

Using stable isotopes and isotopomers to resolve N_2O cycling in the Western Arctic

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- Greenhouse gas, stratospheric ozone destruction
- Coastal regions poorly quantified: high productivity, N_2O hotspots

What are the sources of water-column N_2O ?

Is the Western Arctic a net source of N_2O to the atmosphere?



Credit: Cory Mendenhall

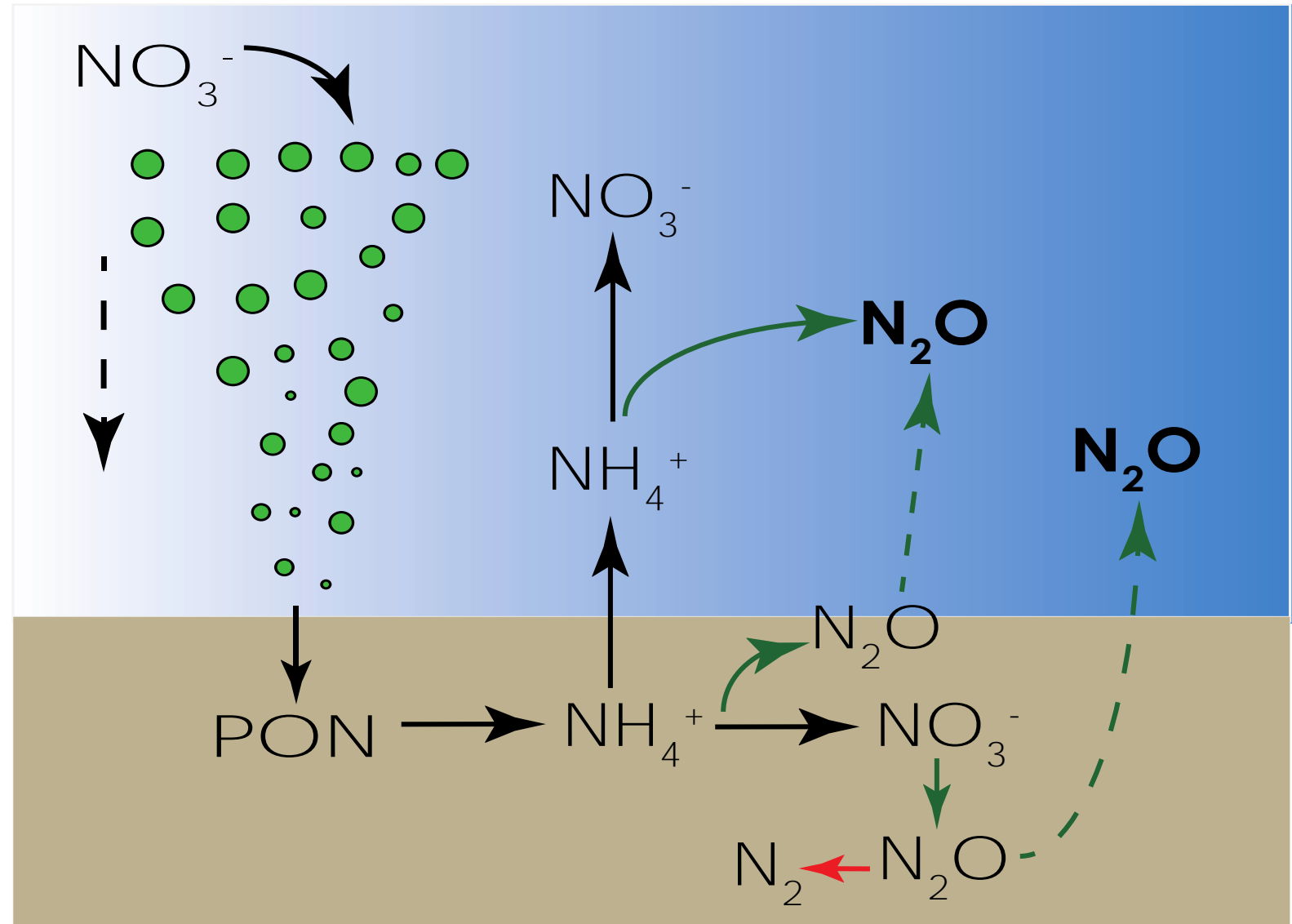


Credit: Katie Krupp

N₂O sources in the Western Arctic

What are N₂O sources?

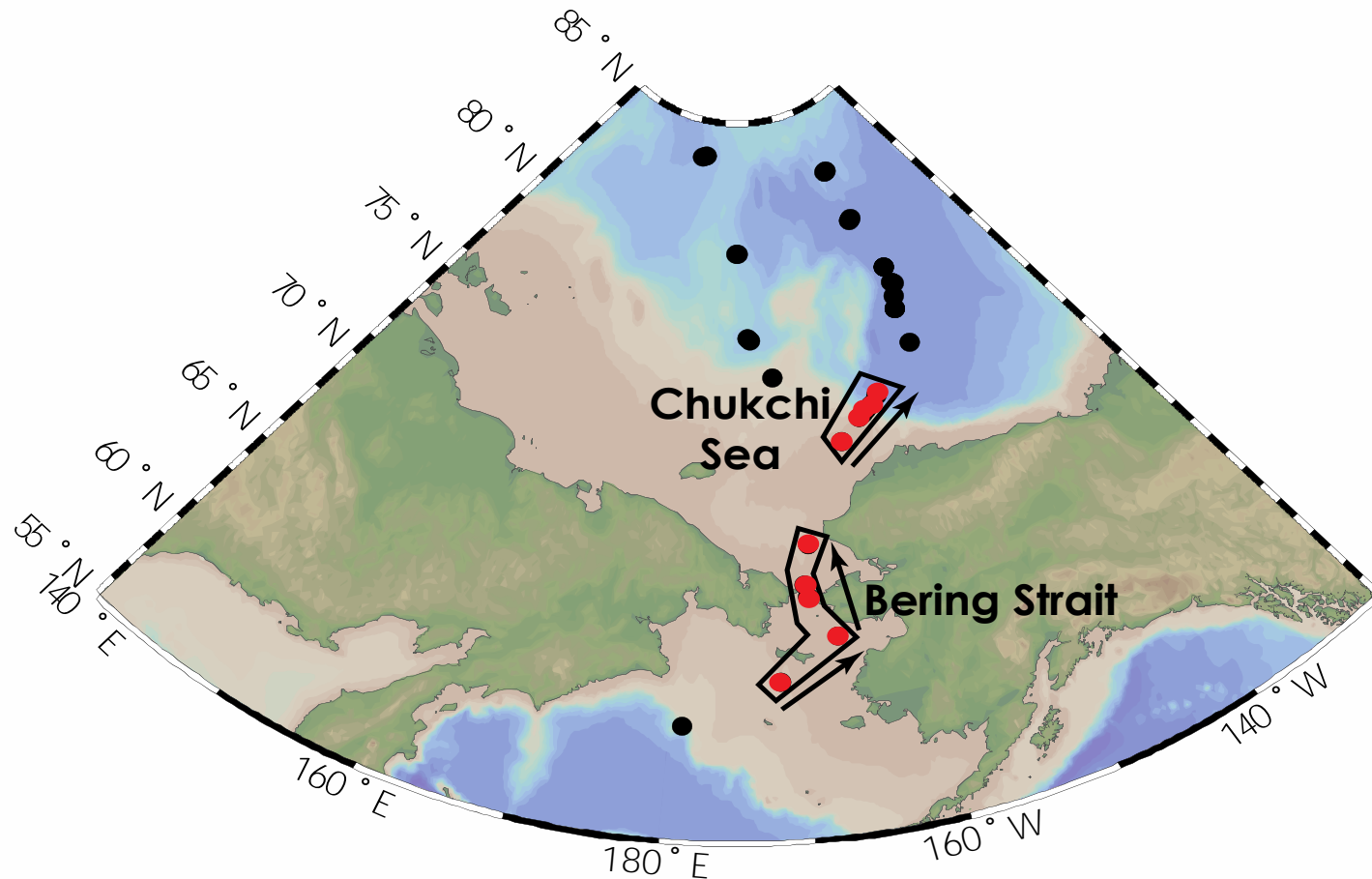
- 1) Water column or benthic nitrification
 - Nitrifier-denitrification
 - Hydroxylamine oxidation
- 2) Incomplete sedimentary denitrification



Sampling in the Western Arctic

US GEOTRACES, Aug-Oct 2015

(N₂O concentrations, stable isotopes and isotopomers)



Credit: Croy Carlin

Water-column N₂O accumulation

