NOOS PROJECT SUMMARY: River runoff data for operational ocean forecasting

Date of revision: 3 September 2012

KEYWORDS: ocean modelling, river, fresh water, runoff

River runoff data for operational ocean forecasting	
Project Aims	Make river runoff data – observed and predicted fresh water flux and nutrient/contaminant loads – available to NOOS partners for use in ocean hindcasting and forecasting, and assess the benefits derived. 1. Make **near-real-time observations** of river fluxes available to partners. 2. Make high quality **historical data sets** of observed fluxes and loads available to partners for hindcast studies. 3. Assess the availability and applicability of **prognostic river runoff data** and make recommendations for further effort. 4. Develop **best practises** for applying river runoff data in coastal ocean forecasting.
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Present status (September 2012)
New or updated items in **bold**
	Project tasks 1.1, 1.2 and 2 were addressed in ECOOP T2.5 (ended May 2010). NOOS partners: met.no, SMHI, RIKZ, BSH. K. Borst coord NOOS part.
	Task 1.1, 2.1: River volume flux data inventory done (→ ECOOP T2.5)
	• Info on NRT data from Sweden, Germany, Norway, UK
	• Archive data for UK from Cefas
	• Coop IBI-ROOS for French, Irish stations
	Task 1.2: NRT data exchange
	• Daily updated obs data provided for major rivers in southern Norway by met.no. ftp.met.no/pub/bruceh/noos/.
	• Daily updated prognostic data for rivers feeding the Kattegat/Skagerrak provided by SMHI.
	• 10-min obs data for Dutch and German stations provided by Deltares.
	• Deltares has implemented data collation, presentation and dissemination. Online access for viewing at http://noos.cc/index.php?id=150. See Figure 1. FTP access at ftp://noosdata.nl/ECOOP/DATA/RWS. MATROOS at Deltares accessible at matroos.deltares.nl (noos login).
	• Data file format standardized to SDN ODV pending a netCDF standard. Metadata standard is SDN CDI.
	• **Data for UK: No progress since last NOOS meeting!**
	  - Data for England can be brought in through efforts of RWS, Deltares and Met Office. Permission from UK Env. Agency is essentially solved. Outstanding tasks/issues:
	  - Select subset of all stations available (met.no)
	  - Obtain final permission from EA – licensing? (met.no)
	  - Implement in dissemination service (Deltares) – in doubt
	  - Main use will probably be for validation of E-HYPE
	  - Need to start process for Scotland. (met.no, MetO)
	• No NRT data will be available from Belgium (but maybe via NL).
	• Contact IBI-ROOS for access to data from France, Eire. (met.no, IMI)
	Task 3: Prognostic runoff data
	• E-HYPE: Hindcast data(daily and monthly means 1980-2008) produced

	using HYPE v1.0 available at ehype.smhi.se. Se Figure 2. **Update: rerun with HYPE v2.1 promised in September 2012.**
	• E-HYPE: OPERR nearing completion. (EU Coord. Activity, <u>SMHI</u>, IMR, met.no)
	    • met.no has done a limited validation of a preliminary hindcast using HYPE v2.0 (precursor to v2.1); 21 Norwegian stations and 4 UK stations, 2005-2008. See Figure 3 and Figure 4.
	    • IMR will perform sensitivity study on new hindcast (v2.1), fall 2012
	    • met.no will repeat validation on new hindcast (v2.1), fall 2012
	• E-HYPE: First tests of E-HYPE data in Met Office model; results were inconclusive with regard to improved forecast skill. Awaiting better quality E-HYPE data.

Workplan	Year 2012/13: • Obs data: Reinitiate efforts to access English data. Station selection and licensing options need to be resolved. (met.no, MetO) • Obs data: Approach Scotland for same. (met.no, MetO) • Validate E-HYPE hindcast (v2.1) against obs in NOOS region. (MyOcean, OPERR) • Test E-HYPE real-time and hindcast data in ocean models by NOOS participants (met.no, IMR, SMHI in OPERR; others on best endeavors basis).
Link to project docs	Description of Work ECOOP WP 2.5 description MyOcean WP3 MyRiver miniproject report OPERR description (http://www.smhi.se/en/Research/Research-departments/Oceanography/operr-operational-pan-european-river-runoff-1.16820)

Figures
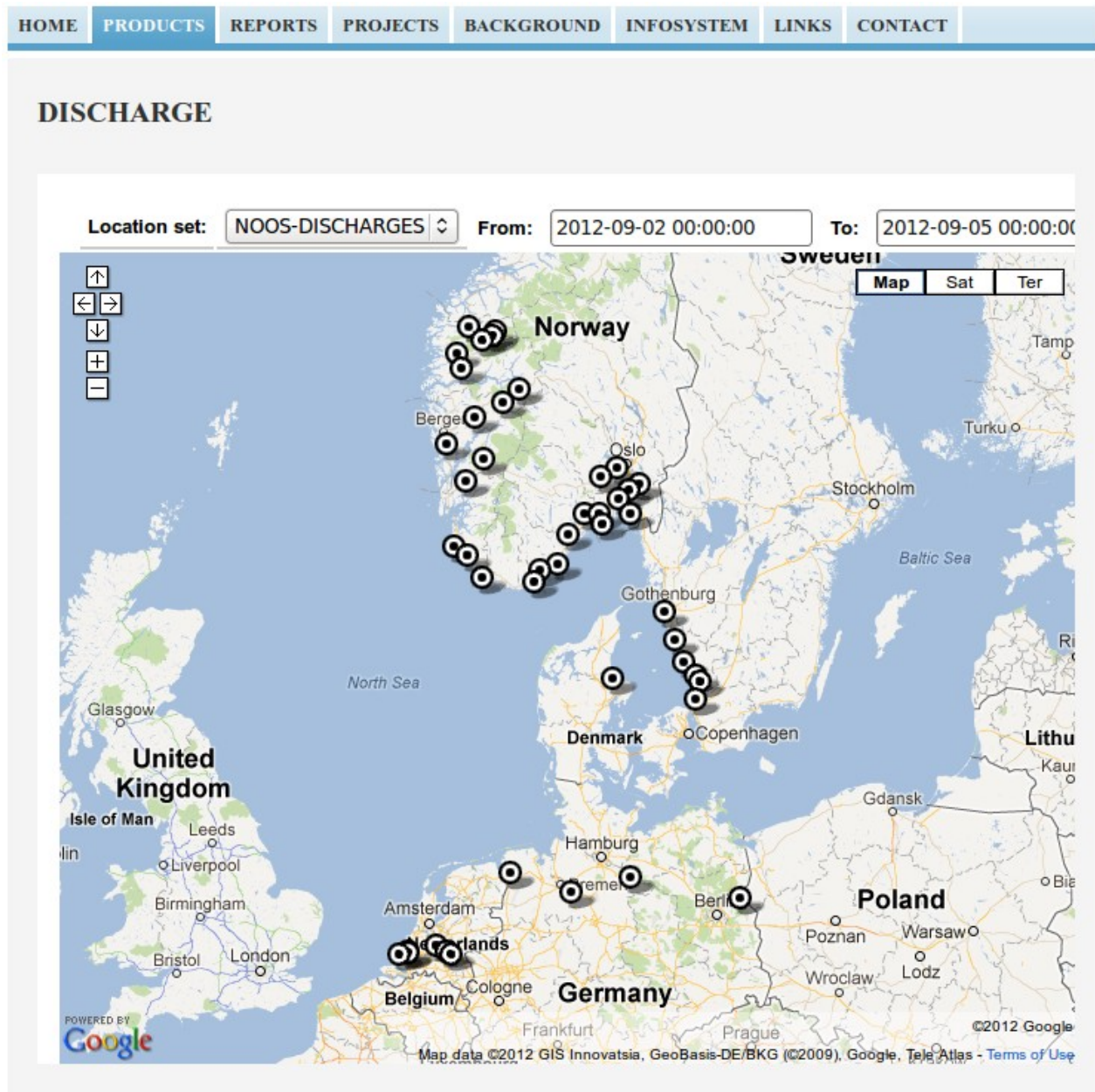
Figure 1: NOOS river discharge data viewing and access service at http://noos.cc/index.php?id=150.

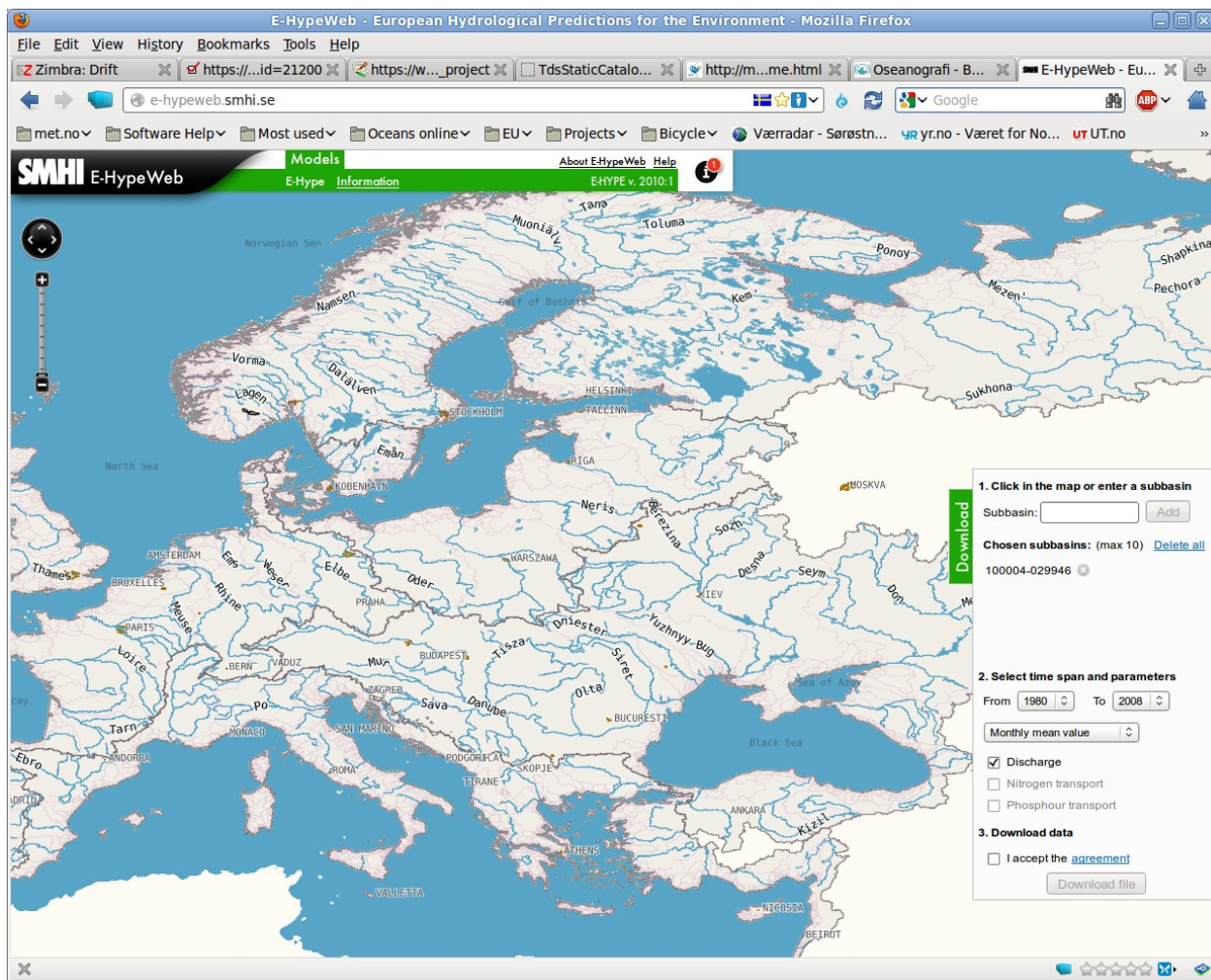*Figure 2: Screenshot of e-hypeweb.smhi.se*
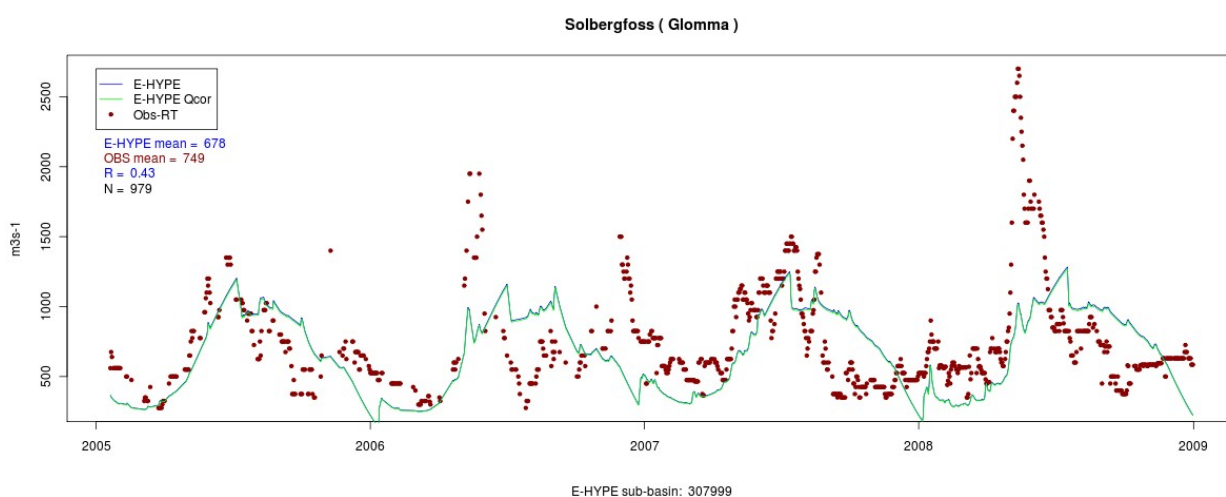
Figure 3: Validation of E-HYPE 2.0 hindcast for Solbergfoss (Glomma River), Norway. Period 2005-2008.

Norham (Tweed)
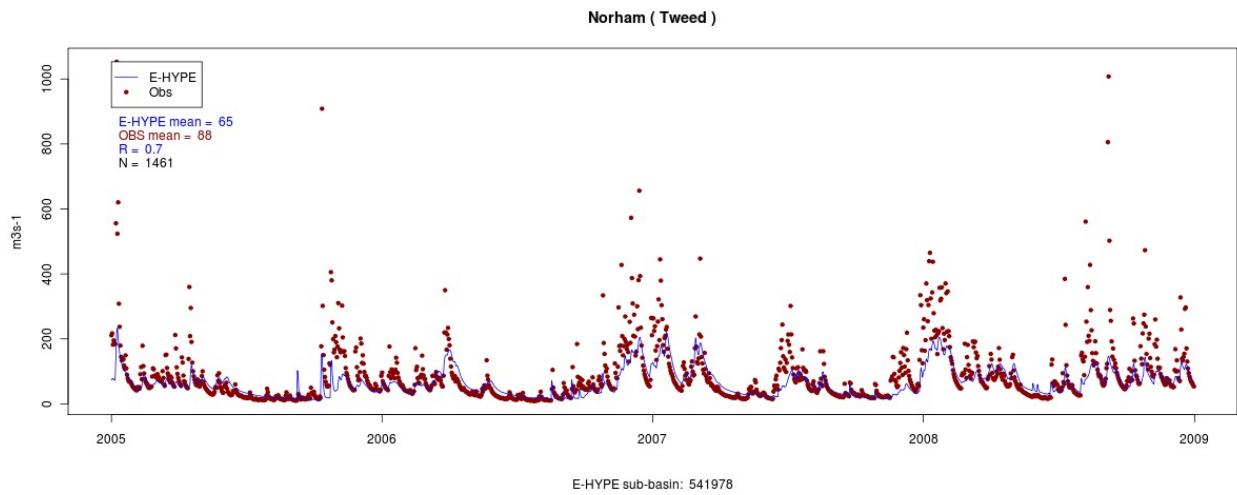
E-HYPE sub-basin: 541978

Figure 4: Validation of E-HYPE 2.0 hindcast for Norham (Tweed River), UK. Period 2005-2008.