

Red List of Ecosystem assessment series

Produced by JNCC and NatureScot, supported by Natural Resources Wales, Natural England, and Northern Ireland Environment Agency.

This resource is one in a series/number of Ecosystem Red List assessments developed to accompany the UK Biodiversity Indicator '[Red List of Ecosystems](#)'. The assessments are available at: <https://jncc.gov.uk/resources/7b922dfc-708b-4c8c-9e6a-e2040447fb39>.

Resilient ecosystems are crucial for preventing biodiversity loss and species extinction. Maintaining healthy ecosystems safeguards the essential services they provide, which are fundamental to human well-being and a thriving economy. However, pressures and threats such as deforestation, overfishing, or climate change, can disturb the balance of ecosystems and threaten their health and functioning. Assessing the level of threat facing ecosystems is important in helping us understand the current status of the environment, and on a practical level, assessments can be used to help prioritise conservation funding decisions and where to take conservation management action on the ground.

The 'Red List of Ecosystems' (RLE) is a global assessment approach set out by the International Union on Conservation of Nature (IUCN). The approach includes consideration of a series of criteria, including change in geographic distribution through time; whether the ecosystem distribution is geographically restricted; evidence for any environmental degradation; and disruption to biotic processes or interactions. We have not carried out the quantitative analyses of the probability of ecosystem collapse necessary to assess criterion E as we do not have the data needed to carry out such analyses consistently. The IUCN methodology is widely used as a robust approach to assessing the status of ecosystems. Further details of the criteria used in these assessments are available on the [IUCN portal](#).

This assessment series sets out the RLE assessment conclusions for ecosystems found in the UK, alongside the details of how the assessment was made, including for each IUCN component criterion. The assessments have been peer-reviewed, and source data is referenced. Once complete, the series will cover the full range of natural and seminatural habitats that occur in the UK, throughout marine, terrestrial and freshwater environments.

Assessments are conducted according to the [Global Ecosystem Typology Level 3](#) (Ecosystem Functional Groups). This enables the assessments to feed into the Kunming-Montreal [Global Biodiversity Framework](#) (GBF) headline indicator A.1 Red List of Ecosystems. This indicator, which has been incorporated into the UK Biodiversity Indicator suite, is designed to measure progress against [Goal A](#) ('Protect and restore') and [Target 1](#) ('Plan and manage all areas to reduce biodiversity loss') of the GBF.

Any gridded maps are derived from public sector information licensed under the Open Government Licence v3.0. Coastline boundary is derived from the Oil and Gas Authority's and Lloyds Register SNS Regional Geological Maps (Open Source).

MT1.1 Rocky Shorelines

1. Key facts

Ecosystem description: Rocky shorelines occur in the intertidal zone, the area of the shore between high and low tides and the splash zone. The upper limit is marked by the top of the lichen zone and the lower limit by the top of the laminarian kelp zone.



Image credit: (Left to right) Berwickshire and Northumberland Coast SAC ©Laurie Campbell/SNH; Insh Island, Firth of Lorn © Matt Dalkin/ SNH.

Overall assessment conclusion: Least Concern (LC)

Date assessment published: 02.12.2025 (Please note a correction to the distribution map was made on 18.02.2026)

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Corresponding habitat classifications:

The following habitats were considered in the production of this assessment:

EUNIS codes: [MA12](#)

UK Marine Habitat Classification: Littoral rock (and other hard substrata) [LR](#)

2. Assessment against IUCN criteria

Criterion A: Reduction in geographic distribution

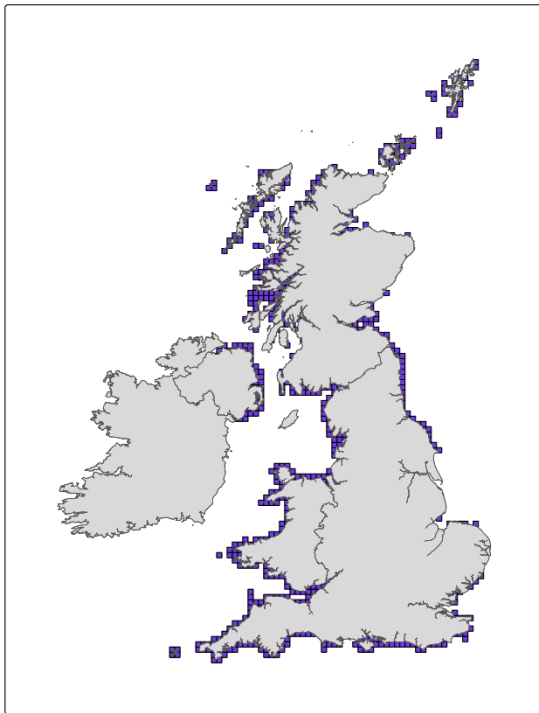
Criterion A considers reduction in geographic distribution over ANY of the defined time periods for criteria A1, A2a, A2b or A3. For details of time periods and criteria see [IUCN Red List of Ecosystems Criteria Summary Sheet 2.2 EN.pdf](#)

Rocky shorelines are geomorphological features. The biological communities present are affected by environmental variables such as salinity, temperature, the diurnal emersion and immersion of the shore, with the most important being wave exposure. Exposed shores tend to support faunal-dominated communities of barnacles and mussels and some robust seaweeds. In contrast, sheltered shores support dense cover of furoid seaweeds, with distinctive zones occurring down the shore. In between these extremes of wave exposure, there are mosaics of seaweeds and faunal communities.

Least Concern (LC) – there is no evidence of a reduction in geographic distribution of rocky shorelines.

Criterion B: Restricted geographic distribution

Criterion B considers restricted geographic distribution indicated by any of criteria B1, B2 or B3. For details of criteria see [IUCN Red List of Ecosystems Criteria Summary Sheet 2.2 EN.pdf](#).



Over 40% of Britain's coastline is comprised of rocky shore, equating to an extent of 287 km² (Mountford et al., 2025). Rocky shorelines range from near-horizontal rock platforms to vertical cliffs and from extremely wave-exposed headlands of the Atlantic coasts to ultra-sheltered, algae-covered embayments such as sea lochs (Jackson and McIlvenny, 2011). Although based on limited sampling restricted to England and Wales, the condition of rocky shores for the UK's west coast is thought to be acceptable whilst for the North Sea coasts there has been no assessment in 2024 although it was considered acceptable in 2018 (UKMS, 2025a).

Least Concern (LC) – There is no evidence of fragmentation or restricted geographic distribution of rocky shores at this time, with condition considered to be acceptable.

Criterion C: Environmental degradation

Criterion C considers environmental degradation over ANY of the time periods for criteria C1, C2a, C2b or C3. For details of time periods and criteria see [IUCN Red List of Ecosystems Criteria Summary Sheet 2.2 EN.pdf](#).

Rocky shorelines experience human disturbance through recreation, trampling and food gathering (Thompson et al., 2002; Pinn and Rodgers, 2005; Micheli et al., 2016; Hawkins et al., 2025) and pollution, including litter (predominantly plastics) and from shipping accidents (e.g. oil spills) (Lacroix et al., 2022; Hawkins et al., 2025). Coastal urbanisation can also impact natural shores and create impoverished artificial rocky shores (Bulleri et al., 2020; Firth et al., 2024).

Rocky shores will be subject to the impacts of climate change. Hard rocky shores are unlikely to erode and will maintain their profile and, as sea levels rise, the intertidal area will decrease where such habitats are backed by cliffs (Jackson and McIlvenny, 2011). Over the last two decades, there have also been relatively small changes in the benthic communities of rocky shores that are associated with changes in sea surface temperature and that these are likely to increase in the future (Mieszkowska et al., 2021; Hawkins et al., 2023; Burrows et al., 2025; UKMS 2025b).

Least Concern (LC) – Whilst rocky shorelines are exposed to numerous human pressures, they can recover quickly if the pressures are reduced or removed.

Criterion D. Disruption of biotic processes or interactions

Criterion D considers Disruption of biotic processes or interactions over ANY of the time periods for criteria D1, D2a, D2b or D3. For details of time periods and criteria see [IUCN Red List of Ecosystems Criteria Summary Sheet 2.2 EN.pdf](#)

Rocky shores are impacted by chronic nutrient pollution from point sources, run-off and catchments (Lacroix et al., 2022; Hawkins et al., 2025), although inputs are thought to be decreasing (Axe et al., 2022). The impact of non-native species is considered to pose a significant threat to rocky shores (Thompson et al., 2002; Epstein and Smale, 2018; Hawkins et al., 2025), with management efforts thought to be reducing the rates of introduction (Stæhr et al., 2022).

Least Concern (LC) – It is expected that the wider efforts to reduce nutrient pollution and the spread of non-native species will be beneficial for rocky shorelines in the longer term.

Conservation measures in place

Rocky shorelines are protected via the Habitats Regulations as a component of the Annex I habitat Reefs where the subtidal rocky reef extends uninterrupted into the intertidal zone (Evans and Roekaerts, 2019). Examples of this include North Rona SAC, St Kilda SAC and the Berwickshire and North Northumberland Coast SAC.

The biological communities of rocky shorelines are regularly monitored through the MarCLIM project which tracks the abundance and distribution of approximately 80 species on 100 rocky shore sites around the UK (Mieszkowska et al., 2021; Hawkins et al., 2023).

Overall assessment conclusion

Rocky shorelines in the UK are assessed as being Least Concern (LC).

3. Literature references

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