

# 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).

# FM 1.3 Intermittently closed and open lakes and lagoons

## 1. Key facts

**Ecosystem description:** Coastal lagoons are areas of shallow, coastal salt water, wholly or partially separated from the sea by sandbanks, shingle or, less frequently, rocks (Bamber, 2010; Angus, 2016). Lagoons show a wide range of geographical and ecological variation.



Image credits: (Left to right) Fleet Lagoon, Dorset © Eunice Pinn/ NatureScot; Loch of Sterness © NatureScot.

**Overall assessment conclusion: Vulnerable (VU) based on criteria C2b and D2b**

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### **Corresponding habitat classifications:**

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

**EUNIS codes:** [MA125](#)

### **UK Marine Habitat Classification:**

Sublittoral mud in low or reduced salinity (lagoons) [SS.SMu.SMuLS](#)

Sublittoral sand in low or reduced salinity (lagoons) [SS.SSa.SsaLS](#)

Sublittoral mixed sediment in low or reduced salinity (lagoons) [SS.SMx.SMxLS](#)

Submerged fucoids, green or red seaweeds (low salinity infralittoral rock) [IR.LIR.Lag](#)

## 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](#)

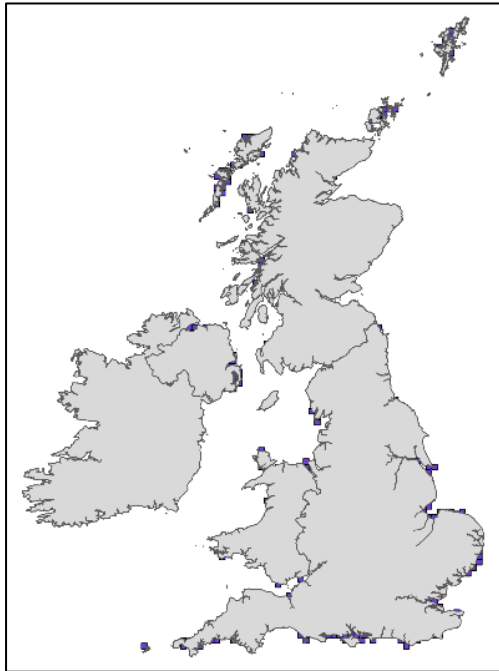
Coastal lagoons are physiographic features, determined primarily by geomorphological and hydrographic processes occurring over long time-scales. Some coastal lagoons have been created artificially through the introduction of sluices or culverts.

The water in lagoons can vary in salinity from brackish (owing to dilution of seawater by freshwater) to hypersaline (i.e. more salty than seawater as a result of evaporation). The plant and animal communities of lagoons vary according to the physical characteristics and salinity regime of the lagoon, with many species being lagoon specialists (Barnes, 1989).

**Least Concern (LC)** – There is some historical evidence of individual coastal lagoon loss, but no evidence of a reduction in geographic distribution of coastal lagoons.

### **Criterion B: Restricted geographic distribution**

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



Coastal lagoons are a relatively uncommon habitat in the UK, having a total extent of 51km<sup>2</sup> (Mountford et al., 2025). As physiographic features, they are not considered to be fragmented. The majority of lagoonal sites in the UK are considered to be in a good condition with a small proportion in a poor or unknown condition (Duncombe-Smith et al., 2018; Natural England, 2019; DAERA, 2024; Cuthbertson et al., 2025; NatureScot, 2025).

**Least Concern (LC)** – There is no indication of fragmentation and the majority of coastal lagoons are considered to be in a good condition.

### **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](#).

Key environmental threats include physical disturbance (e.g. the creation of flood defences), changes in water quality (e.g. heavy metals and other contaminants) and marine litter (Cuthbertson et al., 2025; NatureScot, 2025; NRW, 2025). Of greatest concern, however, is the likely impact of climate change (MCCIP, 2018; NatureScot, 2025; NRW, 2025). Coastal lagoons are often located on low-lying coastlines. As sea levels rise, sediment-impounded lagoons will either lose their impoundment and become incorporated in marine coastal waters, or become increasingly saline (Angus, 2017). In contrast, it is likely that rock-basin lagoons will retain their restricted water exchange with the sea but may become more saline as sea levels rise (Angus, 2017). As salinities rise, the specialist lagoonal organisms, which tend to have wide salinity tolerances, may be outcompeted by marine counterparts.

**C2b: Vulnerable (VU)** – Coastal lagoons are likely to be impacted by climate change as sea levels rise and storms increase the occurrence of overtopping and erosion.

## **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](#)

The biological communities present in coastal lagoons are linked to the physical environment, with salinity and temperature being strong determinants. In calm conditions, and especially over the summer, the water can be stratified, with a sharp boundary between low-salinity brackish water at a depth of around 1m, and the more saline water below. Water quality issues associated with eutrophication, particularly related to agricultural inputs and sewerage/storm water overflows are a recognised issue in many coastal lagoons (Taylor et al., 1995; NRW, 2025, Cuthbertson et al., 2025).

**D2b: Vulnerable (VU)** – Eutrophication has impacted some coastal lagoons, resulting in the loss of specialised lagoon species, and is expected to increase in the future as a result of climatic changes.

### **Conservation measures in place**

Most of the UK's coastal lagoon habitat occurs within the protected site network, designated as Special Areas of Conservation (SAC) or Sites of Special Scientific Interest (SSSI). Site-specific Conservation Objectives, information on pressures and threats, and details of the habitats and species are contained within the Conservation and Management Advice packages for each site. Most human activities with the potential to have adverse effects on the site are managed through a licensing and consents process.

Additionally, outside of protected sites in Scotland, potential impacts are considered on Priority Marine Features (PMFs) which include Low or Variable Salinity Habitats (NatureScot, 2025). Policy GEN 9 on the *Natural Heritage* in Scotland's National Marine Plan (Marine Scotland, 2015) requires that development and use of the marine environment must not result in a significant impact on the national status of PMFs. Scotland's National Marine Plan is currently being updated.

### **Overall assessment conclusion**

**Intermittently closed and open lakes and lagoons in the UK are assessed as being Vulnerable (VU) based on criteria C2b and D2b.**

## **3. Literature references**

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