

US EPA ARCHIVE DOCUMENT

# Ship Emissions in the Gulf of Mexico and Prospects for Control

Presentation to the Gulf Ecosystem Restoration  
Taskforce

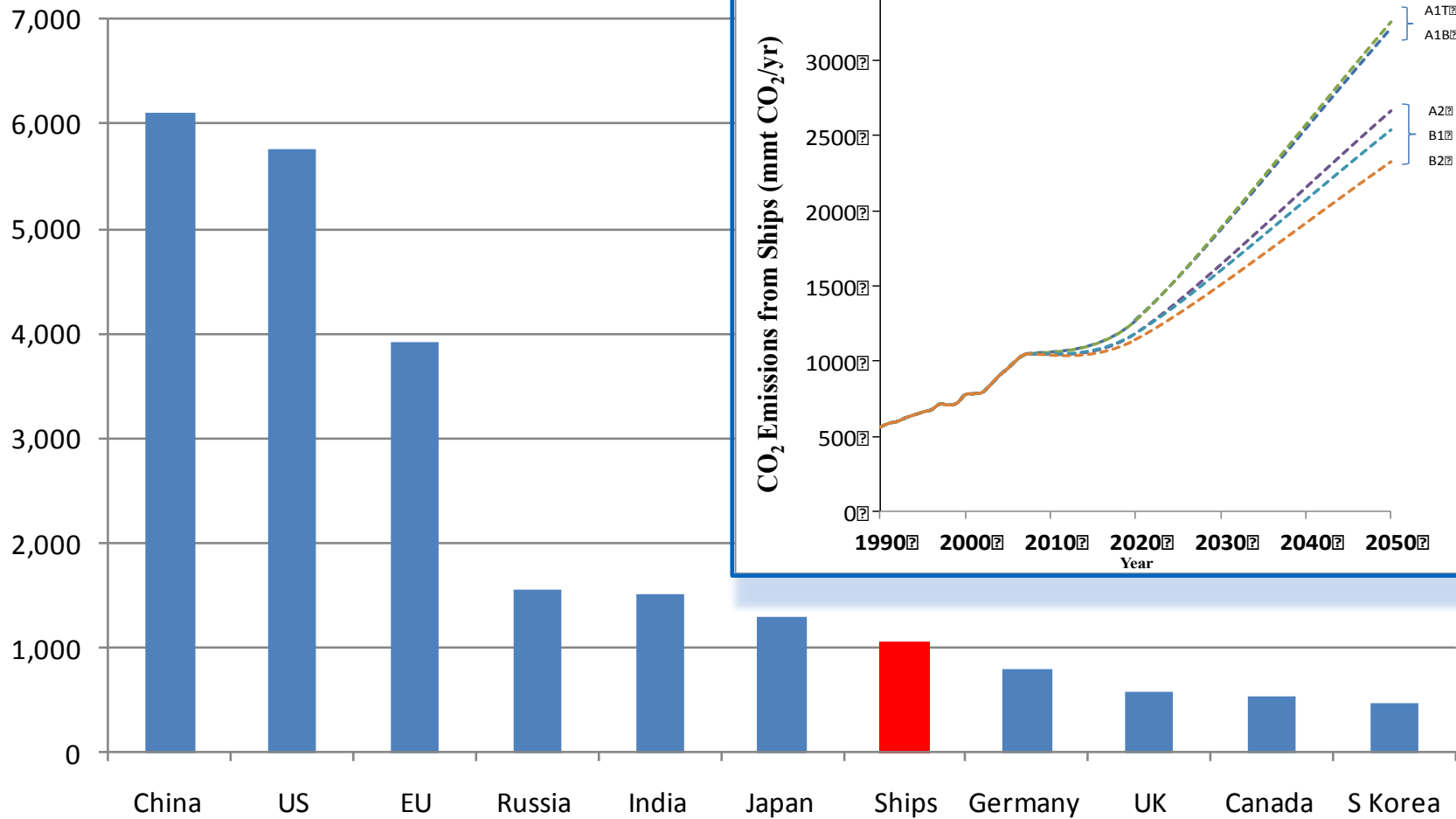
27 June, 2011

*Galen Hon*

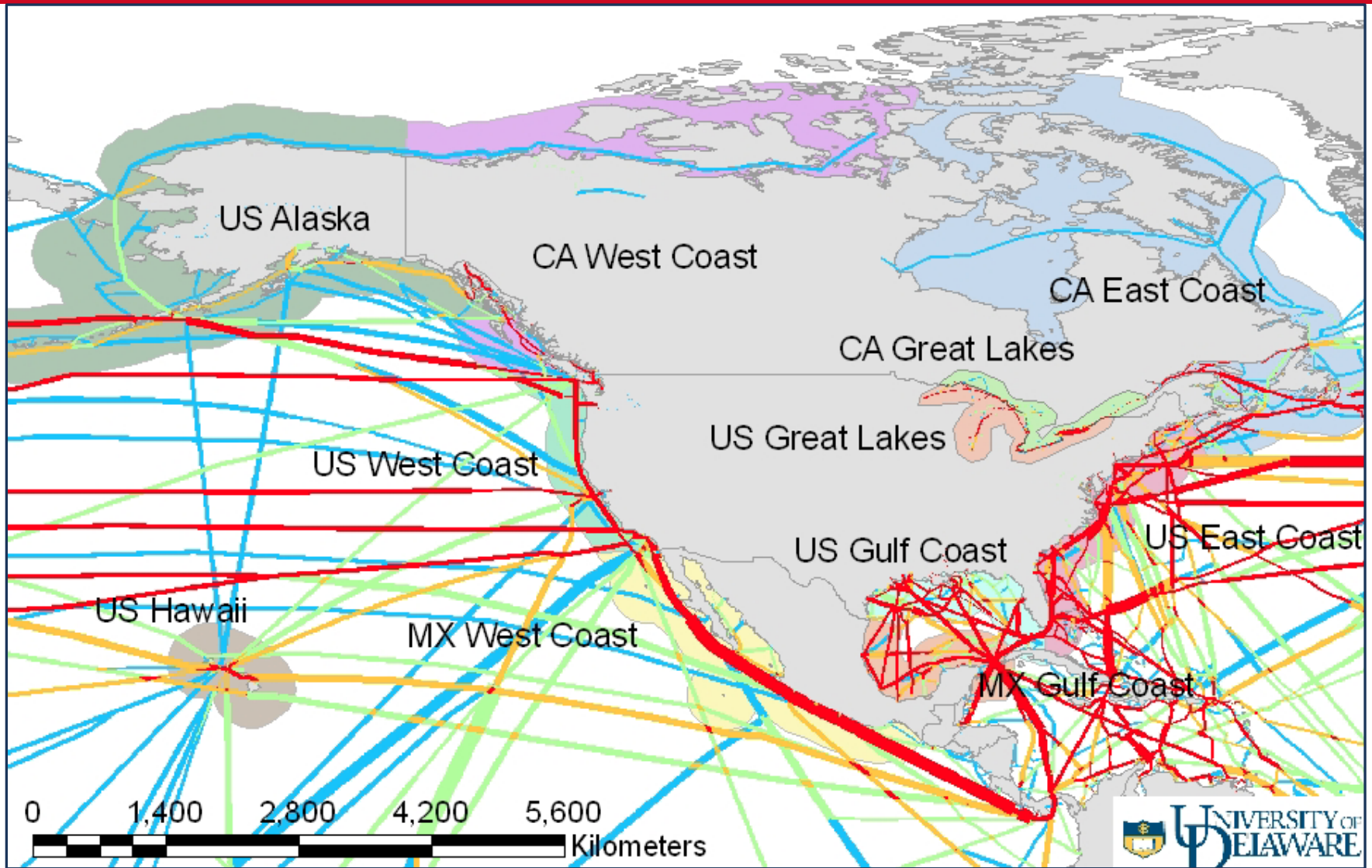
*Marine Program Lead*



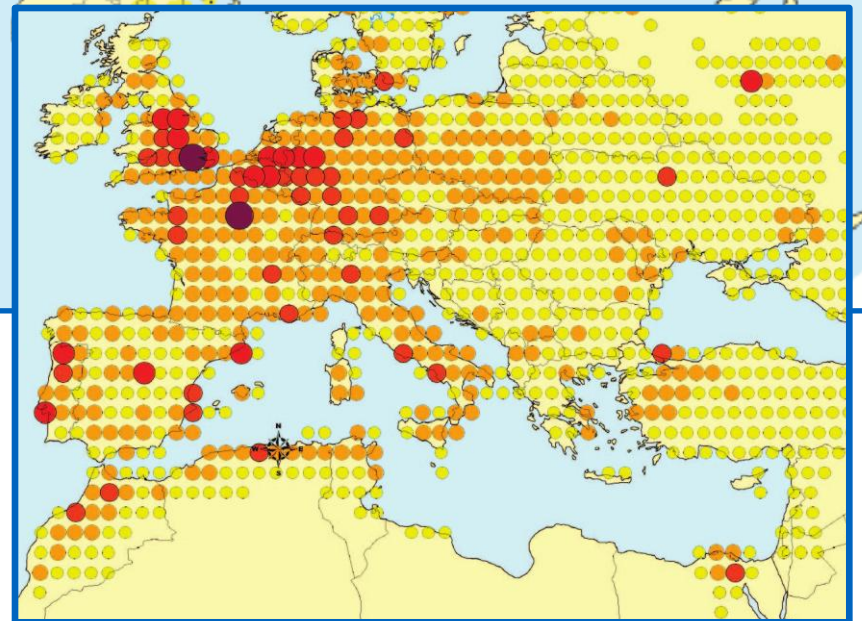
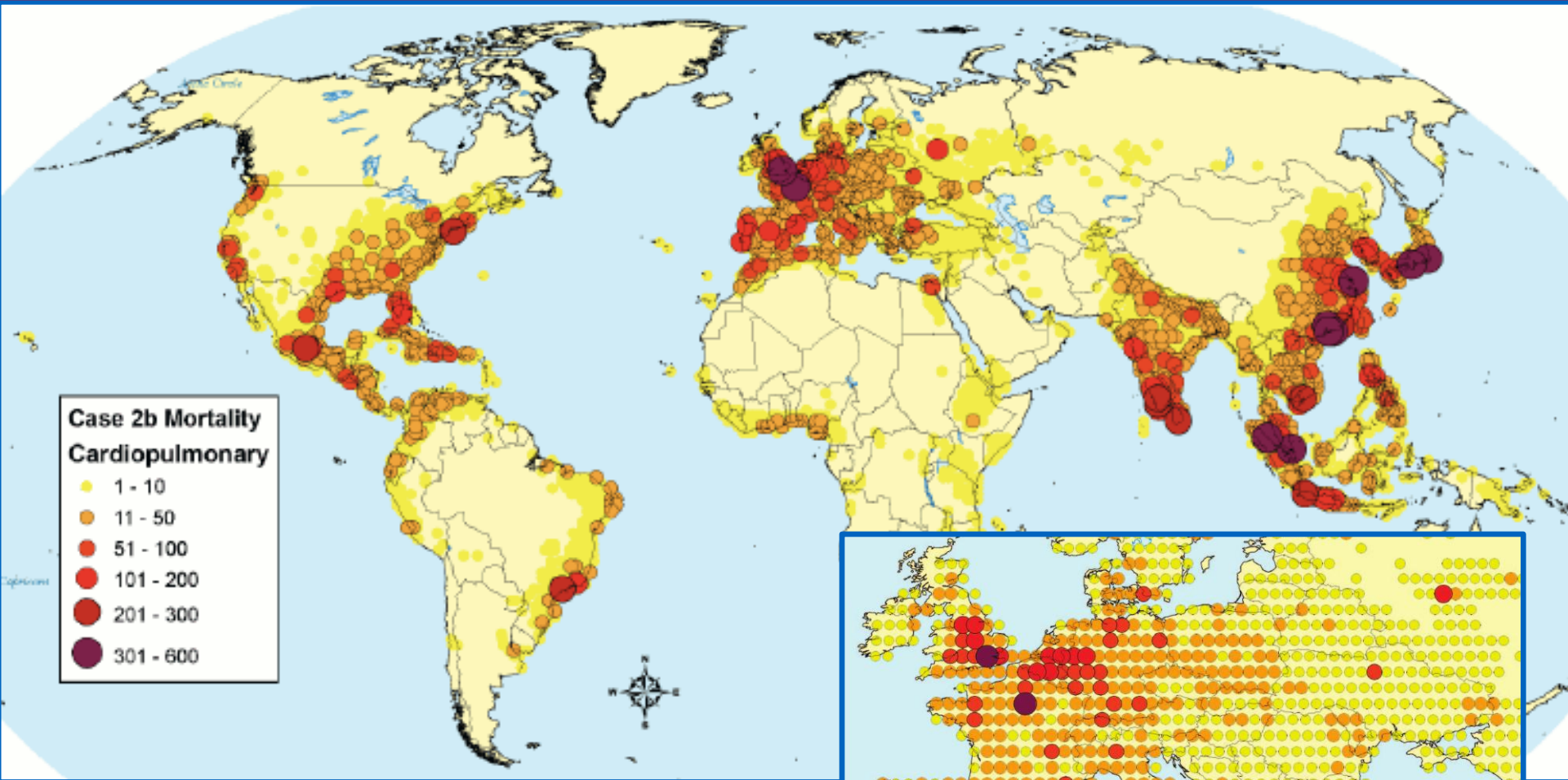
Annual CO2 Emissions (million metric tons)



Shipping, with 1,046 MMT of CO<sub>2</sub> emissions, would be the sixth largest emitter if it were a country: Projected to triple by 2050



Ship Routes and SO<sub>x</sub> Emission Intensity:  
Substantial Coastal Transit and Gulf Port Activity

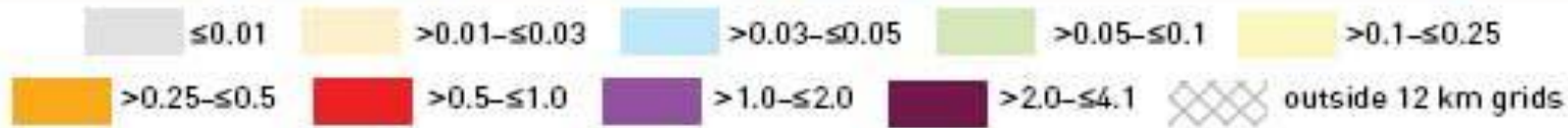


## Worldwide Ship PM-Related Mortality

- Emission Control Areas (ECA's)
  - Air emissions from ships are the last to be regulated by IMO1
  - IMO's Convention on Marine Pollution (MARPOL):
    - Revised in 2008 to include more stringent controls on NOx and SOx emissions from ships – to be phased in gradually through 2025
  - Includes a special provision to allow member states to apply for special protections “ECA's” if they can demonstrate the need.
  - Only US/Canada and Baltic States (Europe) have successfully applied for an ECA so far



# Estimated reductions in annual PM concentrations from U.S. ECA in 2020 ( $\mu\text{g}/\text{m}^3$ )



Difference in annual average SMAT  $\text{PM}_{2.5}$  [ $\mu\text{g}/\text{m}^3$ ]— 2020ce-2020ce—200nm. Source: Power point presentation by Byron Bunker, Center Director of EPA's Office of Transportation and Air Quality given Wednesday, December 17, 2008 at EPA Region 9.

# Barriers to Implementing ECA

- National / Political

- Mexico has not ratified MARPOL Annex 6
- Need strong internal focus, precedent activities
- Ability to withstand industry objections

- IMO Application:

## Requires Substantial Air Quality Program and Planning

- 8 Criteria boil down to need to:

- Prove there is an air quality problem
- Show that shipping is significant source of the problem
- Show that ECA is most cost-effective solution

- Cost: Projected \$3.2 Billion for North America ECA

- Benefits are estimated at \$47-110 Billion
- 14,000 lives saved annually