PFAS Fingerprinting in Humans and Wildlife

Biogeochemistry of Global Contaminants
HARVARD

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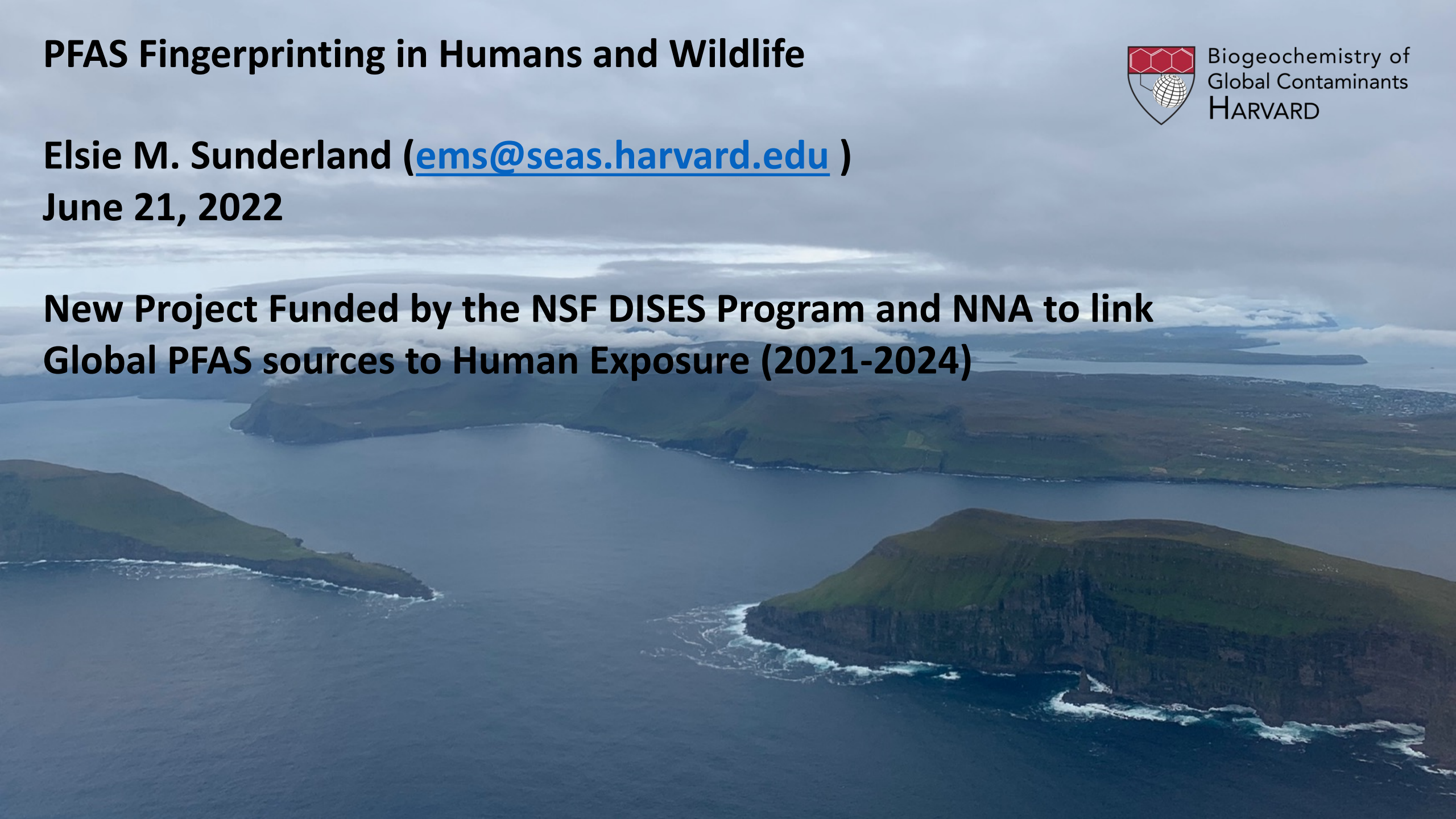
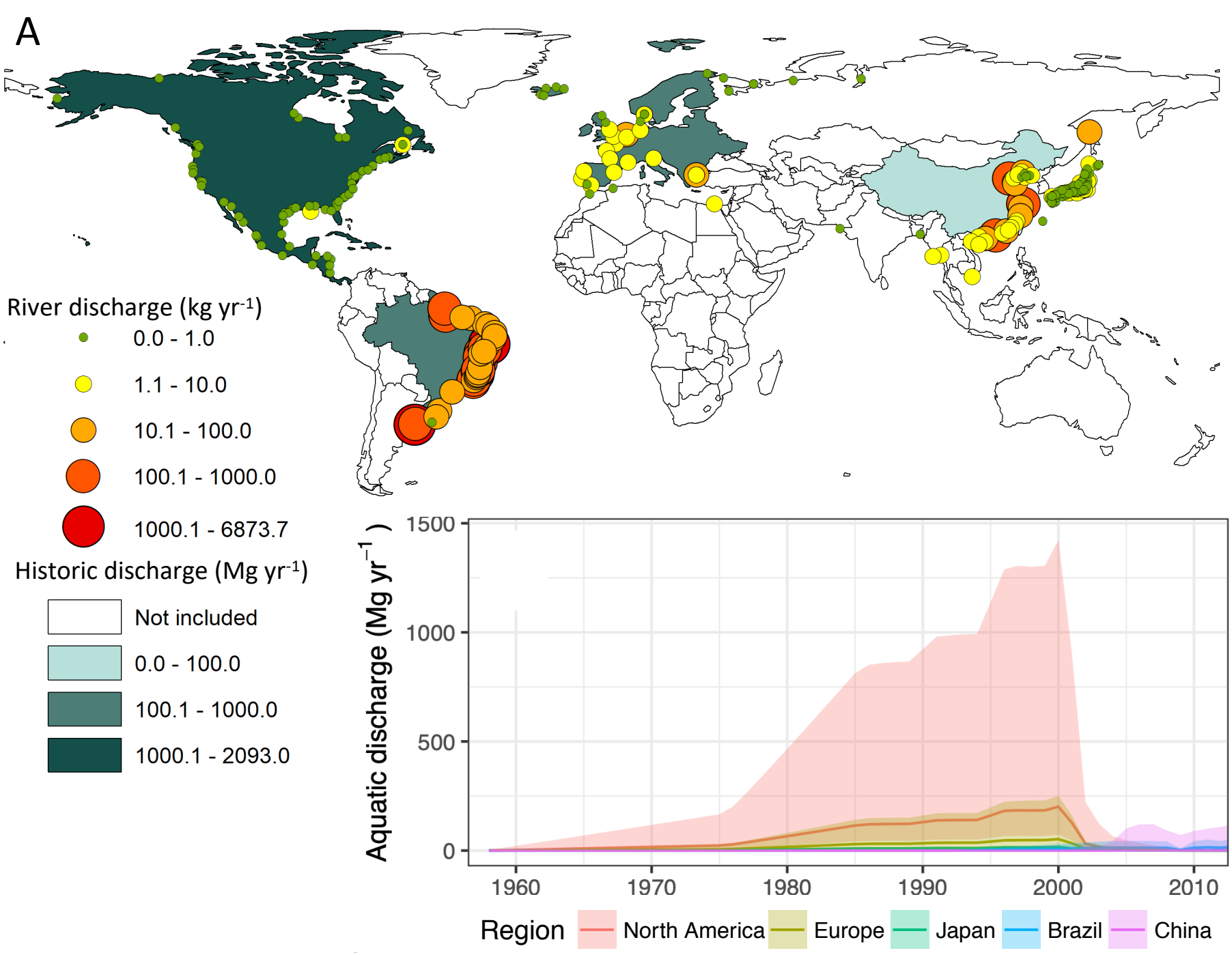
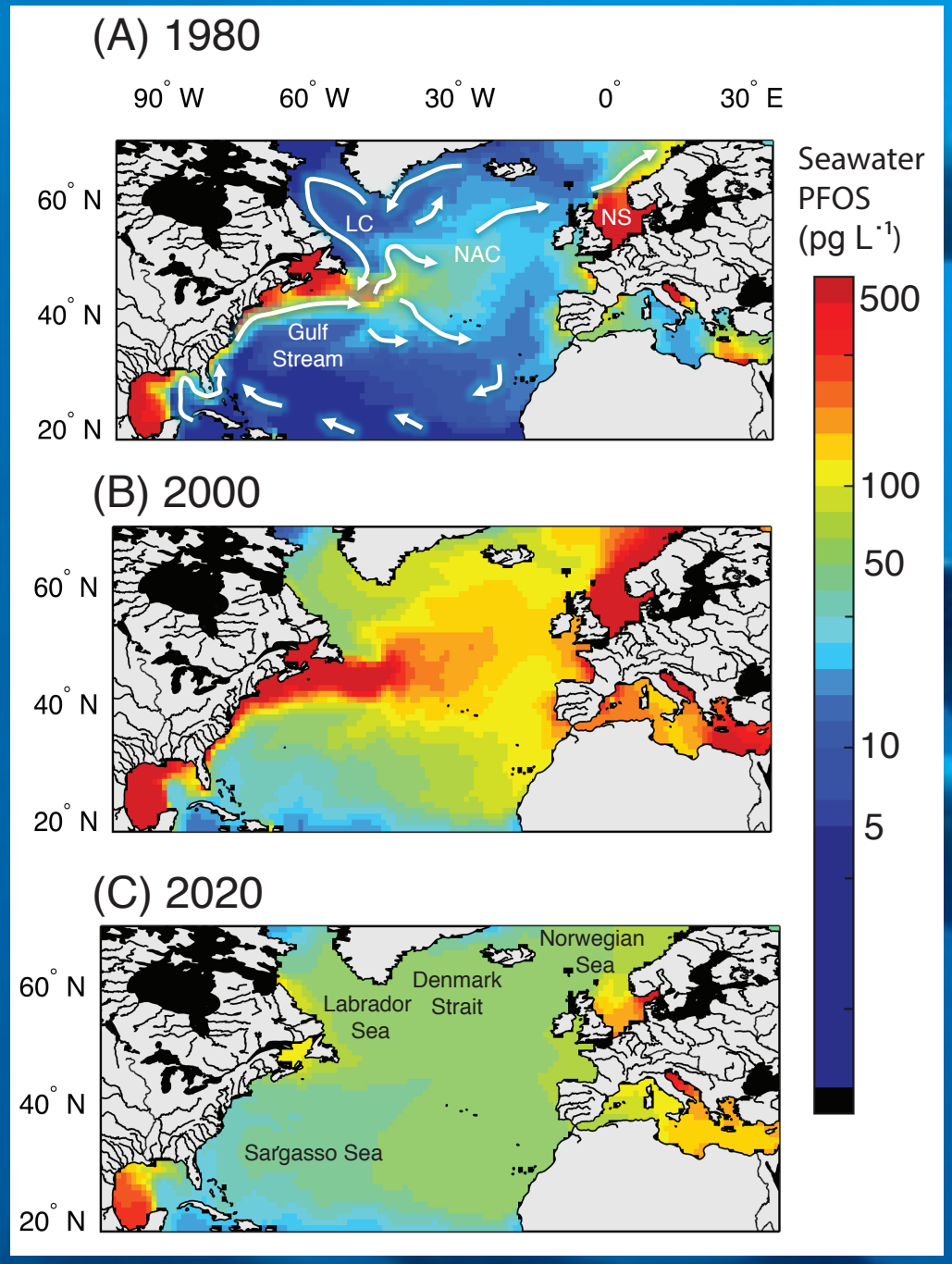
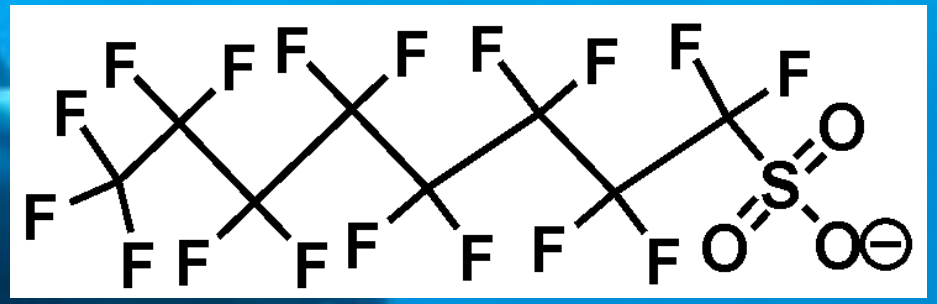
New Project Funded by the NSF DISES Program and NNA to link Global PFAS sources to Human Exposure (2021-2024)



Modeled global PFOS discharges from rivers to the oceans ca. 2010



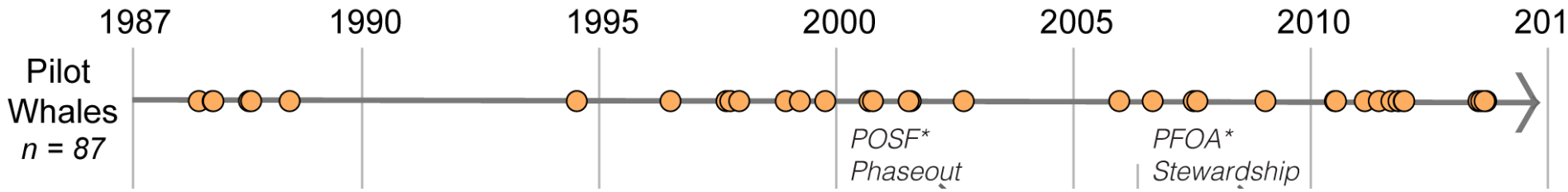




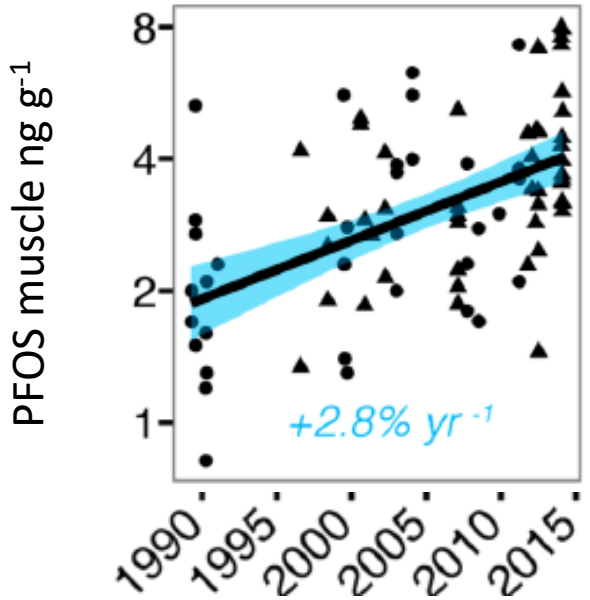
Modeled PFOS in North Atlantic seawater (10 m)

X. Zhang et al., 2017

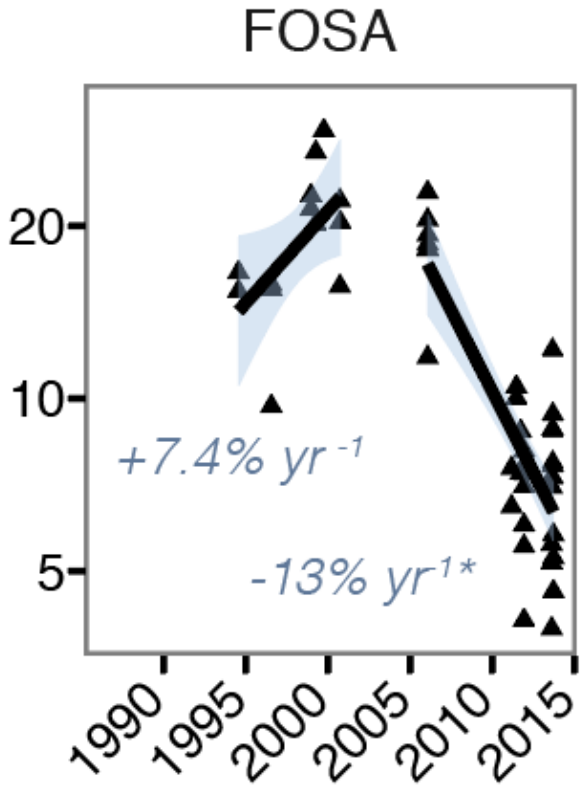
Changing Concentrations of PFAS in Pilot Whales over Time



Dassuncao et al., 2017, ES&T

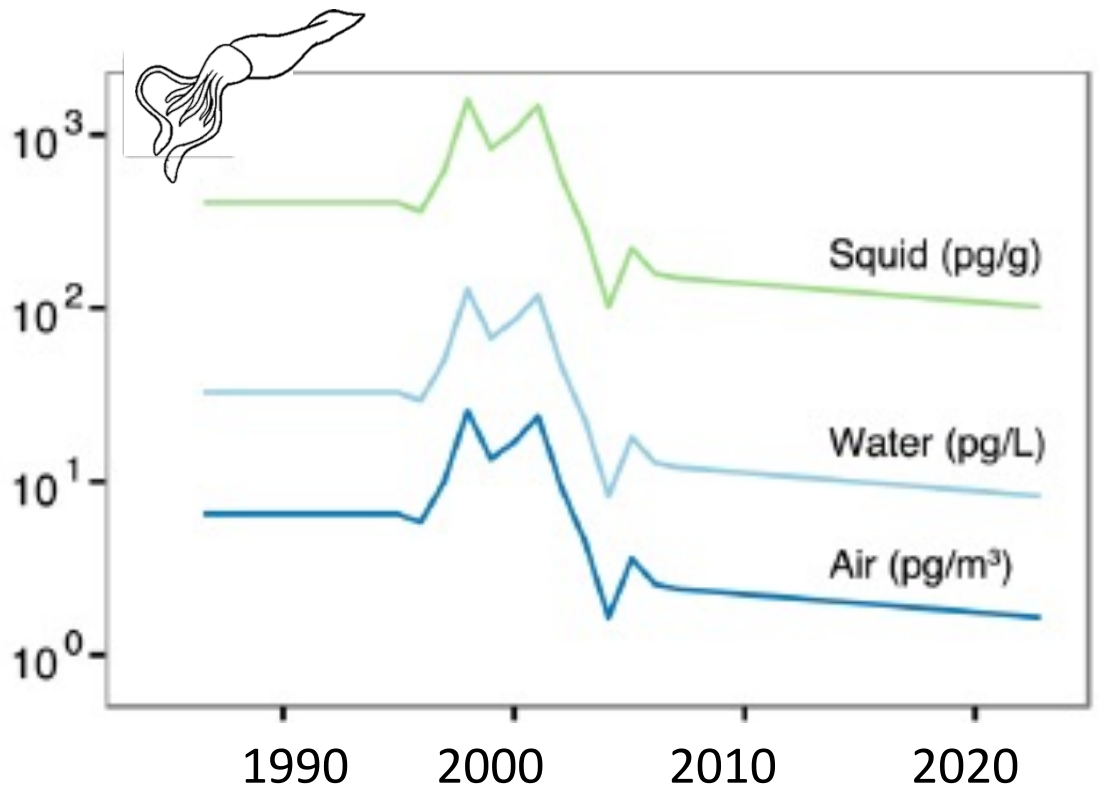


Juvenile males 9-12 years

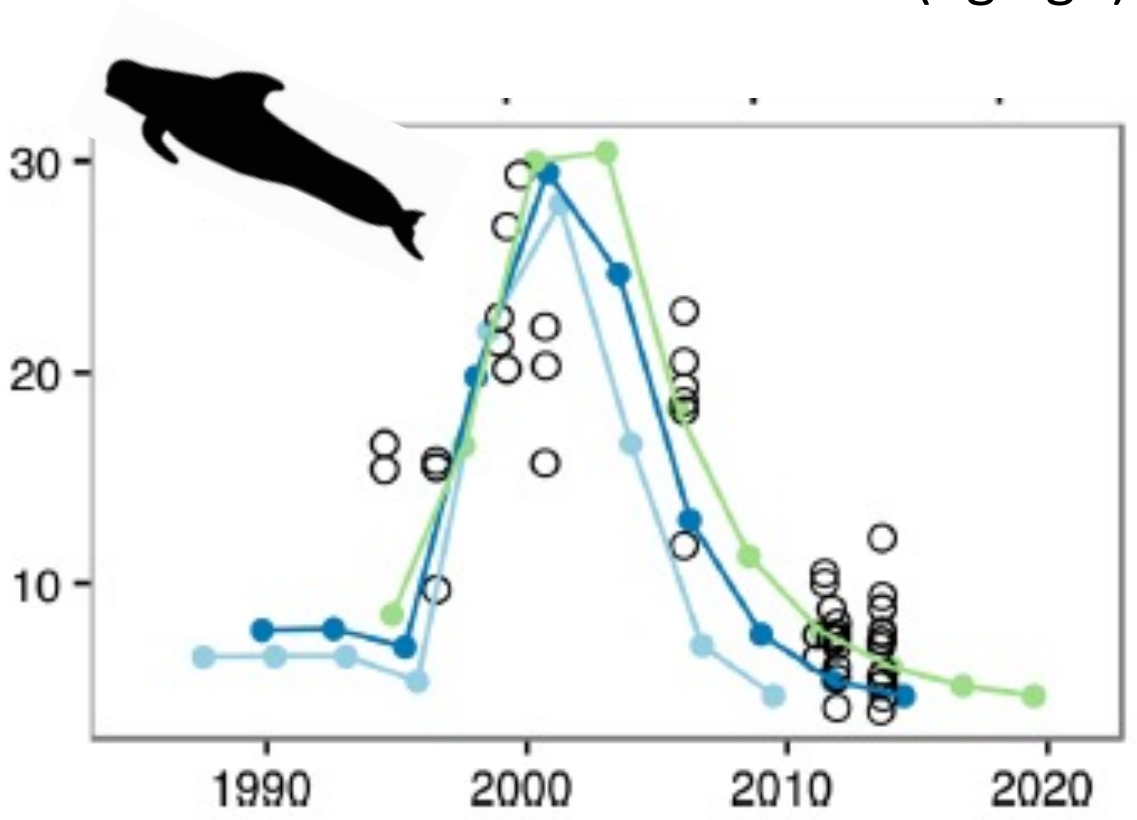


Declining atmospheric FOSA successfully predicts observed changes in pilot whale FOSA concentrations

Environmental Concentration

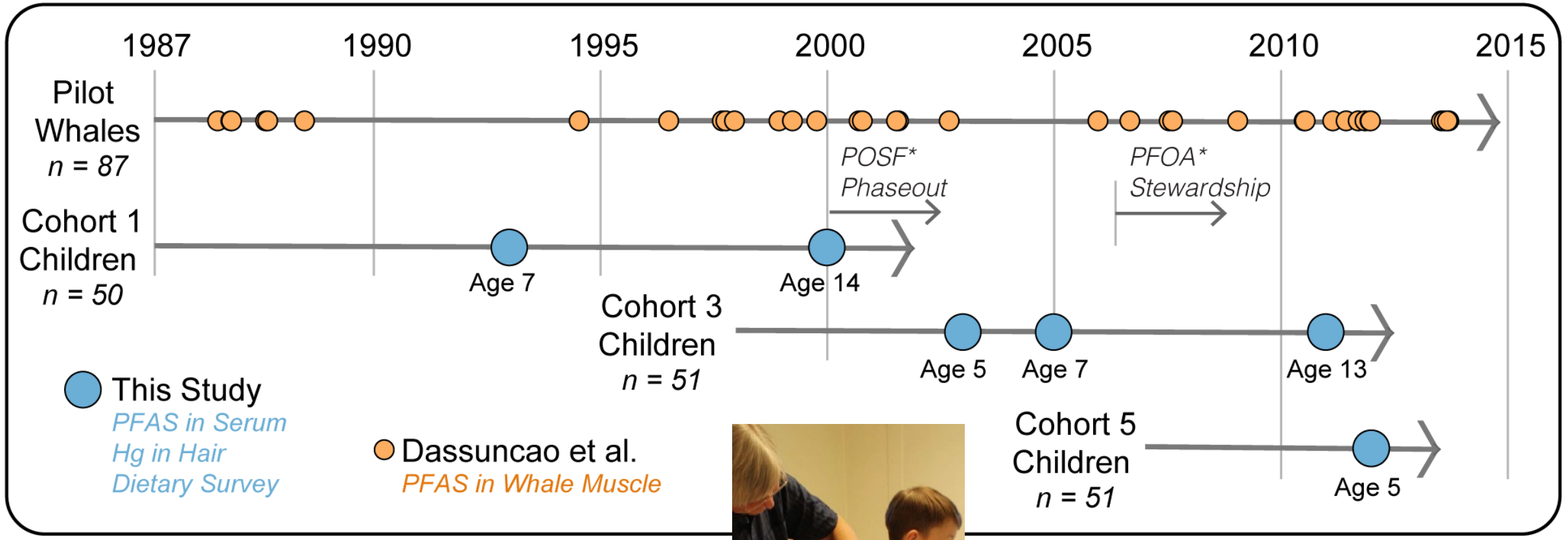


Pilot whale FOSA concentration (ng^{-1} g^{-1})



Dassuncao et al., 2017, ES&T

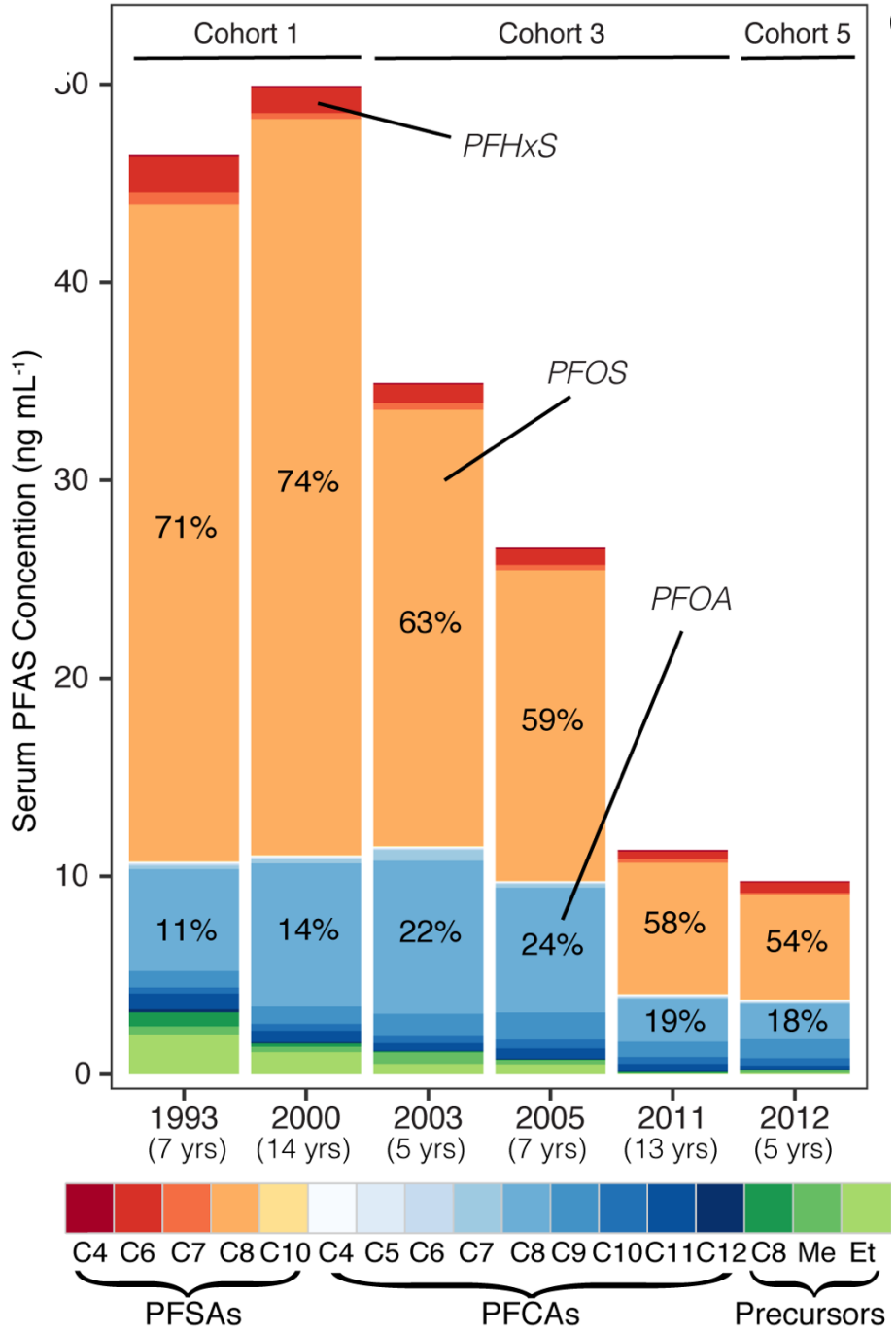
Identify the contribution to exposure from seafood using longitudinal data from children in the Faroe Islands

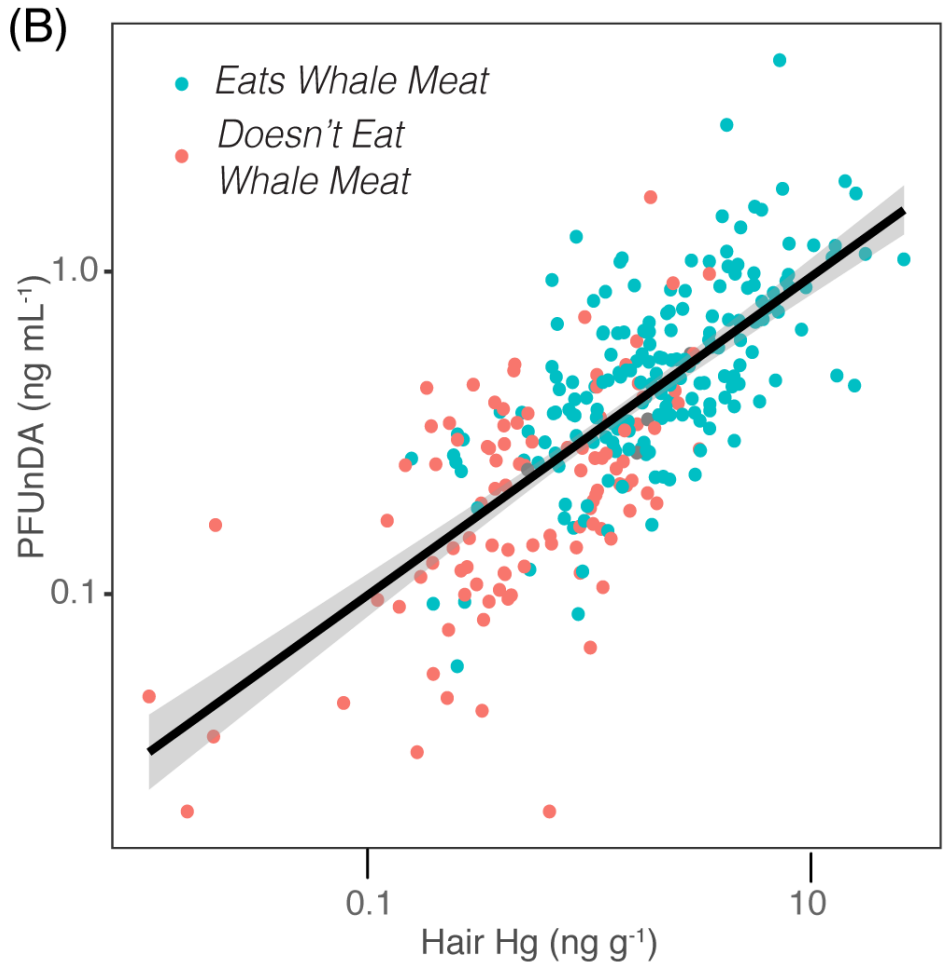


Dassuncao et al., 2018, ES&T

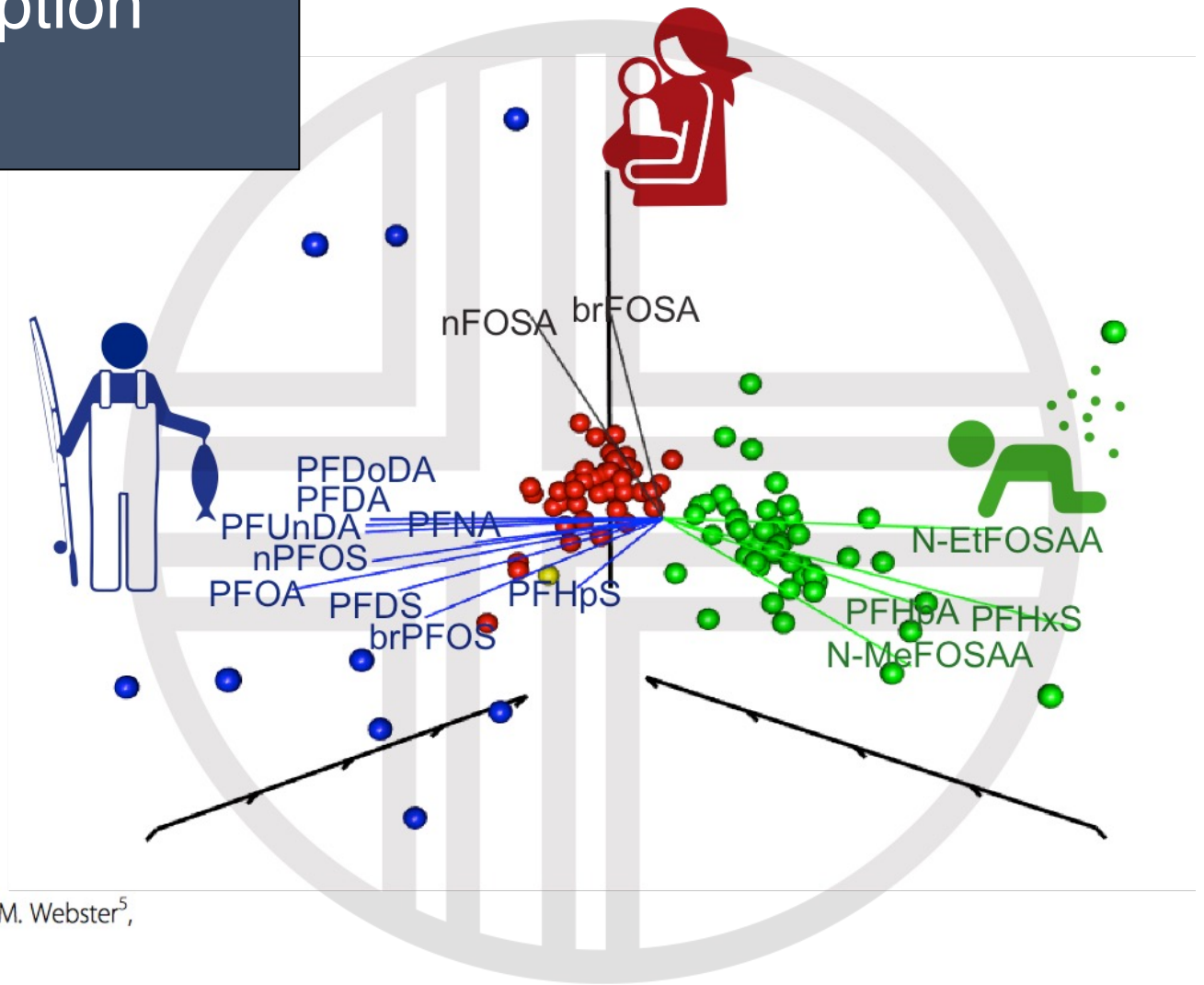
Declining serum PFAS in Faroese children driven by PFOS and FOSA

Dassuncao et al., 2018





Long-chain PFAS in serum (i.e., C>9) good tracer for seafood consumption

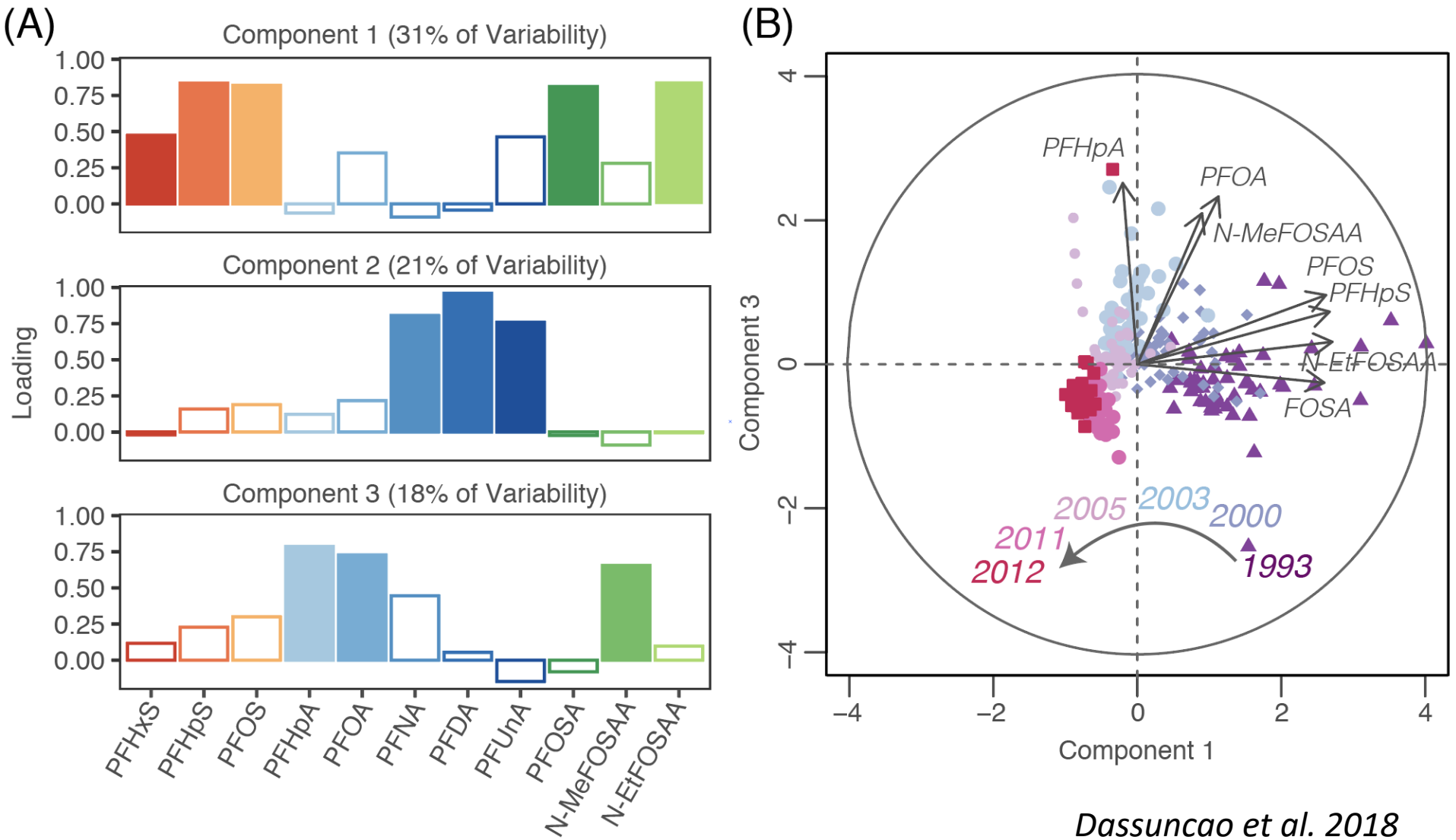


Environmental Health

Can profiles of poly- and Perfluoroalkyl substances (PFASs) in human serum provide information on major exposure sources?

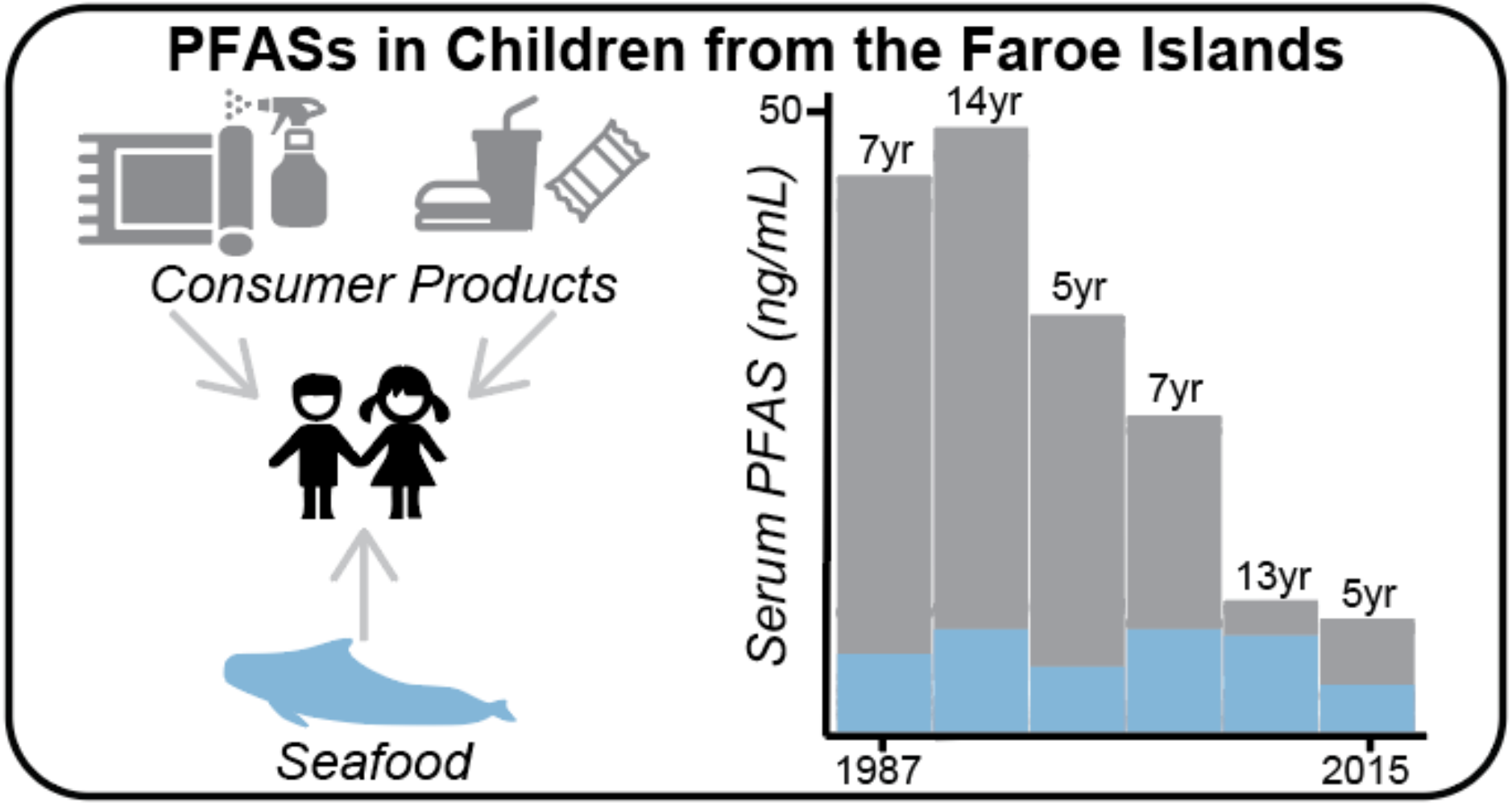
Xindi C. Hu[1,2*], Clifton Dassuncao[1,2], Xianming Zhang[2], Philippe Grandjean[1,3], Pál Weihe[4], Glenys M. Webster[5], Flemming Nielsen[3] and Elsie M. Sunderland[1,2]

Shift in PFAS exposure sources in children away from FOSA/PFOS



Dassuncao et al. 2018

Increasing contribution from seafood despite declines in serum PFAS



Dassuncao et al. 2018