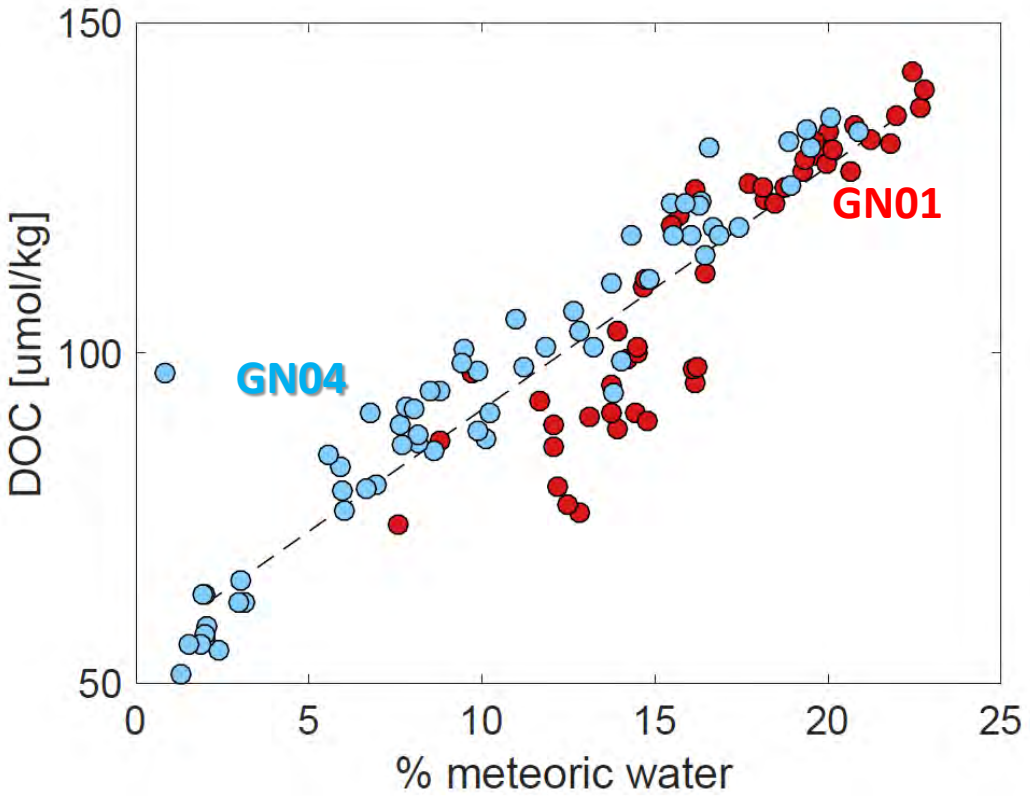
Arctic GEOTRACES

Dissolved Organic Carbon and Nitrogen

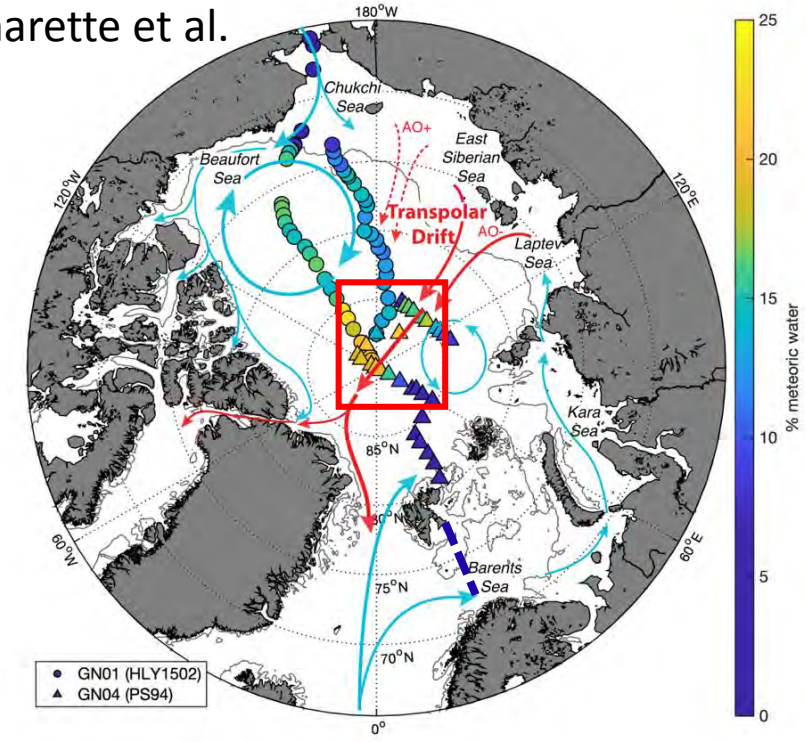
D. Hansell



Efforts in various states of progress;
How can you help?

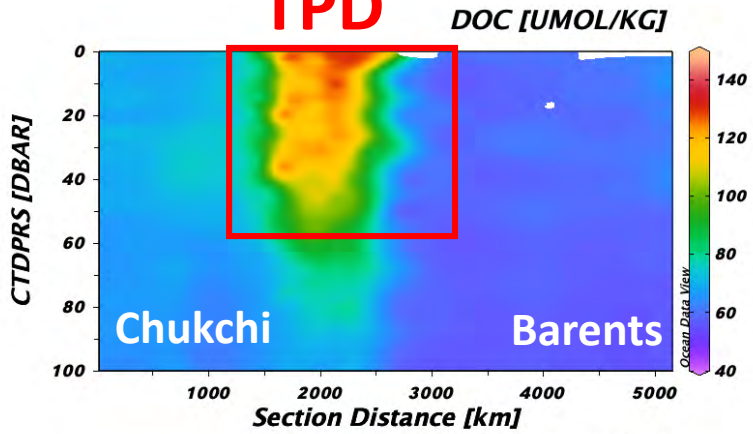
1. *Transpolar Drift* – Matt Charette et al. (submitted)
2. *$\delta^{15}N$ of DON* – Mari Bif, Annie Bourbonnais et al. (data generated)
3. *Elevated DOC values in the deep Arctic*– Rob Letscher, Andrew Margolin, Bill Smethie et al.

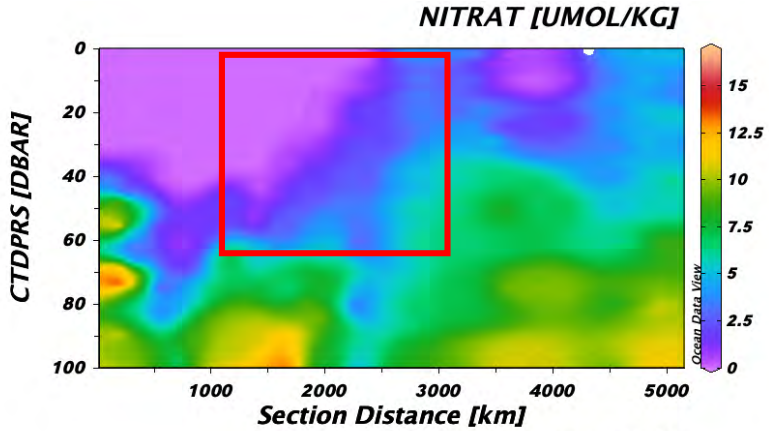
Charette et al.

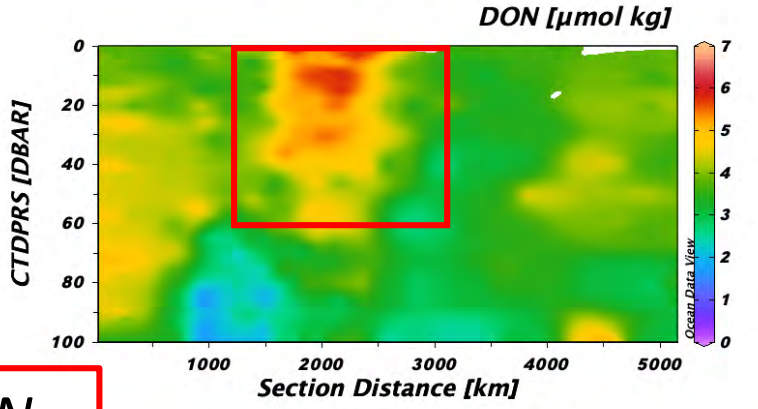


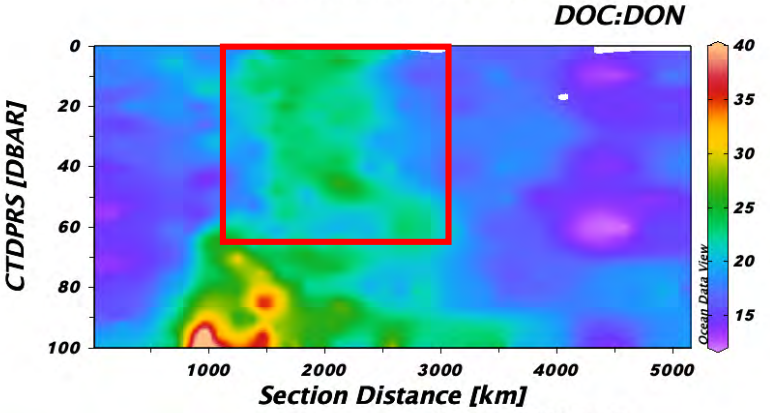
$\delta^{15}N$ *of DON* – Mari Bif, Annie Bourbonnais et al.

TPD



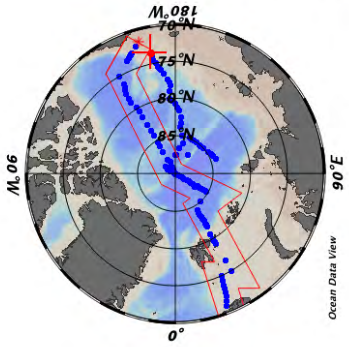


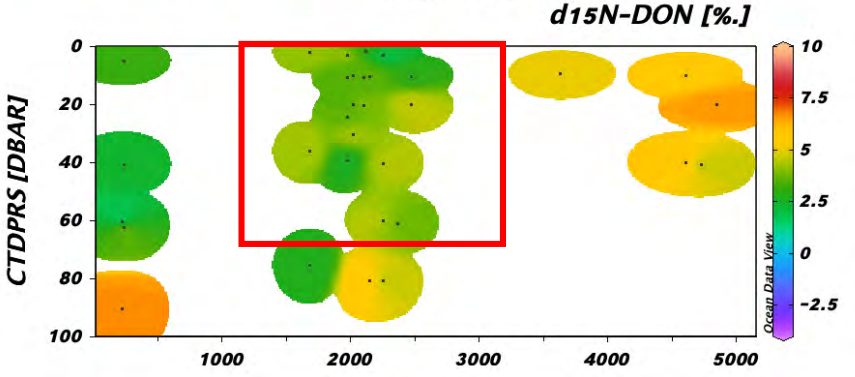




Benner et al (2005) $\delta^{15}N$ *of Arctic DON*:

River & Kara Sea	-1.8 to 3.5%
Marine	3.8–5.0%.”





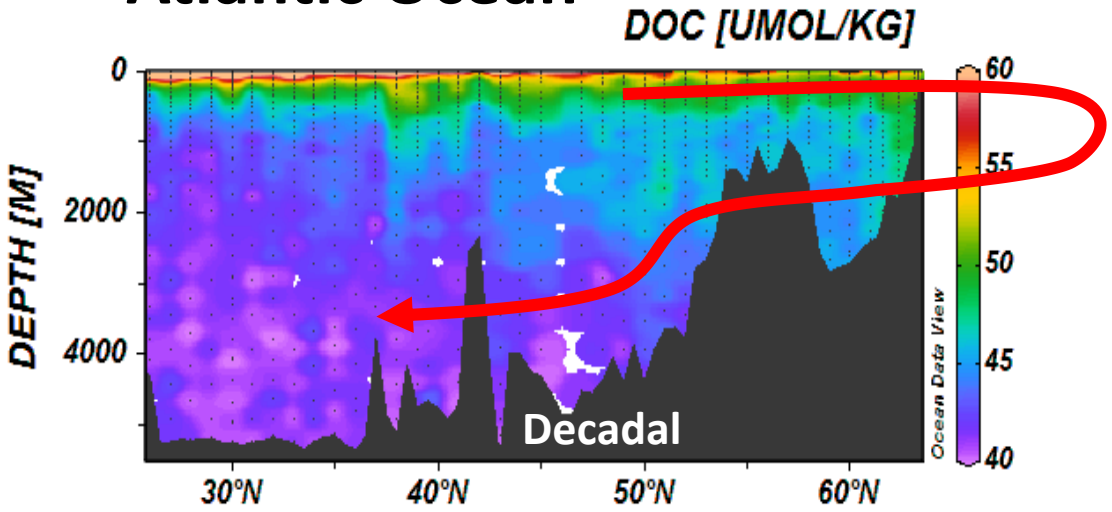
Hansell cont.

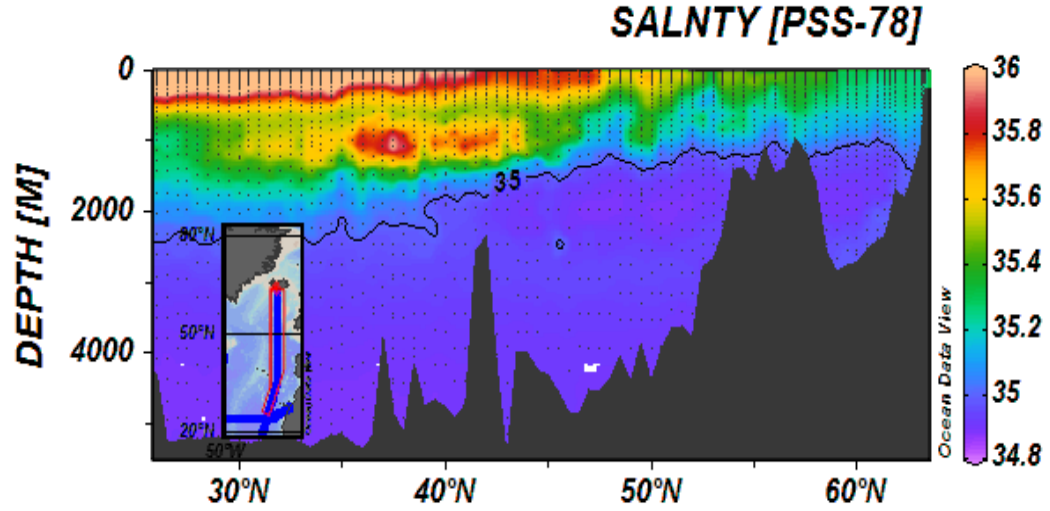
Elevated DOC values in the deep Arctic

Rob Letscher, Andrew Margolin, Bill Smethie et al.

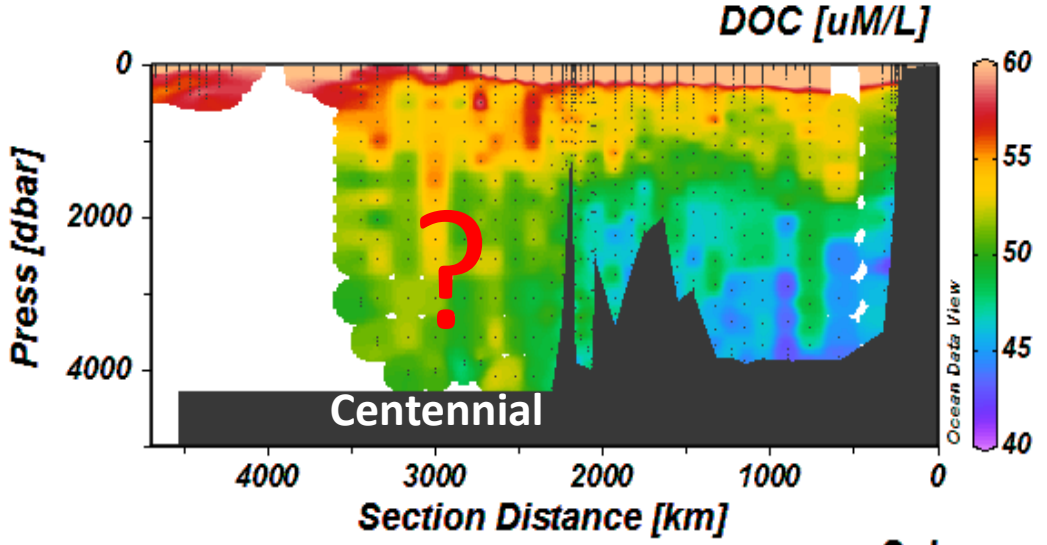
Hansell cont.

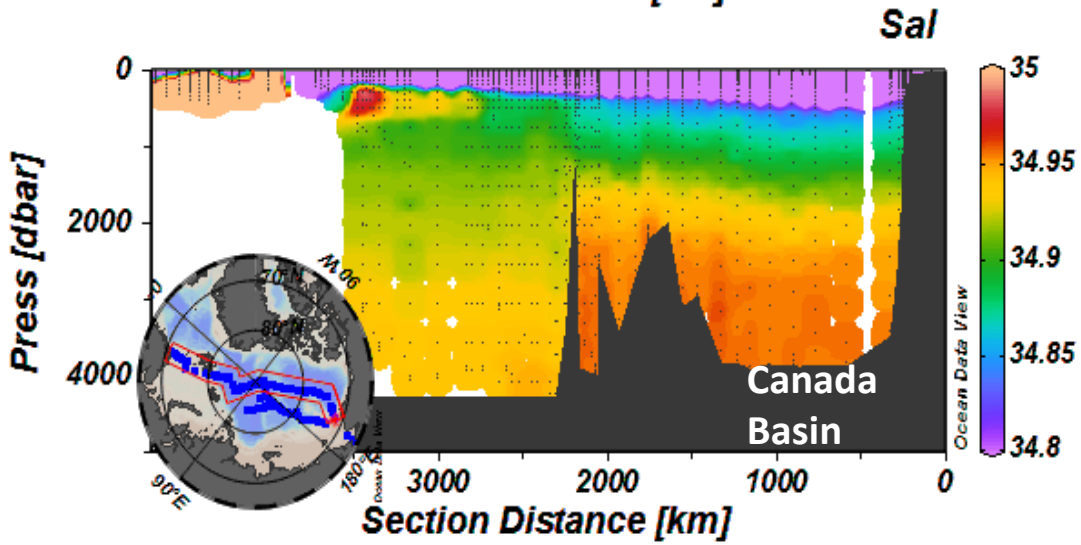
Atlantic Ocean



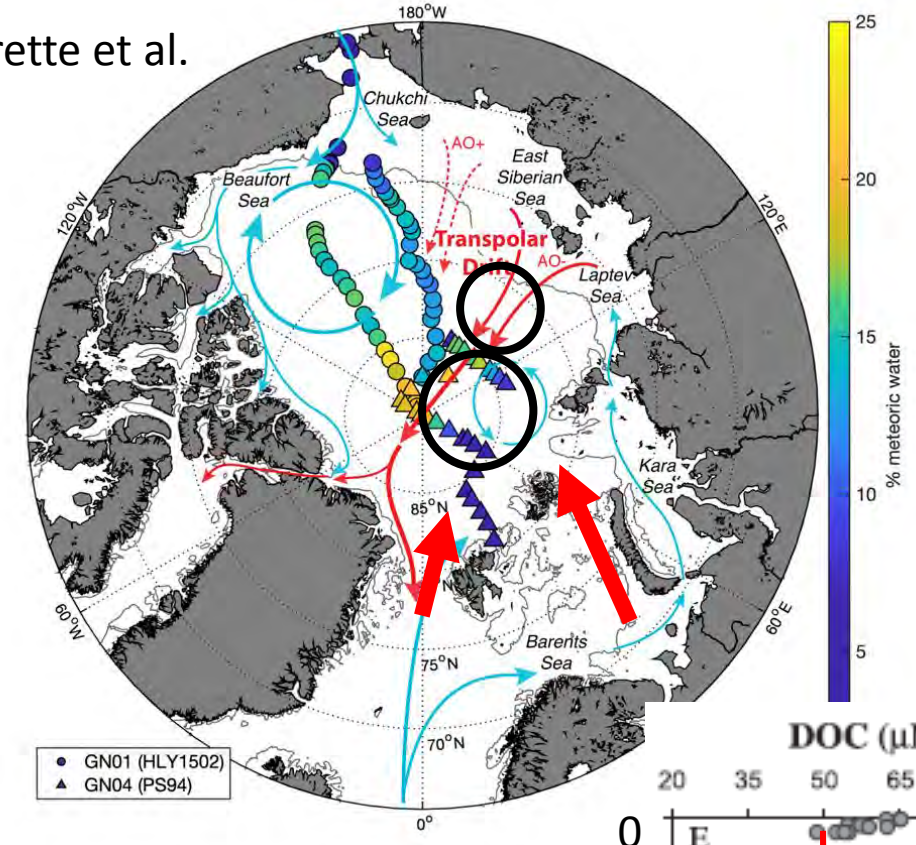


Arctic Ocean





Charette et al.



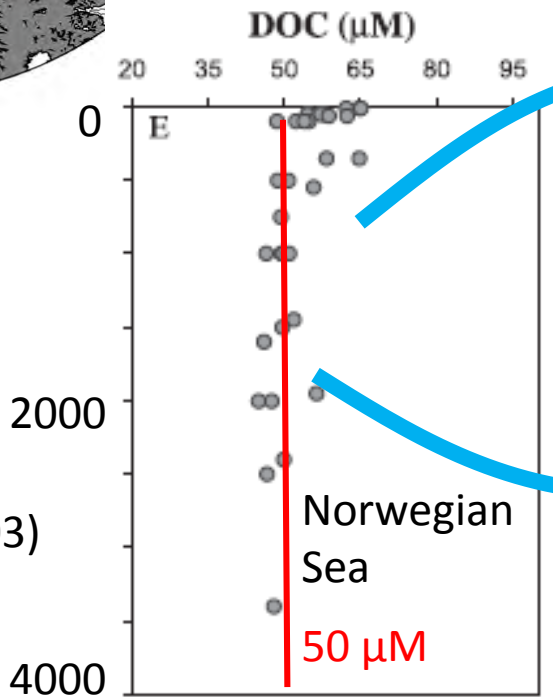
Potential sources of carbon:

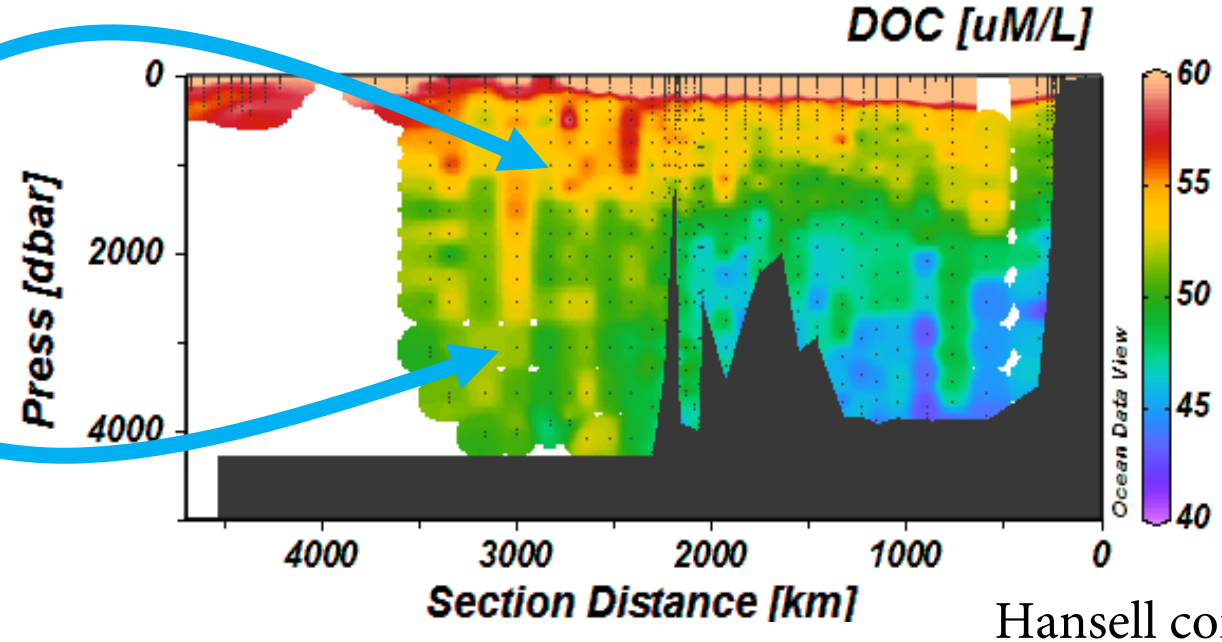
Problems

1) Imported from the GIN Seas — *Preservation*
2) Terrigenous signal from continents (Santa Anna Trough outflow) — *Isotopes; Preservation*
3) Terrigenous particulates sinking from the TPD, converted to DOC — *Absent in deep Makarov*
4) Export of marine particulates, converted to DOC — *Modest export*

Sources?
Preservation?

Amon et al (2003)





Hansell cont.