



NASA Perpetual Ocean



Jon Gula

#### Depth of surface mixed layer: Effect of increased resolution



Small scale flow features induce a large vertical flux of properties which decreases with global warming







Ken Haste Andersen





Weitz et al, 2015





Phytoplankton





## Stirring and Mixing of Interacting Populations

#### Increased infection rate



### **Ocean Acidification**



UN Atlas of the Oceans





## Ocean 'dead zones' are spreading – and that spells disaster for fish

# THE CONVERSATION

Academic rigour, journalistic flair



Fox Kemper et al

How much physical structure needs to be resolved to assess the change to the physical environment?

How much ecosystem and physical complexity needs to be included to capture changes to the biogeochemical system?