

European Nitrogen Assessment

Chapter 13: Nitrogen flows from European regional watersheds to coastal marine waters

Supplementary Material: Datasets on watersheds

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In order to establish a budget of nitrogen delivery from European watersheds to European marine coastal zones, a data base of N delivery at the outlet of European watersheds has been assembled owing to the collective efforts of all participants to the NinE-ENA.

The data have been organised according to the CCM River and Catchment Database from the European Commission (JRC, 2007 and Vogt et al., 2007).

The European watersheds have been grouped according to the marine coastal zones where they are discharging, as indicated in Fig. 13.1 of ENA chapter 13. They include 5872 individual catchments, most of them representing very small rivers. The major ones, with an area larger than 10 000 km², represent 67% of the total European coast watershed area.

The data base includes recent data on total N, P and Si fluxes. Typically, average values of annual fluxes observed between 1995 and 2005 are registered. When only inorganic nitrogen data were available, total nitrogen has been estimated using the relationship between TN and DIN discussed by Durand *et al.* (2011, ENA Chapter 6). Documented watersheds in the NinE data base cover 69 % of the total European watershed area.

The material consists of a set of GIS shape files describing the contours of the European watersheds and their sea outlets (CCM 21, JRC, 2007). Attributes of the watersheds include:

- Watershed identifier (WSO_ID)
- Watershed names (NAME)
- Maximum river Strahler' streamorder (STRAHLER)
- Watershed area (AREA_KM2)
- Coastal zone to which it discharges (COAST_CODE)
- Indication whether or not the basin outlet is in EU27 (EXUT_EU)

An associated dbf file provides the information about nutrient fluxes, NANI (Net Anthropogenic Nitrogen Inputs) and Autotrophy and Heterotrophy. The corresponding fields includes:

- Watershed identifier (WSO_ID)
- Watershed names (NAME and NAME2)
- Maximum river Strahler' streamorder (STRAHLER)
- Watershed area (AREA_KM2)
- Coastal zone to which it discharges (COAST_CODE, COAST_NAME)
- Discharge at the outlet (in millimeters per year) (MM_YR)
- Mean annual delivery of total N, total P and dissolved Si, expressed in kg element /km²/yr (KGN_KM2YR, KGP_KM2YR, KGDSI_KM2Y)
- Reference from which the data are originating (REF)

Autotrophic or heterotrophic character of the watershed (Heterotrophy-Autotrophy, in tonN /km²/yr) (HET_AUT_MG)
Net Anthropogenic Nitrogen Input to the watershed, in tonN/km²/yr) (INP_MGNPER)
Area of the river basin area that is within EU, in km² and in fraction CUMUL_SUP, PART_OK)
Indication whether or not the basin outlet is in EU27 (EXUT_EU)

The complete reference list is provided below

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