Eutrofiering og klimagasser

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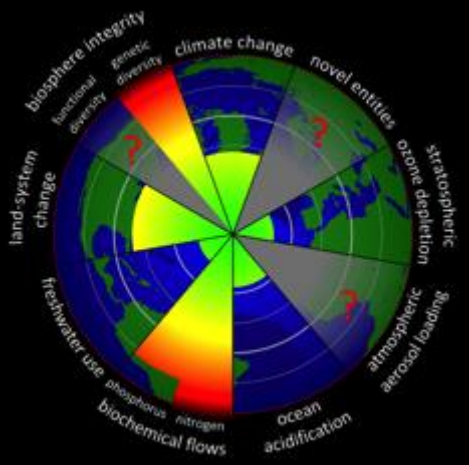
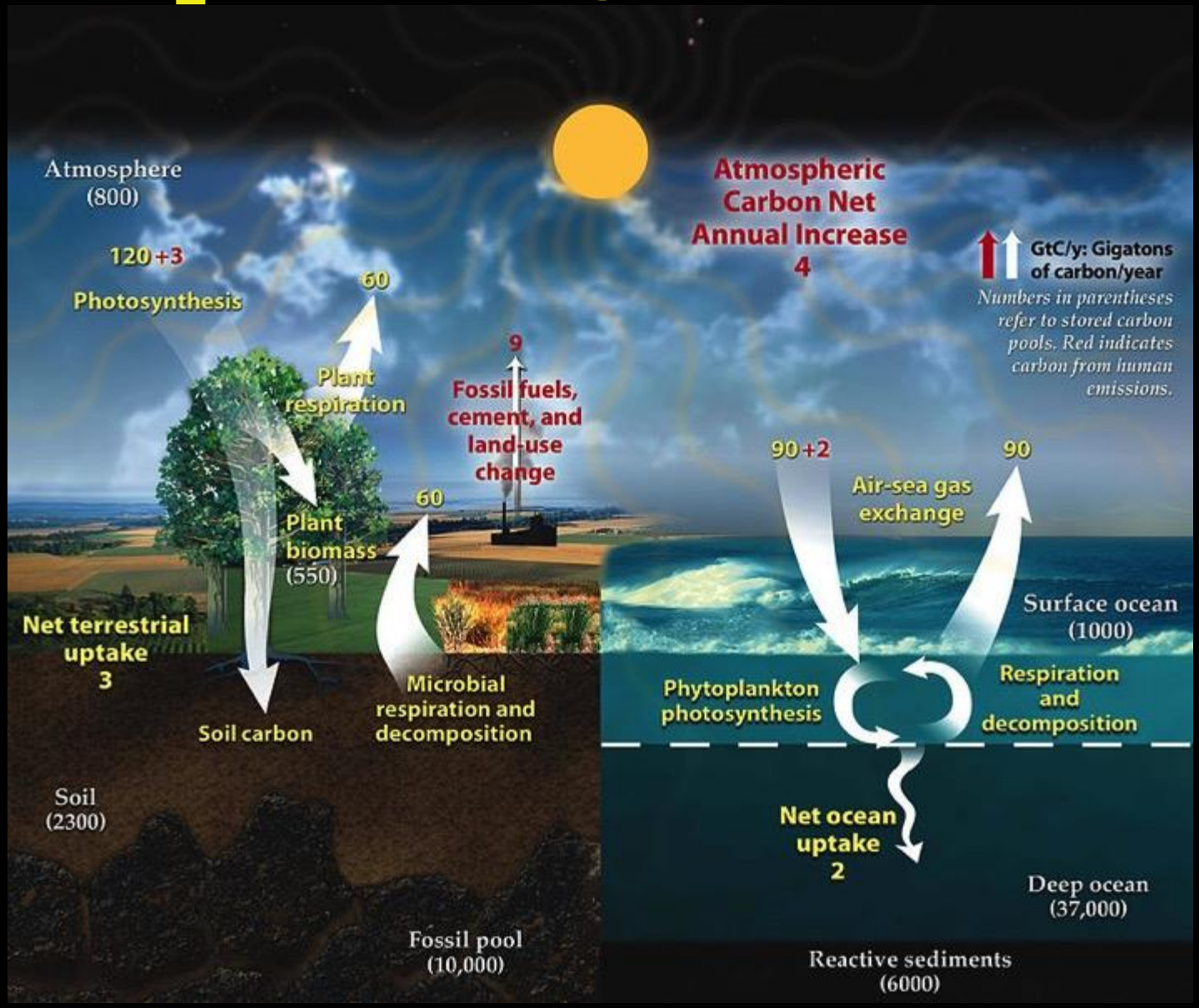
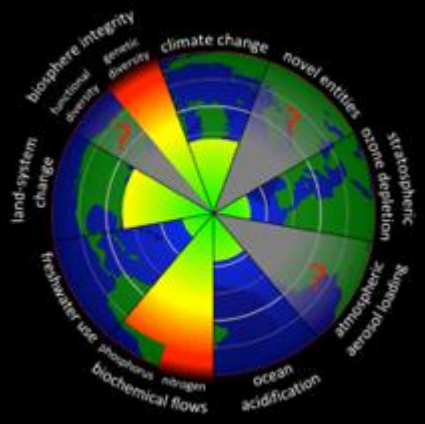


Antropocen – en ny tid

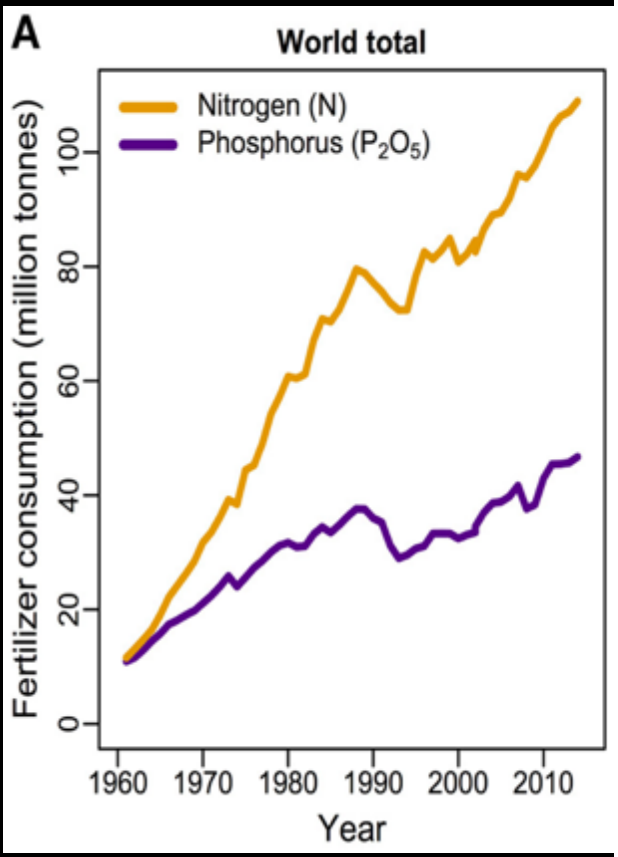
- Atmosfærens CO_2 har passert 400 ppm, rest-kapasiteten opp til 1.5 ^{o}C = 580 Gt CO_2 = < 10 år
- Verdens dyrebestander er halvert i løpet av 40 år
  Vektforhold mellom terrestre dyr: mennesker 36%, husdyr: 60%, ville dyr: 4%
- Verdens befolkning øker til > 10 mrd?
- Global footprint: årskapasiteten brukt opp 29.07

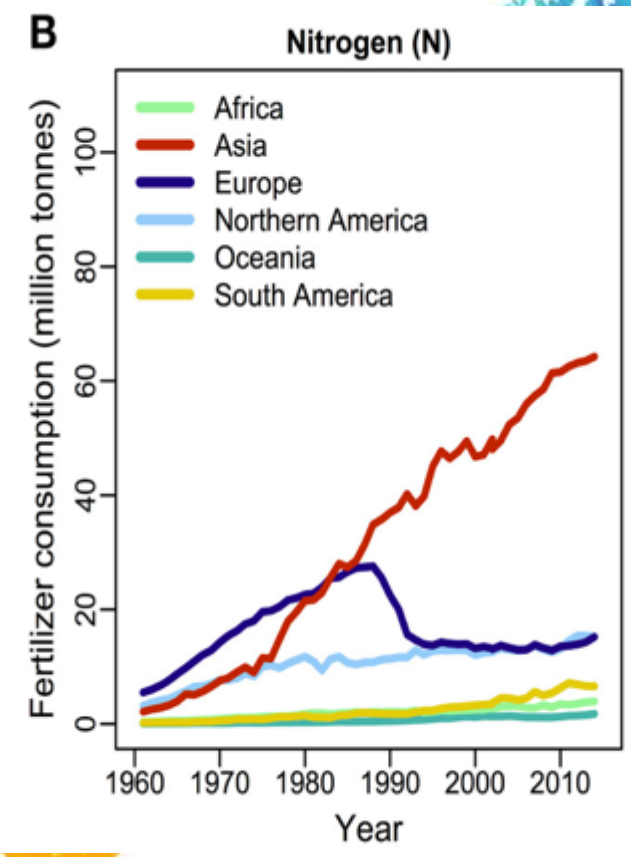
CO_2, klima og økosystemer

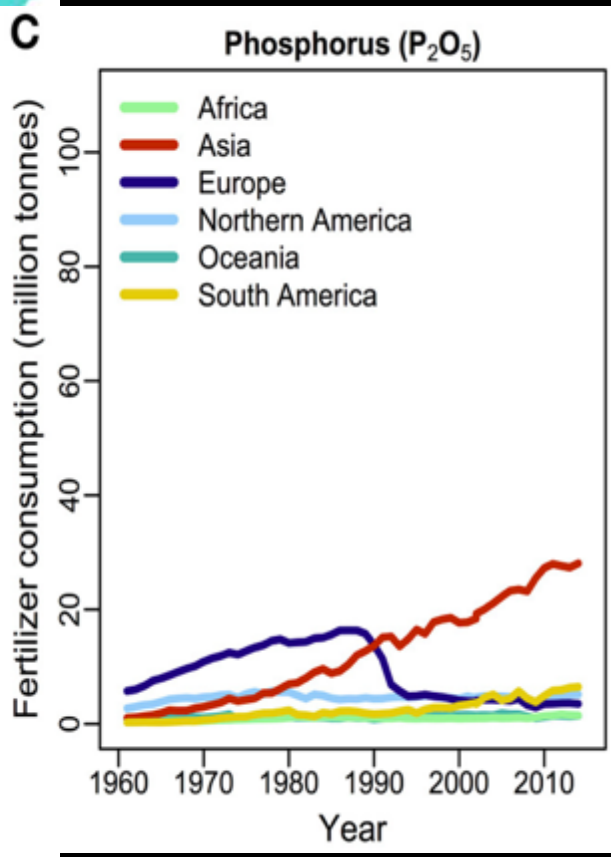




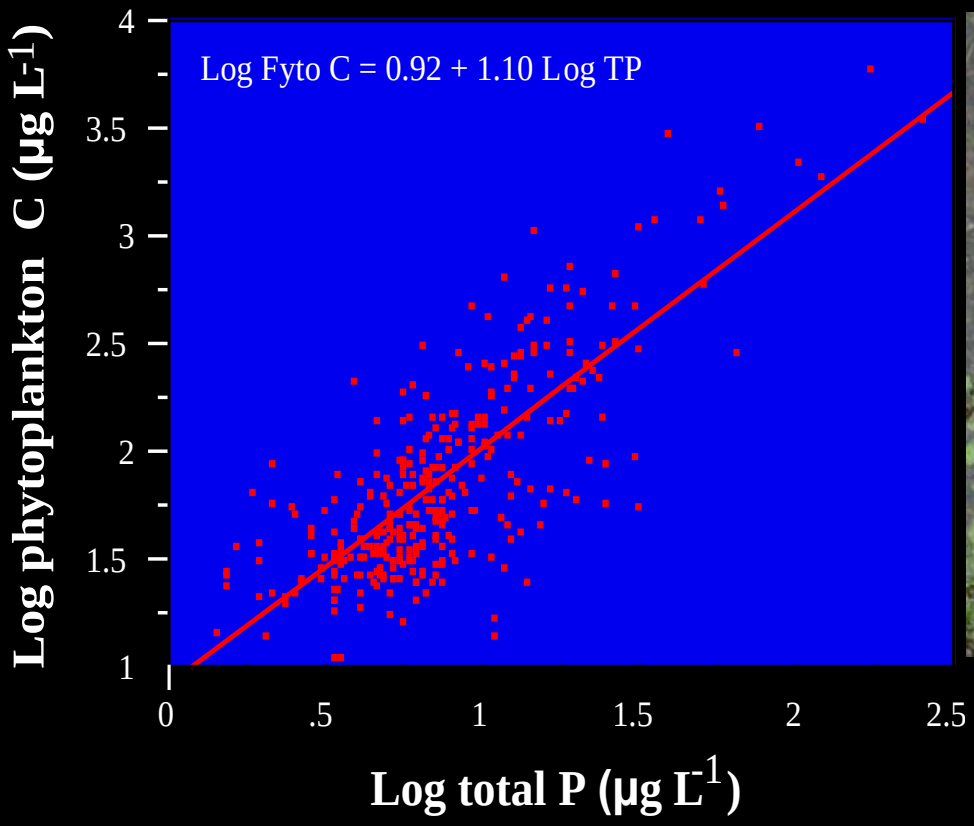
Et storskala gjødslingseksperiment





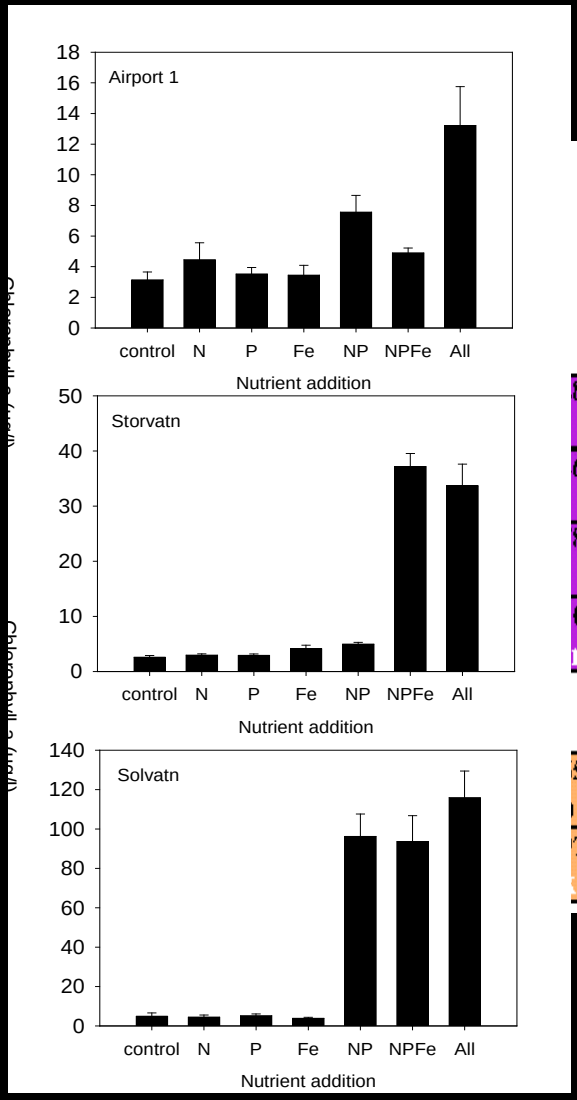


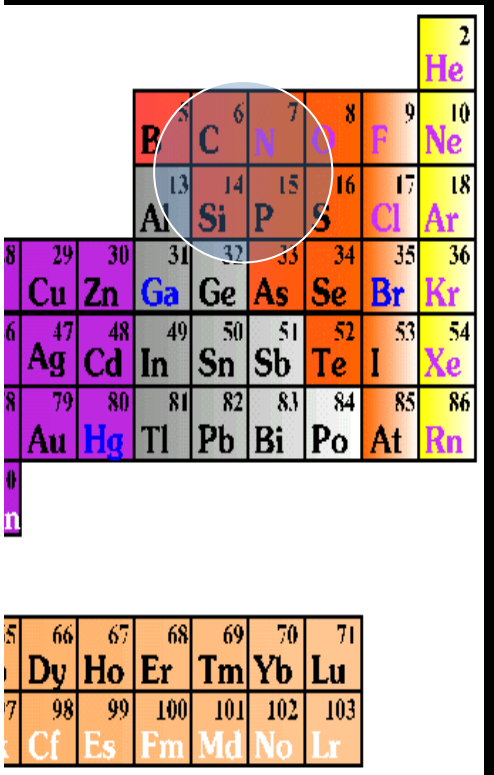
Eutrofiering…



Hva begrenser vekst?

- Lys, vann, næringssalter
- Liebigs minimumsprinsipp
- Mikro- og makronæringsstoffer
- Ofte N-begrensing på land og i hav, P i ferskvann
- Hvordan avgjøre elementbegrensing?
- Kvantitet versus kvalitet





ECOLOGY LETTERS

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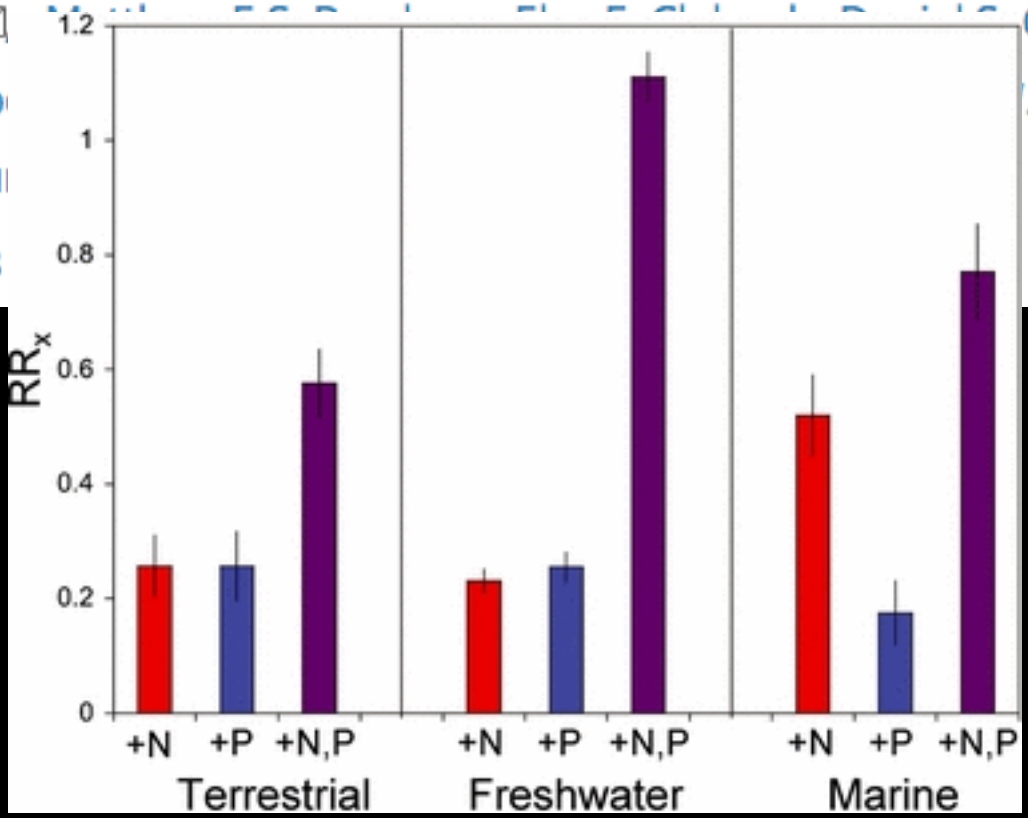
Global analysis of nitrogen and phosphorus limitation of primary producers in freshwater, marine and terrestrial ecosystems

James J. Elser ✉ [illegible] Gruner,

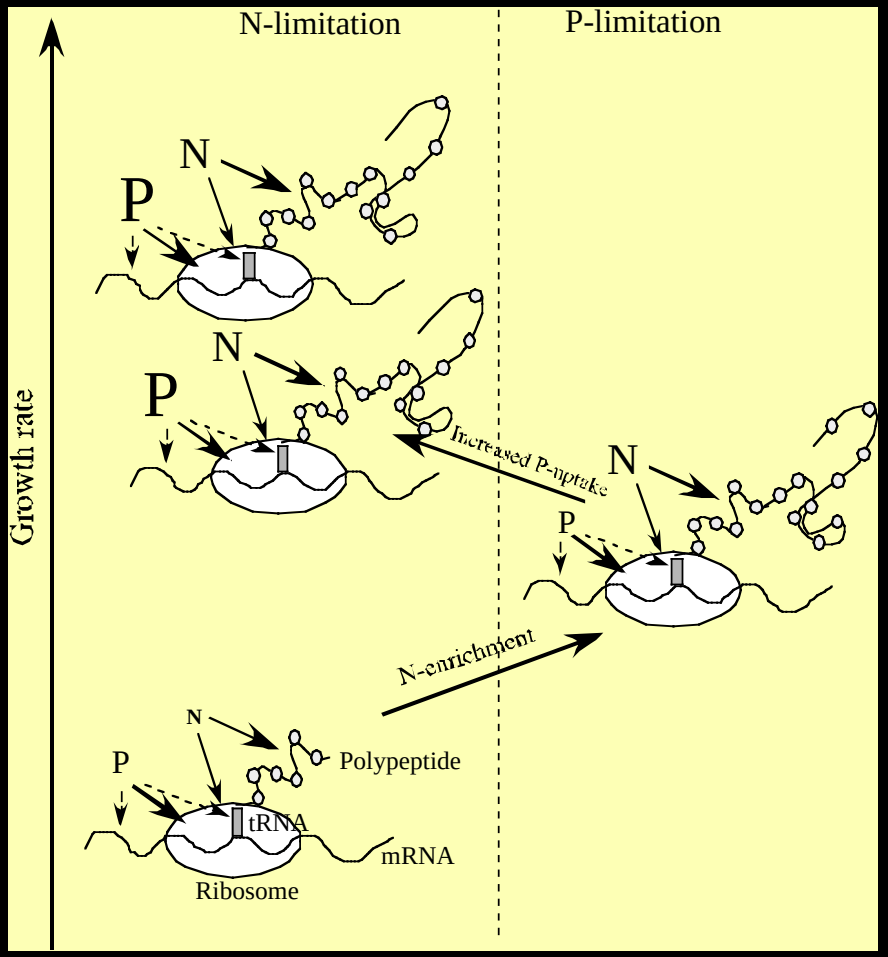
W. Stanley Harp[illegible]. Seabloom,

Jonathan B. Shu[illegible]

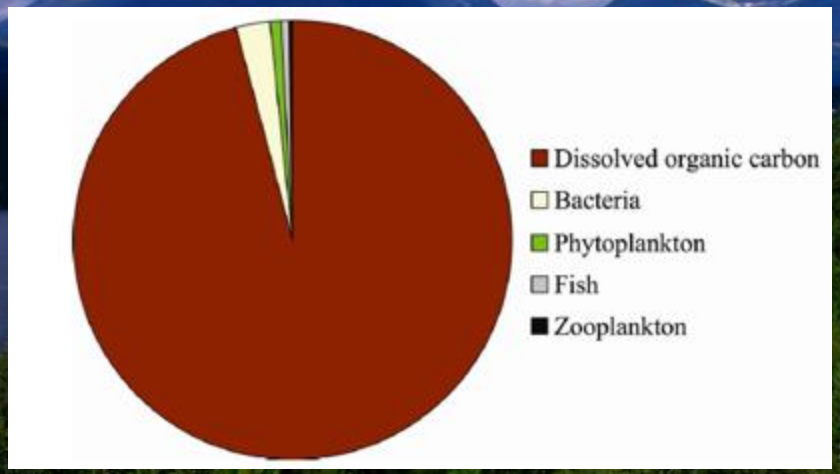
First published: 8



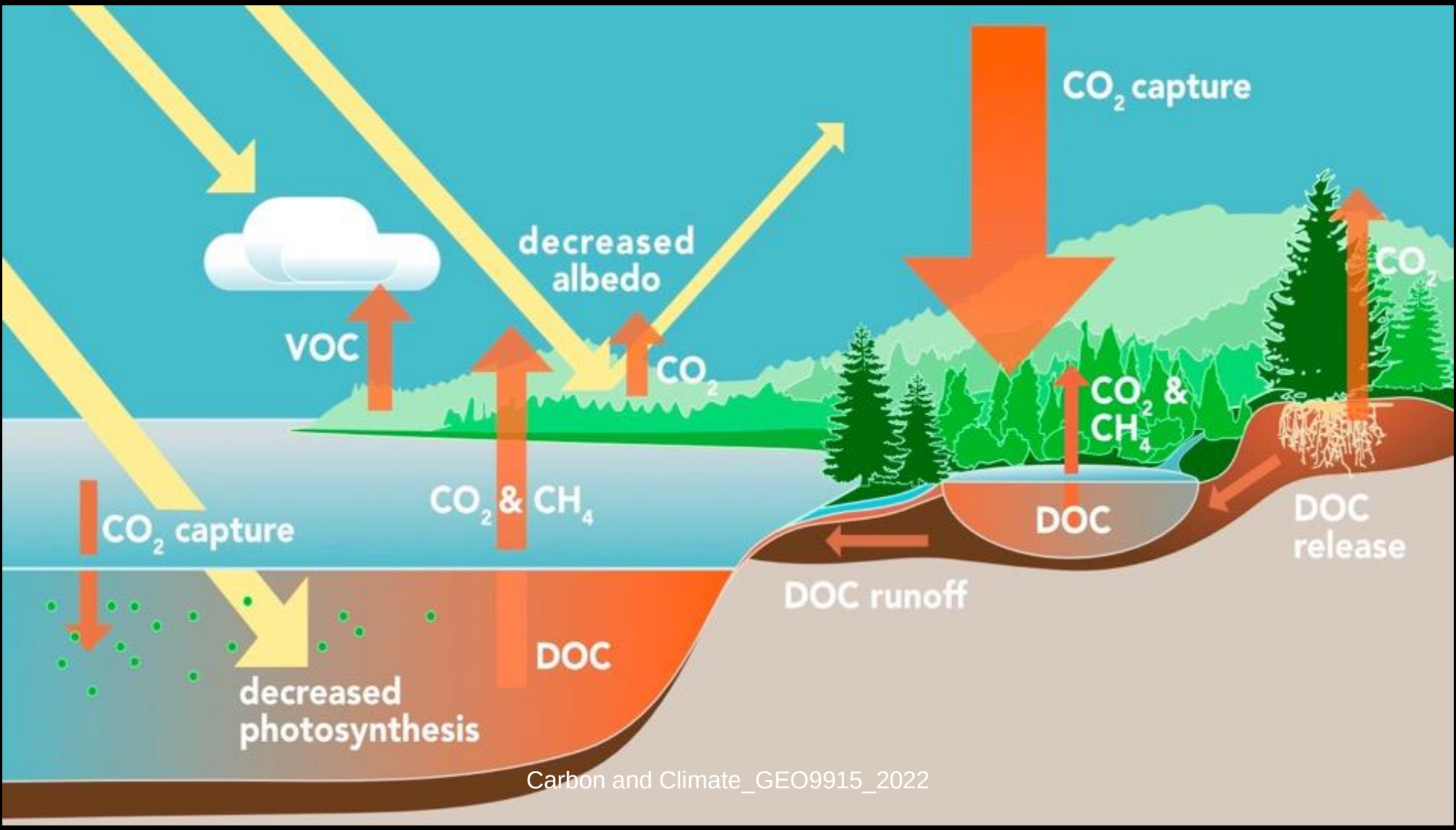
Hvorfor er N og P så tett koblet?



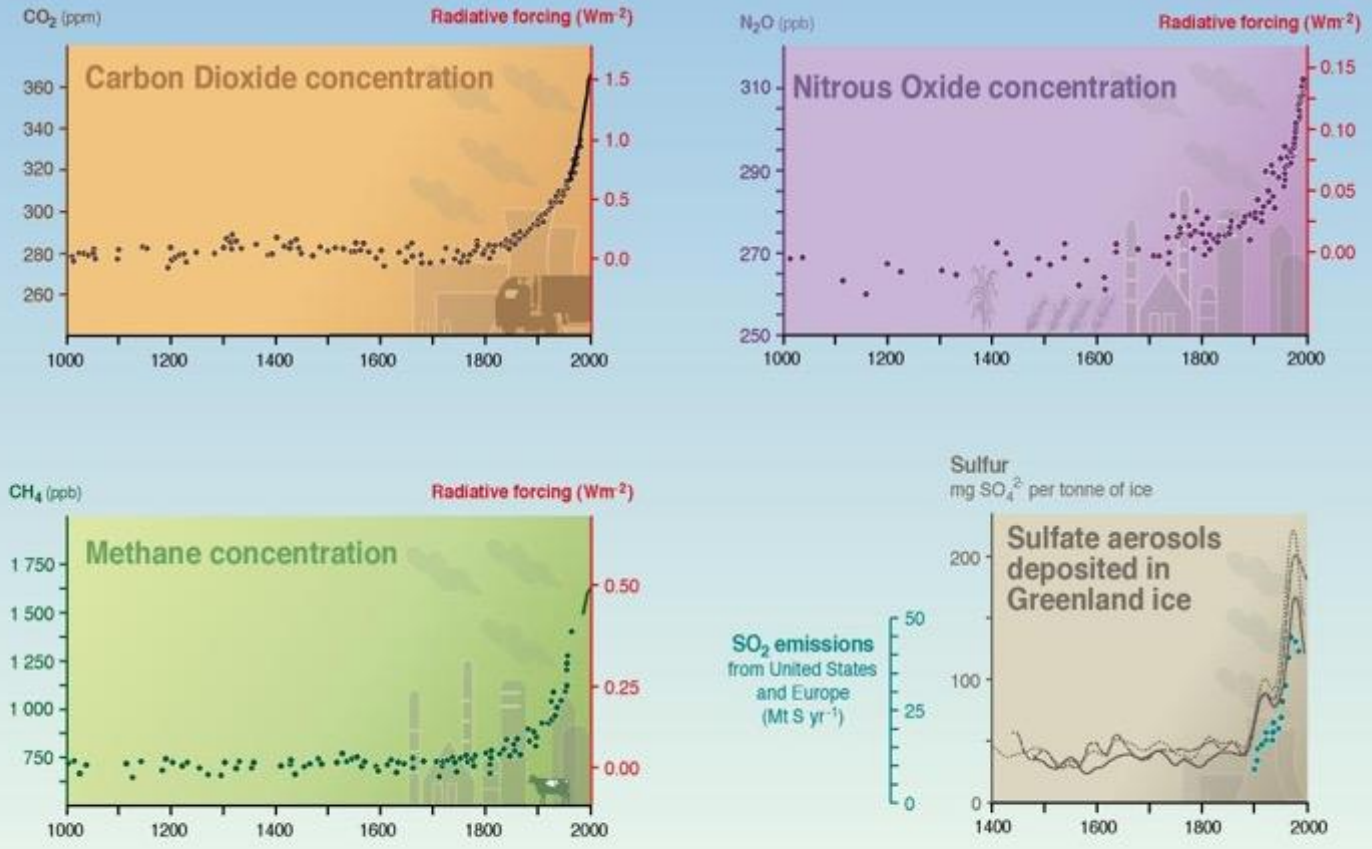
Hva med karbon?



Koblinger og tilbakekoblinger



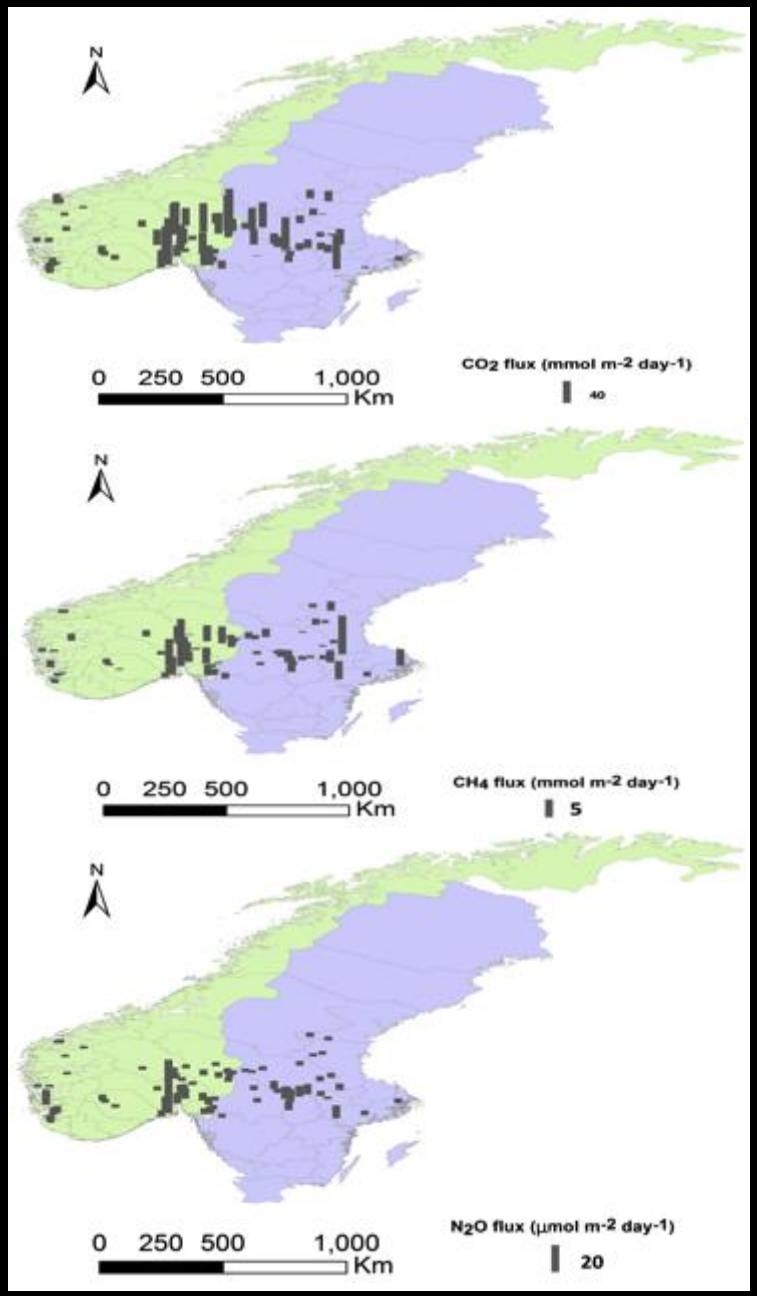
Indicators of the human influence on the atmosphere during the Industrial era



SYR - FIGU
WG1 FIGU

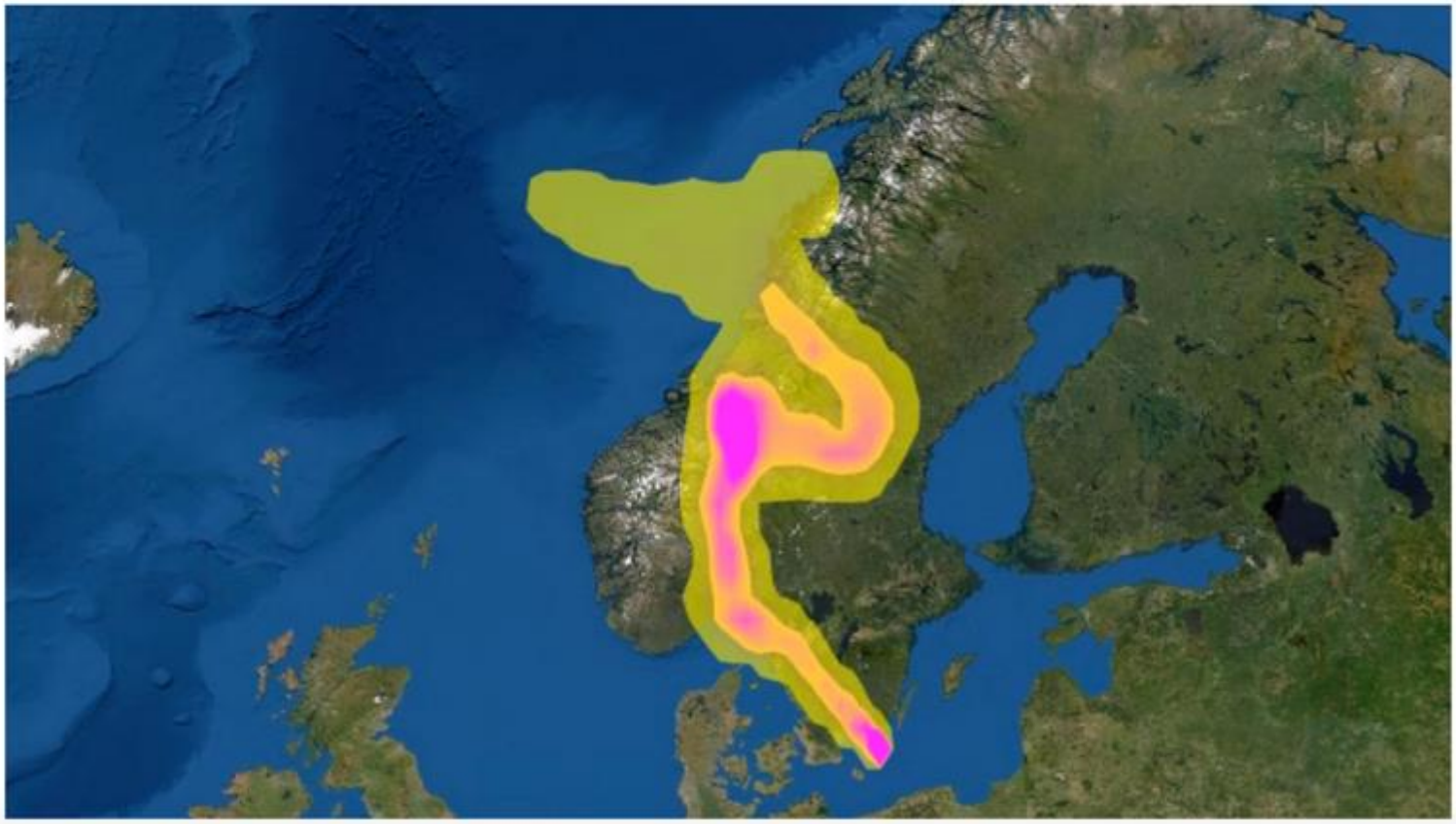
Innsjøer er en betydelig kilde av GHG, påvirkes av TOC, P og N

- TOC (og P) viktigst for CO_2
- P (og TOC) viktigst for CH_4
- N-deponering og N-avrenning viktigst for N_2O



Ny måling viser rekordmykje metan over Noreg

Miljødirektoratet slår alarm om metan-mengdene etter ny måling. Auken har aldri vore høgare frå eit år til eit anna.



Miljødirektoratet

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Journalist

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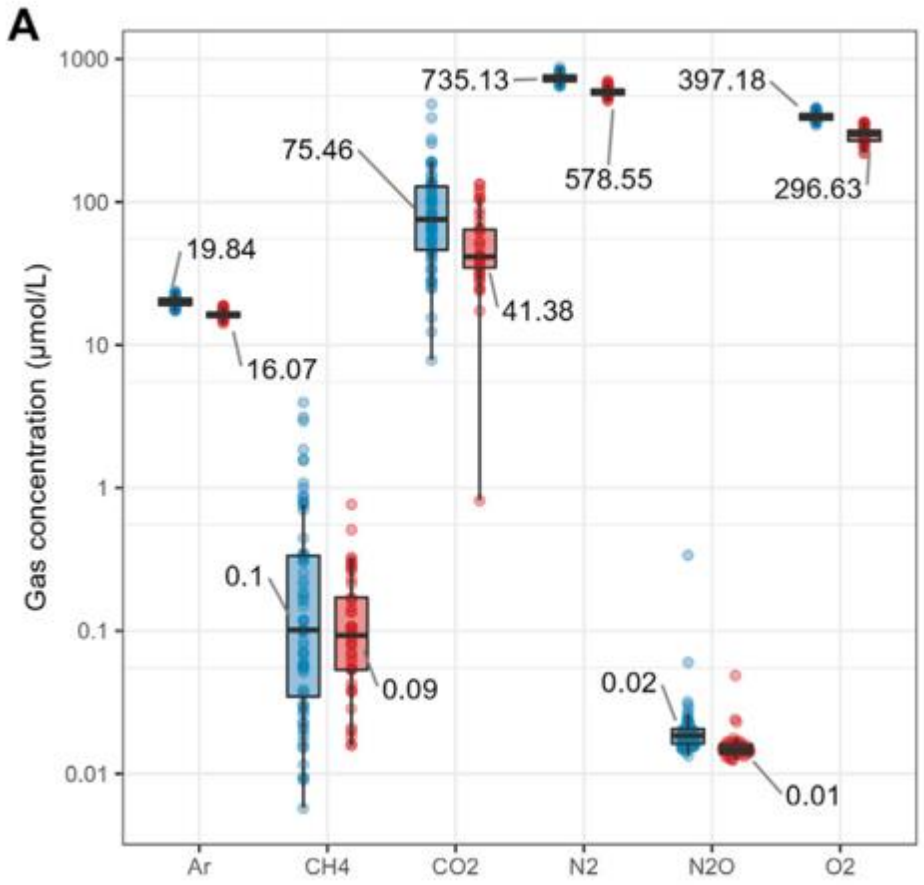
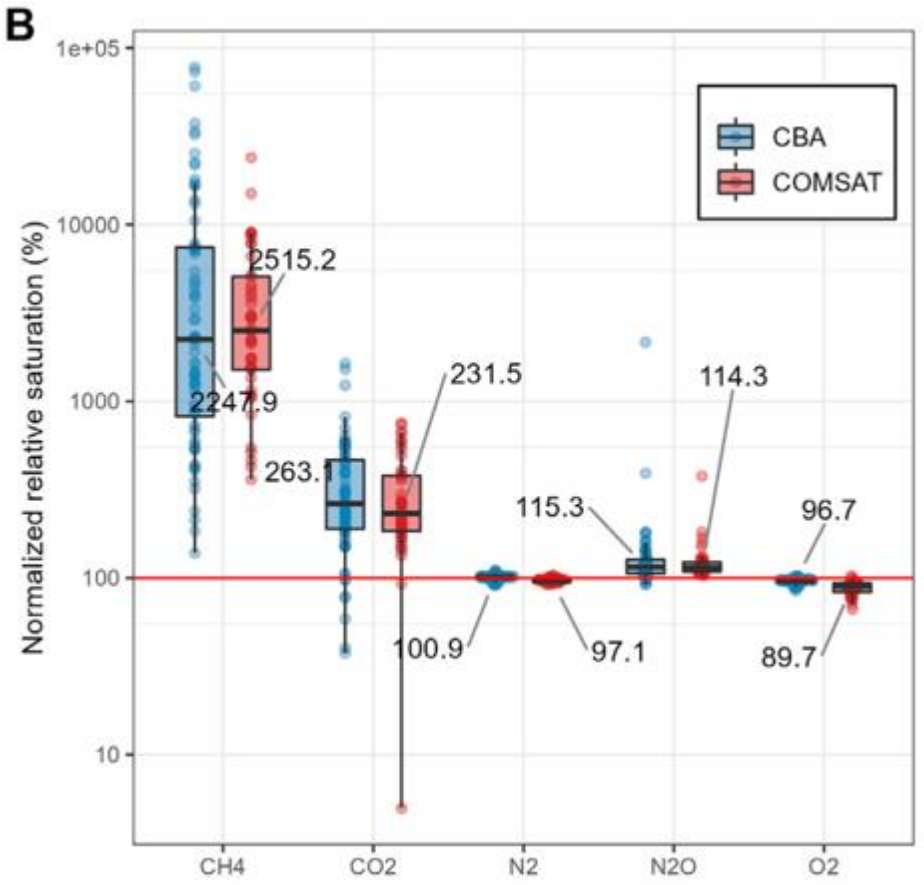
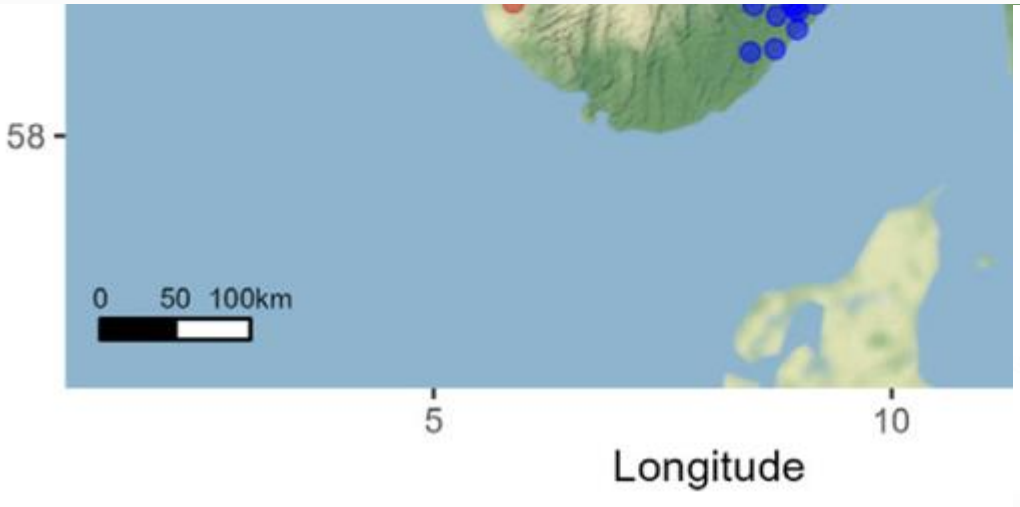


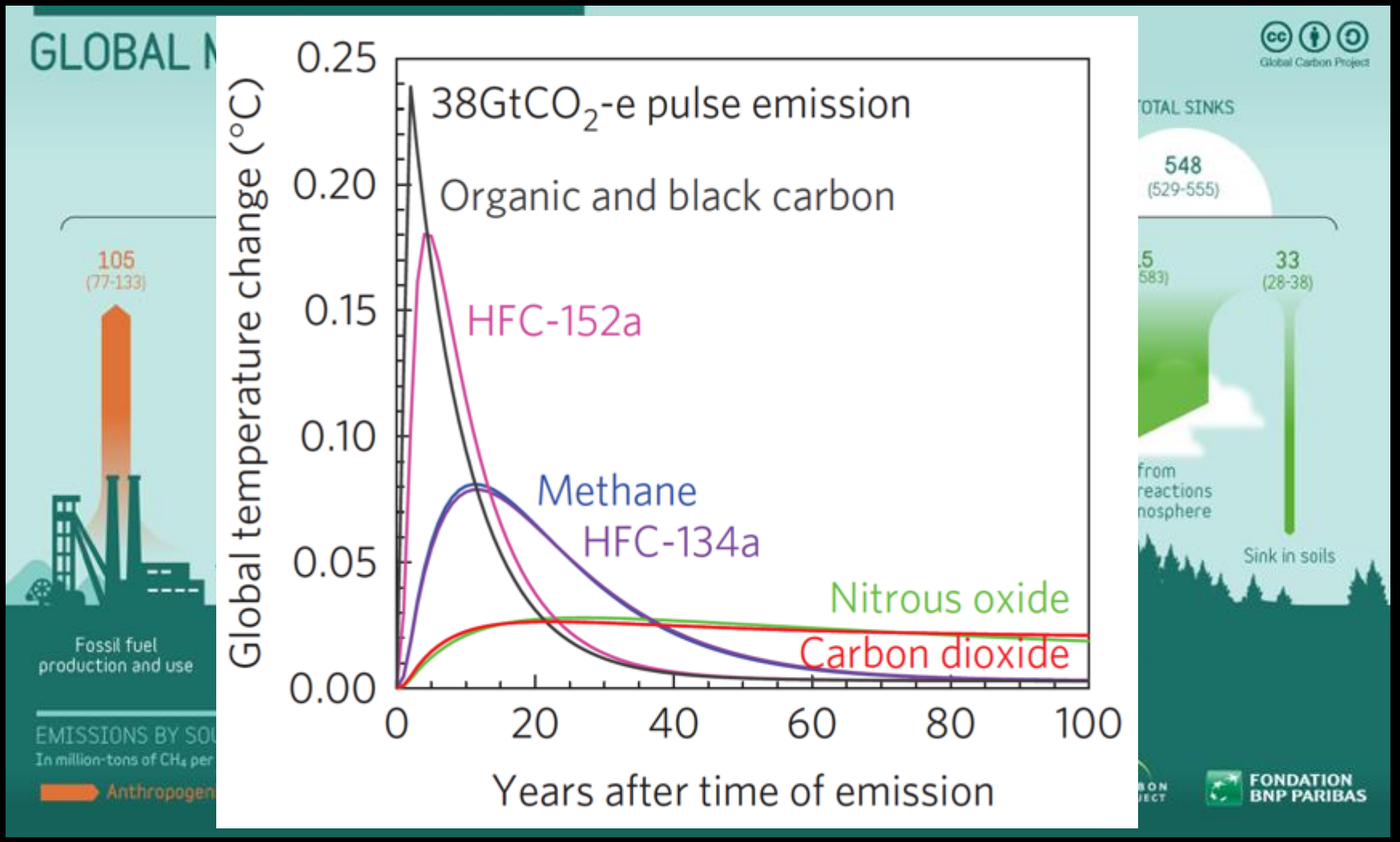




Catchment properties as predictors of greenhouse gas concentrations across a gradient of boreal lakes

Nicolas Valiente[1,2], Alexander Eiler[1], Lina Allesson[1], Tom Andersen[1], François Clayer[3], Camille Crapart[4], Peter Dörsch[5], Laurent Fontaine[1], Jan Heuschele[1], Rolf D. Vogt[3], Jing Wei[1], Heleen A. de Wit[1,3] and Dag O. Hessen[1*]

Metan – mulighet for rask effekt



… og redusert eutrofiering vil gi et viktig bidrag!