Data Management Plan

DM-1. Data Types

This project will collect new geochemical (elemental, isotopic, structural and compound-specific composition) data. None of these data will present novel challenges for purposes of archiving and distribution.

DM-2. Physical Samples

DM-2.1. Sample Preparation

Some of the proposed analyses are destructive (e.g., bulk radiocarbon dating, RPO analysis) or semi-destructive (e.g., compound specific analysis). Therefore, we will systematically archive the following:

1. If it is a multicore site, at least one core tube will be archived.
2. If it is a bottom grab sample, approximately 20-50% of the sample mass will be archived.
3. In the case of total suspended sediments, at least one quarter of one filter will be archived.

DM-2.2. Sample Analysis Standardization

Stable isotopic measurements will be carefully standardized using international primary standards. Lipids will be quantified by comparison with existing authentic standards. All radiocarbon analysis produced in the scope of this project will be performed at the National Ocean Sciences Accelerator Mass Spectrometry Facility (NOSAMS). NOSAMS is a state-of-the-art AMS facility. Measurements are carefully standardized using international primary standards (e.g., NBS Oxalic Acid I [SRM 4990B]) and secondary standards. Details are provided on the NOSAMS website (http://www.nosams.whoi.edu). Radiocarbon measurements will be corrected for procedural blanks determined using the same analytical protocol and equipment (see Fernandez et al., 2015 and Hemingway et al., Radiocarbon, 2017 for details regarding blank and isotope correction of ramped PyrOx data).

DM-2.3. Sample Storage and Accessibility

After completion of the project, raw-sample aliquots and processed samples will be stored at WHOI in a sample repository along with samples from river, coastal, and marine systems around the globe. After completion of the proposed analyses, samples will be accessible upon request.

DM-3. Results and Data

DM-3.1. Data Access and Sharing

All data generated by this project will be made broadly available to the scientific community through several means. First, data will be archived through the Data Library and Archives (DLA), part of the joint MBL/WHOI Library. All data will also be archived and available through the BCO-DMO (http://www.bco-dmo.org/) and CUAHSI (https://www.cuahsi.org/data-publication) archives (marine and riverine samples and data respectively).

Metadata will be available immediately after data are archived, and data files will be openly and freely available on the web within two years from date of collection. Data sets will be versioned to indicate changes since initial release, and a change notification service will be provided to users on request.

Finally, we will publish the data generated in this project along with their interpretation in peer-reviewed scientific journals and associated supplemental data repositories.

DM-3.2. Data Storage, Archival and Preservation

Some data will be collected in the laboratory on paper data sheets or instrument computers and entered or transferred into tabular spreadsheets. Data sheets will be scanned or photocopied after analysis. Electronic files will be backed up on cloud storage regularly (on an hourly to daily routine).