

Blnd02: Total phosphorus concentration in the water column

Quality element: Physico-chemistry

Water category and water body types: Rivers, lakes, transitional waters; all types

Selection rationale: Common water pollution factor driving primary production in aquatic systems, conditioning secondary pressures (e.g. oxygen depletion) and interacting with other pressures

Indicator type (DPSIR): Pressure, State

Description: Phosphorus is an essential nutrient for plants and animals. The element is naturally limited in most fresh water systems. The concentration of total phosphorus in the water represents an indicator of the chemical ecosystem state, increased by discharge and runoff from urban and agricultural land (e.g. wastewater treatment plants, fertilized lawns and cropland, animal manure storage areas). Total phosphorus also represents a pressure causing eutrophication effects such as algal blooms, accelerated plant growth, and low dissolved oxygen as a secondary effect from the aerobic decomposition of vegetation biomass.

The indicator is a standard parameter of water quality: widely monitored, conceptually well-founded and empirically validated.

Spatio-temporal scale: Field data: sampling site, aggregated value of multiple measurements in time (e.g. annual average)

Unit: $\mu\text{g L}^{-1}$

Standardisation: To be standardised against type-specific background levels

Data requirements: Field data, modelled data

Other: none

MARS spatial scale: Experimental, river-basin and European scale

Reference: none