

Table 1: Environmental variables used in the analysis. Variables in **bold** were retained after Variance Inflation Factor (VIF) analyses and were included in the linear models. Variables in *italics* were used for the Principal Component Analysis (PCA)

Data	Variable	Source	Resolution(m)	Units
USGS Yearly median Bottom Shear Stress	Year.median	<i>USGS(SFS – SMD)</i> ³	3500	<i>Pa</i>
<i>Stratification from 1996-2007</i>	<i>strat</i>	<i>CoML</i> ¹	<i>2500</i>	<i>none</i>
<i>Seasonal Range of SST</i>	<i>sst.rg</i>	<i>CoML</i> ¹	<i>972</i>	<i>°C</i>
<i>Average SST</i>	<i>sst.avg</i>	<i>CoML</i> ¹	<i>972</i>	<i>°C</i>
<i>Benthic Silicate</i>	<i>sil</i>	<i>CoML</i> ¹	<i>6000</i>	<i>µM</i>
<i>Sediment Grain size (CONMAP)</i>	<i>Sed</i>	<i>USGS(CONMAP)</i> ²	<i>-</i>	<i>none</i>
<i>Sand</i>	<i>sand</i>	<i>CoML</i> ¹	<i>6000</i>	<i>%</i>
<i>Seasonal Range of Benthic Salinity 1996-2007</i>	<i>sal.rg</i>	<i>CoML</i> ¹	<i>6000</i>	<i>psu</i>
<i>Benthic Salinity 1996-2007</i>	<i>sal.avg</i>	<i>CoML</i> ¹	<i>6000</i>	<i>psu</i>
<i>Benthic Phosphate 1996-2007</i>	<i>phos.avg</i>	<i>CoML</i> ¹	<i>6000</i>	<i>µM</i>
<i>Benthic Nitrate 1996-2007</i>	<i>nit.avg</i>	<i>CoML</i> ¹	<i>40000</i>	<i>µM</i>
<i>Mud</i>	<i>Mud</i>	<i>CoML</i> ¹	<i>6000</i>	<i>%</i>
Average K490	k490.avg	<i>CoML</i> ¹	8000	none
<i>USGS Median of Bottom Shear Stress</i>	<i>gmaine</i>	<i>USGS(SFS – SMD)</i> ³	<i>3500</i>	<i>Pa</i>
<i>Benthic Complexity</i>	<i>complexity</i>	<i>CoML</i> ¹	<i>397</i>	<i>°</i>
<i>Slope</i>	<i>slope</i>	<i>CoML</i> ¹	<i>397</i>	<i>°</i>
<i>Depth</i>	<i>Dep</i>	<i>CoML</i> ¹	<i>397</i>	<i>m</i>
<i>Aspect</i>	<i>comlaspect</i>	<i>CoML</i> ¹	<i>397</i>	<i>°</i>
Seasonal Range of Sea Surface Chlorophyll	chl.rg	<i>CoML</i> ¹	1119	<i>mg × m⁻³</i>
<i>Average Sea Surface Chlorophyll</i>	<i>Chl</i>	<i>CoML</i> ¹	<i>855</i>	<i>mg × m⁻³</i>
Benthic Current Stress with Wind and Tidal Influences	botstr.wt	<i>CoML</i> ¹	952	<i>N × m⁻²</i>
Benthic Current Stress with only tidal influence	botstr.t	<i>CoML</i> ¹	3800	<i>N × m⁻²</i>

¹ CoML obtained from <http://waves-vagues.dfo-mpo.gc.ca/Library/342505.pdf>

² USGS(CONMAP) obtained from <https://woodshole.er.usgs.gov/openfile/of2005-1001/html/docs/datacatalog.htm>

³ USGS(SFS-SMD) obtained from <https://woodshole.er.usgs.gov/project-pages/mobility/gmaine.html>