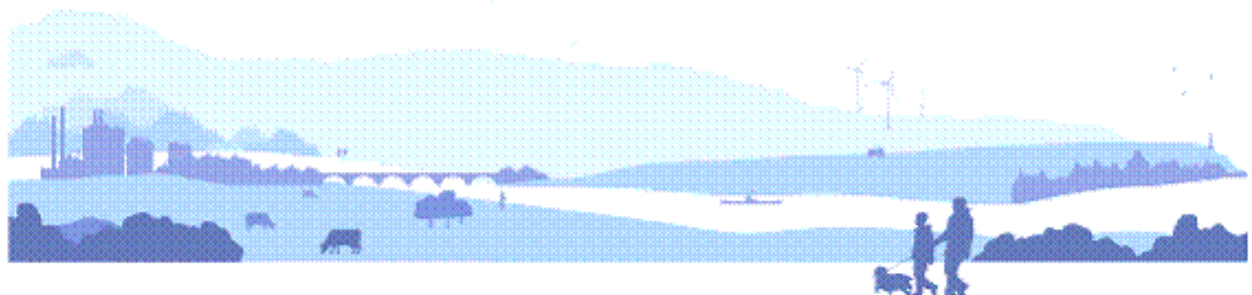


State of Scotland's Water Environment 2013

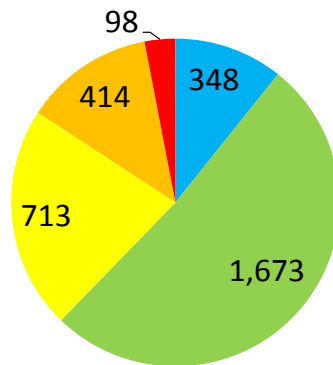
Summary Report

Scottish Environment Protection Agency

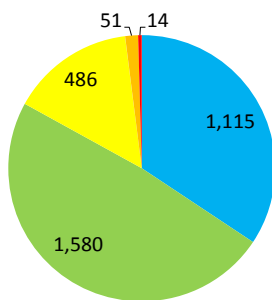


What was the state of the water environment in 2013?

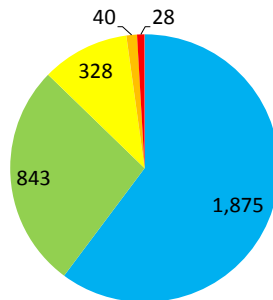
Overview of the state of bodies of surface water in 2013



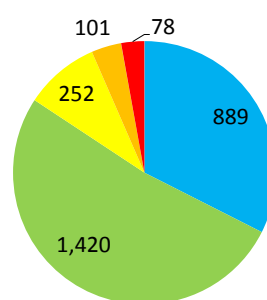
Overall status



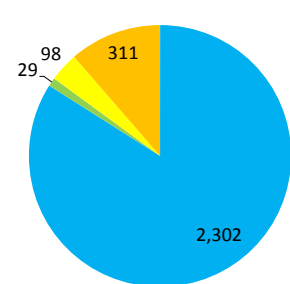
Water quality



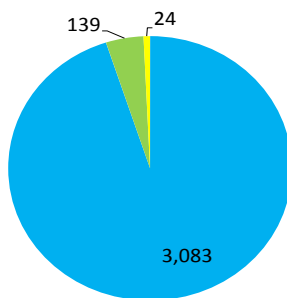
Water flows & levels



Physical condition of beds, banks & shores








Fish passage



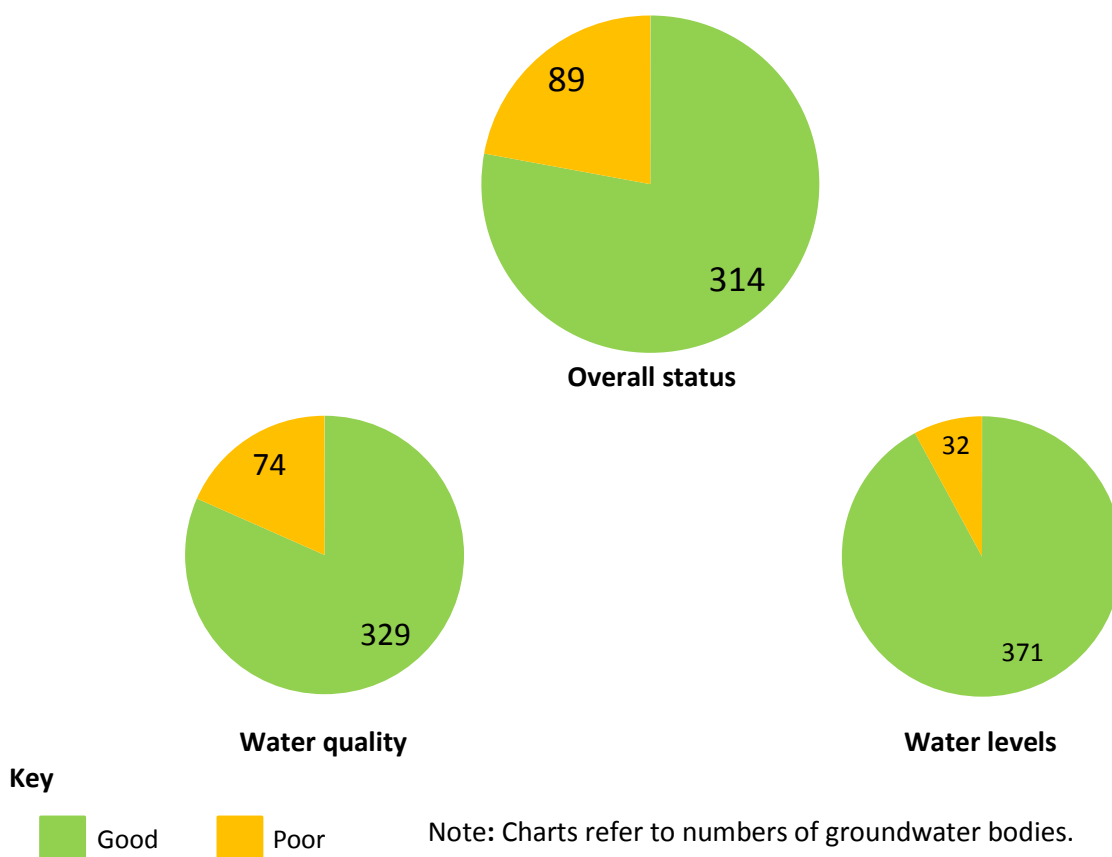
Protection from invasive non-native species

Key

	High		Good		Moderate		Poor		Bad
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Notes: Charts refer to numbers of water bodies. "Good" means conditions consistent with good status or, in the case of heavily modified and artificial water bodies, good ecological potential. Bodies of surface water include rivers, lochs, estuaries and coastal waters.

Overview of the state of bodies of groundwater in 2013



How did we assess the state of the water environment?

To make our assessments, we monitored or modelled a wide range of biological, chemical, hydrological and geomorphological indicators of the health of aquatic ecosystems. We then compared the information obtained with environmental standards. The environmental standards used represent our current understanding of the minimum requirements for each status class; high, good, moderate and poor. For heavily modified and artificial water bodies¹, we also took account of whether the adverse effects of the water bodies' modified or artificial characteristics had been appropriately mitigated. Where relevant, we amalgamated a number of years of monitoring results (typically 3; 2011, 2012 and 2013) for each monitoring station. This allowed us to improve the reliability of the assessments.

Full details of the classification schemes and associated environmental standards are set out in Ministerial [Directions](#) published in 2014.

¹ Heavily modified water bodies are bodies of surface waters whose physical characteristics have been substantially altered for purposes such as flood protection; drinking water supply and hydroelectricity generation.

How has our understanding changed since 2009?

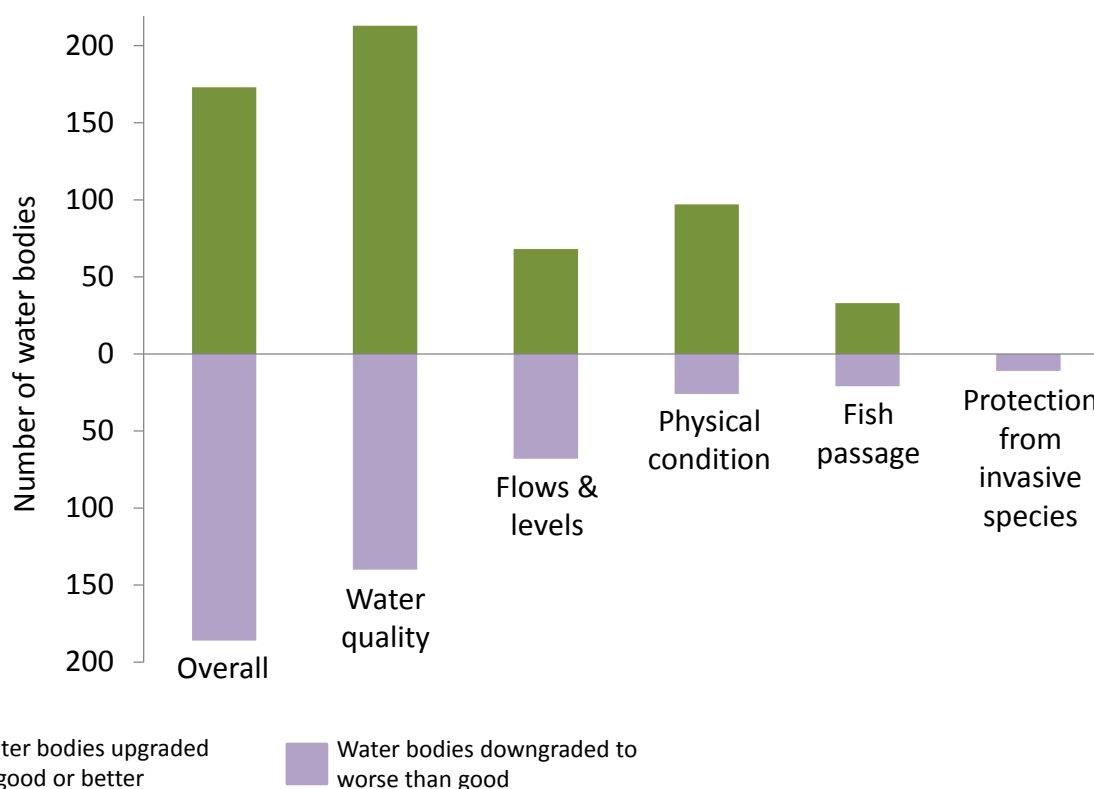
Since our first assessments of the ecological quality of Scotland's surface waters and the state of its groundwater resources were published in the [river basin management plans](#) in 2009², we have been progressively improving our understanding of the state of the water environment. We have done this by:

- increasing the amount of environmental data on which the assessments are based;
- developing and refining the models we use to interpret data and make our assessments; and
- refining the delineation of bodies of groundwater and surface water to ensure there are not significant differences in environmental quality in different parts of the same water body.

In 2014, we made some further, important improvements. These included introducing a wide range of new and updated indicators for assessing the health of aquatic ecosystems.

As a consequence of these improvements, our understanding of the status of water bodies is now significantly better than it was in 2009. This improved understanding is important as it helps in targeting efforts to protect and improve the water environment.

Changes in surface water body assessments solely reflecting improved understanding: 2008 to 2013



By far the most significant improvements to our understanding of the state of groundwater resources have come from a major review of the way bodies of groundwater are delineated. Comparing 2008 and 2013, over 3,400 km² of groundwater has been upgraded from poor to good and around 2,250 km² downgraded from good to poor. The majority of these changes reflect the better representation of the underlying status of groundwater in our revised set of water bodies.

² These first assessments were based on data collected up to the end of 2008.

How has the water environment actually changed?

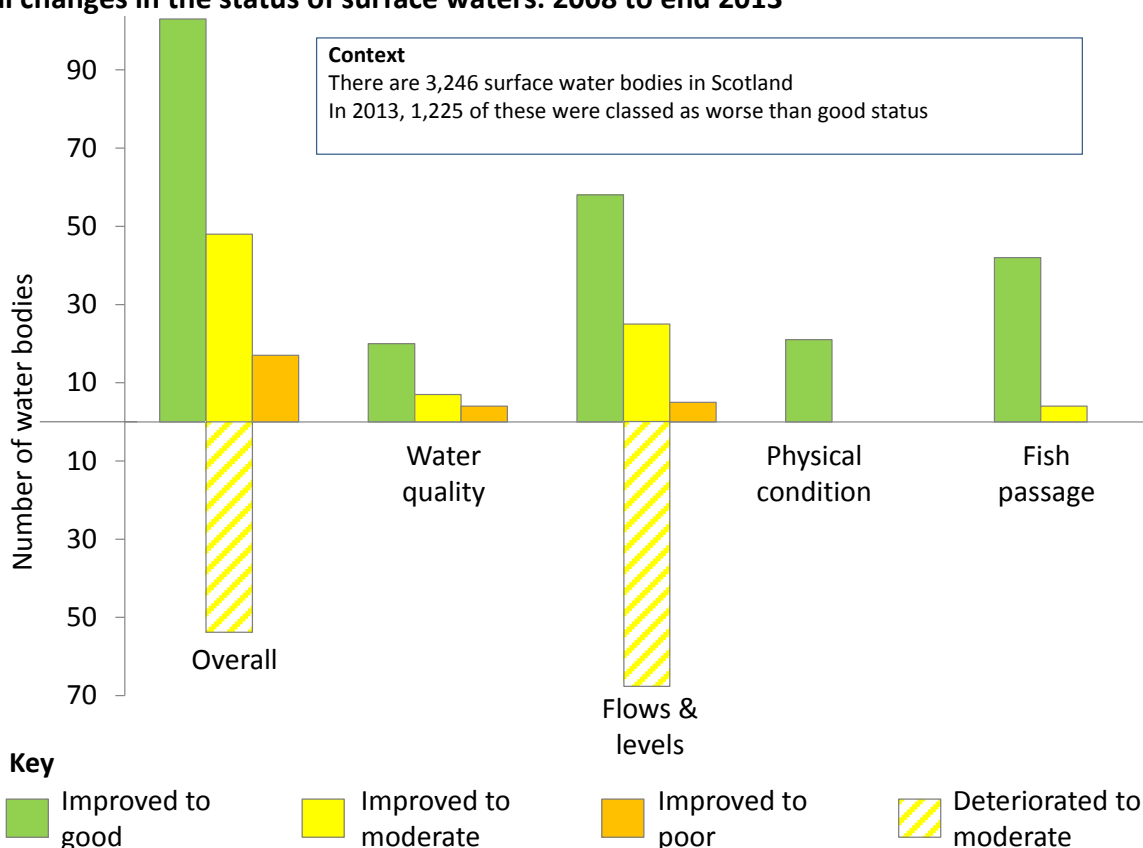
Real improvements have been made to the quality of many water bodies, with around 100 already restored to good status at the end of 2013, including river water bodies representing around 1,000 km of river. In the main, the improvements have been secured by requiring licensed operators to reduce impacts arising from discharges of pollutants or water abstractions, and by working with partners, such as the Rivers & Fisheries Trusts for Scotland, to remove barriers to fish migration.

One consequence of improving our assessments of the water environment is that we could not identify real environmental change simply by comparing the 2013 classification results with those of previous years. Instead, we needed further analysis to disentangle the real change from the other factors that have affected our assessments.

Protecting Scotland’s high quality environment is one of the principal aims of river basin management. However, this objective has to be balanced against the need for sustainable development. To ensure the right balance is struck, all developments that would pose a risk to the status of the water environment require prior authorisation either from SEPA or, in the case of developments in inshore waters, Scottish Ministers. Authorisation is only given if the developments’ benefits would outweigh their adverse impacts on the water environment.

A range of new developments have been authorised since 2009. By far the most numerous have been small hydroelectricity schemes. Between the end of 2009 and the end of 2013, SEPA authorised nearly 400 new schemes, having first weighed up their benefits to sustainable development. The impacts on the water environment of most of the schemes are not individually, sufficiently extensive to affect the status of water bodies. However, around 50 water bodies have deteriorated to worse than good and the future achievement of good status has been compromised in up to another 90.

Actual changes in the status of surface waters: 2008 to end 2013



What next?

We are planning to make further significant improvements to our assessments of surface waters and groundwater and hence our understanding of the state of the water environment over the next few years.

We also expect to see further real improvements to the status of a number of other water bodies by the end of 2015 with more to come in subsequent years as a result of work we have begun during the first river basin planning cycle. The latter includes, for example, the work we have been doing with land managers and other organisations to tackle rural diffuse source pollution.

The status of many other water bodies is also adversely affected by rural diffuse pollution or by the effects of past engineering works that have damaged habitats and left barriers to migratory fish. Addressing these impacts is the key challenge for the next river basin management planning cycles. Information on proposals for meeting this challenge can be found in the [consultations](#) on the second river basin management plans.