

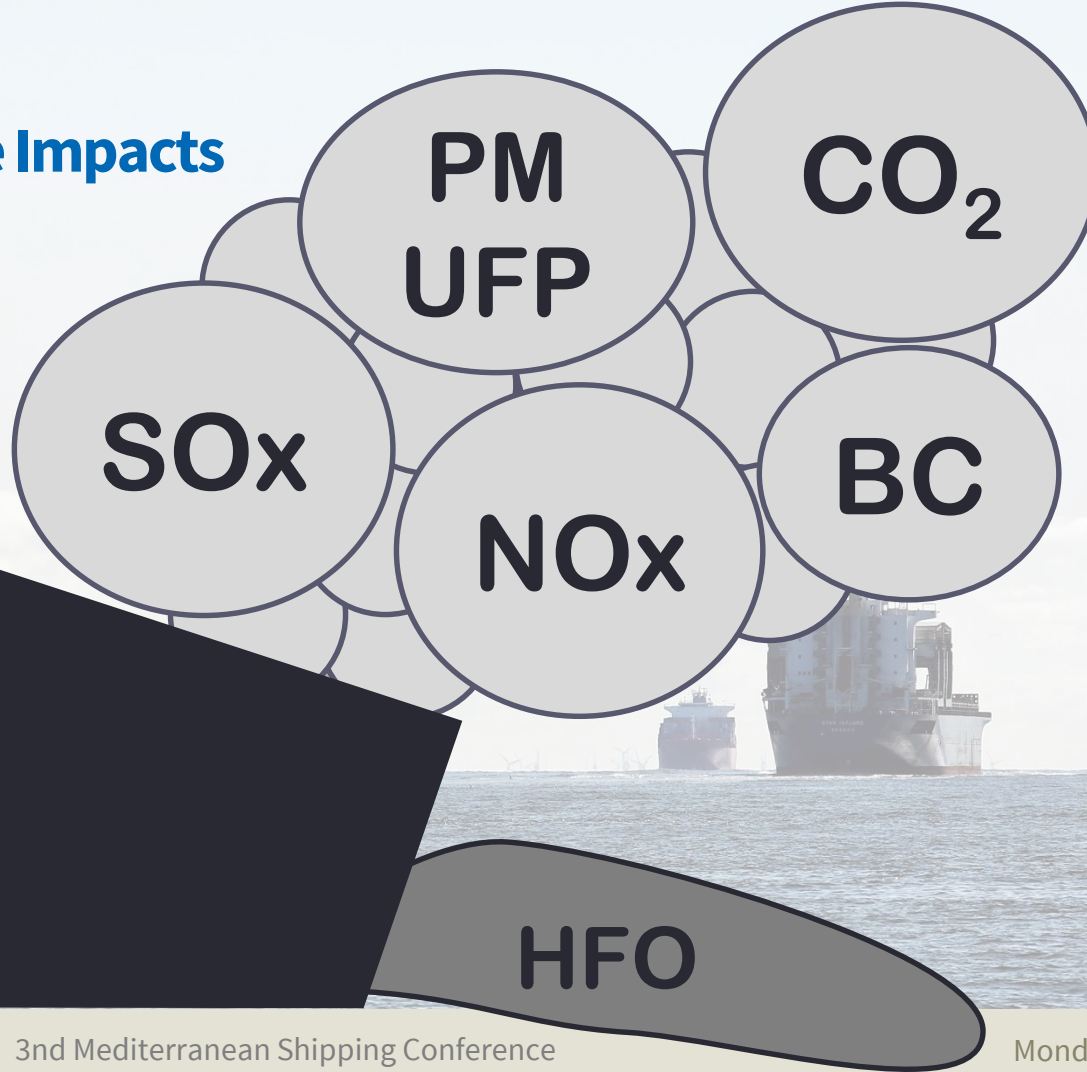


Air Pollution from Ships

Sönke Diesener

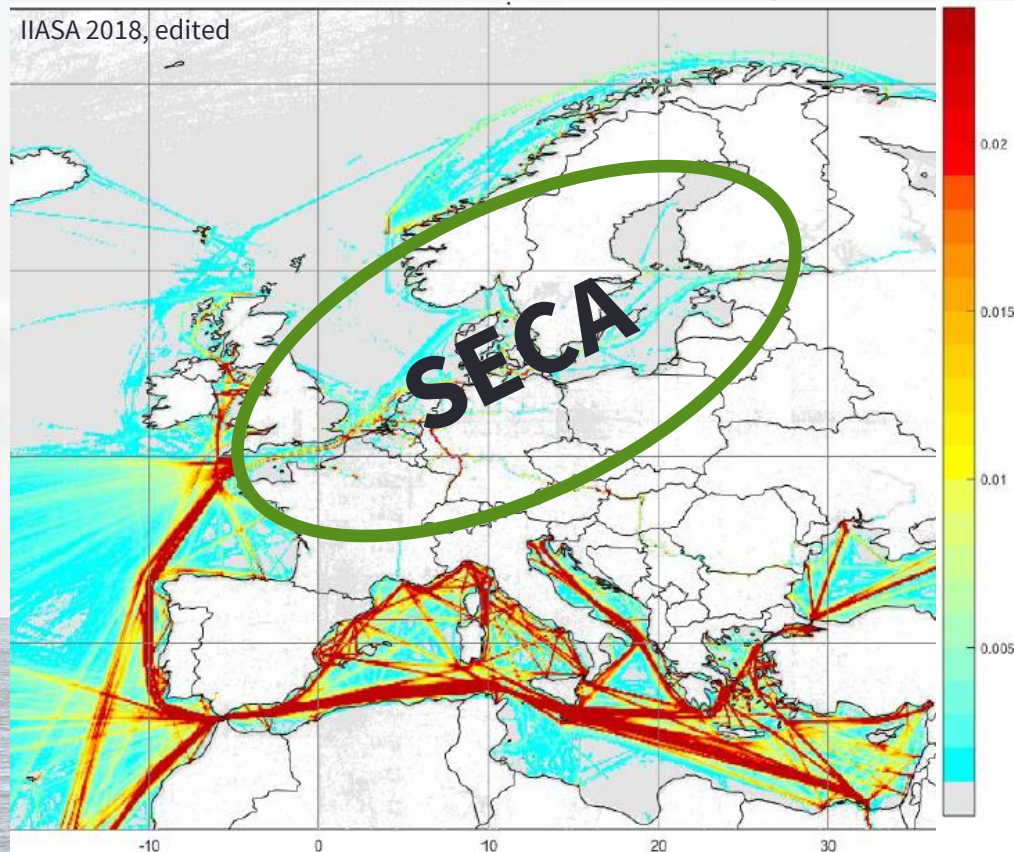
Transport Policy Officer, NABU

Negative Impacts

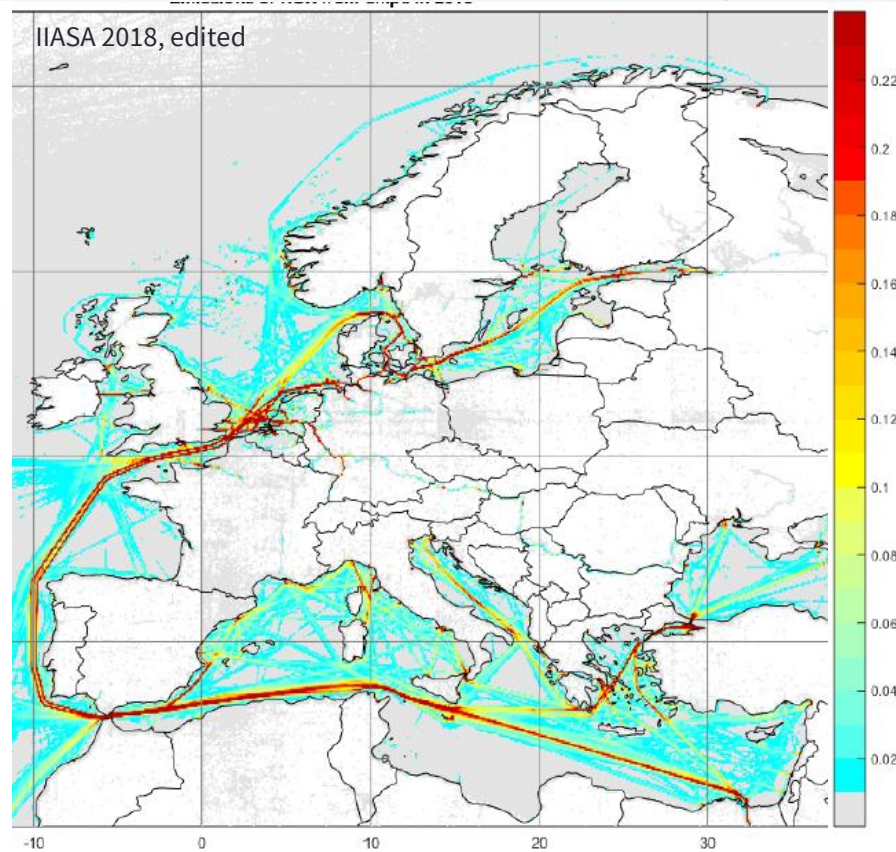


- Health damage
- Environmental Impact
- Climate warming
- Heritage damage
- Oil spill risk

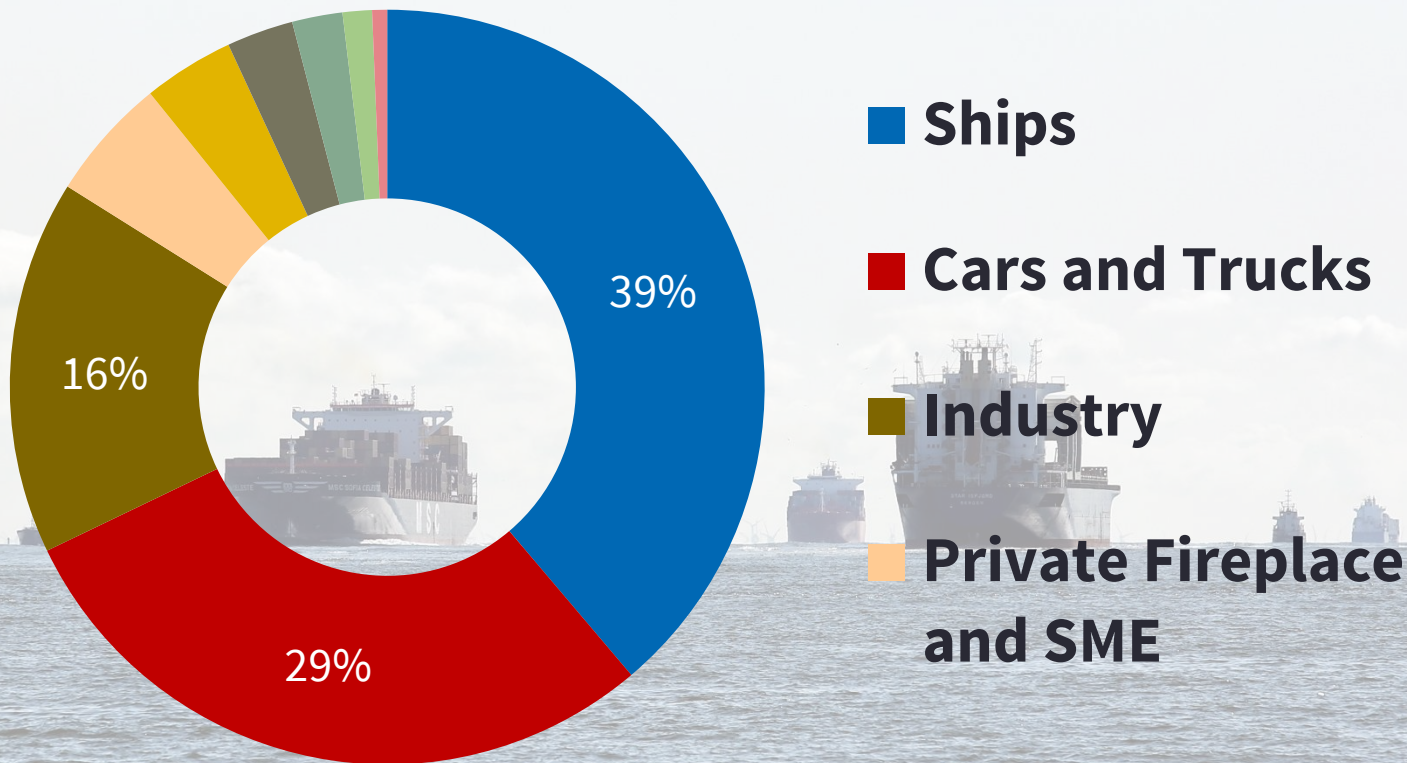
SO₂ from Ships (2015, ktn/grid)



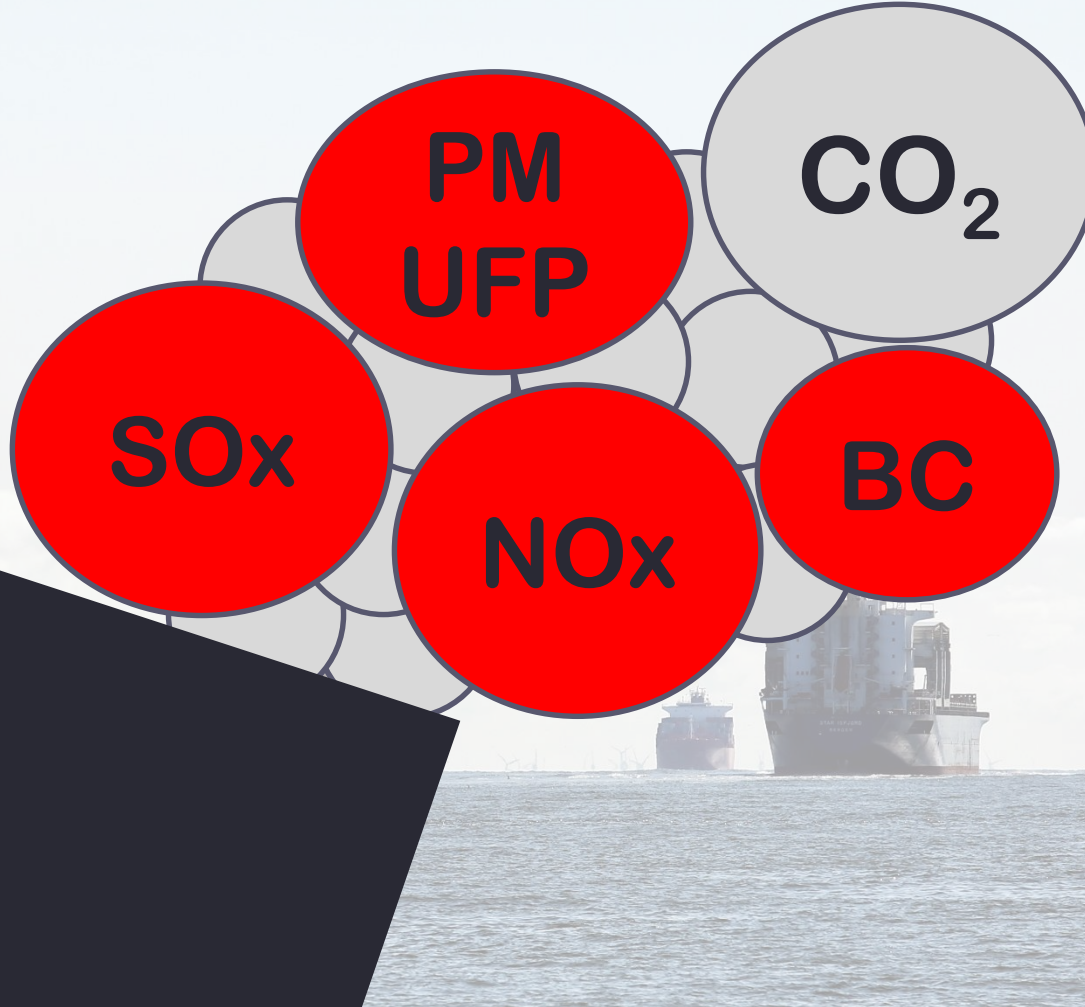
NO_x from Ships (2015, ktn/grid)



NO₂ Emissions City of Hamburg

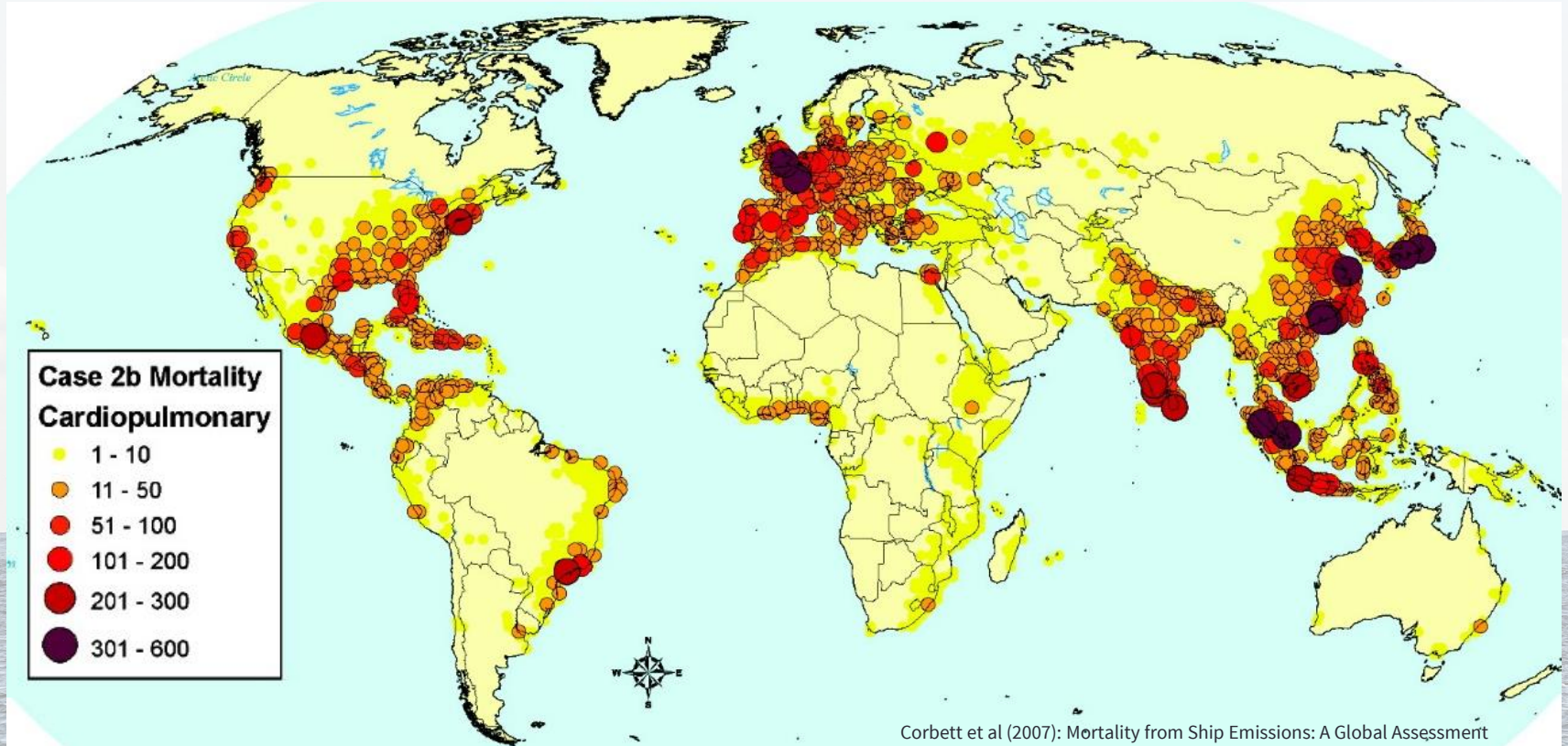


Health

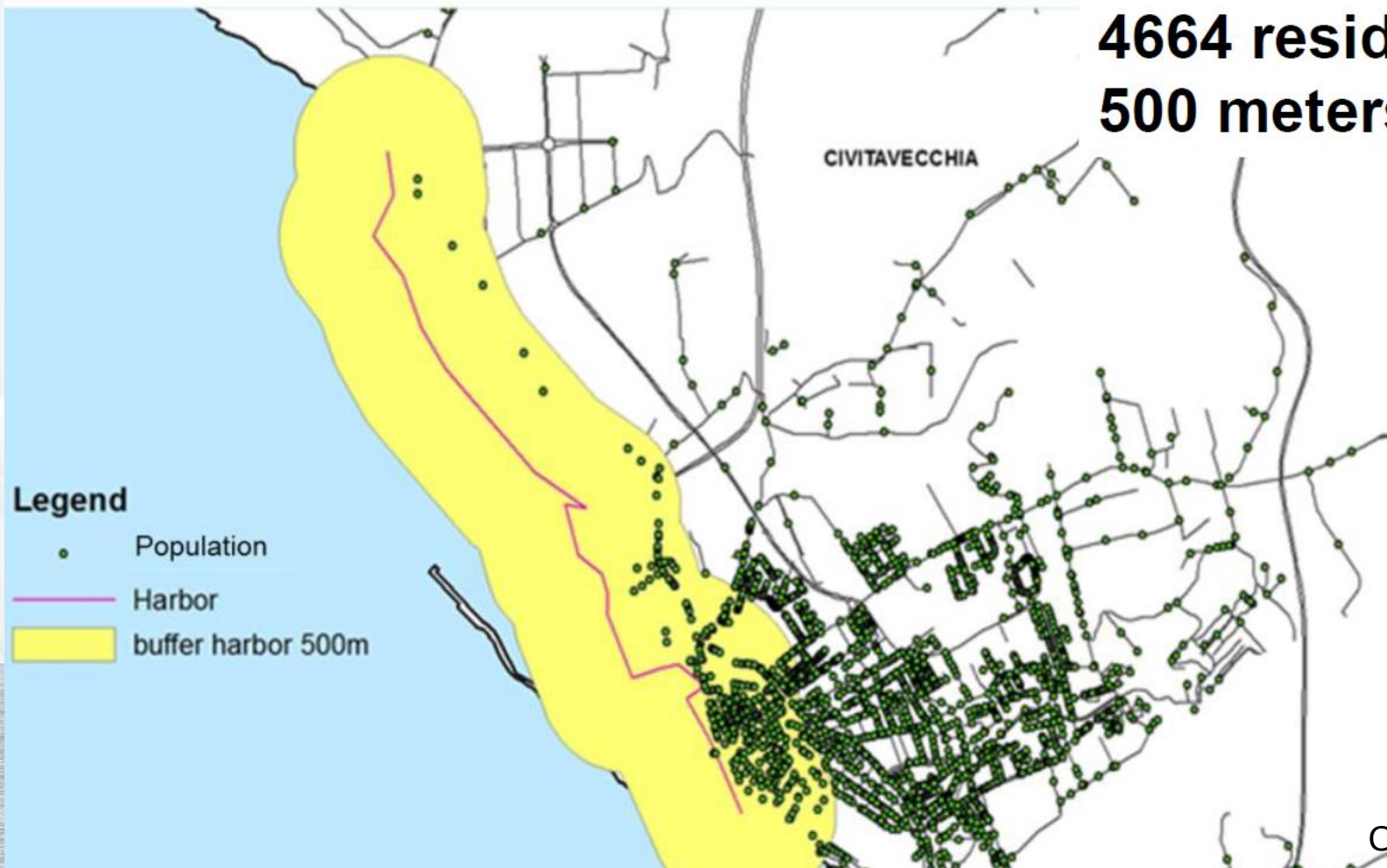


- Respiratory disease
- Cardiovascular disease
- Cancer
- 50.000 premature death in EU attributed to ships (2013)

Mortality from Ship Emissions (PM_{2,5})



**4664 residents <
500 meters**



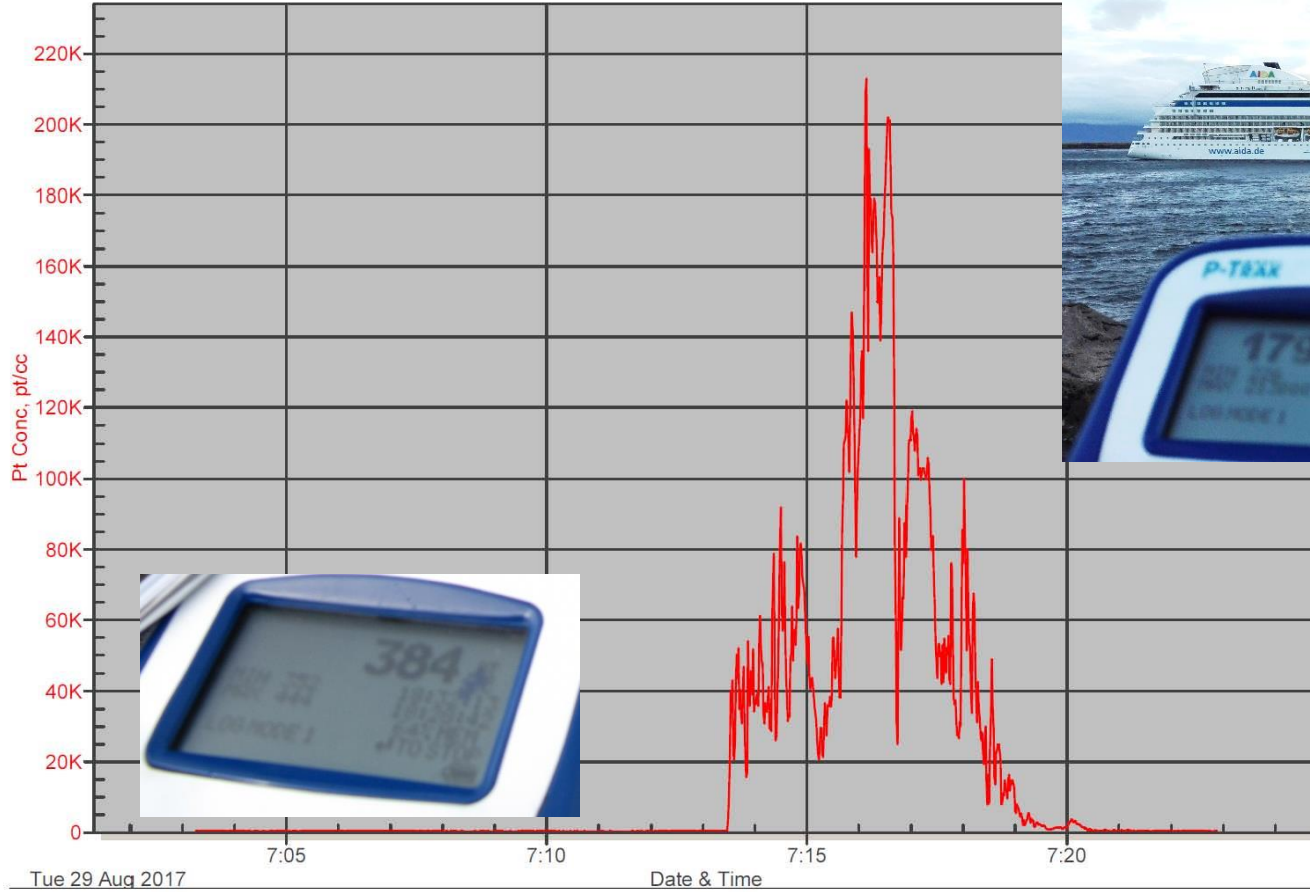
Carla Ancona

Association between living <500 m from the harbour and mortality

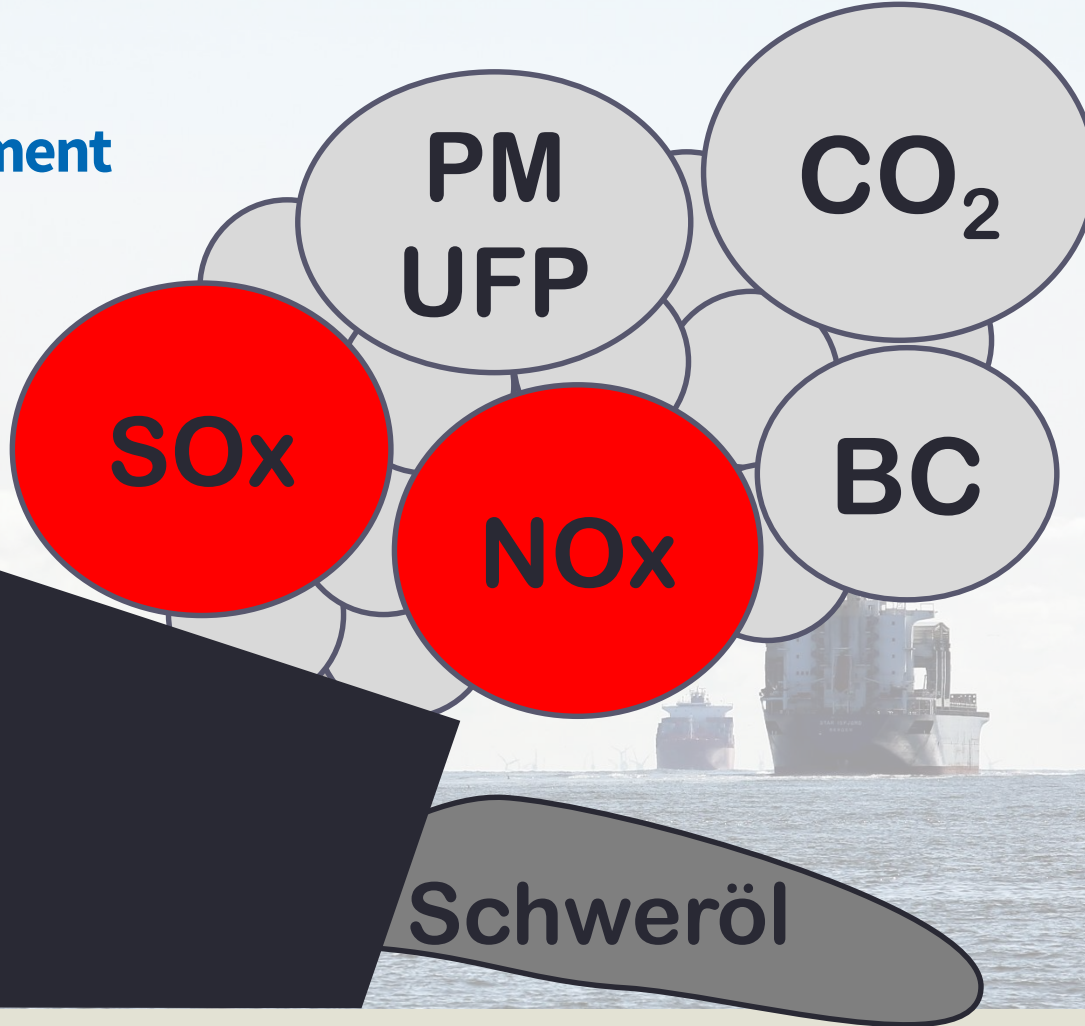
	n	HR adj	95% CI
Natural mortality (001-799)	13,687	1.03	0.96 - 1.10
Malignant cancers (140-208)	4,427	1.11	0.99 - 1.25
Stomach (151)	294	1.39	0.89 - 2.17
Colon and rectum (153-154; 159)	585	1.09	0.79 - 1.50
Liver (155-156)	291	0.99	0.63 - 1.54
Pancreas (157)	240	1.05	0.65 - 1.68
Larynx (161)	38	0.34	0.04 - 2.59
Trachea, bronchus and lung (162)	1,046	1.31	1.04 - 1.66
Pleura (163)	29	0.61	0.14 - 2.63
Bladder (188)	181	1.11	0.62 - 1.98
Kidney (189)	103	0.29	0.09 - 0.95
Brain and other parts of CNS (191-192; 225)	92	0.84	0.35 - 2.02
Lymphatic and hematopoietic tissue (200-208)	368	1.08	0.73 - 1.61
Neurological diseases (330-349)	341	1.51	1.05 - 2.18
Cardiovascular diseases (390-459)	5,354	0.97	0.88 - 1.08
Respiratory diseases (460-519)	874	0.79	0.60 - 1.04
Digestive sistem diseases (520-579)	561	1.04	0.75 - 1.43
Renal diseases (580-599)	242	0.91	0.56 - 1.50

Carla Ancona

AIDAluna Reykjavik Port

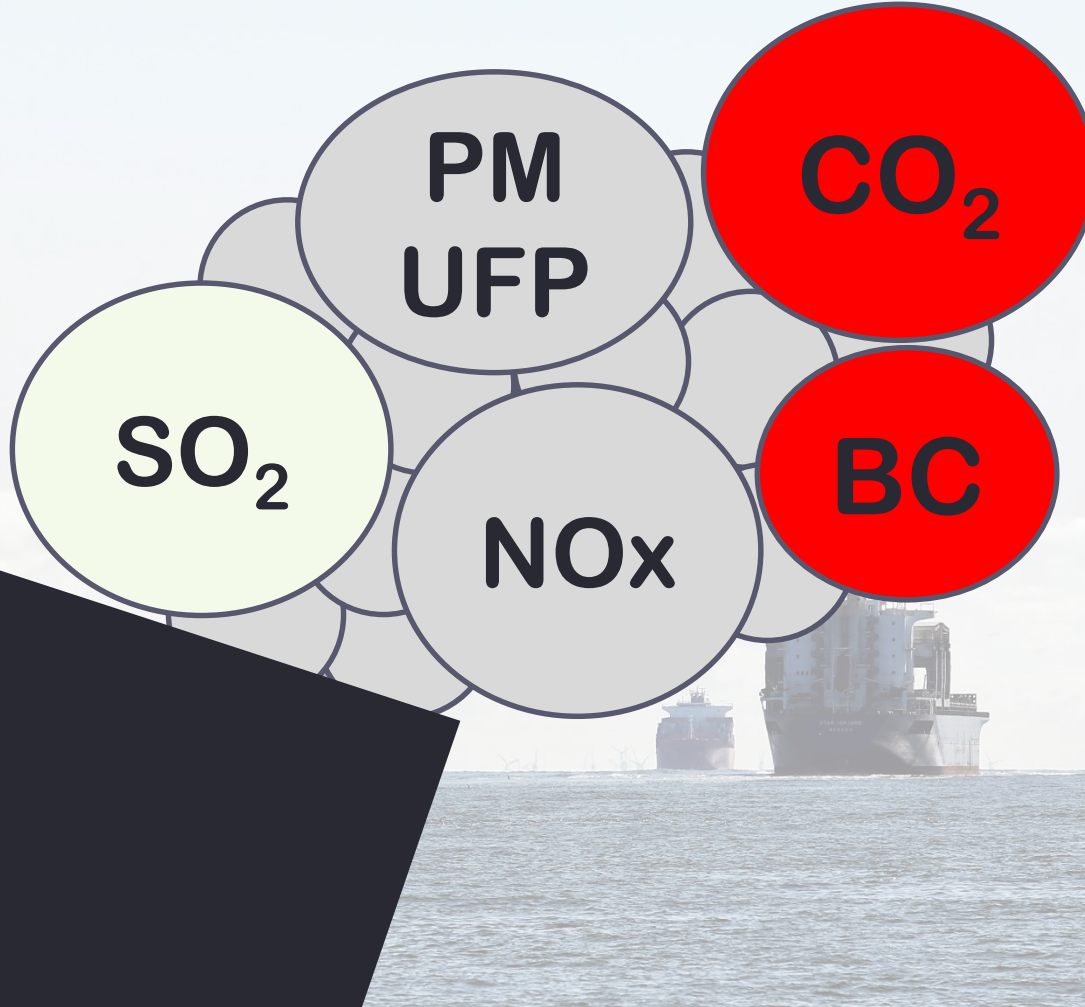


Environment



- Eutrophication and Acidification of soil and water
- Acid rain
- Harm to Marine Life
- Agricultural loss

Climate



- 3,1% of CO_2
- 10~17% in 2050
- Black Carbon
- White Clouds



Thank you for your kind attention!

www.NABU.de/shps
www.NABU.de/ports



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