

Projected changes in water chemistry

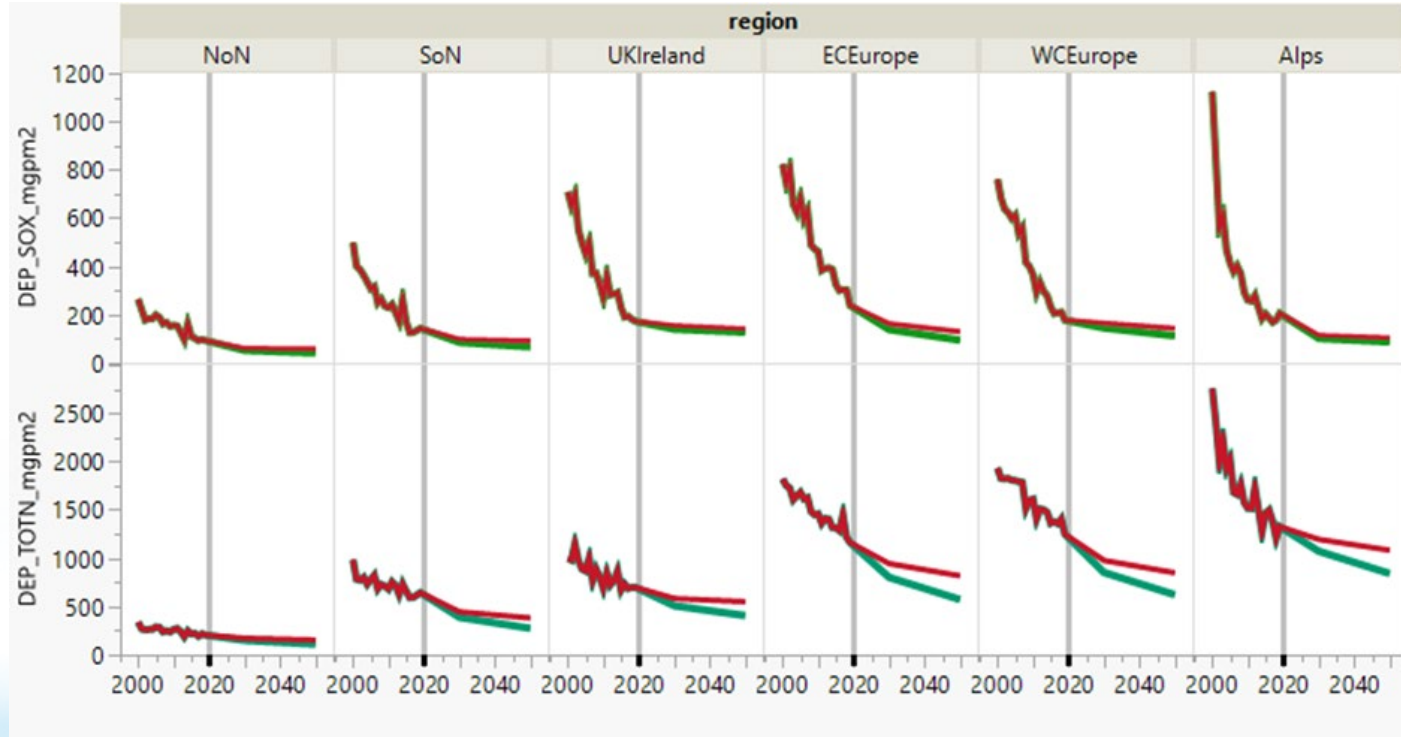
Recent contribution to the GP review from
ICP Waters

Approach

- Projected deposition from EMEP for 2030 and 2050
- Steady-state modelling (SSWC)
 - Normally applied to estimate critical load based on a critical limit (acid neutralising capacity - ANC)
 - Here applied to estimate ANC based on the projected load (deposition)
 - The modelled ANC reflects the projected deposition level for 2030 or 2050, but reaching this ANC may take longer (i.e. steady state may not have been reached)

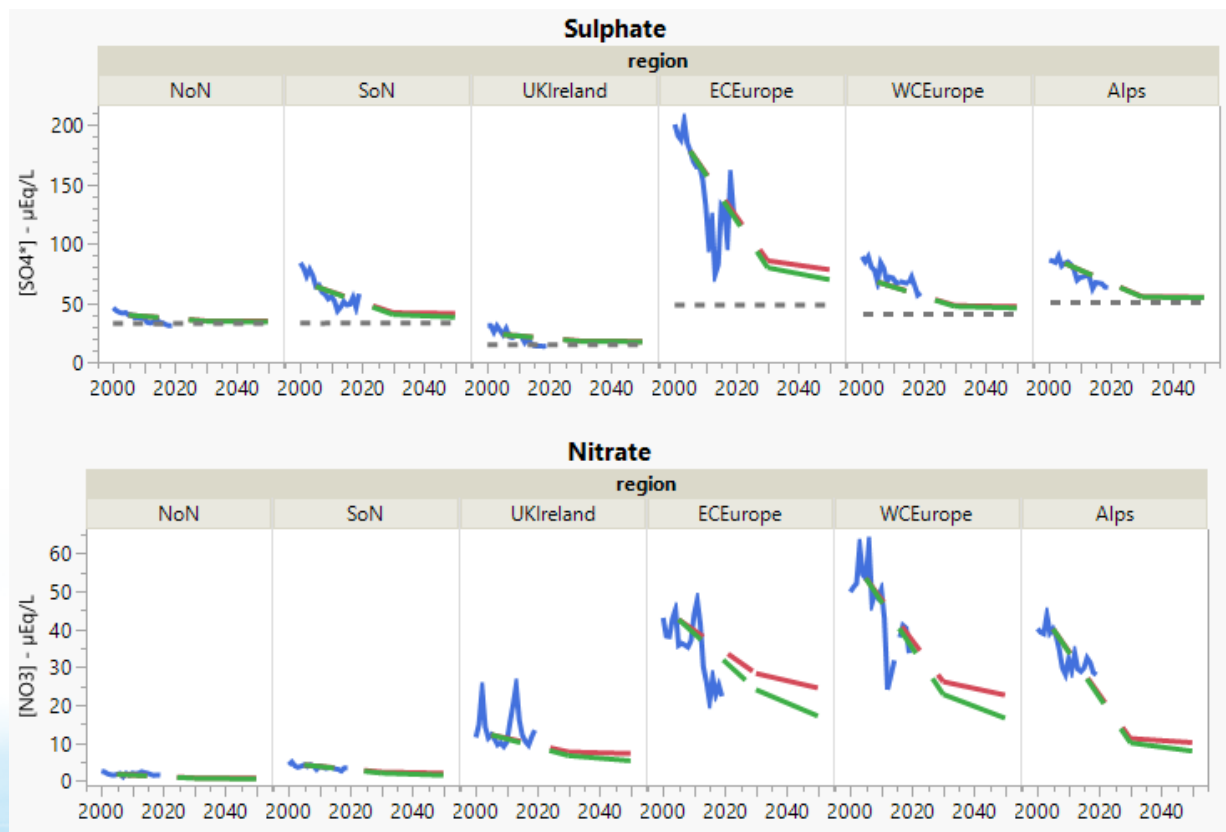


Projected deposition at ICP Waters sites

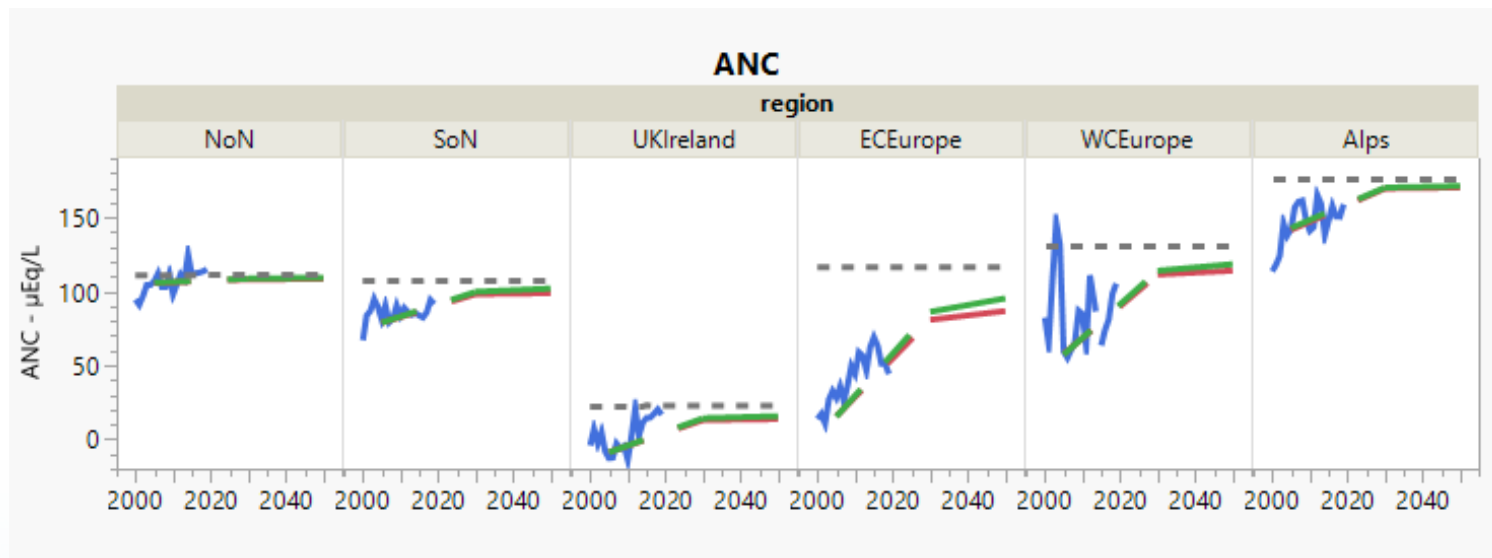


Sulphate and nitrate concentration

- Measured
- Baseline scenario
- Maximum feasible reduction
- Estimated pre-acidification



Acid neutralising capacity



— Measured

— Baseline scenario

— Maximum feasible reduction

- - - Estimated pre-acidification

Future water chemistry

- Projected deposition levels for 2030 and 2050 will give further reduction in surface water acidification
- Sulphate and nitrate concentrations will decline, and ANC will increase, but neither will reach pre-acidification levels
- Chemical recovery is largest where deposition has historically been highest, but this is still where levels are furthest from pre-acidification
- Climate change and interannual variability in weather will have greater effects on ANC as acid deposition declines, with unknown consequences for biological recovery