coastal adaptation through nature-based solutions

Maximise well-being opportunities in the coastal margins

Aim 4: A Regenerative Economy

Deliver sustainable agriculture. Continuing to work with farmers and land managers by providing incentives and support to ensure sustainable agricultural management.

Deliver nature-based solutions at the coast.