

OSPAR Guidelines for Harmonised Quantification and Reporting Procedures for Nutrients (HARP-NUT)

# Guideline 7: Trend analysis and flow-normalisation

(OSPAR Agreement 2004-02g)[[1]](#footnote-1)

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# 1. Objectives

1.1 The aim of this document is to provide overall guidance on a procedure to identify and quantify temporal trends in inputs, including flow-normalisation of the inputs.

# 2. Introduction

2.1 The OSPAR Principles of the Comprehensive Study on Riverine Inputs and Direct Discharges (RID) monitoring programme enables a quantification of all waterborne inputs of selected pollutants to marine waters. The river load data should be sampled, collected and reported through the relevant parts of the RID monitoring programme, (see revised RID-principles; Agreement 2014-04 for the nutrient-related sections). The parts of the RID Programme that concern estimates of loads from point and diffuse sources in order to quantify the total inputs to the maritime area are covered in Guidelines 2 to 6.

2.2 There exists a vast number of methods for statistical detection of temporal trends.

2.3 Time series of water quality data are often strongly dependent on climatic factors such as precipitation and runoff. Thus, the inter-annual variations in nitrogen and phosphorus load can vary substantially and cause spurious trends and lead to misinterpretation. This calls for harmonised procedures for the reporting of normalised annual riverine loads.

* 1. This guideline describes procedures for:
* Assessment of temporal trends in river inputs (cf. section 3 and Annex 1); and
* flow normalisation of river inputs (cf. section 3 and Annex 1).

# 3. Trend analysis and flow normalisation of river input data

3.1 The JAMP Guidance on input trend assessment and the adjustment of loads, adopted by OSPAR in 2003 (Agreement 2003-09) was produced and agreed pending the results of a two-year trial period. Based on experience gained in its application, the agreement was to be finalised in 2005. This Guidance was revised and published in 2017 and should form the basis for performing the normalisation/adjustment of riverine nitrogen and phosphorus load data. The JAMP Guidance describes a procedure to identify and quantify temporal trends in inputs, including flow adjustment/normalisation.

# Annex 1

See - Agreement 2003-09 Revised 2017, Guidance on Input Trend Assessment and the Adjustment of Loads

1. Revised in 2018 [↑](#footnote-ref-1)