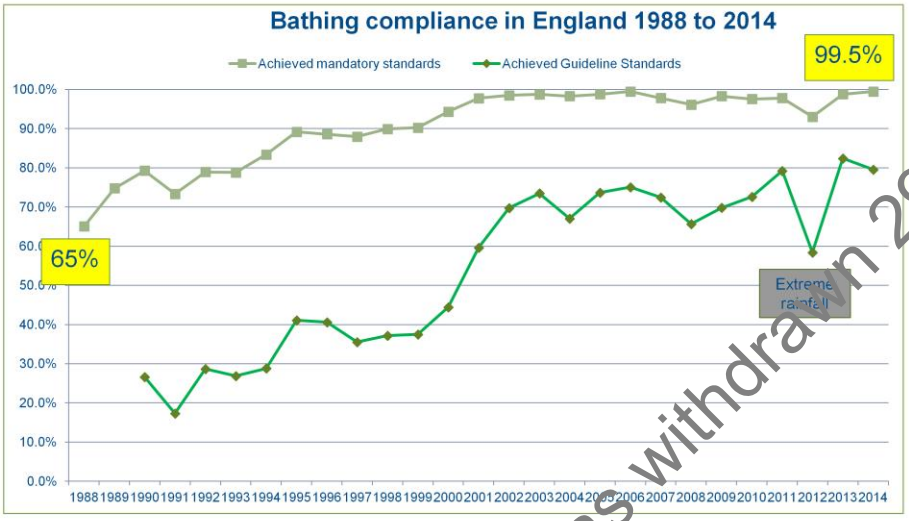
Water quality: the good news story

March 2015

Working with others we are succeeding in improving water quality

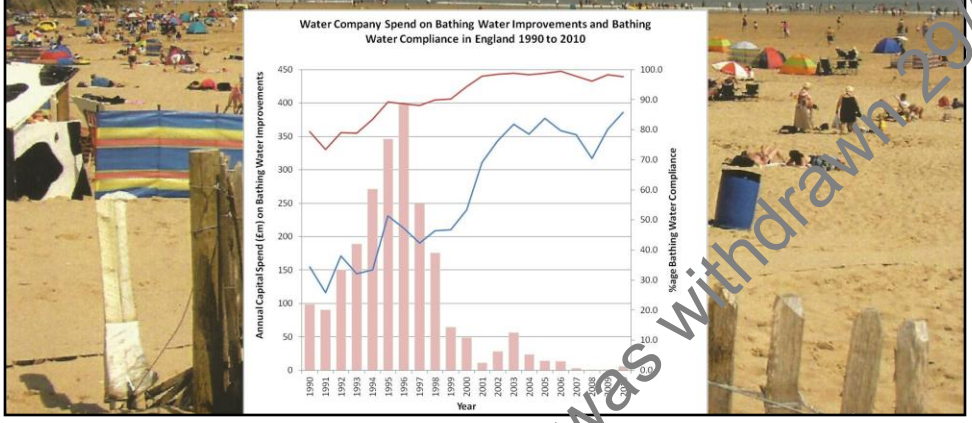
Bathing Water improvements



Sewage pollution dramatically reduced1990 – 2010

Environment Agency has targeted;

- **£2.2 billion** on improving bathing waters
- **£6 billion** on Urban Waste Water Treatment Directive & Shellfish waters.



Water Industry environmental investment 2010 – 2015 (PR09)

- The overall figures for potential environmental outcomes in England and Wales are:

- River Length: Improved or prevent deterioration = 3097 km
- Lakes area: Improved or prevent deterioration = 21 km^2
- Transitional and Coastal Waters: Improved or prevent deterioration = 3953 km^2
- Number of Wetlands improved or protected = 25
- Number of Bathing Waters improved = 52
- Number of Shellfish Waters improved = 23
- Number of Groundwater bodies improved or maintained = 41

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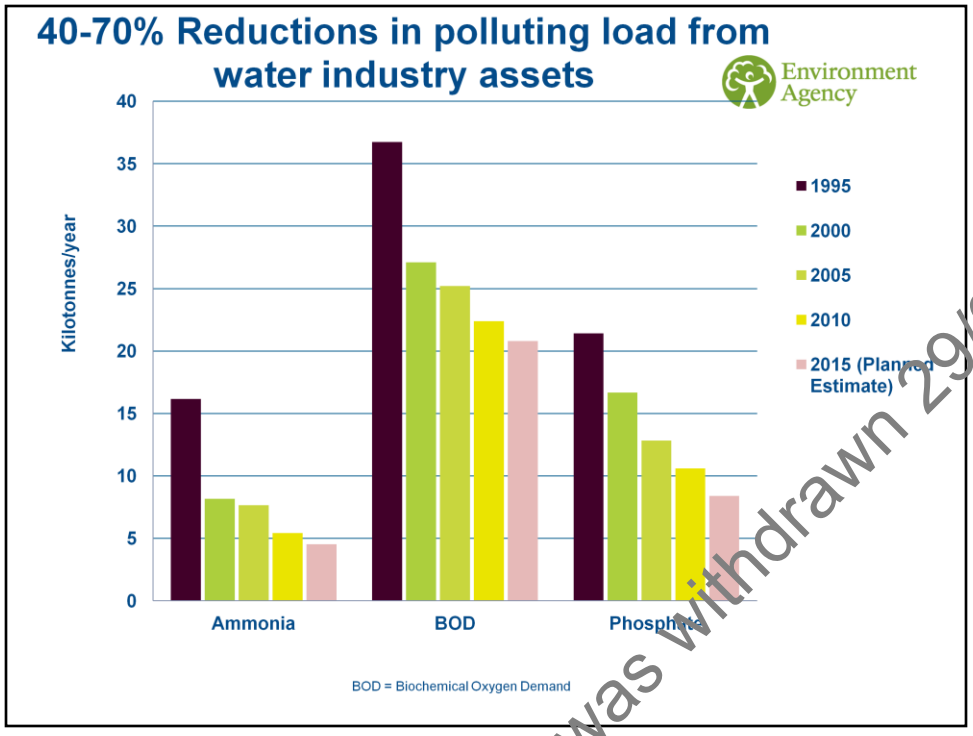
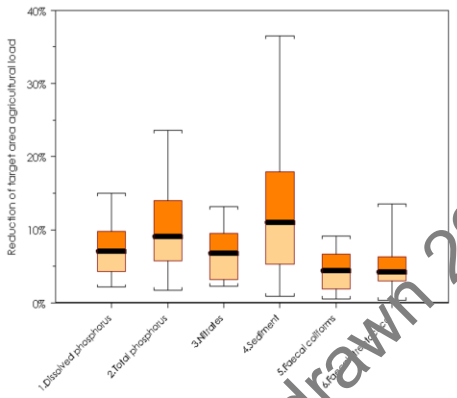


Restoring the flow

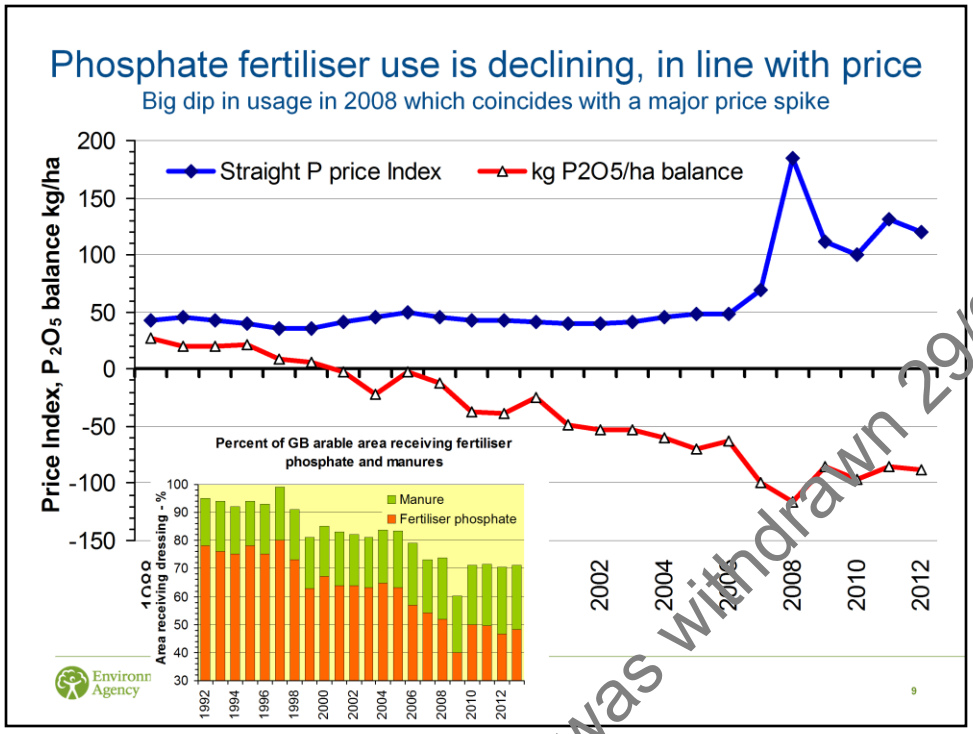
- Since 2008, we have prevented damage or risk of damage associated with 127 unsustainable abstraction licences across England.
- We have returned nearly 27 million cubic meters of water per year to the environment.
- In 2014, we changed abstraction licences on 4 iconic rivers at Mimram and Beane (Hertfordshire & North London), and Axford and Ogbourne (West Thames).
- This will reduce the amount of water that can be taken by around 9.5million cubic metres per year by 2018.

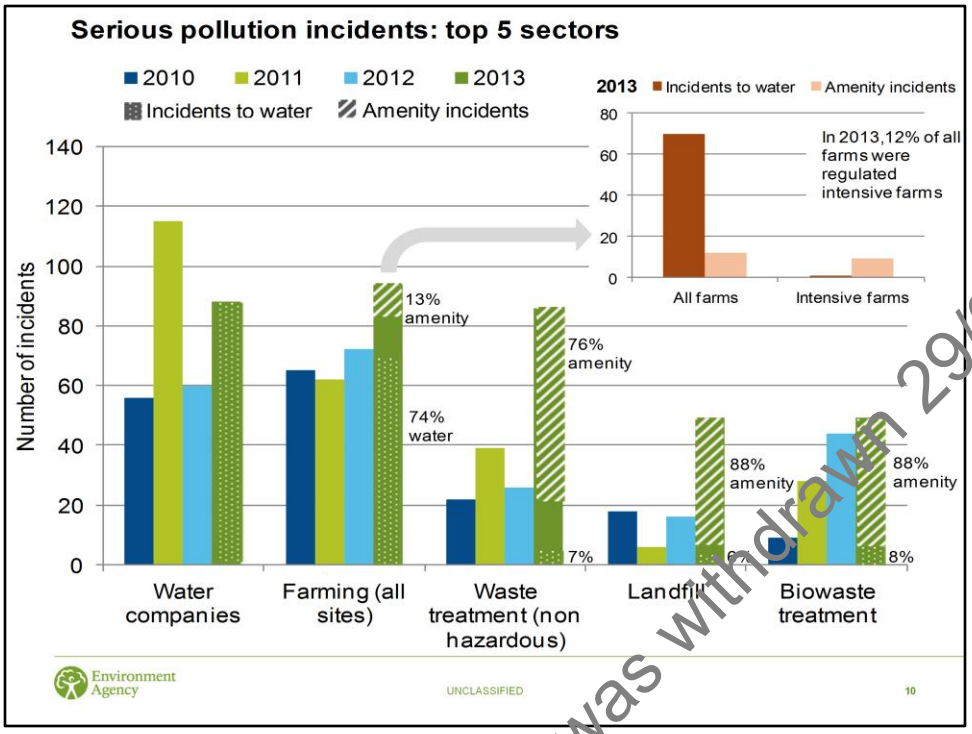
Catchment Sensitive Farming is making small but measurable improvements to water quality

- Average 4-12% reduction in losses in target areas
- In-river concentrations reduced by 3-7%
- Sediment losses have increased in areas without CSF



- CSF catchments cover 46% of England's farmland, but only key areas are targeted
- CSF advises around 16,000 farmers covering 2.3 million hectares, 42% of the overall CSF area
- CSF has provided over £80m of capital grant to farmers, which has been match funded



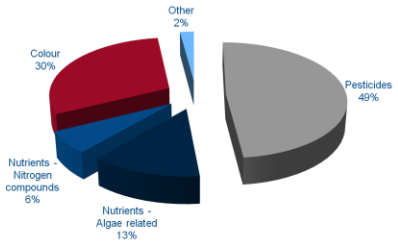


Eels & biodiversity

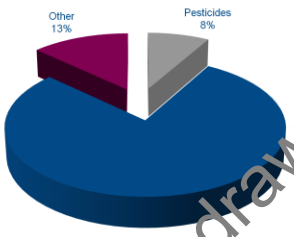
- Since 2009 we have installed 160 fish passages and 400 eel passes, extending access to more than 2500km of river.
- Otters and water voles are now present in every county in England
- Increase from 90 to 96% in the area of water dependent Habitats Directive sites at favourable or unfavourable recovering condition between 2009 and 2014

Drinking water – metaldehyde concerns, but other issues too

Reasons for Surface Water Drinking Water Protected Areas being 'at risk'

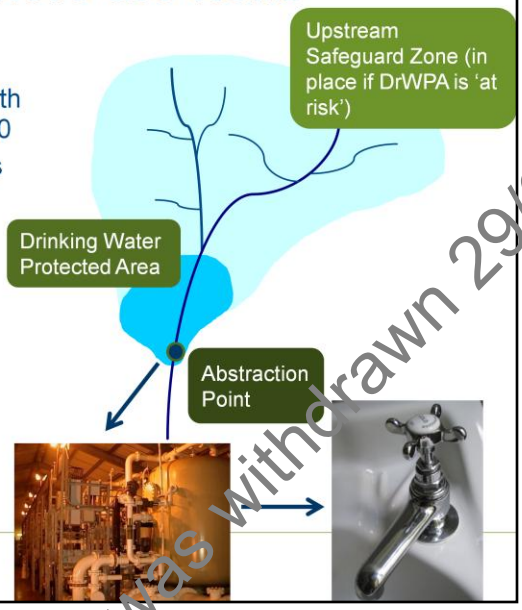


Reasons for identifying Groundwater Safeguard Zones



Drinking waters receiving more protection where there are risks

- 173 catchment schemes to reduce risk by water industry with farmers between 2015 and 2020
- CSF has driven 50% reductions in pesticide load and events where pesticide levels exceed thresholds in its target areas
- Metaldehyde a major concern



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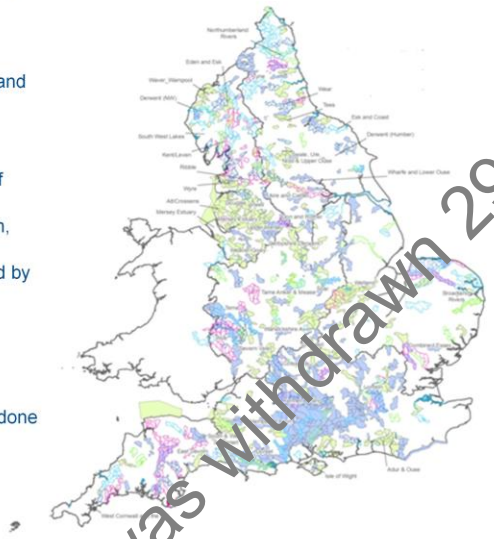
Understanding and improving catchments

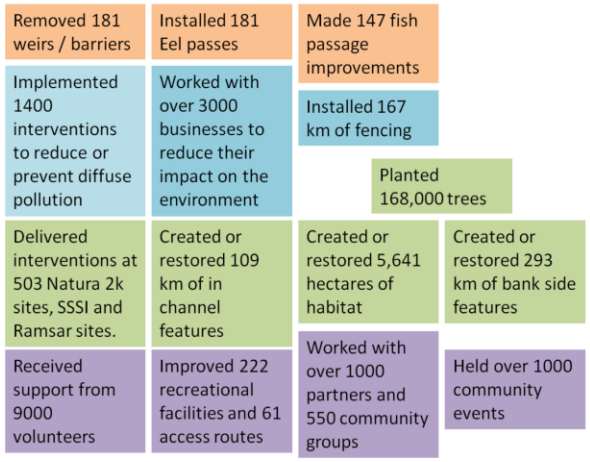
- Additional £90m invested to improve 15,000km of rivers (at locations on map).
- Massive programme of enhanced engagement and partnership – the catchment based approach
- A major data sharing initiative to open up tens of thousands of records of monitoring, investigation, objective setting and action planning results held by the Environment Agency
- Probably the most comprehensive economic appraisal of water quality objective setting ever done
- 16,000 investigations



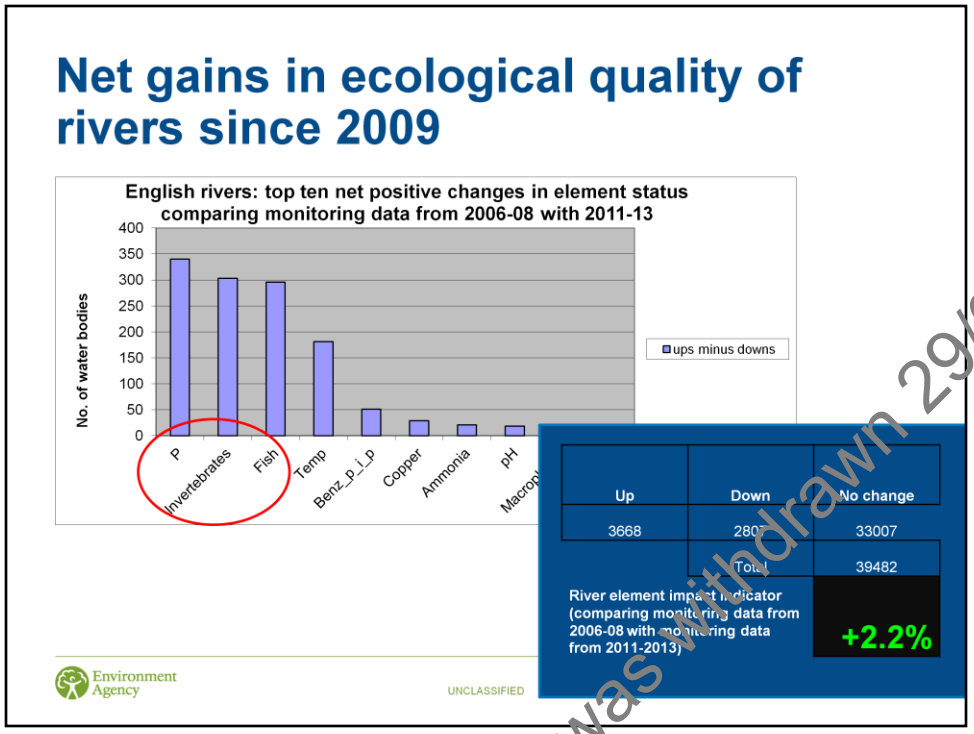
We have been working with partners (Natural England, Rivers Trust and Wildlife Trust) to predict the outcomes our project work is aiming to achieve. Our thanks go to everyone involved for their, often considerable, efforts.

There are more than 600 projects covering a large number of waters as you can see on the map. The projects are diverse and this exercise can only hope to shine a light on a fraction of the benefits the projects are delivering.

Catchment Restoration Fund: £90m for new projects to improve future quality



- 300 (6%) additional waters should achieve good biology
- 500 (10%) further waters should improve in status for at least one element
- Partners supplemented investment by at least 2:1 for Environment Agency led projects



Key points:

• This is analysis is based on analysis of like-for-like data, where we've monitored the same parameter in the same place;

• Overall we see a modest improvement; in net terms element-level results in English rivers are on a slow but gradual rise. This is not yet evidence in our overall ecological status statistics because we've expanded our evidence base into problem areas within catchments, and the one-out all-out rule masks some of the element-level improvement.

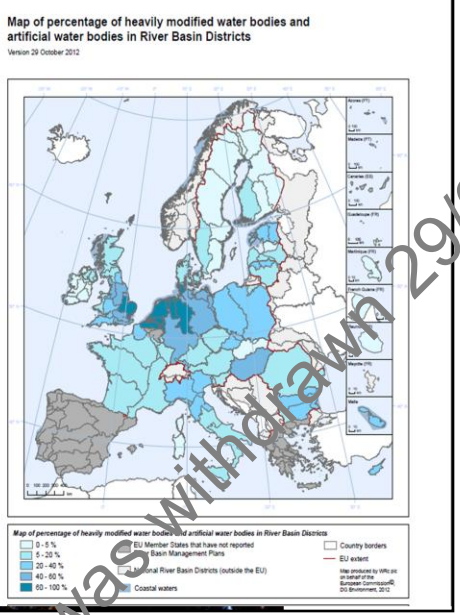
• There are three element improvements to highlight

  • Just under 350 river water bodies have improved in status for phosphate; this is due largely to phosphate stripping but work to address nutrient run-off from agriculture is also playing a part here

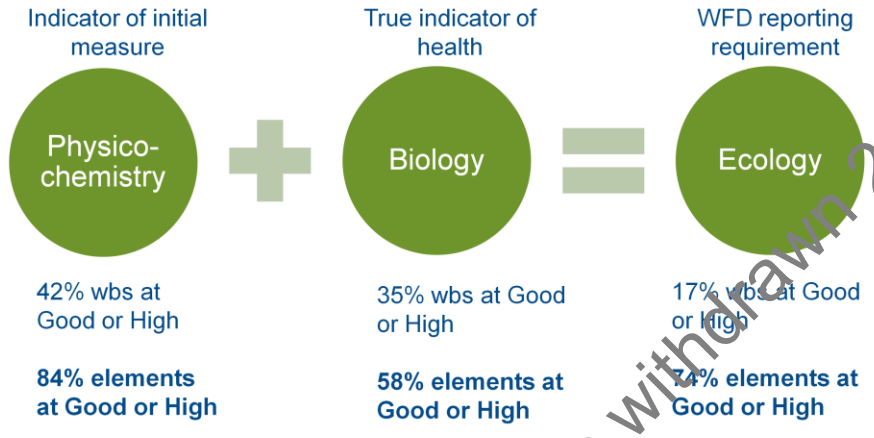
  • Approximately 300 water bodies have improved fish status, which is also seen by the jump from 42% of all fish results meeting good ecological status when first reported in 2009 to 49% when reporting in 2013. It is likely, but unconfirmed, that the improvement is due to a combination of improved data quality and a reduction in environmental pressures.

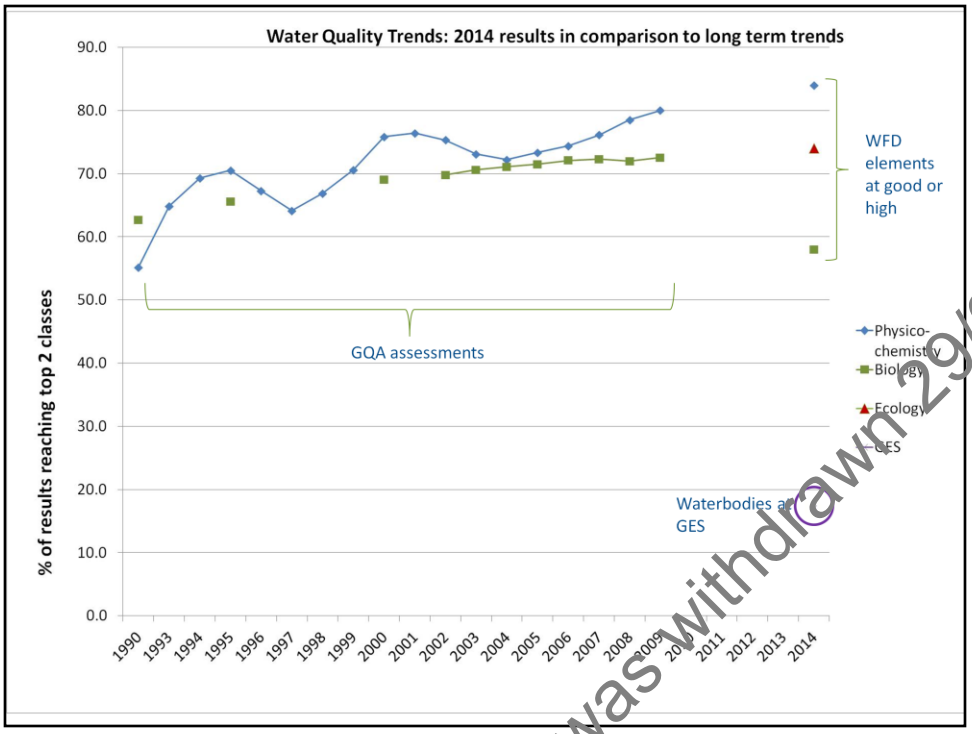
  •An independent report published in 2014 by IAN P. VAUGHAN and STEVE J . ORMEROD, Cardiff University, concludes that genuine improvements in macro-invertebrate populations have been observed since the 1990s, particularly in urban environments.

Aiming for near natural conditions in the anthropocene



Sequence of response





Key points

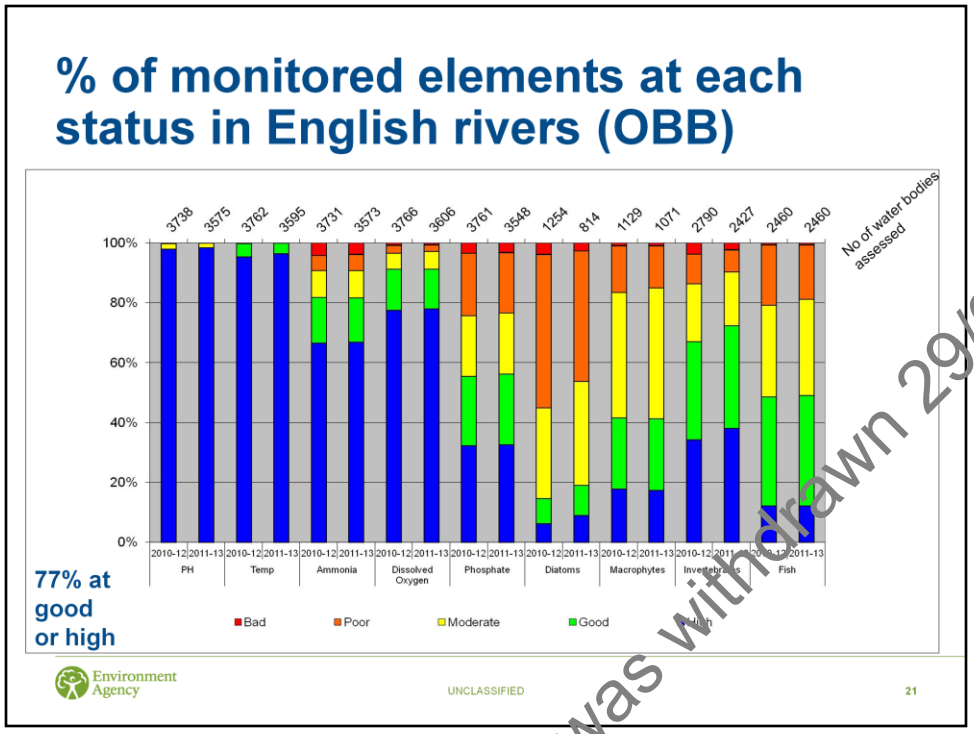
• This slide compares the long term trends we formerly reported using two of our General Quality Assessment (GQA) measures against the latest 2014 results

• The comparison is not totally scientific as the reporting regime is notably different but:

• This does show that buried beneath the WFD metrics we commonly use we are managing to maintain a high quality environment in many locations and for the vast majority of parameters.

Impacts of new classification methods and extra monitoring on reporting of the environment

% of English rivers:	Meeting supporting standards for physico-chemistry	At good status for biological parameters	At good status for whole ecological assessment
2006 - 2008 (The 2009 classification, old methods)	46	34	22
2011 -2013 (The 2014 classification, old methods, but more extensive biological monitoring than 2009)	50	26	23
2012 - 2013 (The 2014 classification using new method)	42	35	17

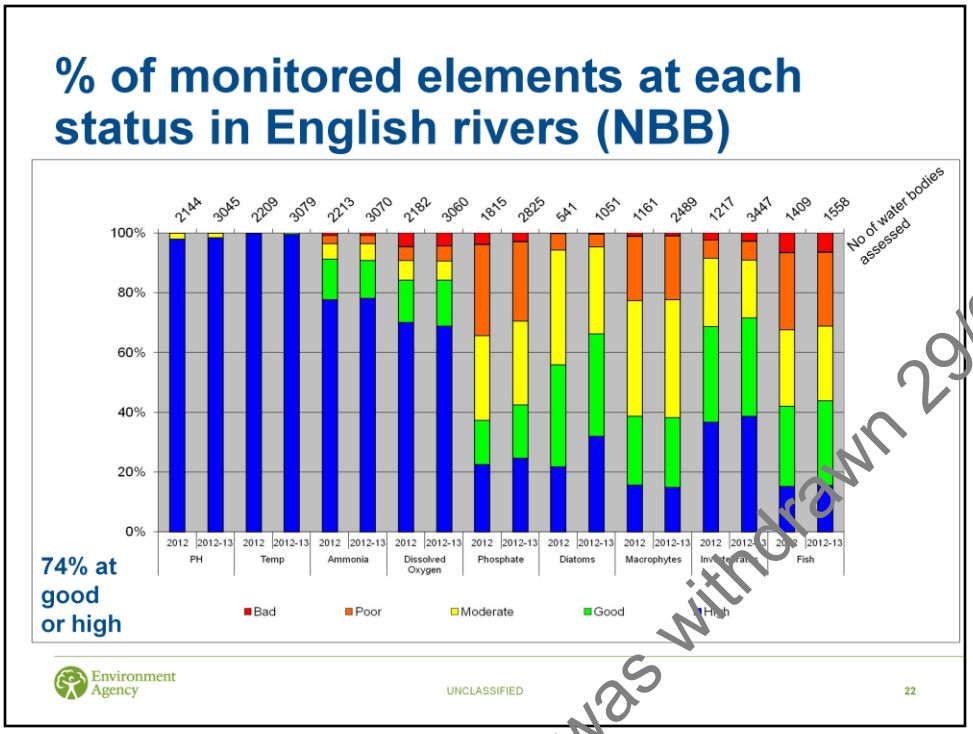


The next two slides are presented to show how each element is doing, broken down by status. Note the numbers on top denote the number of water bodies in which the element is monitored.

This slide presents the C1 (old building block assessments). It compares the 2013 reported data (monitoring 2010-12) with 2014 reported data (monitoring largely from 2011-12).

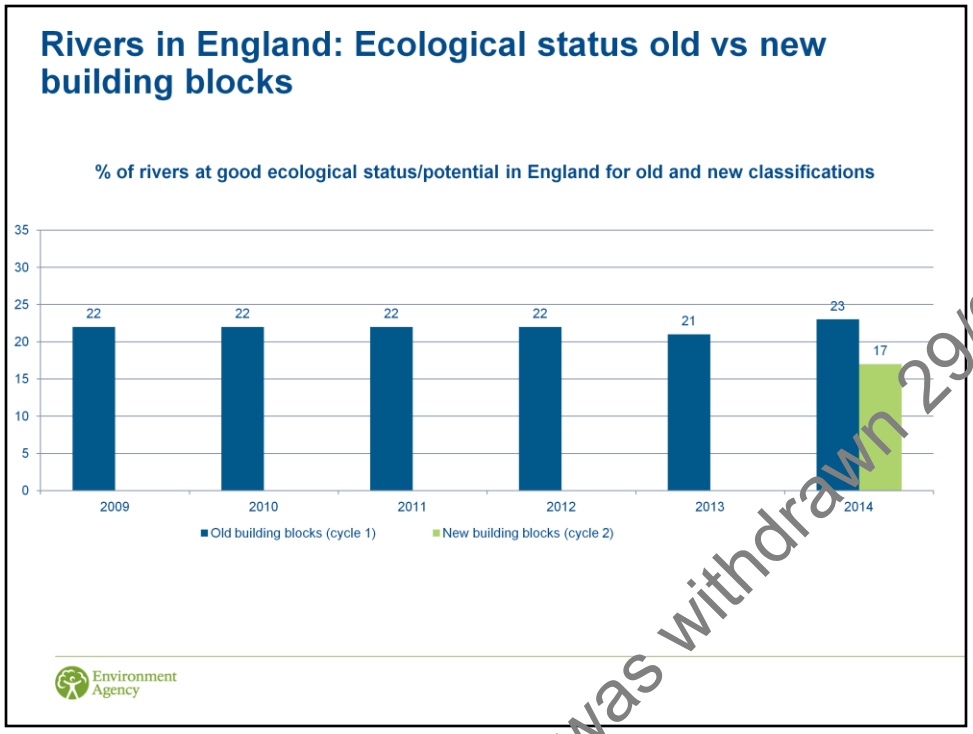
Key things to note:

- While it is not advisable to look from trends with only two data points you can see most elements are showing an improvement between reporting years (eye-ball top of green sections)
- There is a significant increase in the number of monitored water bodies for macrophytes in C2 assessment (next slide), and overall the ESI network monitors more ecology, in more places.



Note:

Significant change in no. of water bodies monitored for each element. Note that we predominantly monitor biology where it is likely to be impacted (risk based monitoring)..



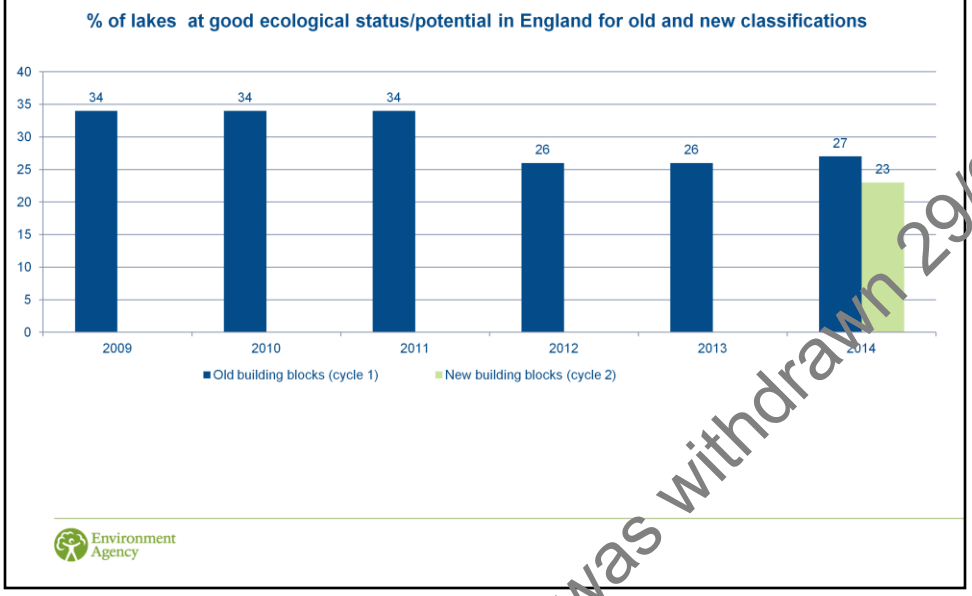
Note: we did report NBB results for 2013 results but this was based on the results gathered approximately half-way through the new monitoring programme that we set up in 2012.

Note that our 2014 classification for groundwaters is as follows:

Overall groundwater status: 41% good or better, 59% moderate or worse

Groundwater chemical status: 52% good or better, 48% moderate or worse (or 'fail')

Lakes in England: Ecological status old vs new building blocks



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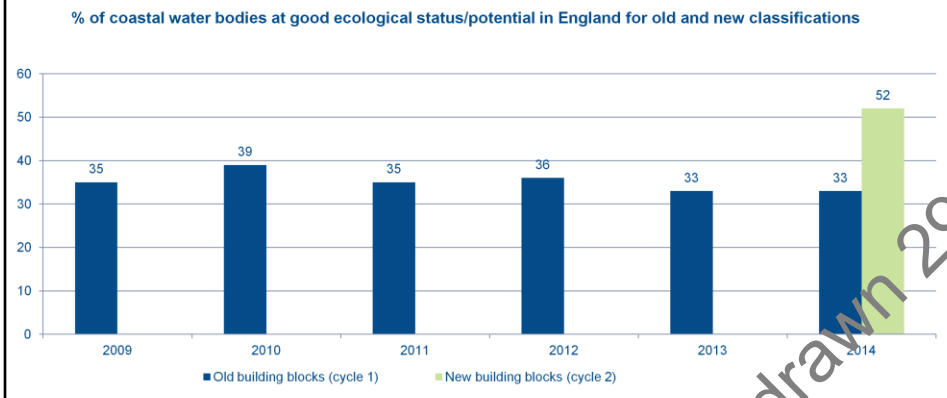
Coastal WBs in England: Ecological status old vs new building blocks



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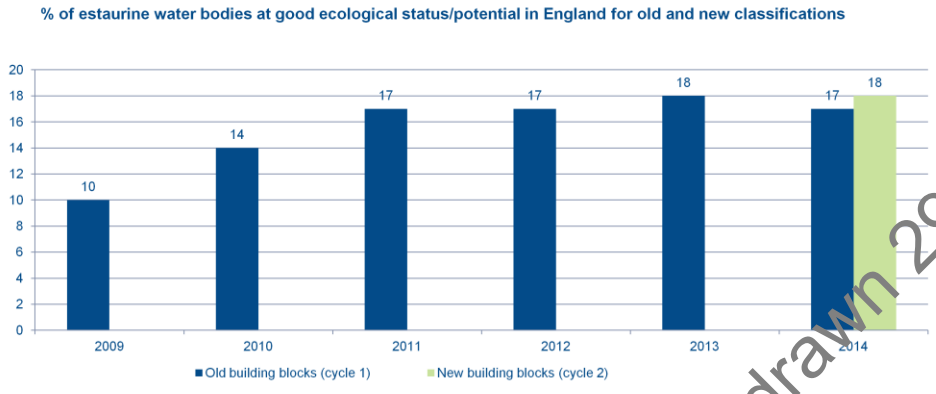
Transitional (estuarine) WBs in England: Ecological status old vs new building blocks



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Across Europe

- Netherlands: 4% of waters at GES/GEP, but 50% of elements measured at GES. Want to push forward review of WFD as part of Netherlands EU presidency in 2016;
- France: 42% at GES/GEP in 2013, no significant progress since 2009
  - Objective set in 2009 was 66% at GES/GEP by 2015 – mainly political, not evidenced
  - Has a new invertebrate classification tool that would take this down to 30%, decided not to introduce this tool until 3rd cycle (2021)

Provided for context.