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| **Indicator:** | **Levels of soluble reactive phosphorus in our rivers and levels of Dissolved Inorganic Nitrogen in our marine waters** |

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| **Responsible Statistician:** | Paul Caskie, Department of Agriculture, Environment and Rural Affairs |
| **Web Link to Statistical Publication:** | <https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report> |
| **Frequency of update:** | Annually |
| **Time lag:** | 12 months |
| **Data Source:** | Administrative |
| **National Statistics Status** | Official Statistics |
| **Quality Report:** | Details on the Water Framework Directive can be found here: <https://www.daera-ni.gov.uk/articles/water-framework-directive>  The document ‘Rationale for Water Framework Directive Freshwater Classification’  describes how WFD freshwater classification has been undertaken and the rationale behind classification, the biological, chemical and physical quality elements monitored, the monitoring networks and how classification is produced.  <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/surface-water-monitoring-and-methodology-for-the-final-river-basin-plans-2015.PDF>  The complete Water Framework Directive classification is updated every 3 years. One of the key elements for assessing the status of freshwater bodies is soluble reactive phosphorus (SRP) for rivers. One of the key elements for assessing the potential eutrophication state of marine surface waters is to examine the extent and degree of winter Dissolved Inorganic Nitrogen levels. These measures are updated annually. |
| **Historic Data available from:** | 2004 (soluble reactive phosphorous), 2012 (Winter dissolved inorganic nitrogen) |
| **Time-series trend:** | River water quality - soluble reactive phosphorus (SRP)   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | | Average SRP in rivers (MG/l) | **0.076** | **0.083** | **0.070** | **0.066** | **0.063** | **0.049** | **0.052** | |  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | | Average SRP in rivers (MG/l) | **0.058** | **0.047** | **0.053** | **0.064** | **0.059** | **0.067** | **0.066** |   Note: This is the average concentrations at 93 river monitoring surveillance sites  Some progress on reducing phosphorus from agricultural sources has been achieved since the introduction of the Phosphorus (Use in Agriculture) Regulations (Northern Ireland) 2006. However, recent river monitoring results indicate that soluble phosphorus levels in rivers is rising again with a negative impact on river water quality.  Marine water quality – winter dissolved inorganic nitrogen (winter DIN)   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | | Average DIN in marine water bodies (µM) | **24.19** | **21.26** | **25.19** | **26.45** | **25.59** | **20.82** |   In Northern Ireland levels of winter DIN have been monitored consistently at 24 marine waterbodies since 2012. The levels of winter DIN remained relatively stable between 2012 and 2016. In 2017, winter DIN fell to a low of 20.82µM. This was a 5.6 µM decrease on 2015 levels. |
| **For Survey Data**  **Sample size and confidence interval for the latest available year:** | Sample size: SRP based on 93 rivers; Winter DIN based on 24 marine waterbodies  Confidence interval: N/A |
| **UK/RoI/International comparisons:** | UK: Yes  UK Regional: Yes  RoI: Yes  International (please specify countries): Europe |
| **Issues in relation to this data, e.g. data limitations, future data availability, changes to methodology** | For SRP in rivers there are no data issues.  Winter DIN is based on monitoring data with number of yearly observations dependent on status of each water body and weather conditions. |
| **Is this measure being used to monitor performance against your current/latest Departmental/ Agency Plan** | Yes |
| **If yes, please specify any particular baseline point/year for the measure which is being for performance monitoring purposes** | 2015 |

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| **Technical Assessment Panel** |  |
| **Baseline Year** | 2015 |
| **Criteria for reporting change from the baseline** | River water quality: +/- 0.01 MG/l  Marine water quality: +/- 3 µM |

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| **Available groupings\*** | **Yes/No** | **Notes** |
| **NI Level** | Yes |  |
| **Parliamentary Constituency level** | No |  |
| **Local Government District (2014) level** | No |  |
| **Deprivation Quintile** | No |  |
| **NISRA Geography Urban/Rural Measure** | No |  |
| **Gender** | No |  |
| **Age** | No |  |
| **Marital Status** | No |  |
| **Religion** | No |  |
| **Political Opinion** | No |  |
| **Disability** | No |  |
| **Dependants** | No |  |
| **Sexual Orientation** | No |  |
| **Racial Group** | No |  |
| **Lowest level geography at which the measure is available:** | Northern Ireland | |

\* Due to confidentiality constraints, in some instances breakdowns may not be available due to small numbers