



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

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

Annex.

Method for assigning confidence to evidence presented

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
Chapter 5	Well-being in Wales
Chapter 6	Identifying Unsustainable Management
Chapter 7	Towards sustainable management of natural resources
Chapter 8	Assessment of the sustainable management of natural resources
Annex	Technical Annex for Chapter 3
Annex	Technical Annex for Chapter 7 (Part 1)
Annex	Technical Annex for Chapter 7 (Part 2)
Annex	Method for assigning confidence to evidence presented
Annex	Record of confidence assessments
Annex	Acronyms and Glossary of terms

All of the SoNaRR documents can be downloaded from the NRW website:
www.naturalresources.wales/sonarr.

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1. Introduction

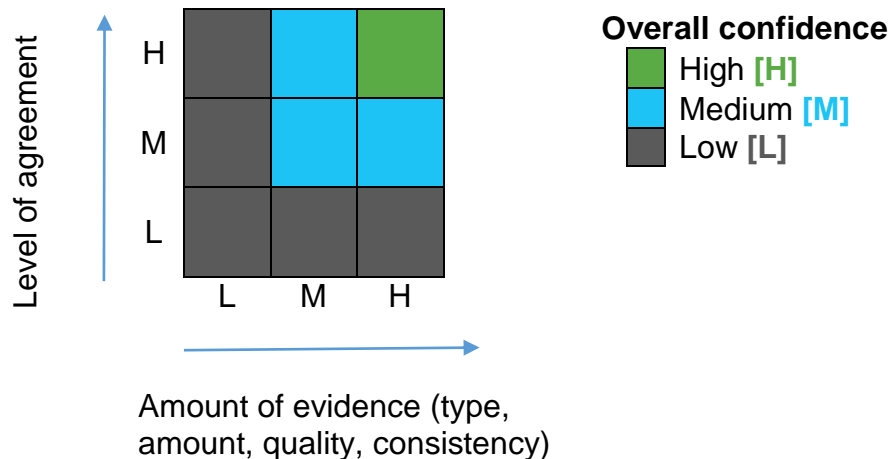
As part of the State of Natural Resources Report (SoNaRR) process, it has been important to be clear about where the evidence came from and how much confidence there is in the messages being presented. Applying confidence allows the reader (including policy-makers) to make an informed decision about how representative of the true picture the messages in SoNaRR are. Applying confidence can indicate where there is an abundance of or limited evidence available and also the level of agreement between different sources.

2. Methodology

To assign confidence to the baseline evidence being used in SoNaRR (Chapters 3 and 4), NRW followed guidance set by the Intergovernmental Panel on Climate Change (IPCC)¹ which has been used (or adapted for use) in IPCC reports², the Millennium Assessment (MA)³, the UK National Ecosystem Assessment (UK NEA)⁴, Living With Environmental Change (LWEC) report cards⁵ (which builds on aspects of the UK NEA) and Marine Climate Change Impacts Partnership (MCCIP) report card⁶. By using a tried and tested methodology, this ensured a consistent approach with other, similar work.

The key messages and evidence to support them presented in the main report have a confidence level associated with them – Low [L], Medium [M] or High [H]. In some cases, [L-H] is shown which signifies it is variable. This represents where it has been difficult to determine an overall confidence level due to different datasets with difference confidence being used to form a single map.

The most recent LWEC biodiversity report card⁷ and the MCCIP report card use the most up-to-date, slightly adjusted version of the confidence assessment methodology. **This is the version we have used in SoNaRR.**



Confidence Annex Figure 1 Confidence assessment guidance showing how the confidence levels are determined.

The methodology itself is dependent on expert judgement to determine what is an appropriate amount of evidence and level of agreement specific to each subject. For each subsection of SoNaRR, several NRW experts and generalists came together to discuss each key message in turn and the key evidence presented for them. As a group, they worked through the graph to reach a group consensus first on the amount of evidence available for the message being presented as low, medium or high according to the type, amount, quality and consistency. Following this, the group discussed the level of agreement across those evidence sources. Where only one source was available, it was discussed whether this was due to there being a lack of evidence generally or whether this was due to it being a national statistic or standardised way of presenting evidence. In the case of the latter, the quality of the evidence was discussed further to determine whether a confidence higher than low could be given and whether there was general agreement within that field/sector that the message would be the same if an independent carried out similar work. National statistics were, in general, assigned high confidence as the methodologies go through rigorous quality assurance and consultation.

An example:

In general, where Directive (Water Framework Directive, Bathing Water Directive etc.) results are used, these are the only evidence sources for those parameters. It is known, however, that these are the standardised ways of collecting and presenting such evidence. The methodologies have been scrutinised and consulted on and go through various quality assurance processes. They are also reviewed on a regular basis to ensure a fit-for-purpose method is employed. There are other smaller studies that support the findings of individual parts of these Directives so it is known that the general messages are accurate representations. Taking all of this into consideration, the messages related to these Directives were, therefore, assigned HIGH confidence overall in the majority of cases.

A record of the confidence assessments with a summary of the reasoning given for each one is provided in Confidence Annex – Methodology for assigning confidence to evidence presented.

References for Confidence Methodology Annex

("Accessed" refers to the date the link was last accessed)

¹ Mastrandrea, M.D., C.B. Field, T.F. Stocker, O. Edenhofer, K.L. Ebi, D.J. Frame, H. Held, E. Kriegler, K.J. Mach, P.R. Matschoss, G.-K. Plattner, G.W. Yohe, and F.W. Zwiers, 2010: *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties*. Intergovernmental Panel on Climate Change (IPCC). Available at <http://www.ipcc.ch>.

² IPCC. 2016. Publications and data. Online source: https://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml. Last accessed 04/07/2016.

³ Millennium Ecosystem Assessment. 2005. *Ecosystems and human well-being: Synthesis*. Island Press, Washington, DC. Other Millennium Ecosystem Assessment publications available online at: <http://www.millenniumassessment.org/en/index.html>. Last accessed 04/07/2016.

⁴ UK National Ecosystem Assessment. 2011. *The UK National Ecosystem Assessment (UK NEA) Technical Report*. UNEP-WCMC, Cambridge.

⁵ Living with Environment Change (LWEC). 2011-2015. *Climate change impact report cards*. Available online: <http://www.nerc.ac.uk/research/partnerships/lwec/products/report-cards/>. Last accessed 04/07/2016.

⁶ Marine Climate Change Impacts Partnership (MCCIP). 2013. *Marine Climate Change Impacts Report Card 2013*.

⁷ Living With Environmental Change (LWEC). 2015. *Biodiversity Climate Change Impacts. Report Card 2015*.