

# **N production and cycling**

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**Project goals:** Constrain the flux and fate of organic matter as well as the recycling and removal of fixed nitrogen on the eastern Bering Sea shelf using both purposeful tracers of nitrogen productivity as well as an analysis of the natural abundance of major nitrogen pools.

Spring long cruise - KS; MP +1?

Summer cruise - RS; DB; JG

# Matrix of field work - N production & cycling

Measurement	Locations/ focus/ frequency	Equipment/ water volumes	Responsible participants
New (nitrate) and regenerated (ammonium and urea) productivity + community composition	Major physical regions/ 15-20 stns.	CTD/ 5-12 L/ depth surface 50m; + on-deck incubators	RS/ DB/ KS/ ML/ B M
$\delta^{15}\text{NO}_3$ & $\delta\text{N}^{18}\text{O}_3$ $\delta^{15}\text{NH}_4$ & $\delta^{15}\text{NO}_2$	Major physical regions – 15 stns.	CTD/ 100 mL/ depth – full profile	JG/ MP
[DON]; [urea]; $\delta^{15}\text{N}$ -DON	Major physical regions – 15 stns.	CTD/ 200 mL/ depth – full profile	RS/ KS/ JG/ MP
$\delta^{15}\text{N}$ -PON; PCN	Major physical regions – 15-20 stns.	CTD/ 4 L/ depth – full profile	RS/ DB/ ML/ BM
Ice core profiles of $\delta^{15}\text{N}$ pools; PCN; [urea]	Several ice stations	Ice cores/ 200 mL/ depth	MP/ JG/ KS/ DB
Underway $\text{O}_2$ / Ar	continuous	Ship seawater system	MP/ JG/ BM/ ML
DNA samples	Selected physical regimes/ 5-7 stns.	CTD/ 10 L/ depth – 2 depths	RS/ DB/ KS
Net haul samples; sediment samples	Selected stns. (15?)	Net hauls – 500 mL; multicores - sections	JG/ MP

# Incubators (partial list)

