**Supplementary Data and Video Titles**

**Data S1. Accession numbers of all BioProjects under the EukBank umbrella project.**

**Data S2. Accession numbers of the amplicon sequence data targeting 18S V4 regions from samples collected through *Tara* Oceans expeditions.**

**Data S3. Taxonomic annotation and assigned module for each OTU.**

**Video S1. Nineteen-year time series of community type distributions predicted from satellite-derived parameters, related to Fig. 6.**