

Data Management Plan Huettel

The data management procedures adhere to and are guided by the requirements of the NSF/earth science data policy as described in

http://www.nsf.gov/geo/ear/2010EAR_data_policy_9_28_10.pdf.

Collection and Processing of Data

Laboratory data will consist of raw data series that will be collected by the computers running the signal processing hardware or by the sensors themselves (RINKO III, NORTEK Vectrino and Vector ADVs). Field data will be collected in two rivers and two coastal zones, and will consist of data collected by the NORTEK ADV logger and by additional loggers and environmental sensors (e.g. light, oxygen loggers). After each deployment, the compressed files stored by the ADV logger will be transferred to a computer. All raw data files will be stored and backed up on two external hard drives (lab and office), and the secure file servers for data available at FSU and UVA. These raw data will include the primary raw data series (oxygen concentration, current flow, pressure temperature, salinity) and accessory data series (light intensity, light spectrum). Raw data files will be stored in folders named by starting time (hhmm), parameter and sensor type (e.g. 1623_O2_RINKOIII) and stored in a directory named by the date the raw data series was started (YYMMDD) and location (e.g. 140823_Pensacola).

The data we will produce include:

Temperature	(unit)
Salinity	(°C)
Pressure	(PSU)
Flow velocity	(Pa)
Oxygen concentration	(m s ⁻¹)
Oxygen consumption rates	(μmol l ⁻¹)
Sediment permeability	(mmol m ⁻² d ⁻¹)
Sediment grain size	(m ²)
Porosity	(μm)
Light (PAR)	(% wt)
	(μmol (photon) m ⁻² s ⁻¹)

These data will be associated with date and time and latitude/longitude information.

Analysis

After quality control that excludes data generated by faulty sensors and out of range data, the raw data will be processed using Fortran codes, Matlab, SigmaPlot, Origin or Excel software that will produce tables, figures and macros for automated data processing. The Fortran codes for the eddy flux extraction and spectral analysis were developed by Peter Berg with support from previous NSF-funded projects and include ExtractNortek (ver. 1.5), EddyFlux (ver. 2.01), and Spectra (ver. 1.2). Processed data files will be stored in a folder named by the same date the raw data directory is named and by the type of the processed data (e.g. 140823_O2).

Documentation

Metadata files will link raw data files to processed data files, experiments and field deployments. Metadata will be compiled using NOAA's Metadata Enterprise Resource Management Aid. Results of our laboratory tests and field deployments will be published in scientific journals.

Data availability

We will share the primary data with other researchers within a reasonable time or after mutual agreement or through collaboration. Data will be prepared as soon as possible for publication. In order to allow time to generate primary publications in the scientific literature, raw and processed data will be made available electronically through the PI's web sites by two years after the end of the project. At that time, data will also be uploaded to the National Oceanographic Data Center (<http://www.nodc.noaa.gov>), a scientific data archiving site that is publicly accessible. Data that are shared can be redistributed under the provision that the contact information of the person that generated the data, the metadata and the quality control information is associated with the data.

Publication of data subsets

Results of this project and associated instrument deployments will be presented at international science conferences (ASLO, AGU) and published in peer-reviewed papers submitted to international scientific journals. With these publications, subsets of the data will be made available also as in Web Appendices that several journals now manage (e.g. L&O).