

What do we use as an Indicator?

Saltmarshes

Why do we use Saltmarshes?

Saltmarshes hold great ecological value due to their range of associated plants and animals. The diversity of flora and fauna reflects the interactions between the marine and terrestrial environment. Saltmarshes provide an essential habitat for a range of bird species to feed, roost and nest. Their creeks provide vital spawning and nursery areas for many fish species. They hold an essential function in the exchange of nutrients and sediments within estuarine and coastal ecosystems. Saltmarshes are also recognised for their flood defence benefits as they provide an effective buffer between land and sea.

Sampling

A mix of aerial and field surveys are carried out in the summer (June to September) when the saltmarsh is most developed. Aerial imagery is captured at low water in order to reveal the entire extent of the saltmarsh and the creek system. Field surveys involve walking transects between the landward and seaward edges of the saltmarsh. Along the transects taxa are recorded for measuring species diversity and for ground truthing aerial imagery interpretation.



What do we measure?

We measure 6 things:

Saltmarsh extent as a proportion of “historic saltmarsh”

Current extent is mapped by digitising areas of saltmarsh from aerial imagery. The extent area is measured as a proportion of historic saltmarsh area. Historic saltmarsh area is derived from historic maps and from an estimate of land claim using LiDaR (Light Detection and Ranging) measurements.

Saltmarsh extent as a proportion of the intertidal area

The extent is measured as a proportion of the intertidal area which has been derived from the OS landline series.

Change in saltmarsh extent over two or more time periods

Recent change is measured by comparing the current extent with a recent baseline extent.

Proportion of saltmarsh zones present

The tool assumes that an area of saltmarsh can have up to five functional zones (in England and Wales). The number of zones as a proportion of the maximum five is measured for each water body.

Proportion of saltmarsh area covered by the dominant zone

The tool assumes that no one zone should strongly dominate the others. The most dominant zone area is measured as a proportion of the overall areal cover.

Taxa as a proportion of a historical reference value or as a proportion of 15 taxa

Where the National Biodiversity Network (NBN) provides suitable historic data the total number of present taxa is compared to the total number of historically recorded taxa. Where NBN data is not available a value of 15 taxa is used.

How do we decide the Biological Status?

For the above six measures figures were determined to represent undisturbed waters. The observed results are then compared with these results to calculate the Ecological Quality Ratio (EQR). EQR values close to one indicate saltmarsh communities are close to their natural state; those near zero indicate a high level of pollution or disturbance. To decide the Ecological Quality Status the six measures are combined and the range from one to zero divided into the five bands required by the Water Framework Directive. See the table below:

Biological Status Boundary Values

Status	EQR Values
High	0.80
Good	0.60
Moderate	0.40
Poor	0.20
Bad	0

For more details see the [UKTAG Saltmarsh Tool Method Statement](#)