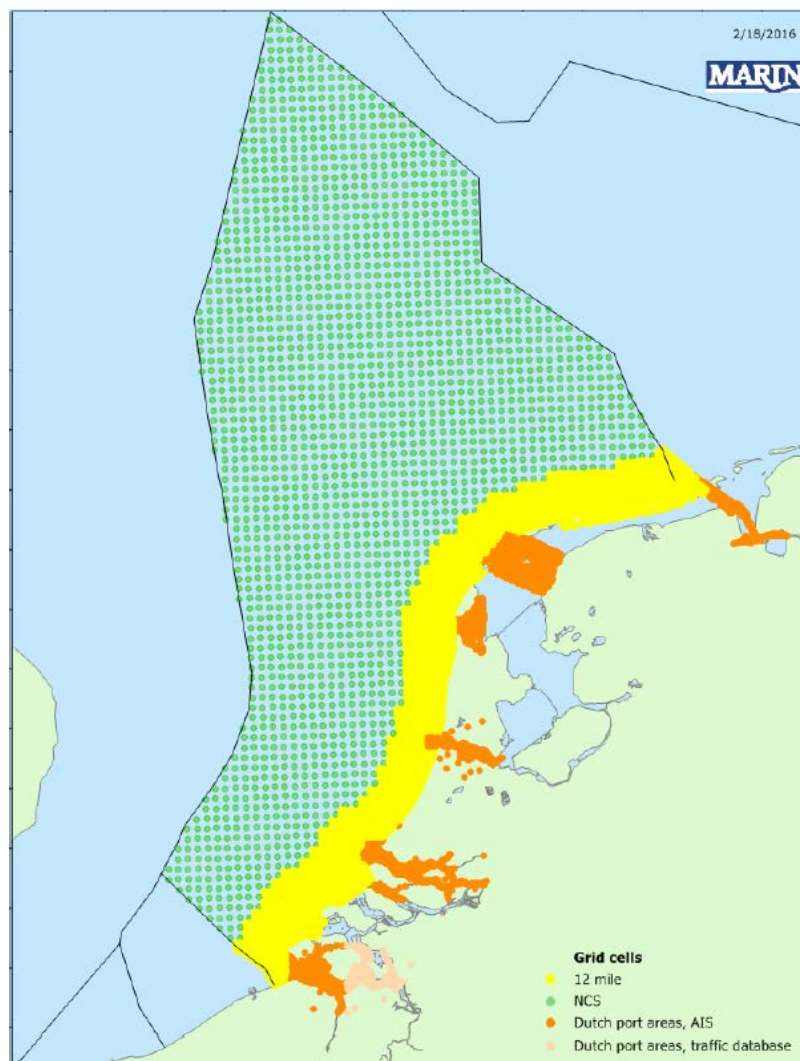


28) Allocation to grid cell (ports)

Description

The allocation applies to air emissions resulting from sea-going vessels present in the main ports in the Netherlands (figure 1), both sailing and at berth. In case of sailing ships, the distribution is based on the fuel consumption over a year in Tera Joule (TJ). For ships at berth, gross ton hours is used, calculated from the total time a ship is present and the gross tonnage. The gross tonne (gt) is a volume measurement (1 gt = 2.83m³) and concerns the volume of all closed parts of the ship. Nine shipping types are distinguished.

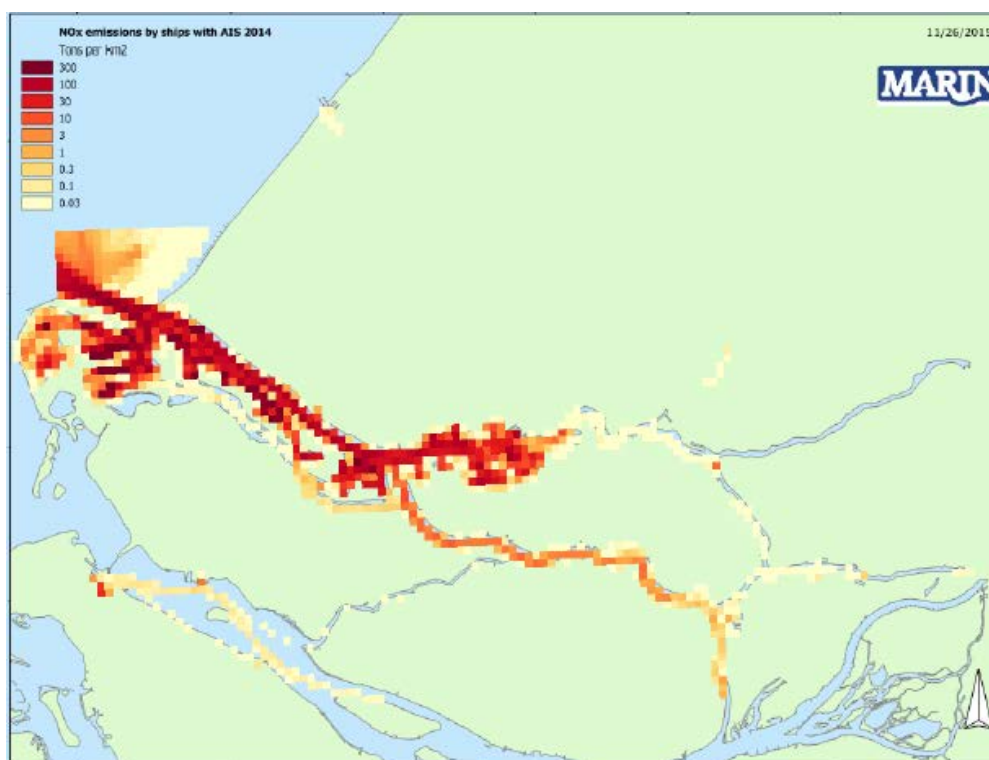
- Bulkcarrier
- Chemical/Gastanker
- Containership
- General Dry Cargo
- Refrigerated Ship
- Oil tanker
- Other ships
- Passenger ship
- Roro cargo/vehicle



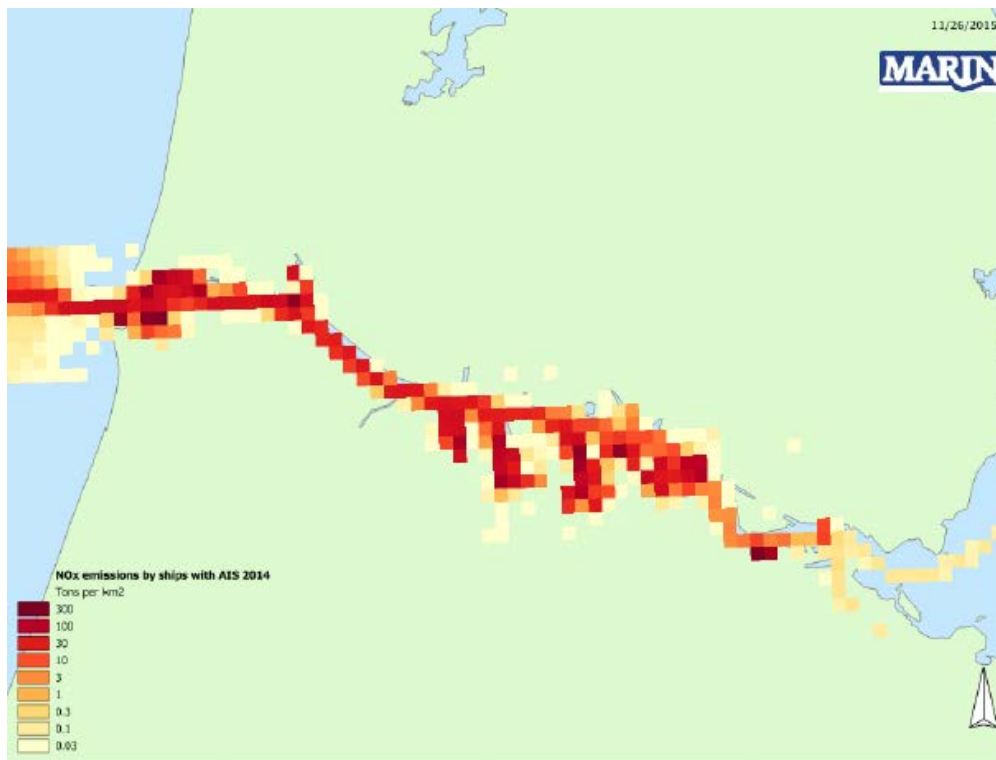
Map 28a: main port areas (orange), 12-mile zone (yellow) and Netherlands Continental Shelf (NCS)

Information on vessel type, fuel consumption and berthing time is based on data from the Automatic Identification System (AIS). Since 2005, all merchant vessels over 300 Gross Tonnage are equipped with this system. It transmits information about the ship, its voyage and its current position, speed and course. Static information, such as name, IMO number, ship type, size, destination and draft, is transmitted every six minutes. Dynamic information such as position, speed and course is transmitted every 2 to 10 seconds. By linking the AIS data with ship databases, as provided by Lloyd's registry, additional characteristics about the ship can be used, allowing for calculations of fuel consumption and emissions during movements. AIS data were analysed by the Marine Research Institute Netherlands (MARIN). Subsequent, emissions were calculated by TNO (Netherlands Organization for Applied Scientific Research)

Example



Map 28b : Total NOx emissions (sea-going and at berth) , port of Rotterdam



Map 28c: Total NOx emissions (sea-going and at berth), port of Amsterdam

Institutes involved

MARIN

TNO (Netherlands Organization for Applied Scientific Research)

Currency of data

2014

Background documents

MARIN

Sea Shipping Emissions 2014: Netherlands Continental Shelf, Port Areas and OSPAR Region II

Final report

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