Maryland Climate Change Commission

Climate Change Impacts Assessment Overview

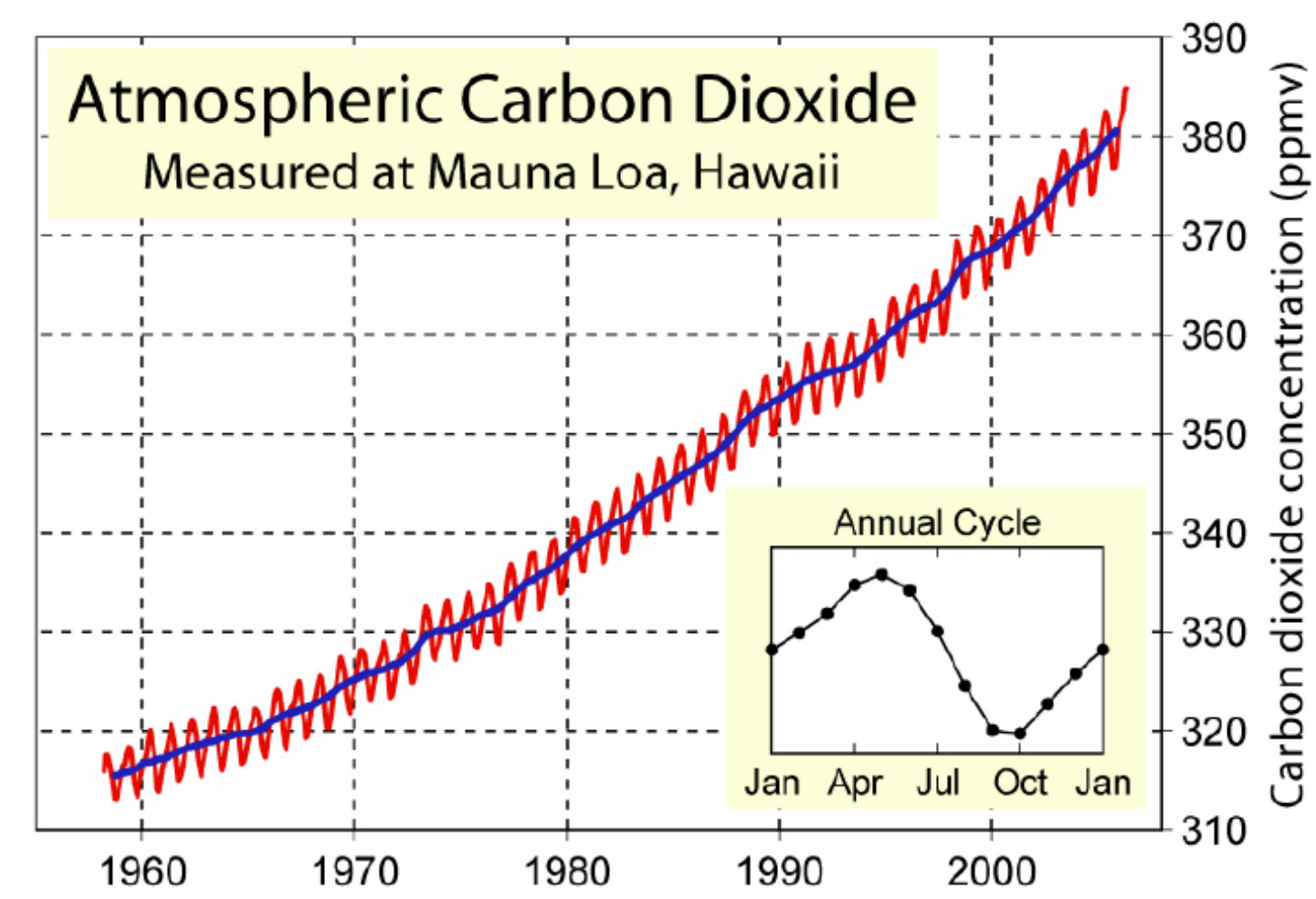
Chesapeake Bay Commission
Don Boesch
May 9, 2008

Working Group Charge

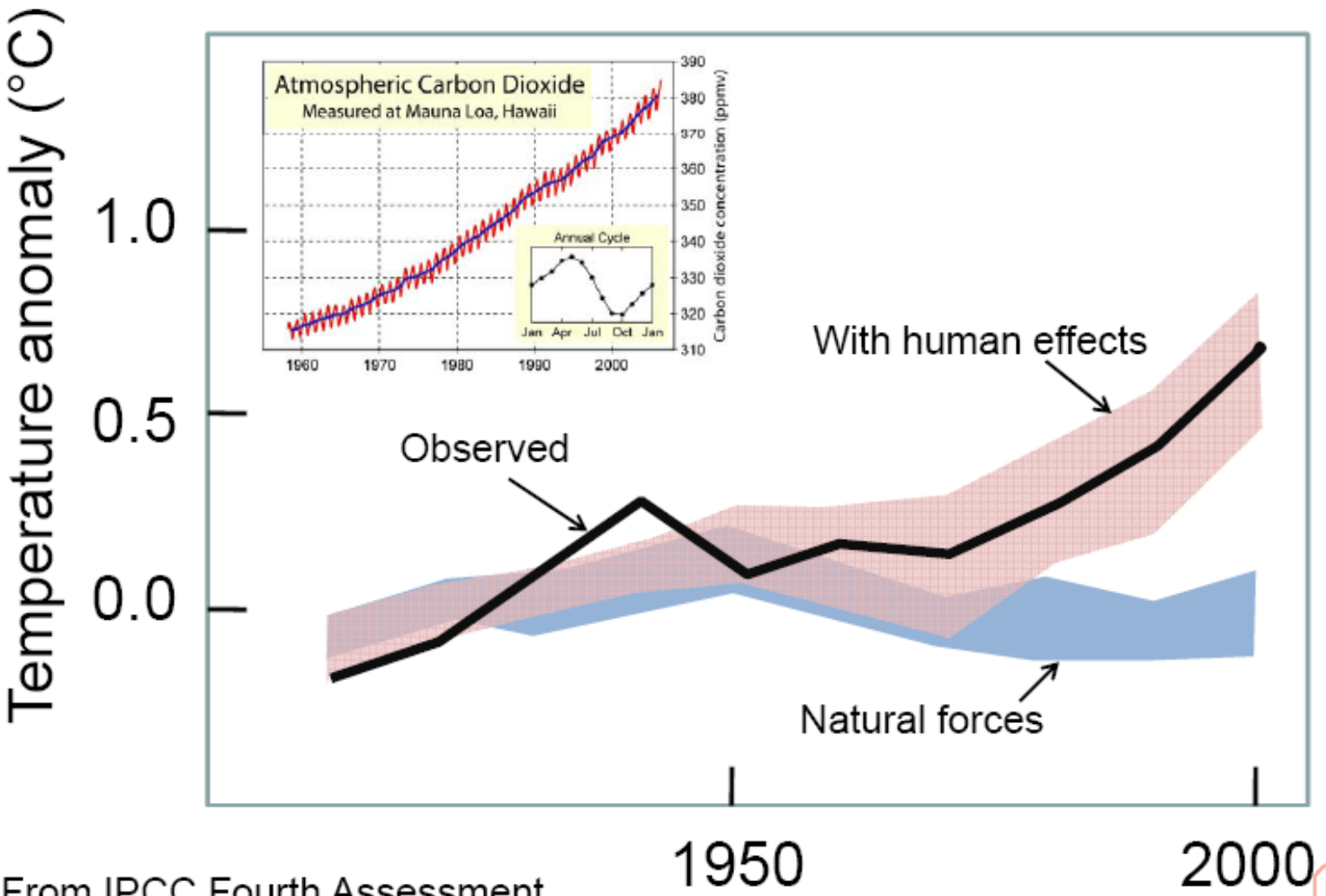
Develop a *Comprehensive Climate Change Impact Assessment*:

- **Advise the Commission, as well as other working groups, on the scientific and technical aspects of climate change;**
- **Inventory Maryland's greenhouse gas emission sources and sinks**
- **Calculate Maryland's "carbon footprint" to measure the impact of human activities on the environment based on the State's greenhouse gas production;**
- **Investigate climate change dynamics, including current and future climate models and forecasts; and**
- **Evaluate the likely consequences of climate change to Maryland's agricultural industry, forestry resources, freshwater supply, aquatic and terrestrial ecosystems, and human health**

Why climate is changing

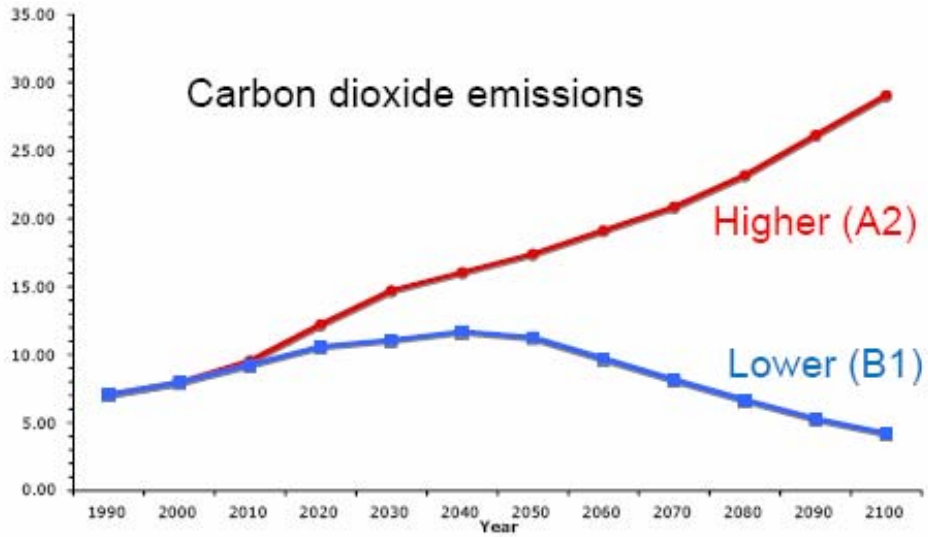


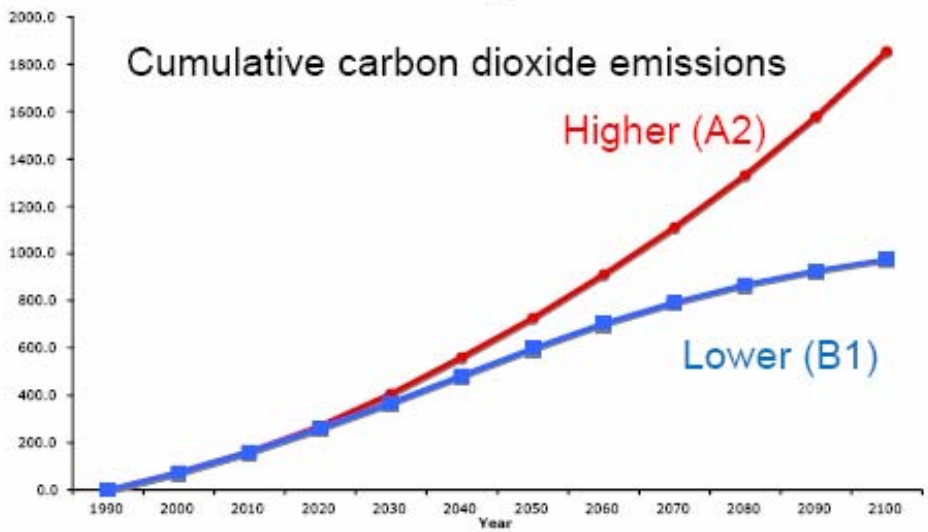
Human-induced warming "unequivocal"



From IPCC Fourth Assessment

Future with higher & lower emissions

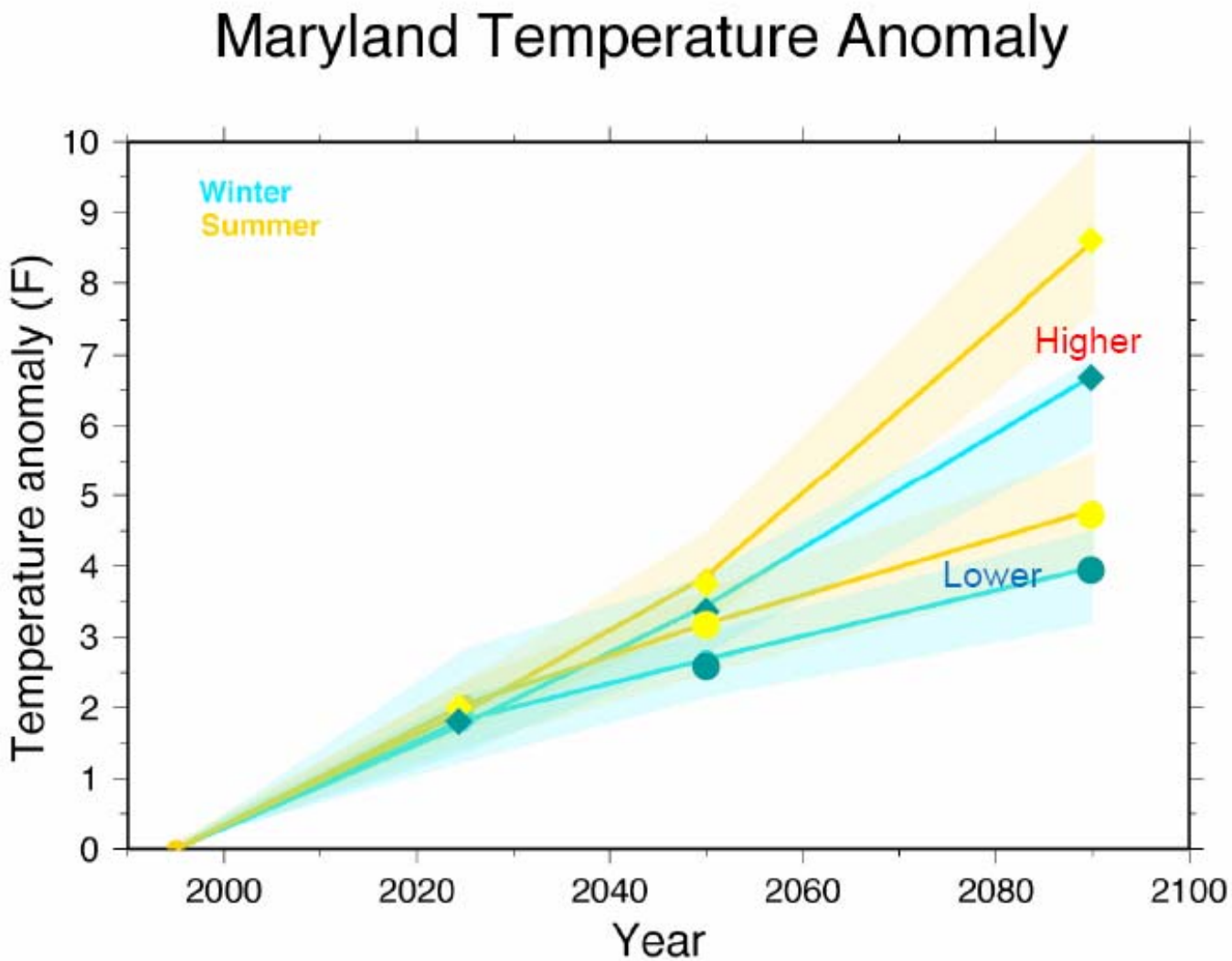




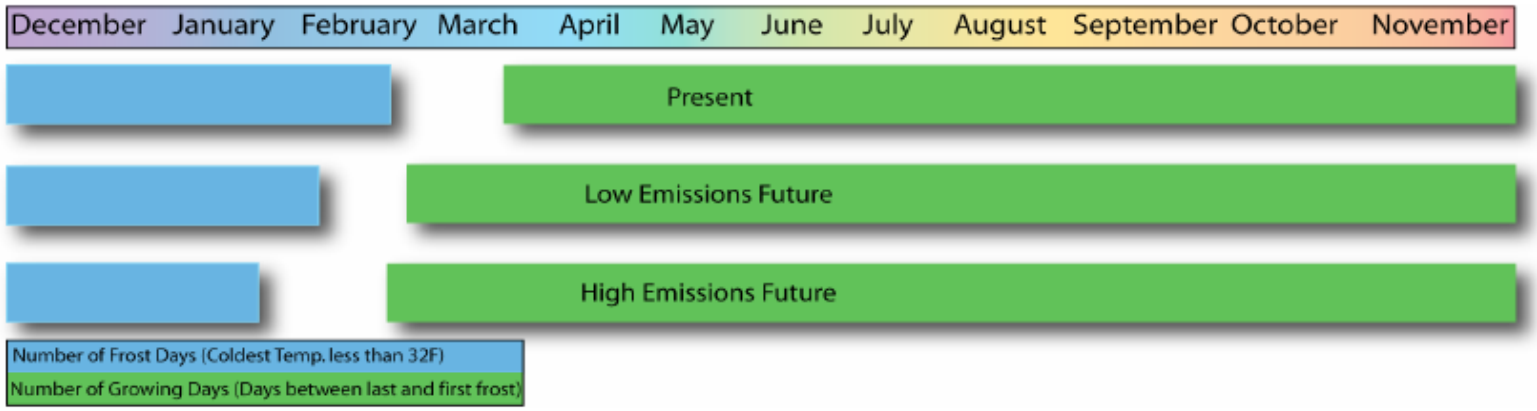
Assess impacts at mid-century and end of century under higher and lower emissions scenarios

Conveys message that we not only have to prepare for a range of possibilities, but that reducing emissions will make a difference

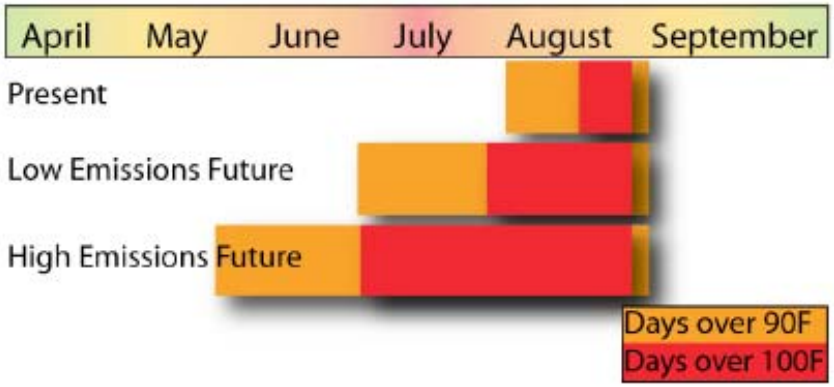
Warmer, particularly in summer

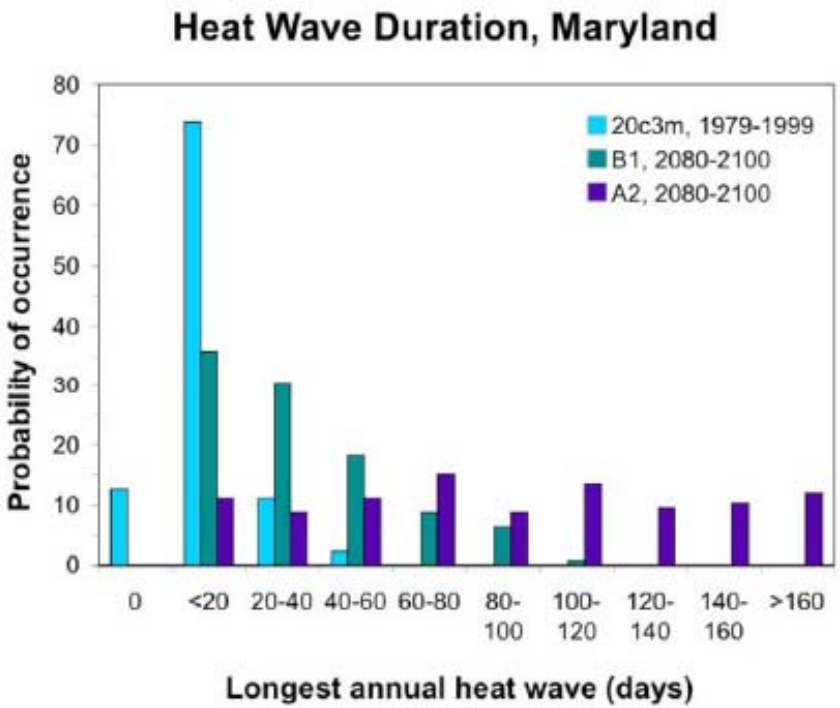


Longer growing season



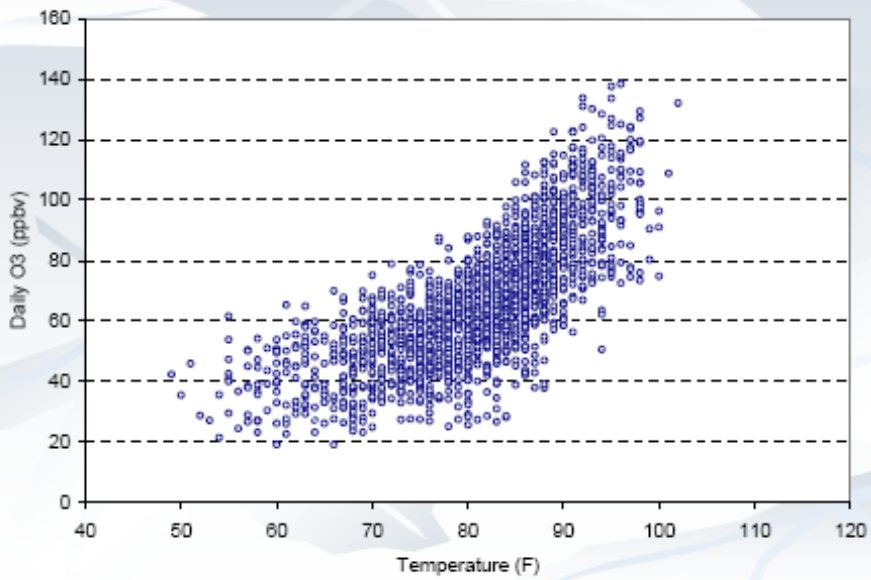
Hot days and heat waves





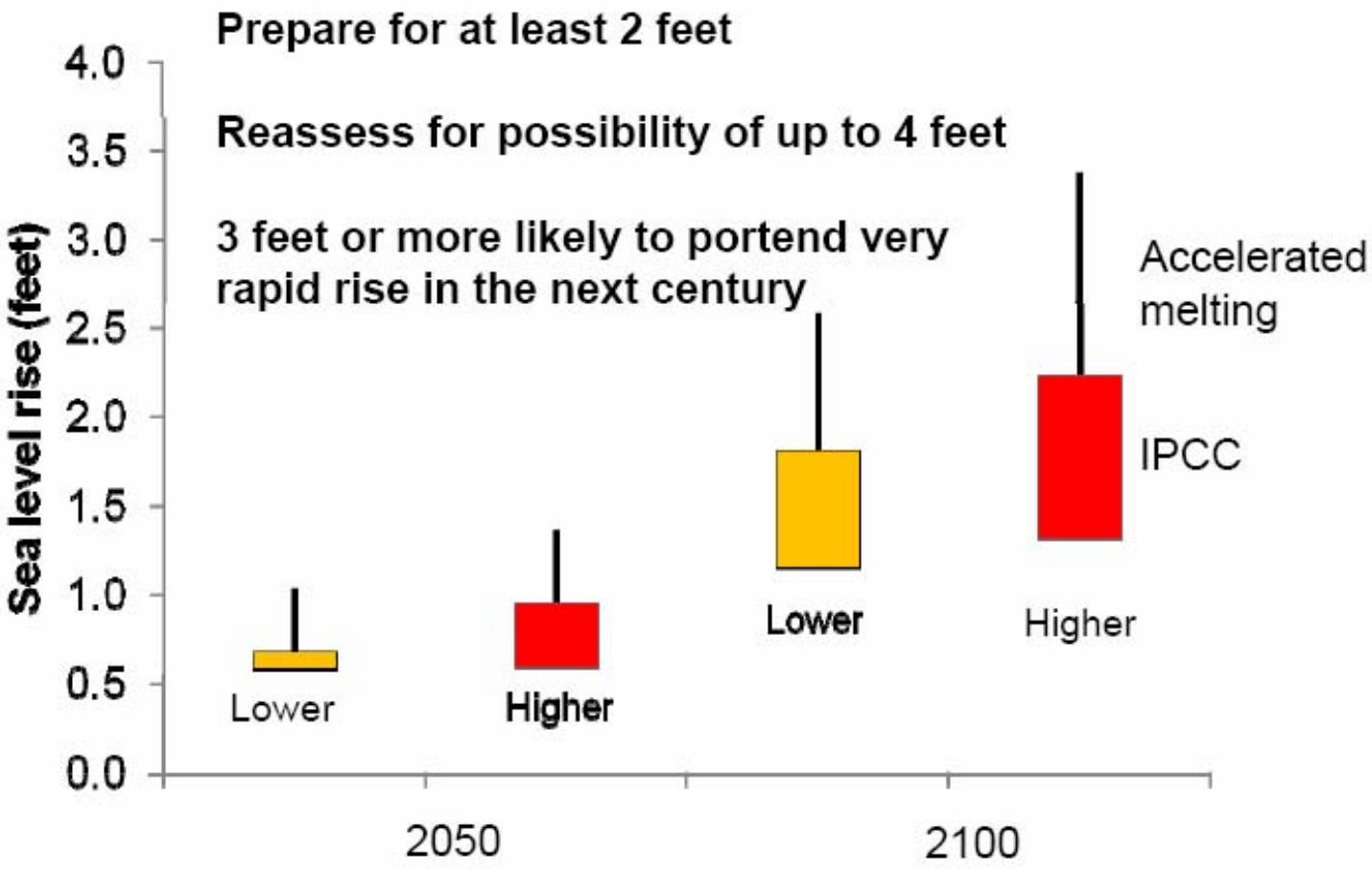
Human health: heat stress & air quality

Ozone is higher at high temperatures

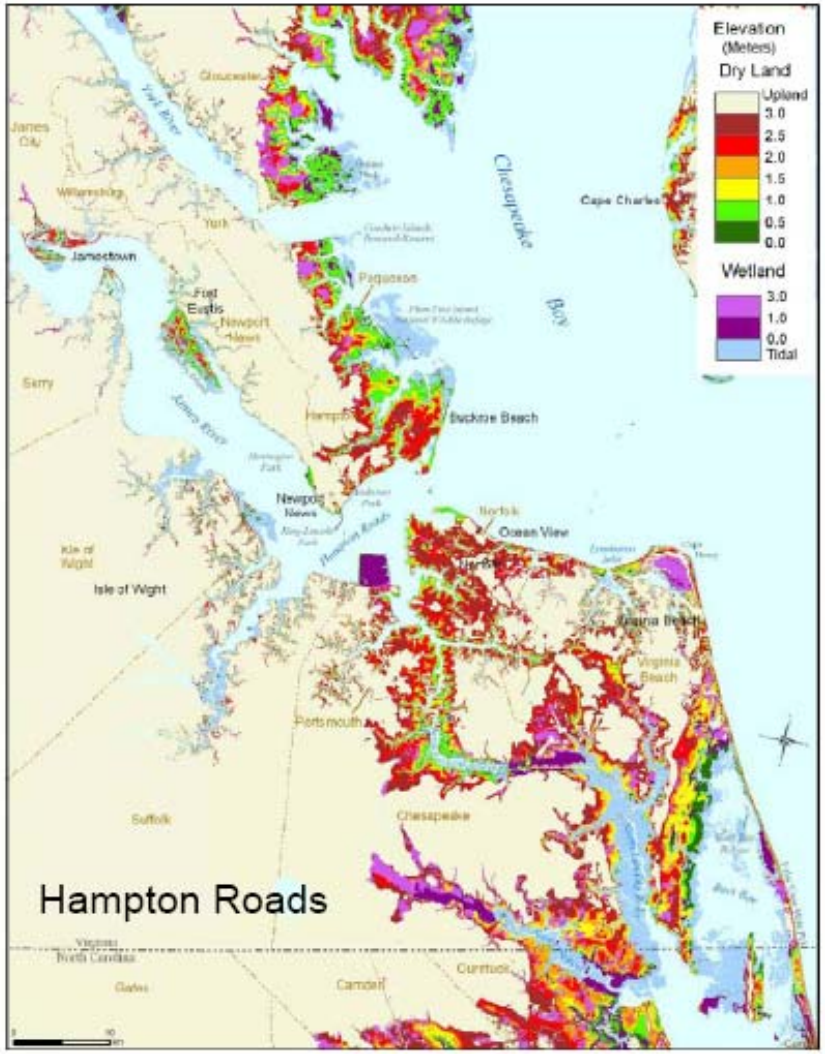


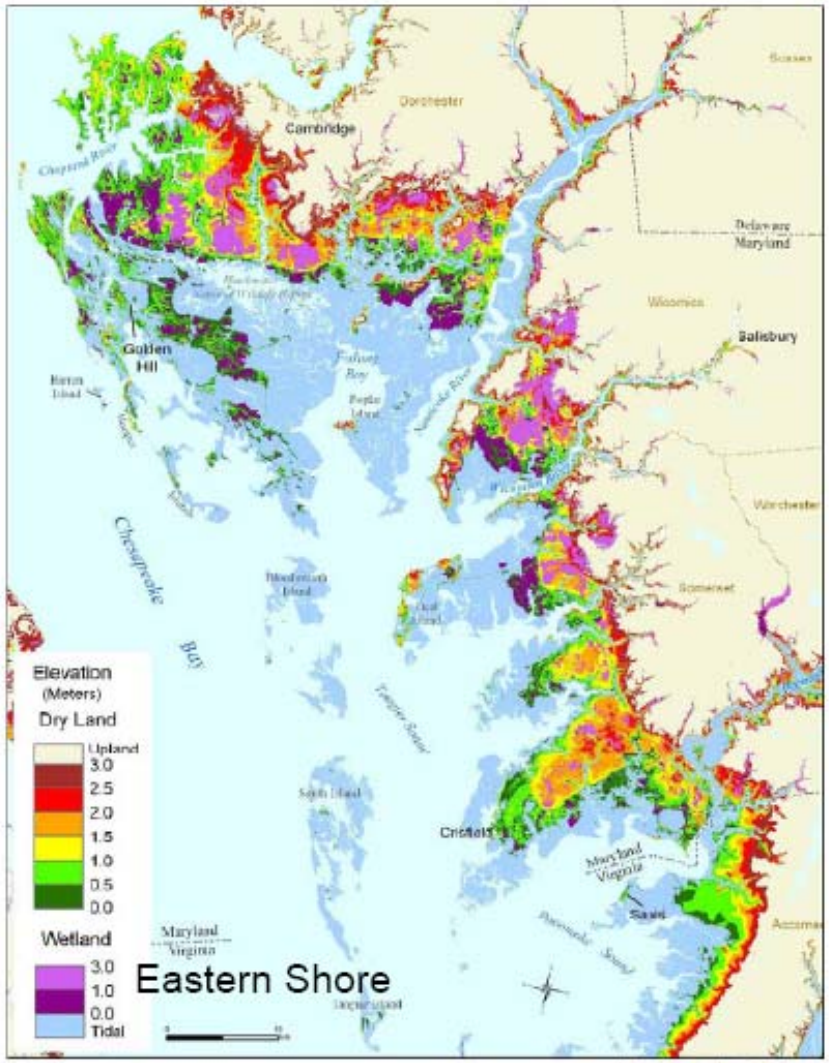
Maximum surface temperature at BWI versus peak 8-hr ozone concentrations in the Baltimore non-attainment area for the period May-September, 1994-2004 (Piety, 2007).

Sea level rise: high end uncertain



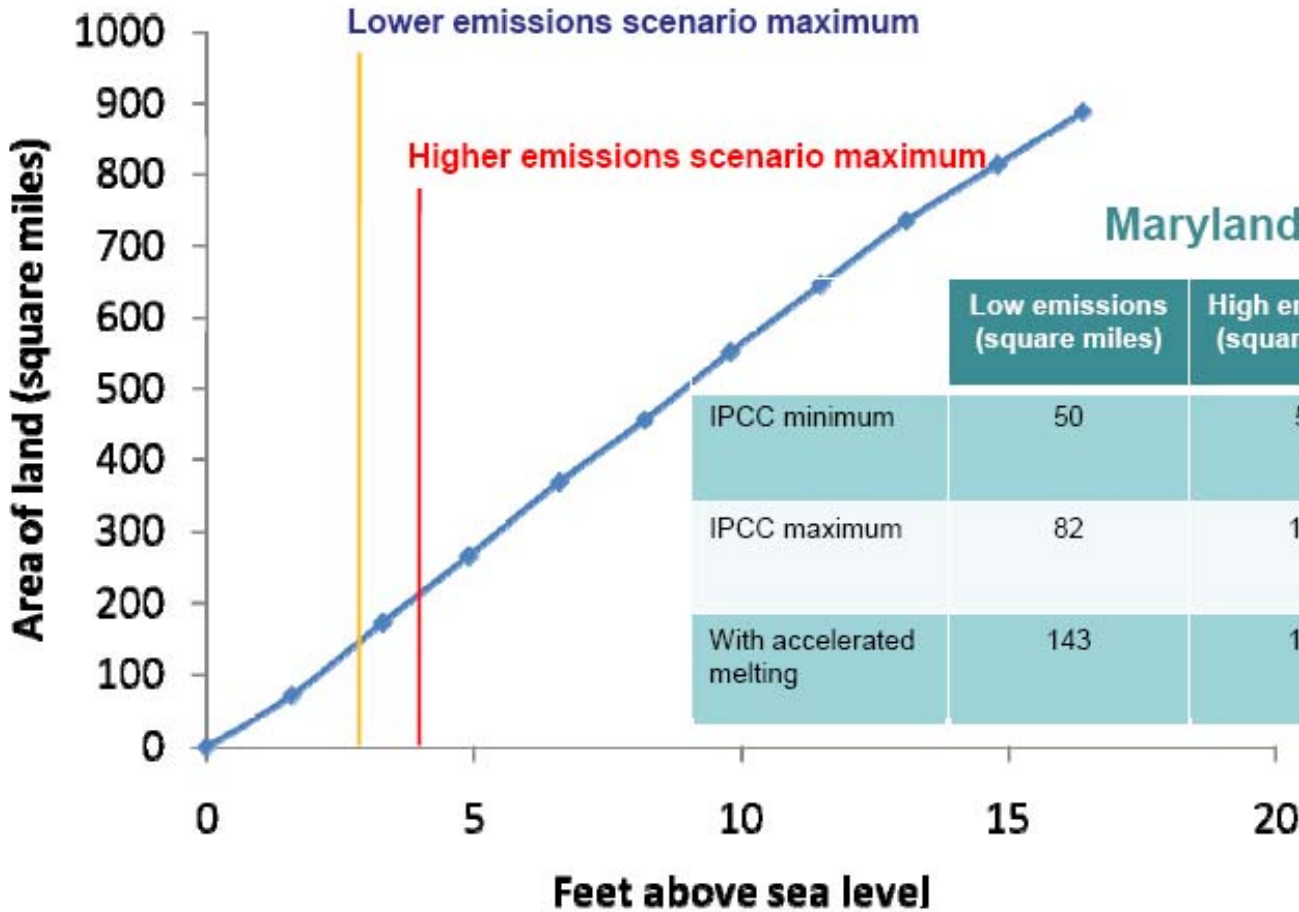
Blue and green may be gone





MARYLAND

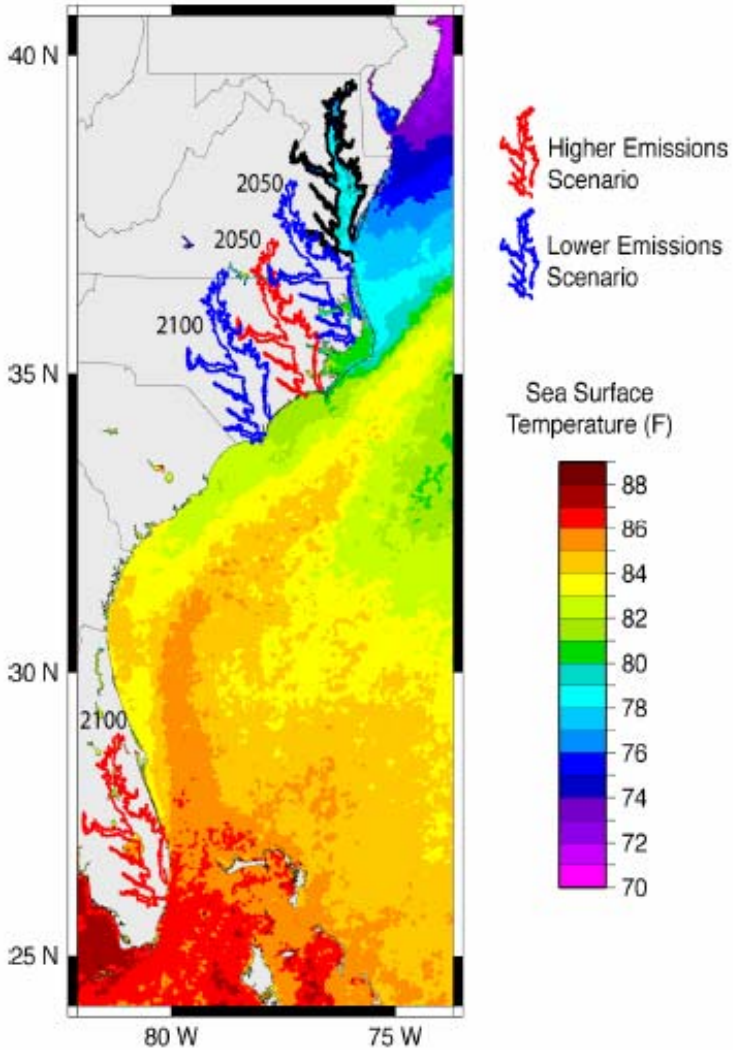
Inundation of low-lying land



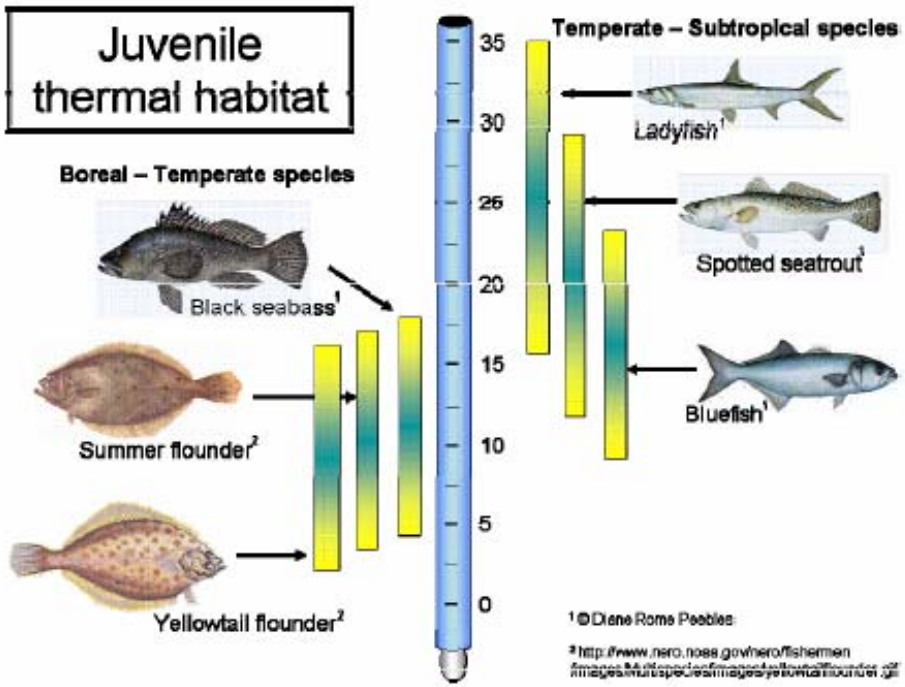
Maryland

	Low emissions (square miles)	High emissions (square miles)
IPCC minimum	50	57
IPCC maximum	82	133
With accelerated melting	143	179

A subtropical Bay?



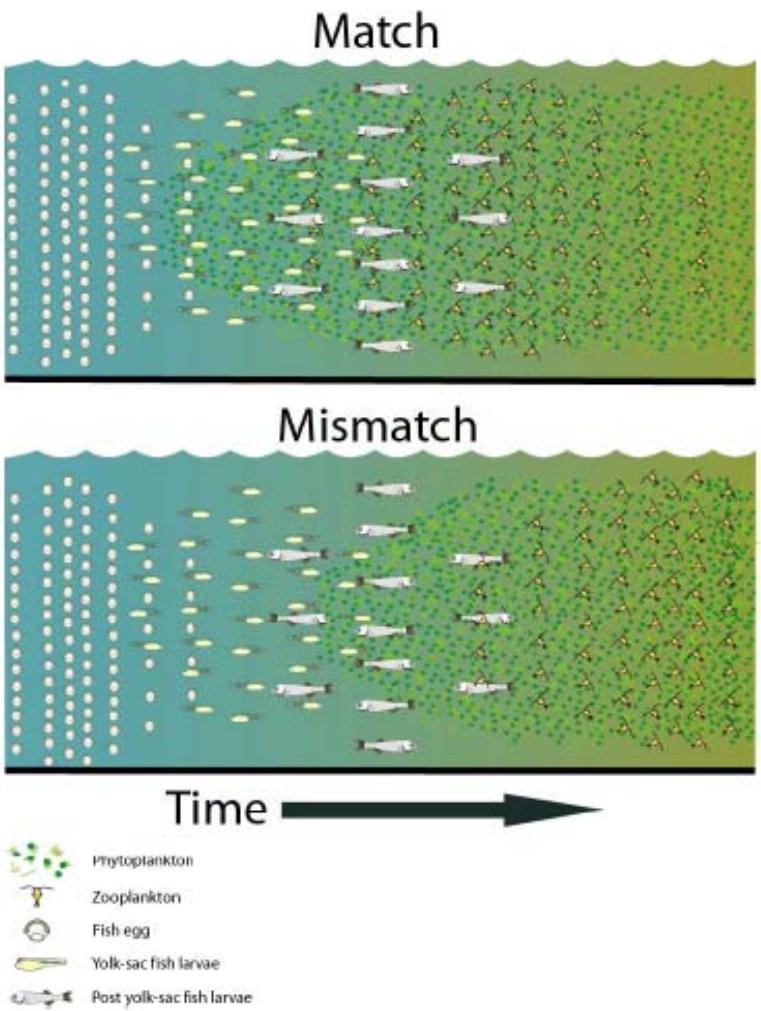
Northern species going, southern species coming



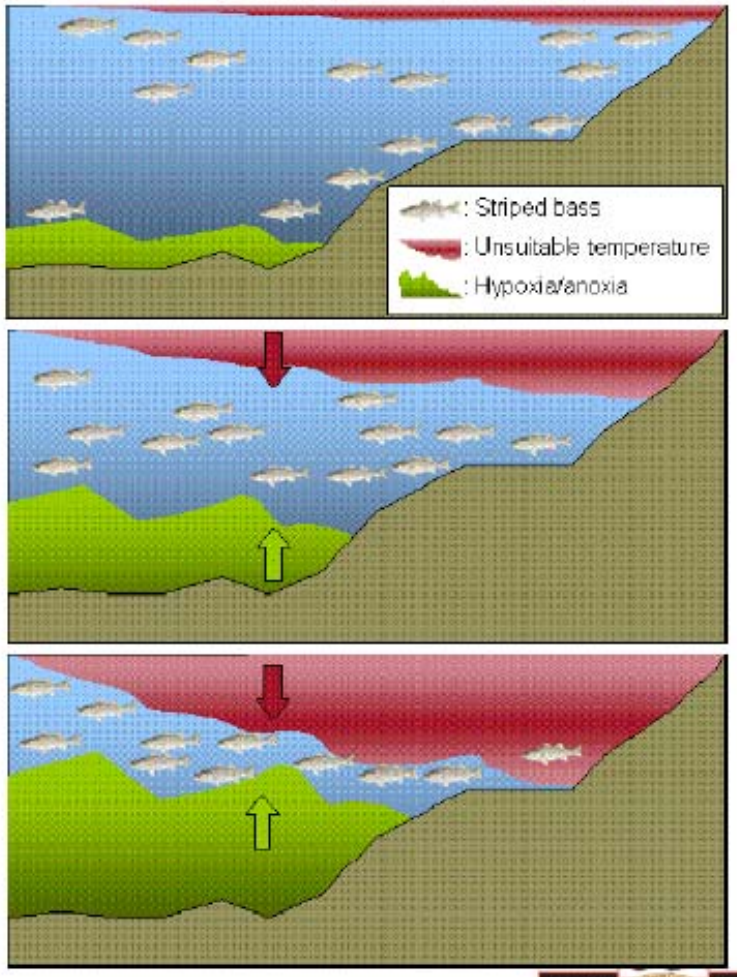
Striped bass habitat squeeze

Challenges to living resources

Throwing off the timing?



Putting on the squeeze?



Questions?

New York Times

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So little time!