

Why do we classify the quality of our waters?

Water is needed to sustain life and is essential to our existence. Protecting and maintaining our water quality is critical if we are to have a healthy society and environment.

To check on the health of our aquatic environment we monitor, assess and classify the quality of our waters. The EPA classifies the water quality of our surface waters (rivers, lakes, estuaries and coasts) and groundwaters every three years. We classify our waters into five quality or status classes under the approach set out in the EU Water Framework Directive (WFD):

1. High

2. Good

3. Moderate

4. Poor

5. Bad

Having a single European framework such as the WFD to assess water quality allows us to compare our results across Europe.

Our water quality is reported to the EU and also in the EPA's three-yearly water quality reports as well as Ireland's national River Basin Management Plan. This helps us to track progress towards meeting the objectives set out in the plan and the WFD.

What are the Environmental Objectives?

We assess water quality at the **water body** scale and each water body is assigned a status. Typically, rivers and estuaries are divided into several smaller water bodies, whereas lakes and most coastal waters are represented by a single water body. Water bodies are categorised as natural, heavily modified, or artificial.

The objective for natural surface waters is to achieve **good ecological** and **good chemical status** and the objective for groundwaters is to achieve **good quantitative** (water quantity) and **good chemical status** at a minimum. A smaller number of our surface waters have to achieve a higher standard of **high ecological status** as their objective.

Artificial water bodies are those that have been created by humans (e.g. canals¹). Heavily modified water bodies are those that are substantially and permanently changed in character for important specific purposes (e.g. drinking water reservoirs). The objective for these water bodies is **good ecological potential**. This is the best status they can achieve whilst also taking their modified nature into account.



Photo credits left to right: Robert Wilkes; Neasa McDonnell; Hugh Feeley.

¹Canals are assessed by Waterways Ireland (www.waterwaysireland.org).

What information is collected for classification?

The information used in the classification of the status of our water bodies is collected in the national WFD monitoring programme. Information on a range of different elements is collected:

- **Biology** (plants and animals living in and around water bodies). Factsheets explaining how the biology of our surface waters is assessed can be found at www.epa.ie.
- **Water quality** (concentrations of nutrients such as nitrogen and phosphorus and harmful chemicals such as pesticides).
- **Water quantity** (flows and levels of surface waters and groundwaters).
- **Hydromorphology** (the physical habitat conditions of water bodies).

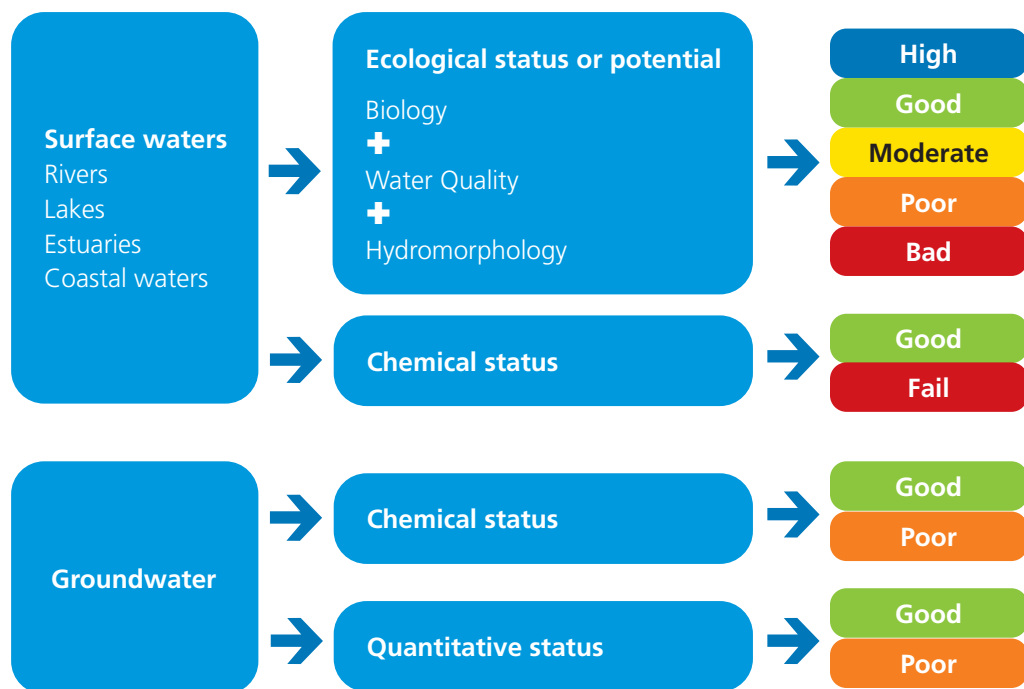
There are thousands of WFD water bodies so it is not possible to monitor all of them. To address this, we classify unmonitored water bodies with the status of monitored water bodies that have similar characteristics and pressures.

How is the information used in classification?

Surface waters are classified by their **ecological status** (biology, water quality and hydromorphology combined) and **chemical status** (level of harmful chemicals in the water).

Groundwaters are classified according to their **chemical status** and **quantitative status** (the amount of water present).

The way this information is combined to provide an overall status of surface waters and groundwaters is illustrated here. The element with the lowest status in each step of the process determines the overall classification. This is called the 'one out, all out' principle.



For more detailed information on the role of the EPA in monitoring the quality of our surface and groundwaters go to <https://www.epa.ie/our-services/monitoring--assessment/freshwater--marine/>. For the latest information on water quality go to www.catchments.ie.