

E-HYPE is under continuous development. Most applications on the site use E-HYPE 3.1.1, but it is not the latest version of E-HYPE. Please contact us for more information.

E-HYPE version: 3.1.1

HYPE model version: HYPE 4_10_7

Geographical domain: Drainage basin of Europe

Model purpose/User community:

This is a multipurpose model. Current operational uses include water forecasting in Europe today (WET, a real-time water information service), delivering forecast data to oceanography models, delivering a soil-water forecast for gardening companies and more. The model is also used for many research projects including as the main source of open data for both research experiments and production in the [SWITCH-ON project](#), for European climate scenarios in the IMPACT2C and ECLISE projects, for seasonal forecasting in the EUPORIAS project and more. A separate pan-european model, EFAS-HYPE is currently being tested in the European Flood Awareness System (EFAS).

Table 1. Data sources and characteristics

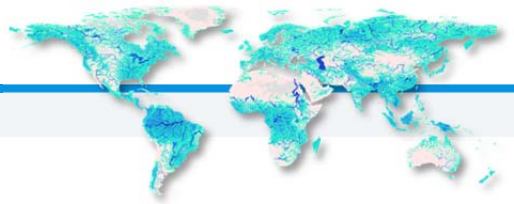
Characteristic/Data type	Info/Name	Provider (references below)
Total area (km ²)	8.8 million	-
Number of sub-basins	35408 (mean size 215 km ²)	Tailored by SMHI from topography
Topography (routing and delineation)	Hydrosheds and Hydro1K (for latitude > 60°)	WWF & USGS
Soil characteristics	ESD DSMW	Panagos (2006) http://www.fao.org/soils-portal/soil-survey/soil-maps-and-databases/faounesco-soil-map-of-the-world/en
Land use characteristics	CORINE GLC2000 (for areas not covered by CORINE) Euroland Soil Sealing for urban area	http://www.eea.europa.eu/publications/COR0-landcover http://bioval.jrc.ec.europa.eu/products/glc2000/data_access.php Produced by: GeoVille, Planetek, Infoterra
Lake and wetland	GGLWD for lake area and distribution	Lehner and Döll (2004)
Irrigation	EIM, EU scale GMIA, global	Wriedt et al. (2009), Siebert et al.



	scale Siebert et al. (2010), global scale FAO-56, regional scale	(2005)
Type of crop, demand of water	CAPRI, MIRCA2000, FAO-56	Portmann et al. (2010)
Discharge	Global Runoff Data Centre European Water Archive (EWA) Baltex Hydrological Data Centre (BHDC)	http://www.bafg.de/GRDC http://www.bafg.de/GRDC/EN/04_spcldt_bss/42_EWA/ewa_node.html http://www.smhi.se/sgn0102/bhdc/
Precipitation	WFDEI	Weedon, G. P. et al.(2014)
Temperature	WFDEI	Weedon, G. P. et al.(2014)
Snow	GlobSnow Former Soviet Union Hydrological Snow surveys	1. http://www.globsnow.info/ 2. Krenke, A. (1998, 2004)
Glacier fluctuations	World Glacier Monitoring Service (WGMS)	Zemp, M. et al. (2012)
Evapotranspiration	MODIS satellite	http://modis.gsfc.nasa.gov/data/dataproducts.php?MODNUMBER=16
Waste water	Hyde (population), EEA (treatment levels)	Goldewijk et al. (2011), http://www.eea.europa.eu/data-and-maps/indicators/urban-waste-water-treatment/urban-waste-water-treatment-assessment-3
Atmospheric N deposition	MATCH model simulations	SMHI
Industrial point sources	European Pollutant Release and Transfer Register	http://prtr.ec.europa.eu/
Crop statistics	CAPRI	Britz et al. (2007)
Riverine nutrient concentrations	National data sets and GEMS Water	http://gemstat.org

Calibration:

Stepwise, simultaneous calibration in a number of 116 selected representative upstream sites with river discharge observations, manual and remote sensing snow observations, actual evapotranspiration, as well as annual glacier massbalance observations for the period 1980-2000.

**Validation:**

Evaluation was made using all available river discharge stations (1347) for the entire simulation period 1979-2009, thus including the calibration period.

Contact person

For further information, please contact [René Capell](#) Funding: Setup of E-HYPE was initiated by SMHI, but has benefited from funding from a number of sources where the model was further developed and provided data to each project. Projects include several EU FP7

projects [Geoland2](#), [MyOcean](#), [OPERR](#), [SUDPLAN](#), [Ecosupport](#) and ECLISE as well as a Swedish [Formas](#) research grant for the [Hydroimpacts2.0](#) project. Ongoing projects in which E-HYPE is used and further developed include FP7 projects [IMPACT2C](#), [EUPORIAS](#) and [SWITCH-ON](#) and the

References for Input data

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