

El Cambio Climático

¿Por qué debería importarnos?

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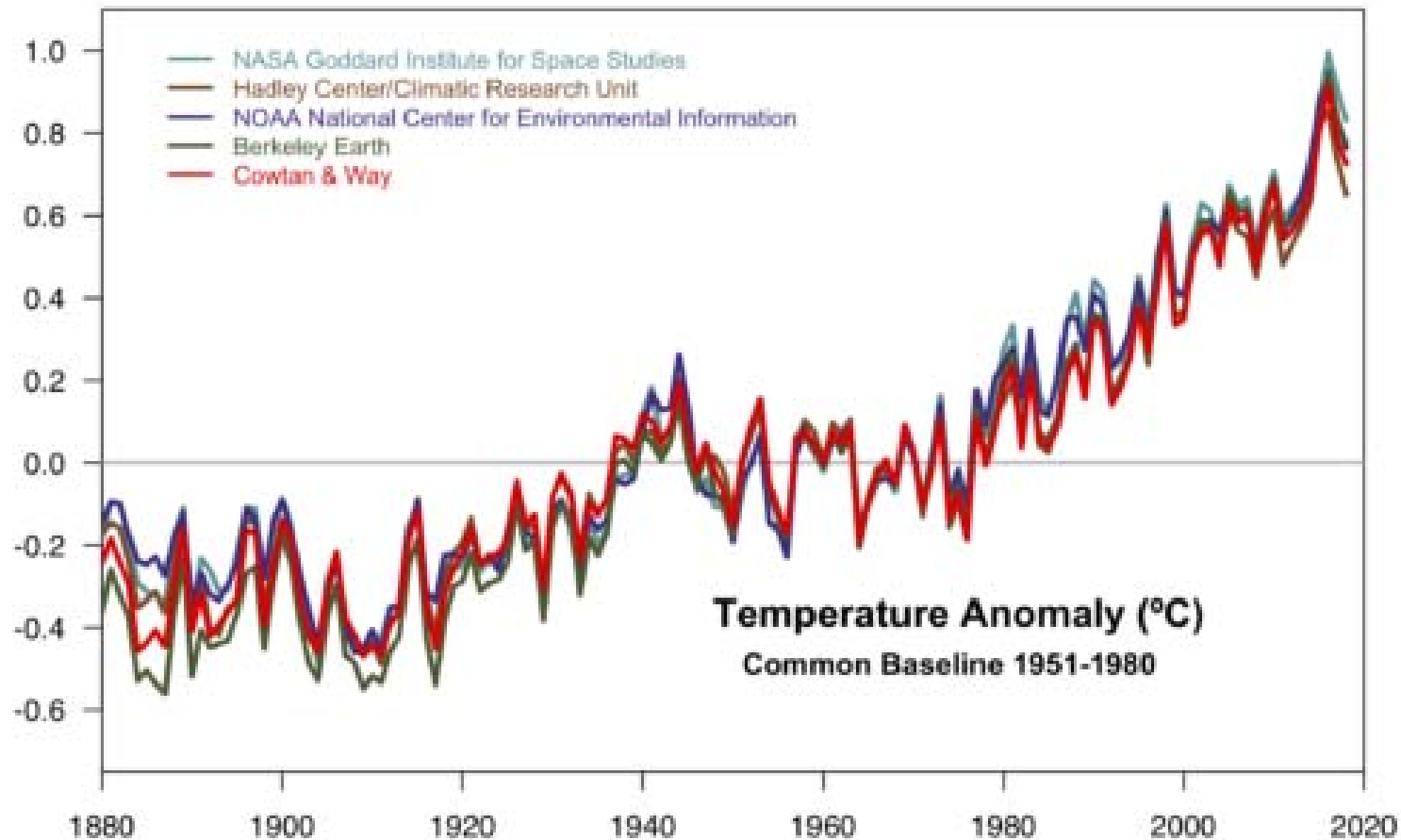
Universidad de Castilla-La Mancha, Toledo

CONAMA
LOCAL
TOLEDO
2019

CAMPO y CIUDAD
AGENDA GLOBAL

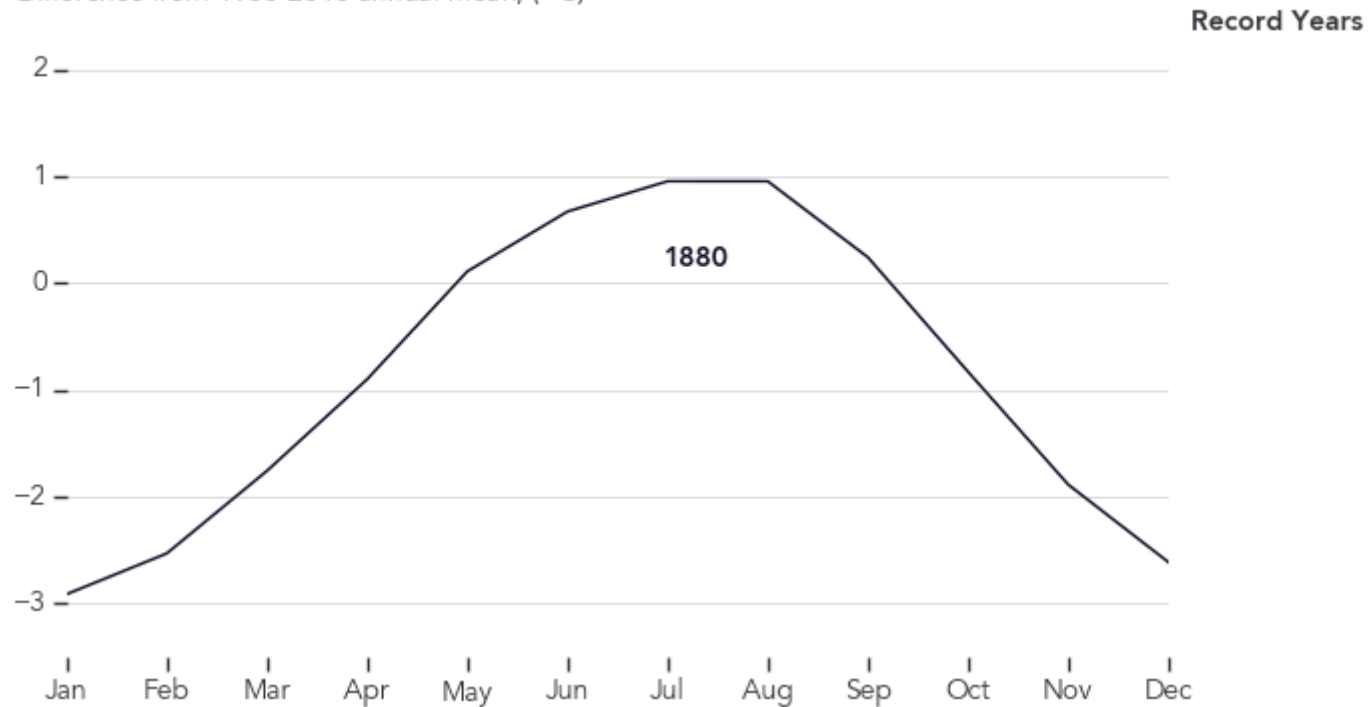


Anomalía térmica (°C)

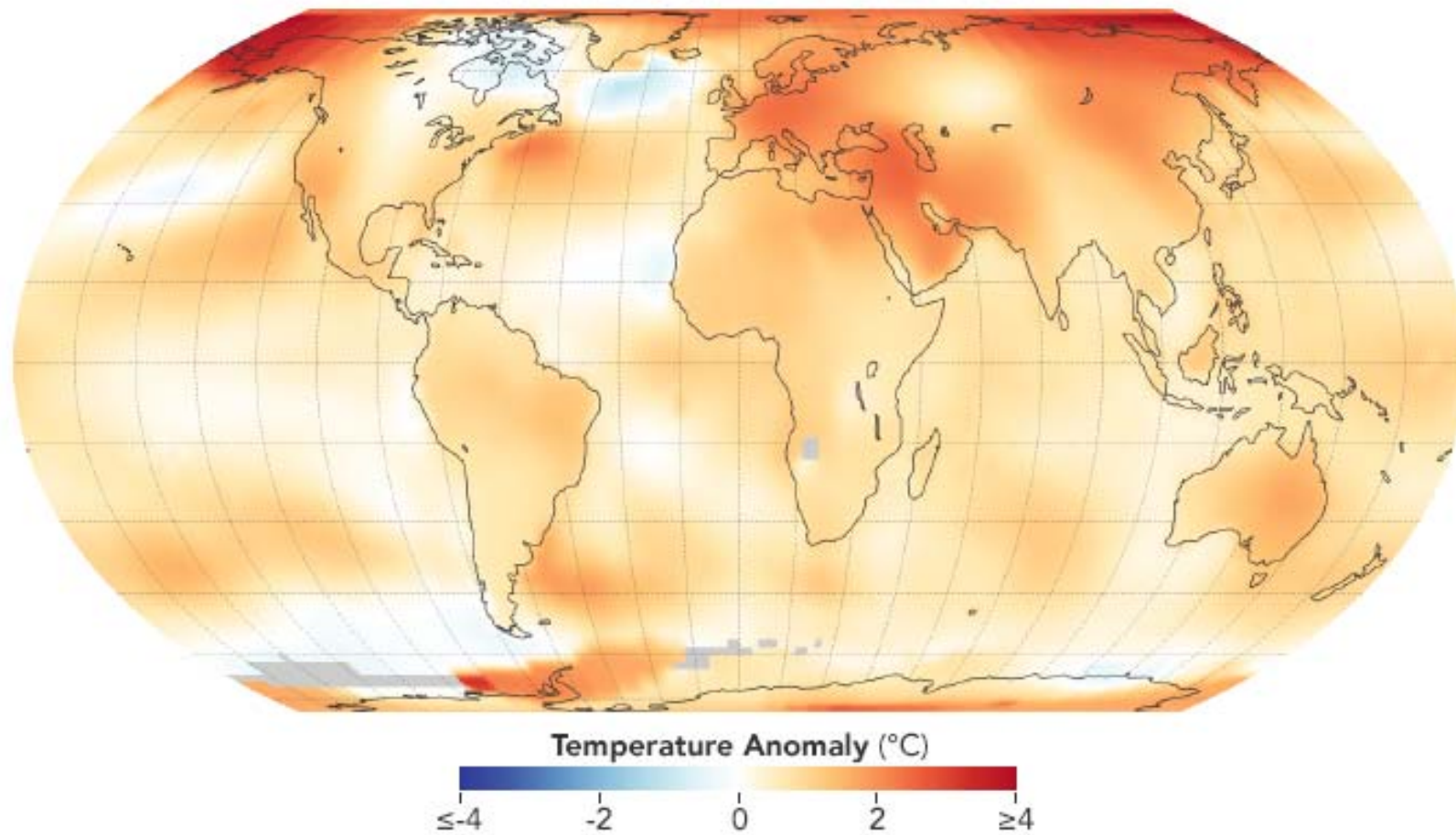


Variación anual de la temperatura

The Present is Warmer than the Past
Difference from 1980-2015 annual mean, (°C)

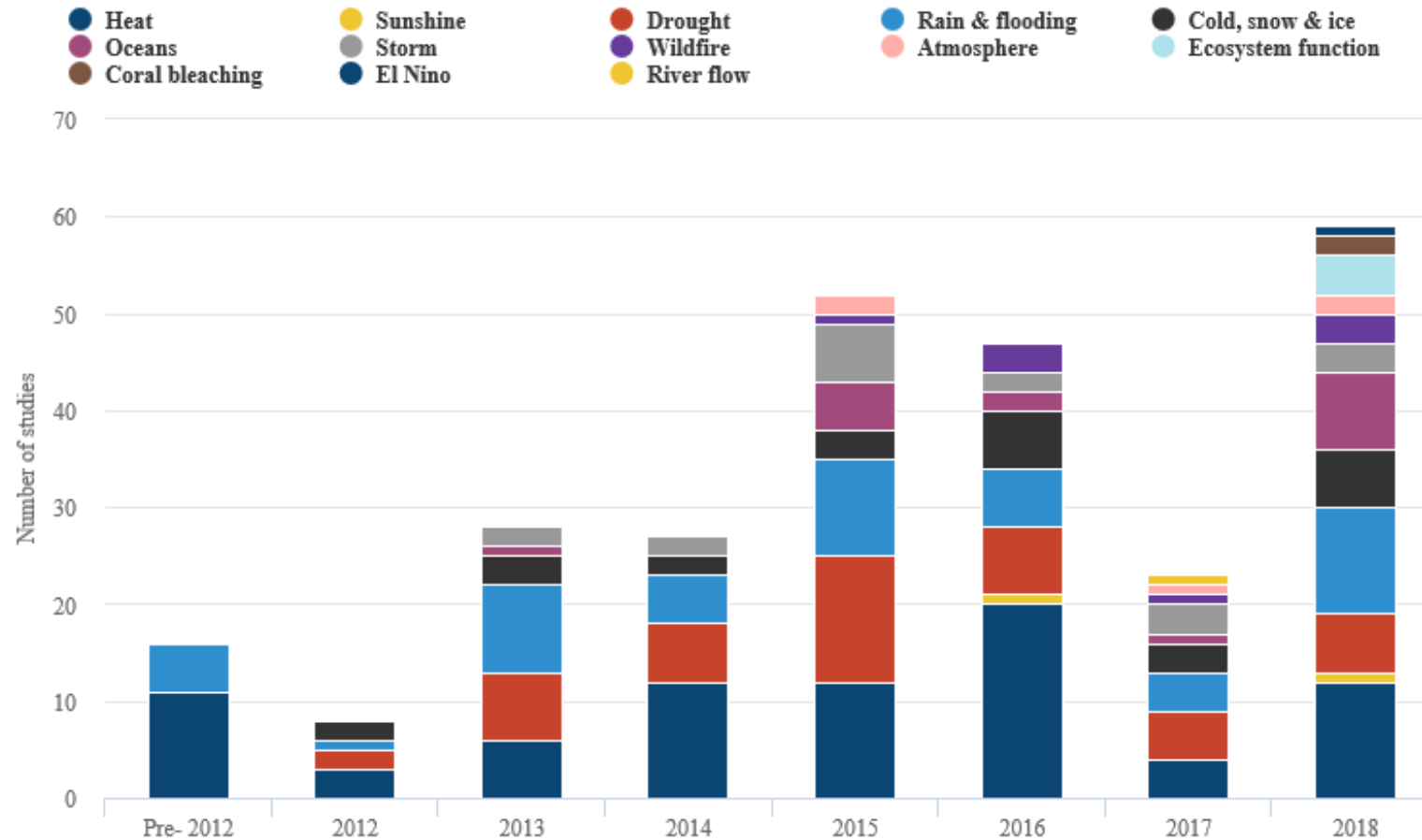


2018 Cuarto año más cálido de los registros

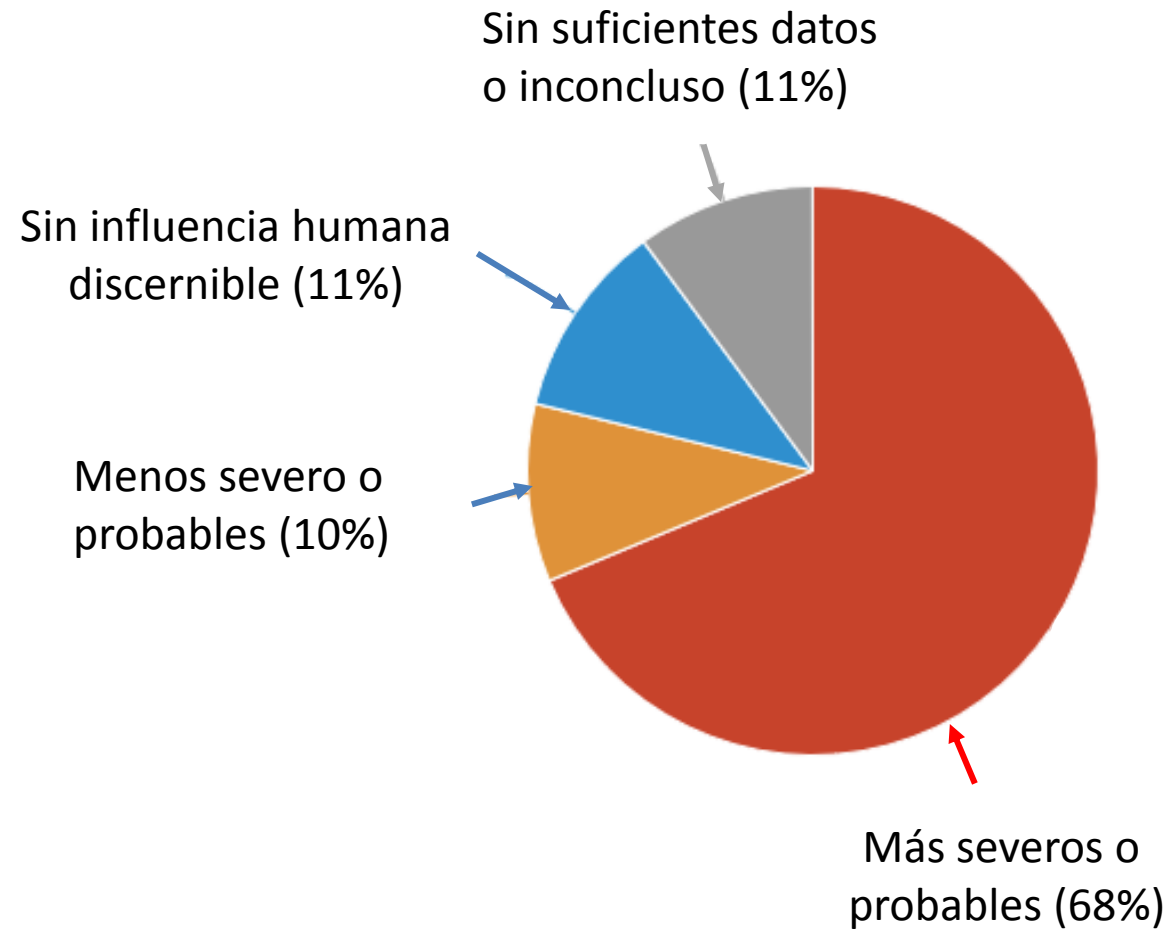


Atribución de eventos extremos

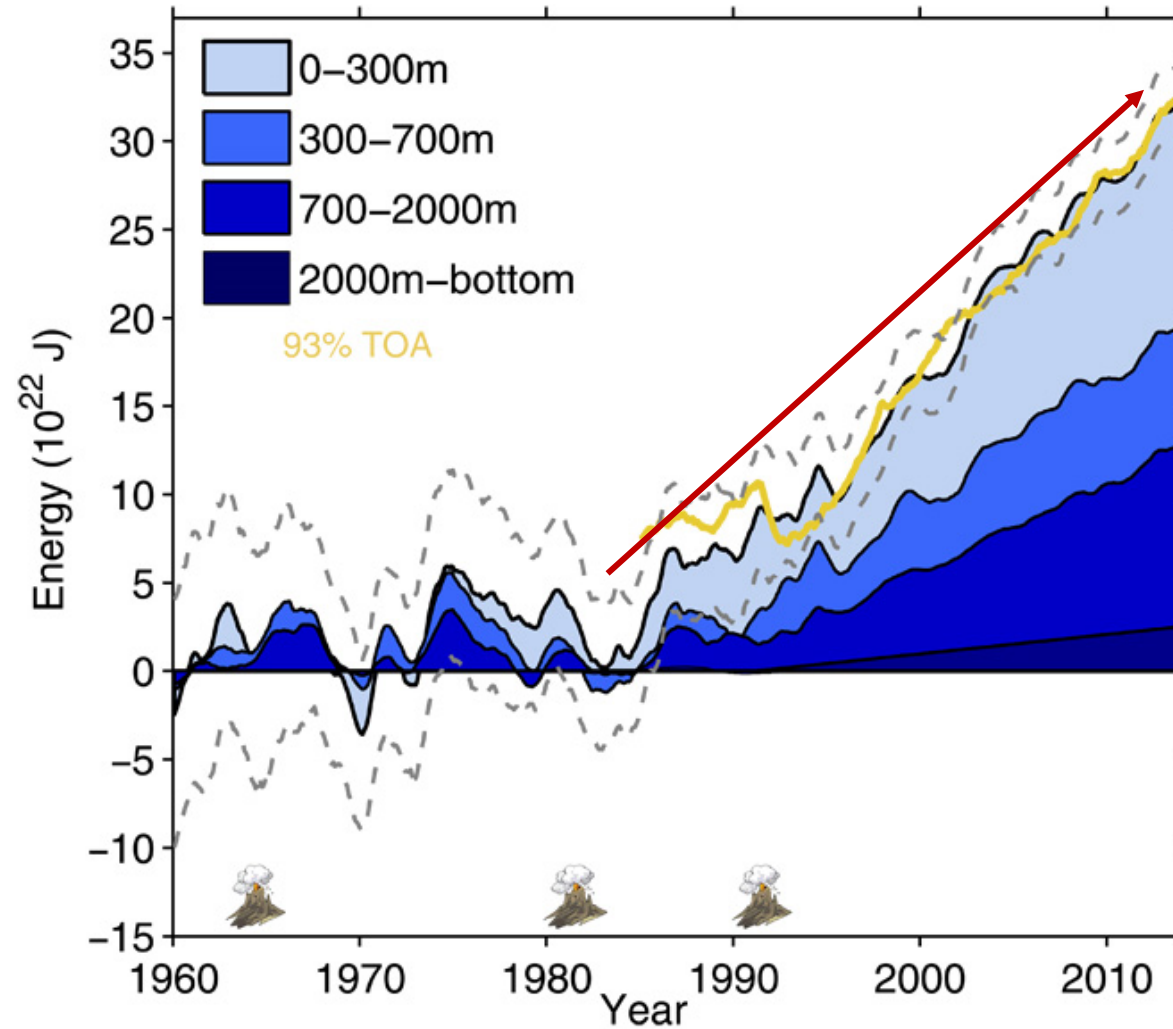
Extreme weather event attribution studies



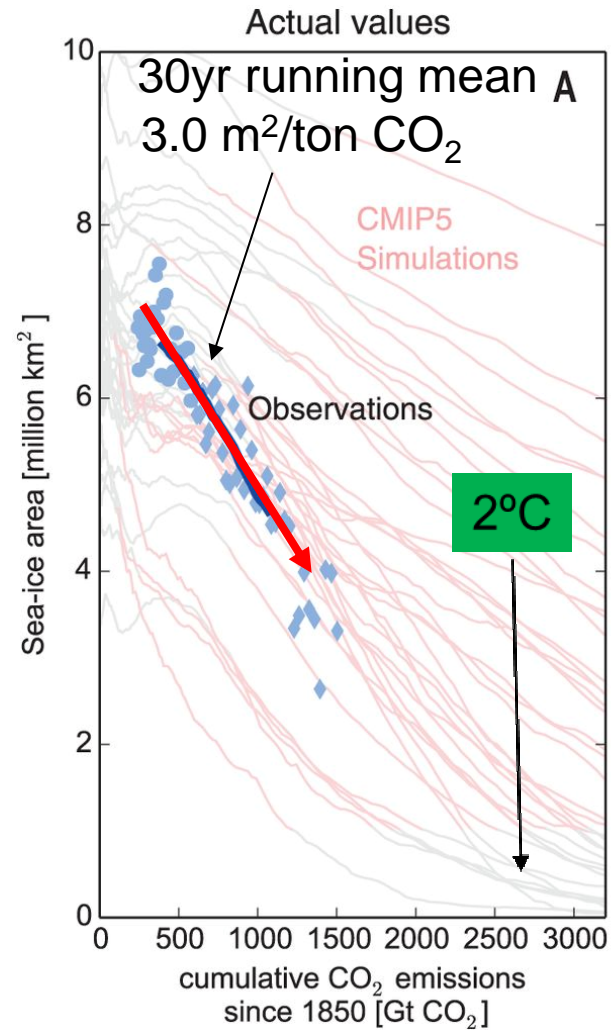
Atribución de eventos extremos



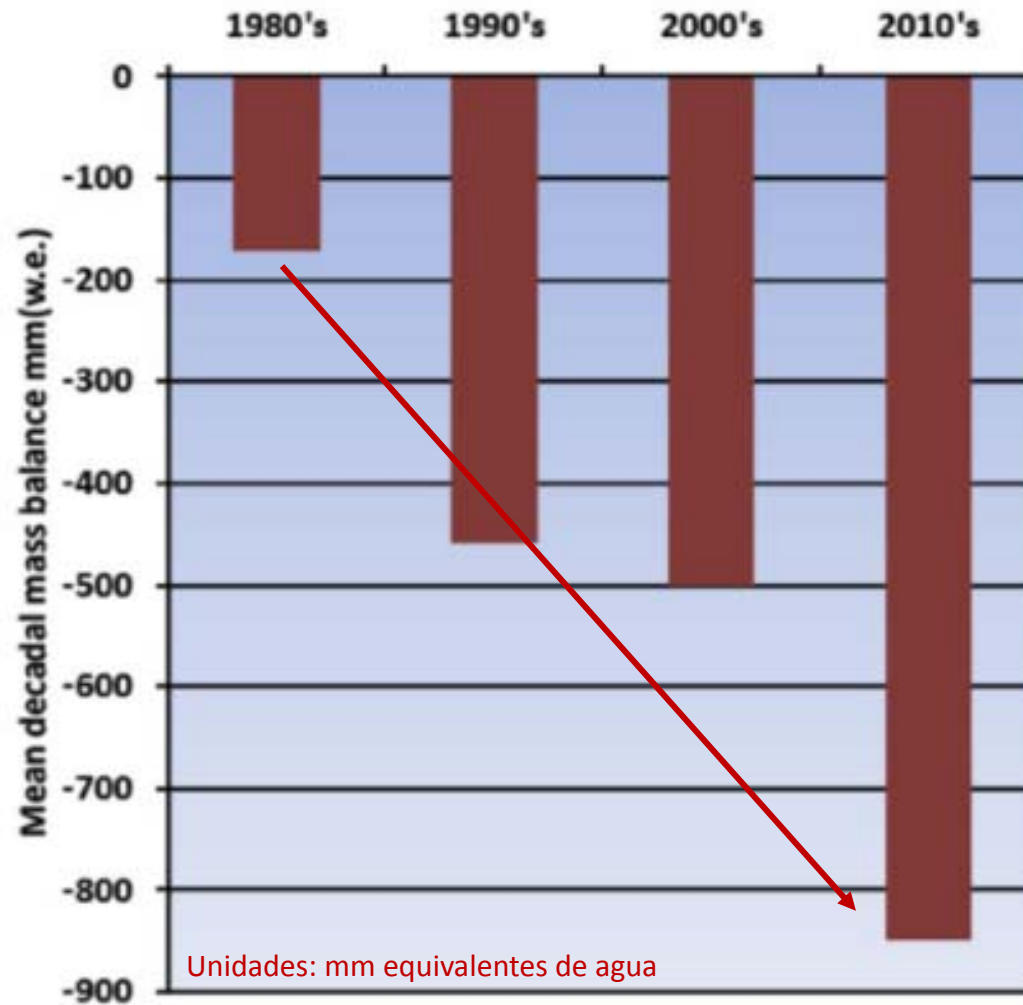
Estimación del balance energético del océano



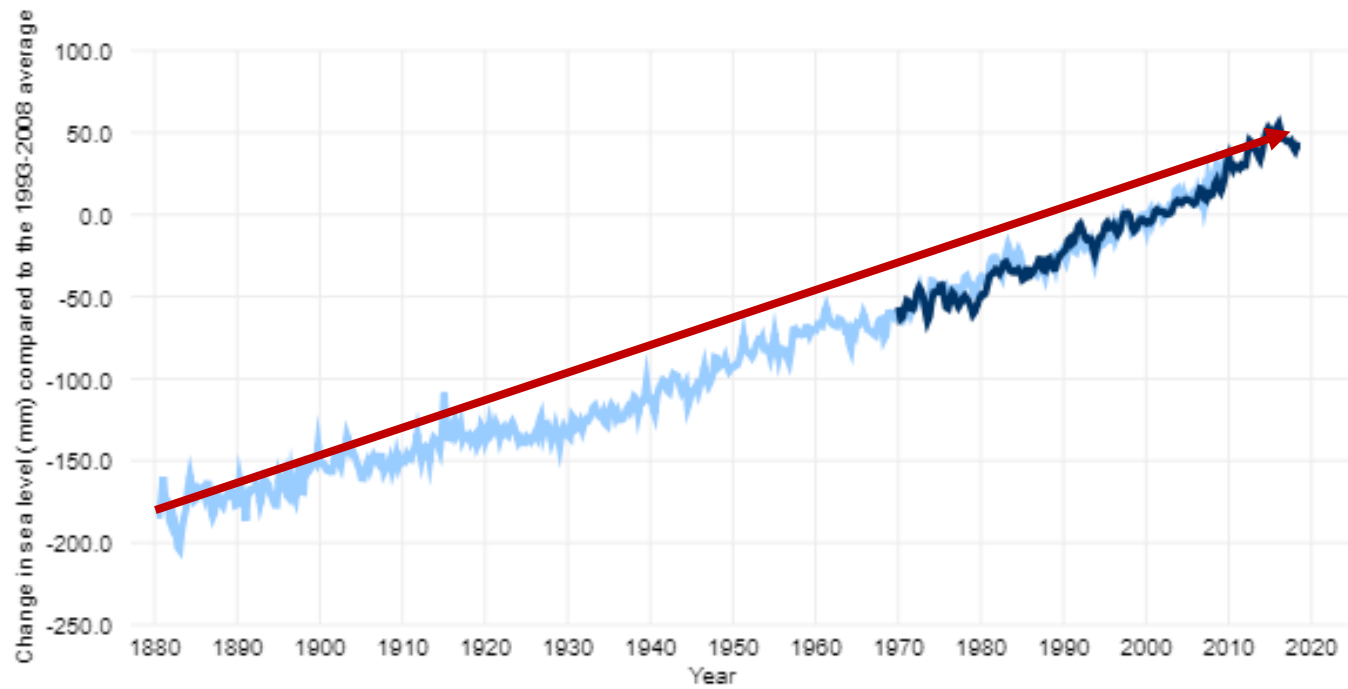
Relación entre el área de hielo ártico en septiembre y las emisiones antropogénicas de CO₂



Promedio decadal del balance de masa de los glaciares de referencia alpinos del mundo



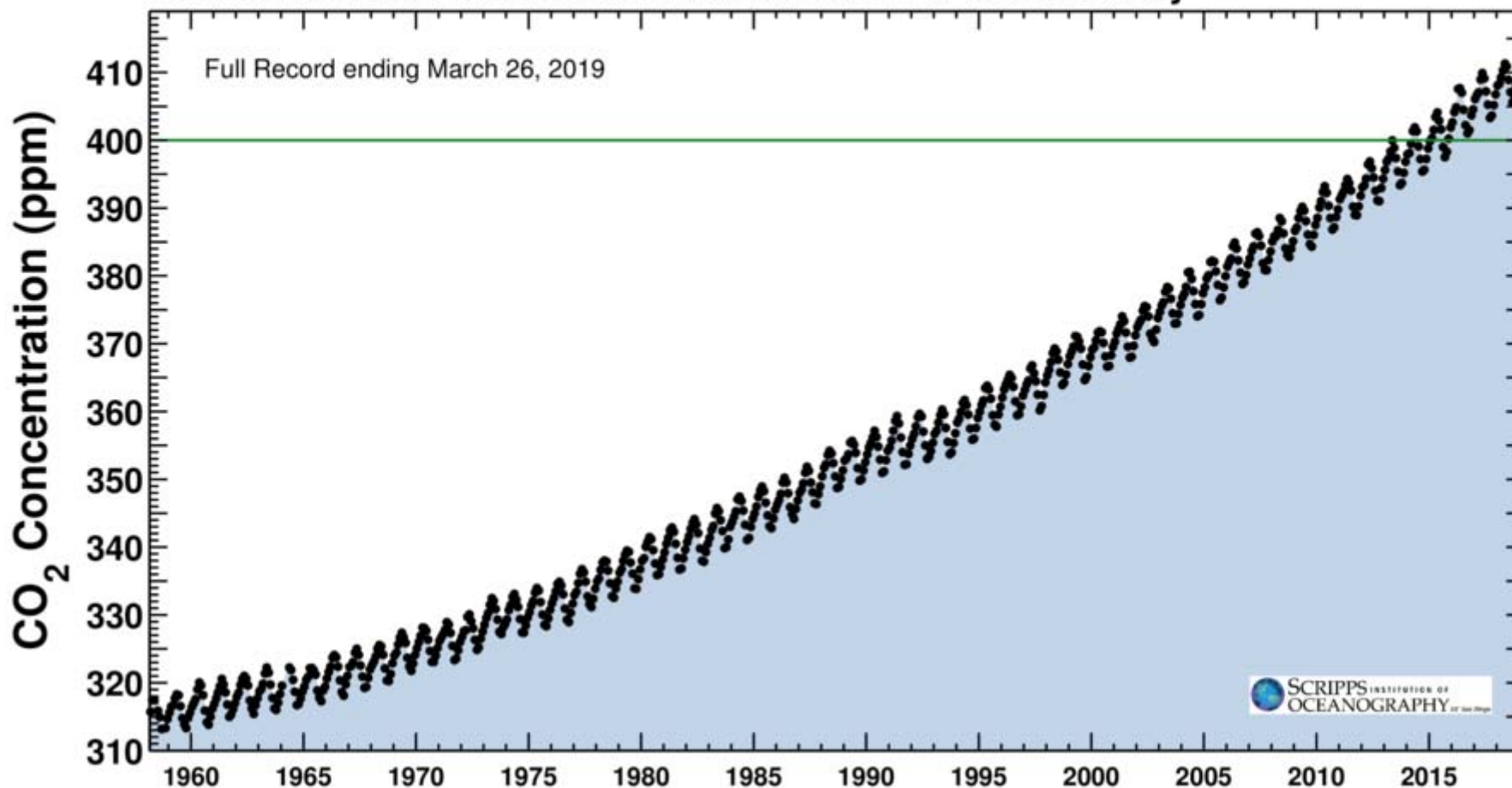
Tendencia del nivel mar global



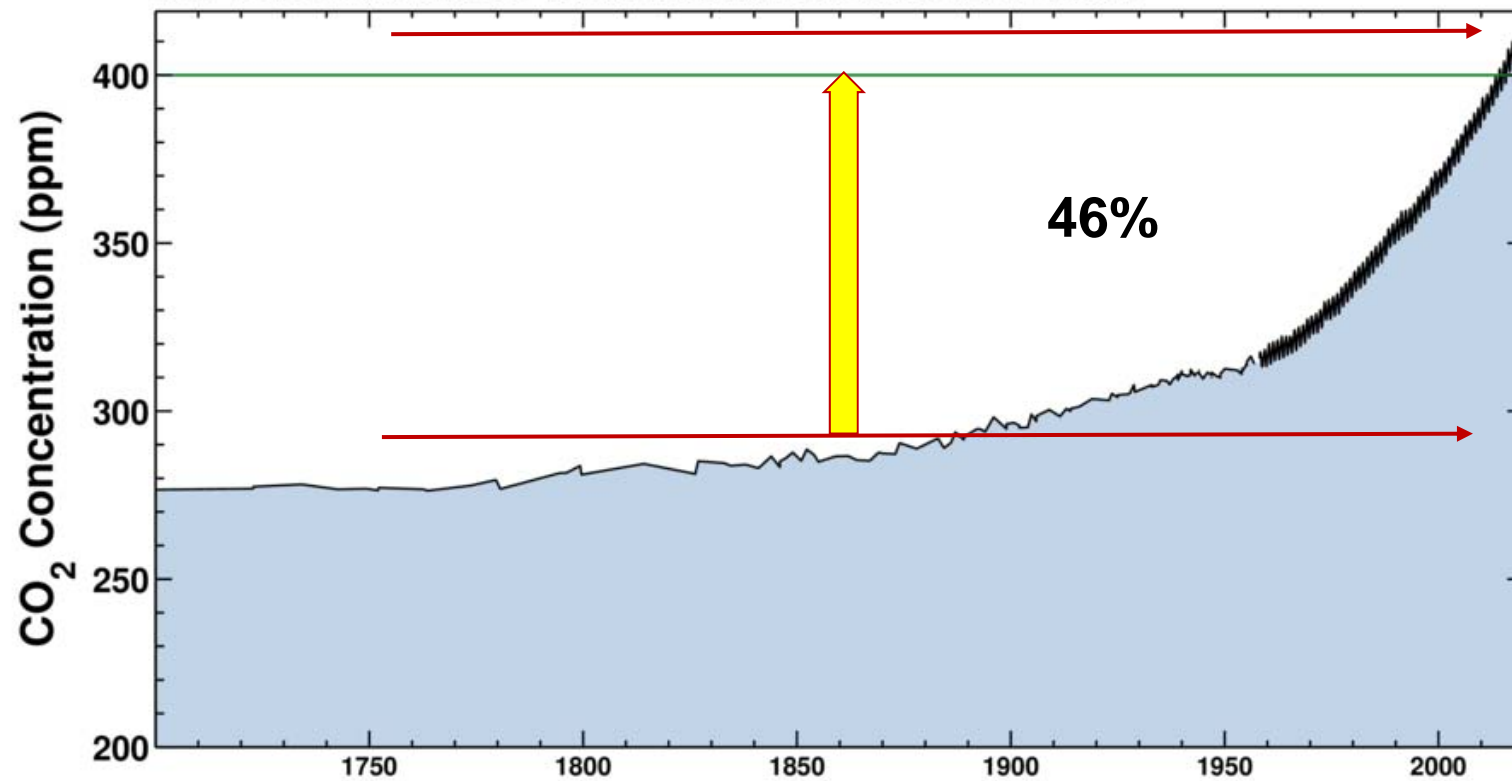
Latest CO₂ reading
March 26, 2019

410.58 ppm

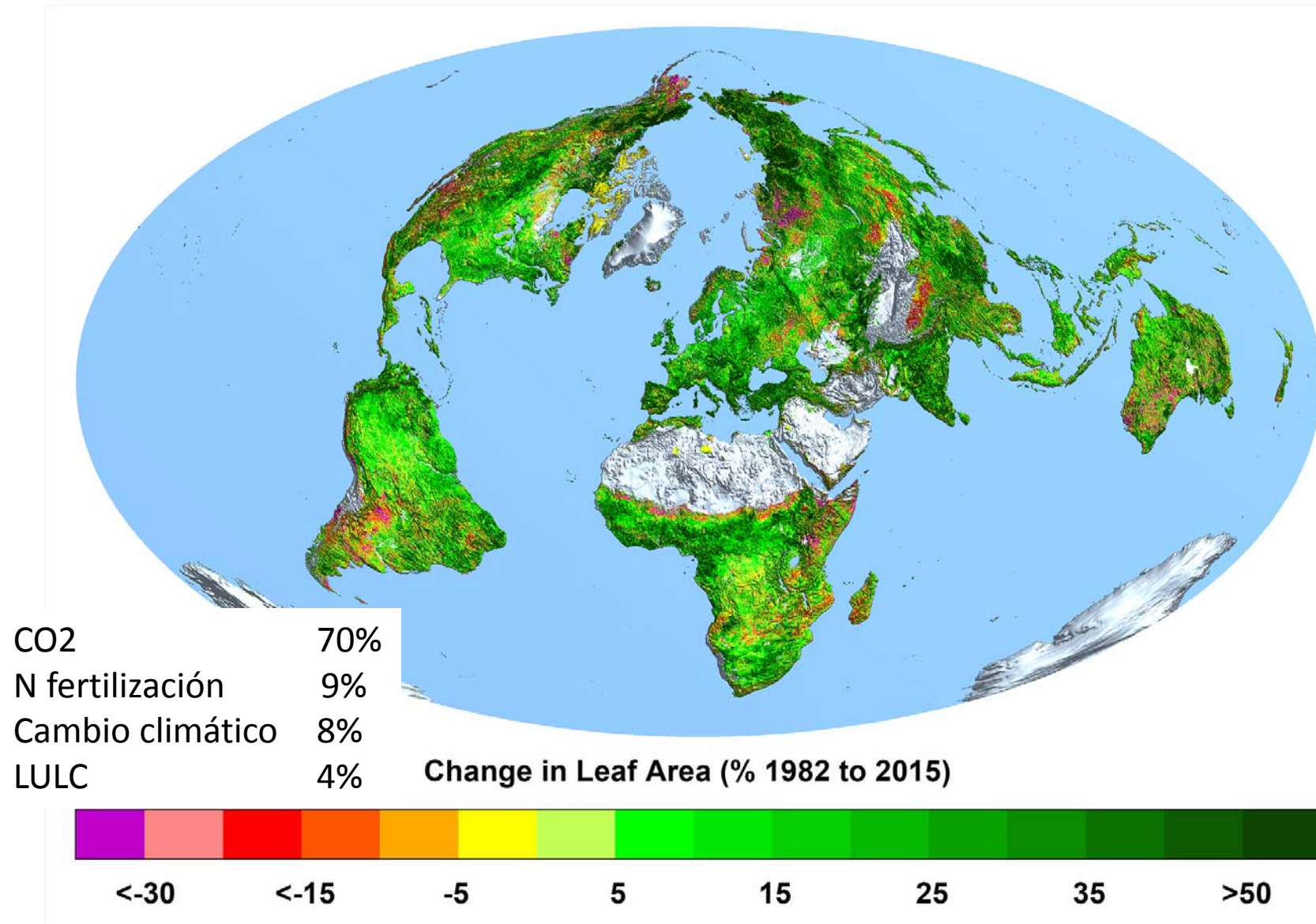
Carbon dioxide concentration at Mauna Loa Observatory



El CO₂ en el pasado reciente

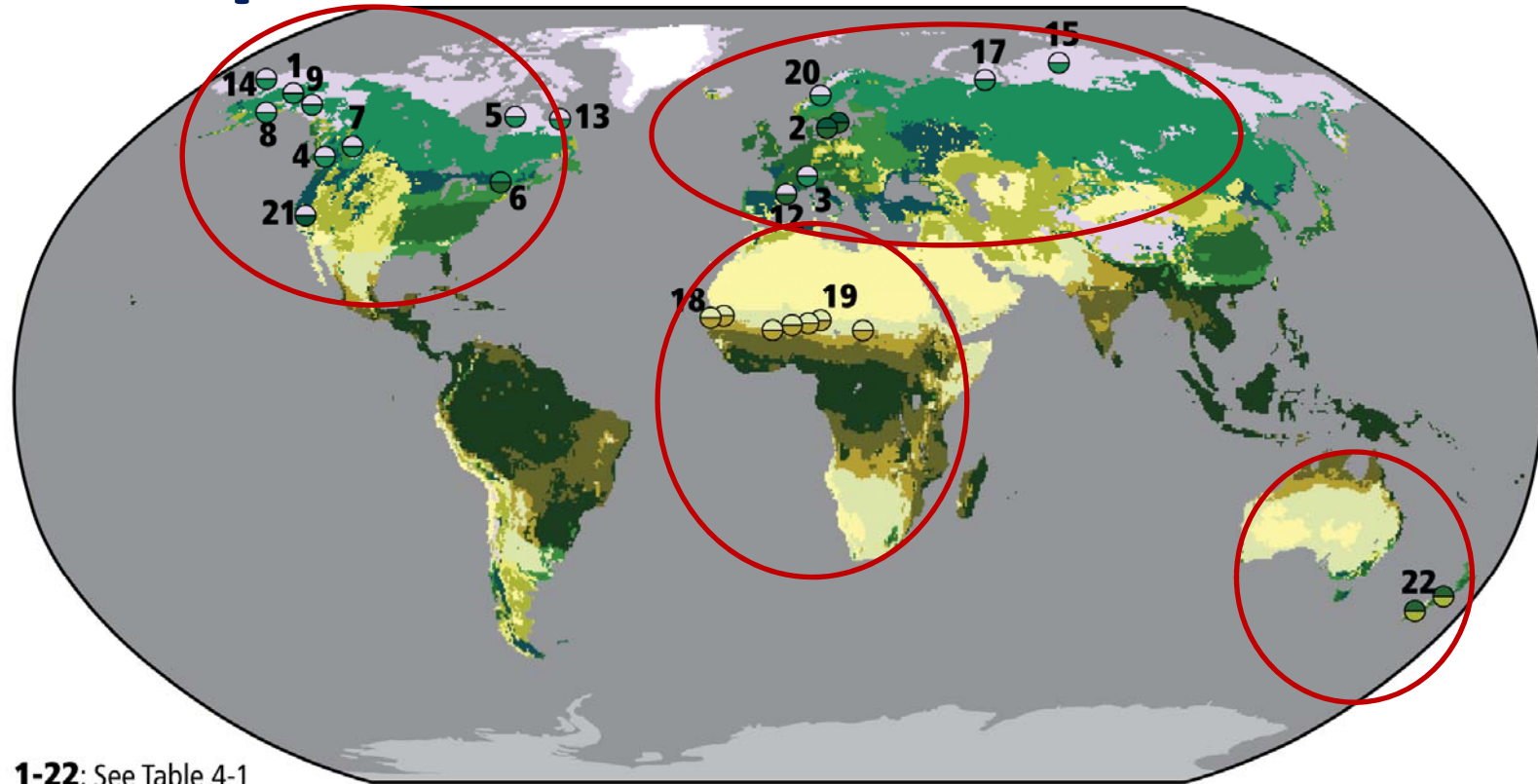


El enverdecimiento terrestre



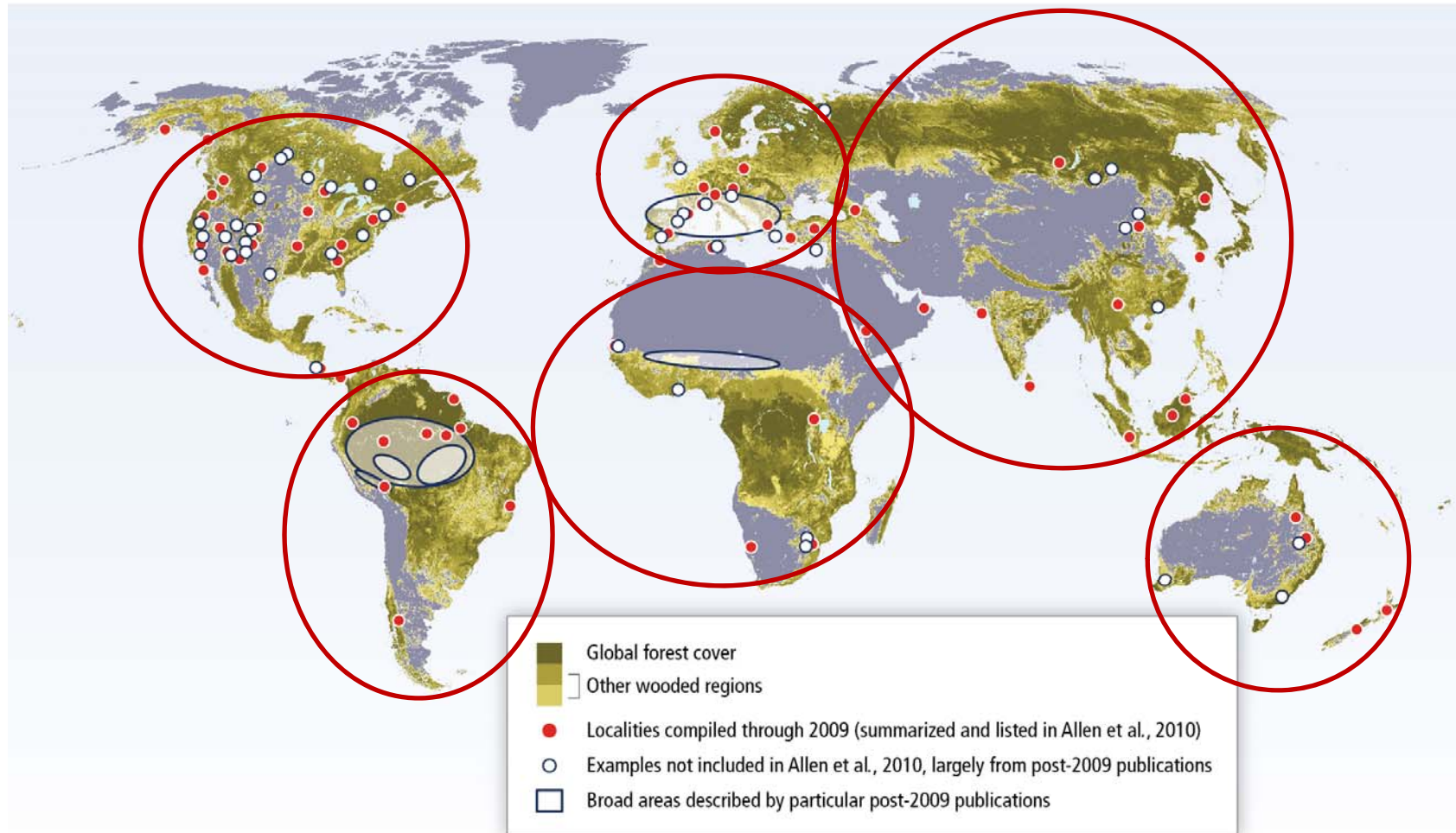
De: Zhu et al. 2016 Nature Climate Change; imagen de R. Myneni, Boston Univ.

Desplazamiento de los biomas

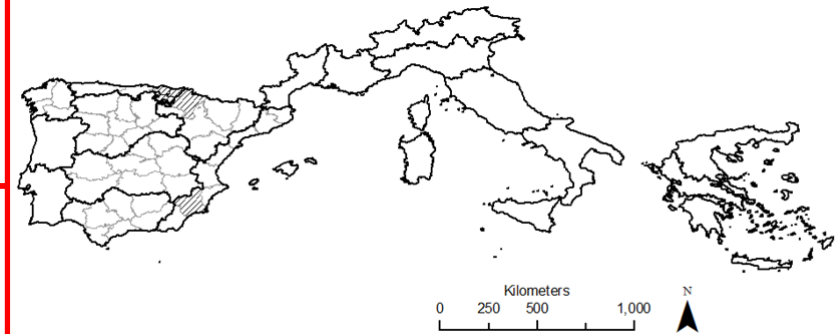
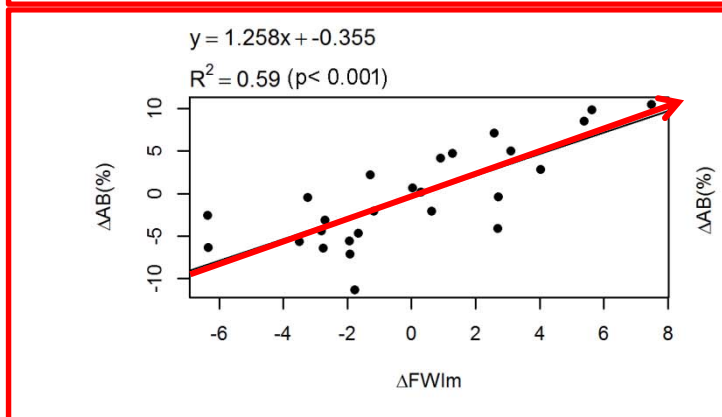
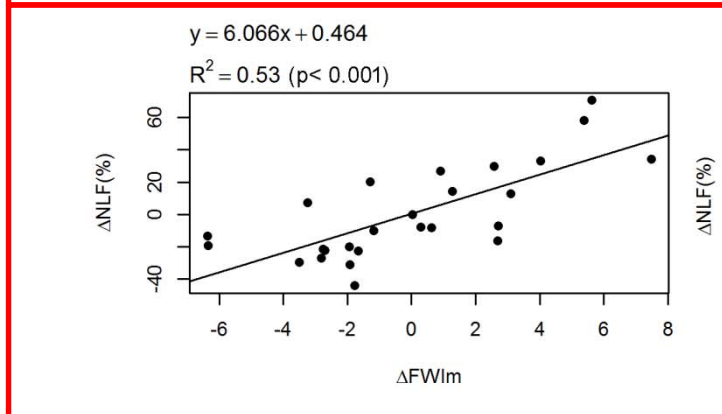
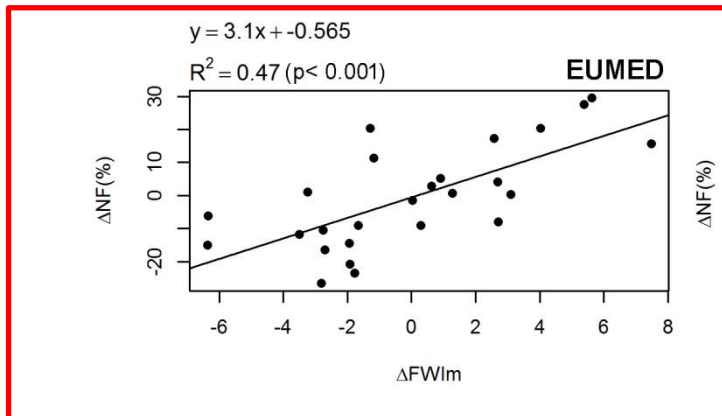


Biomes					
□	IC: Ice	■	TC: Temperate conifer forest	■	DE: Desert
■	UA: Tundra and alpine	■	TB: Temperate broadleaf forest	■	RG: Tropical grassland
■	BC: Boreal conifer forest	■	TM: Temperate mixed forest	■	RW: Tropical woodland
		■	TS: Temperate shrubland	■	RD: Tropical deciduous broadleaf forest
		■	TG: Temperate grassland	■	RE: Tropical evergreen broadleaf forest

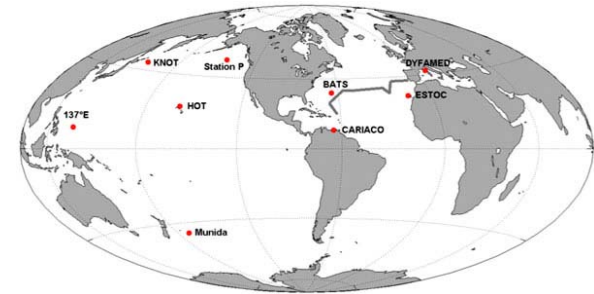
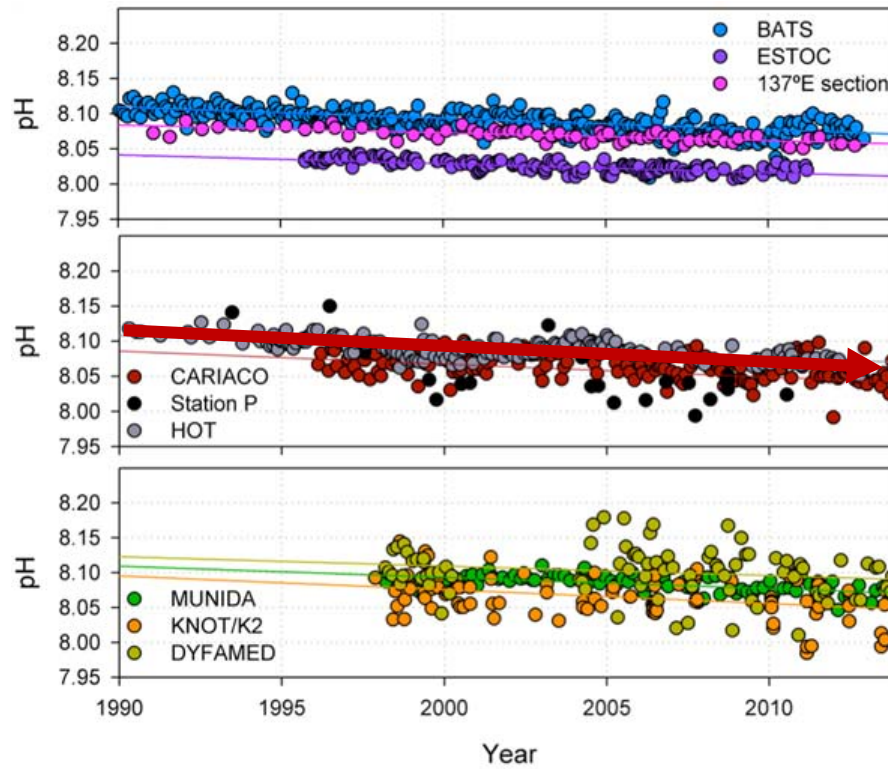
Mortalidad de árboles generalizada



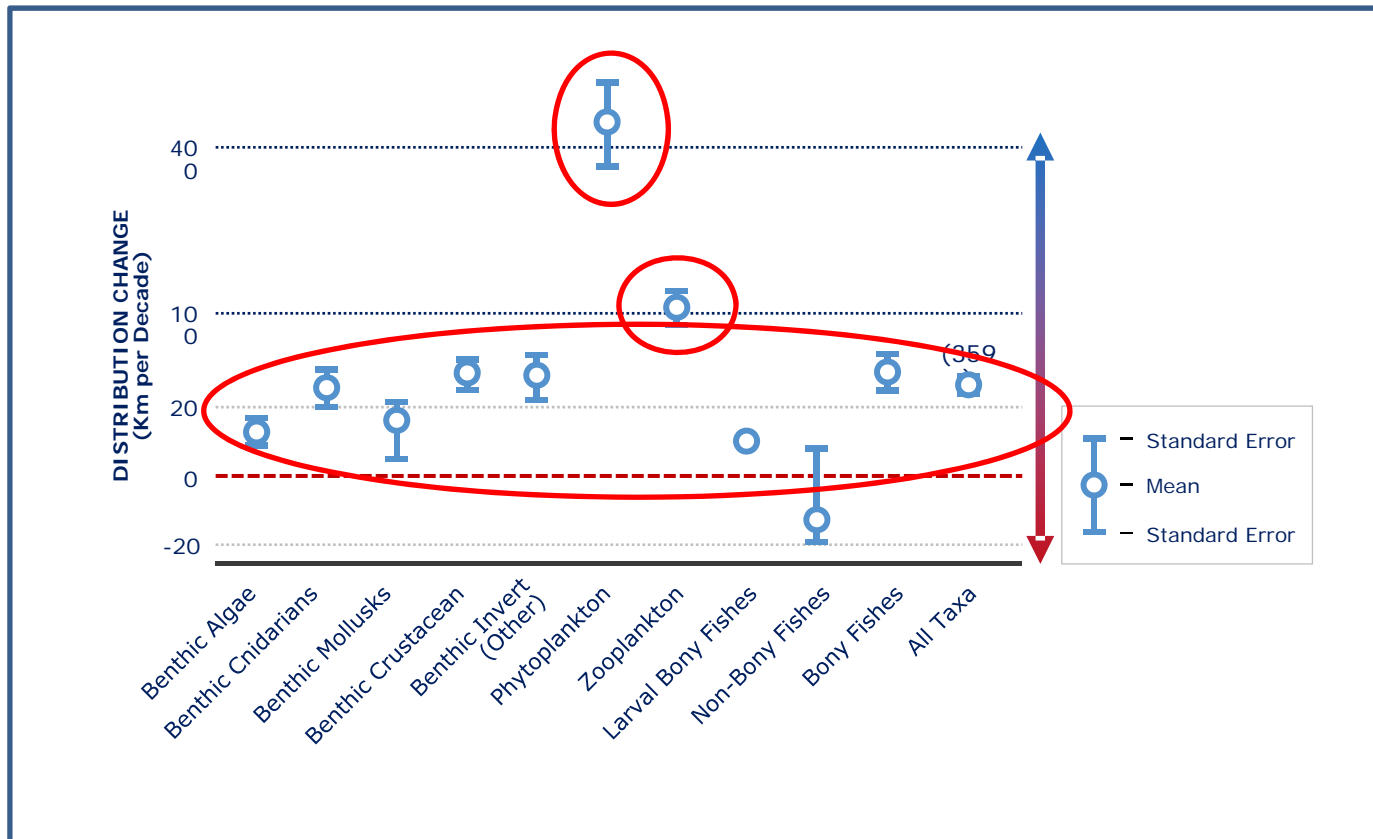
Incendios y FWI en Europe



Tendencias del pH del océano

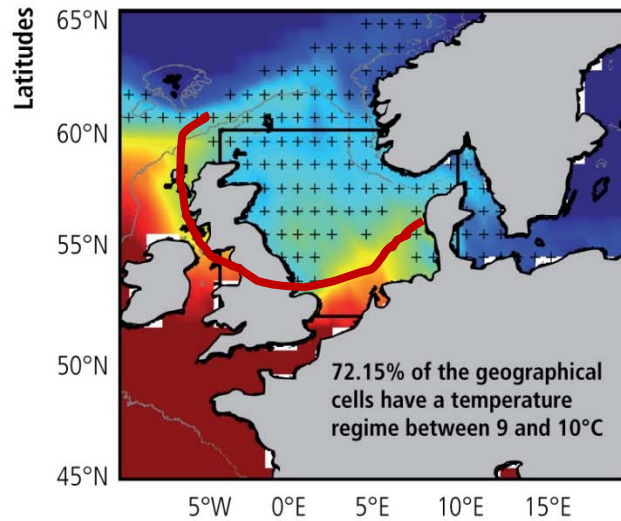


Cambios generalizados en la biota

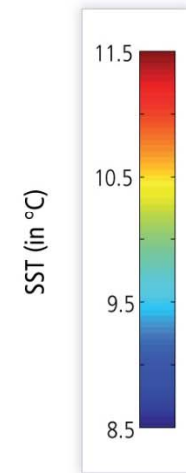
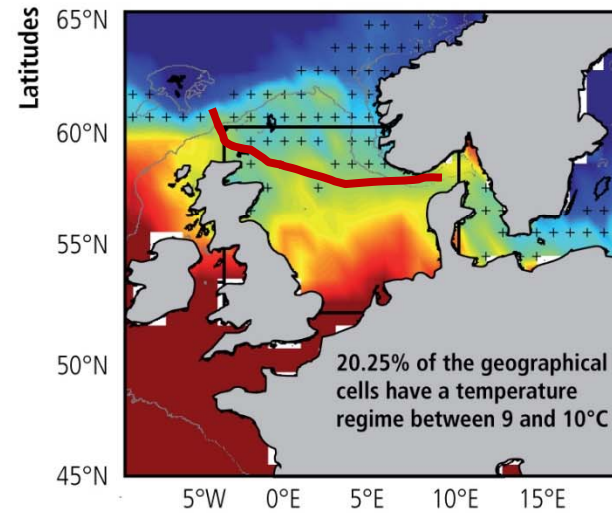


Temperatura del mar en el NW de Europa

(c) Temperature regime (1960–1981)

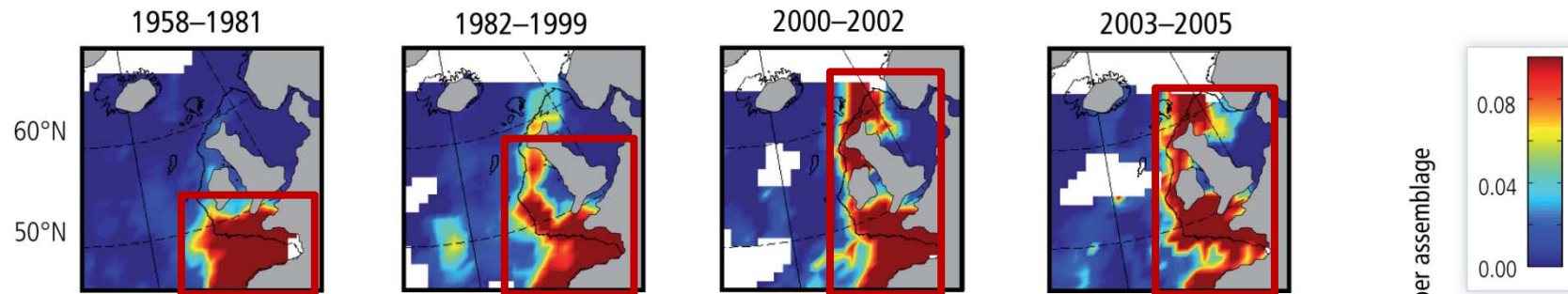


(d) Temperature regime (1988–2005)

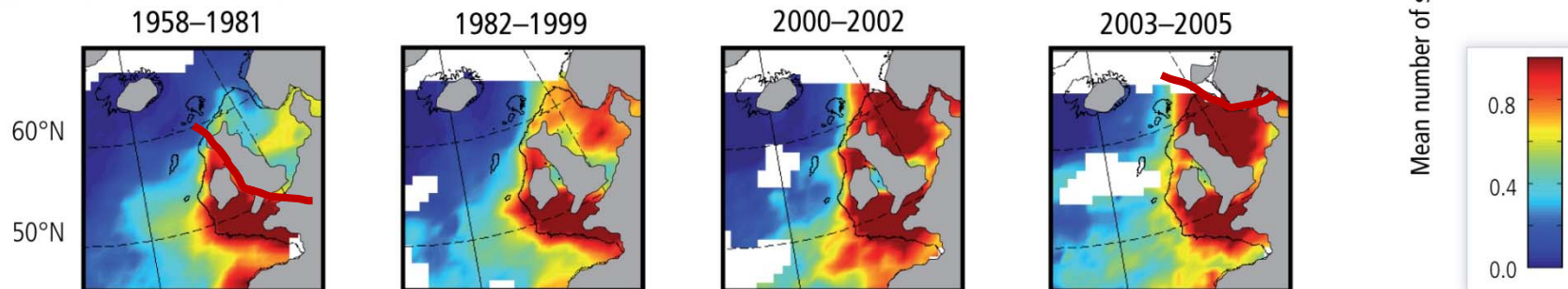


Desplazamiento de especies marinas

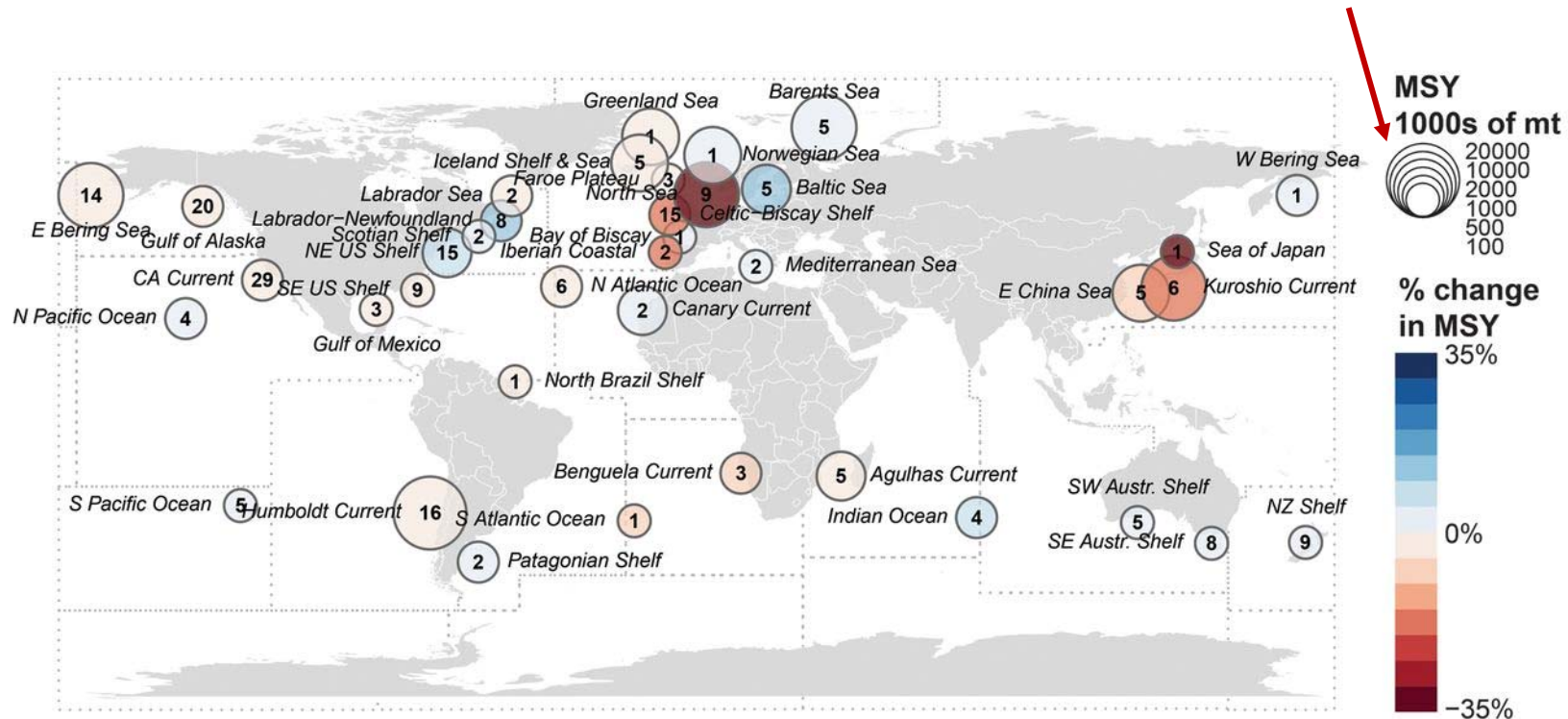
(e) Warm-temperate pseudo-oceanic species



(f) Temperate pseudo-oceanic species

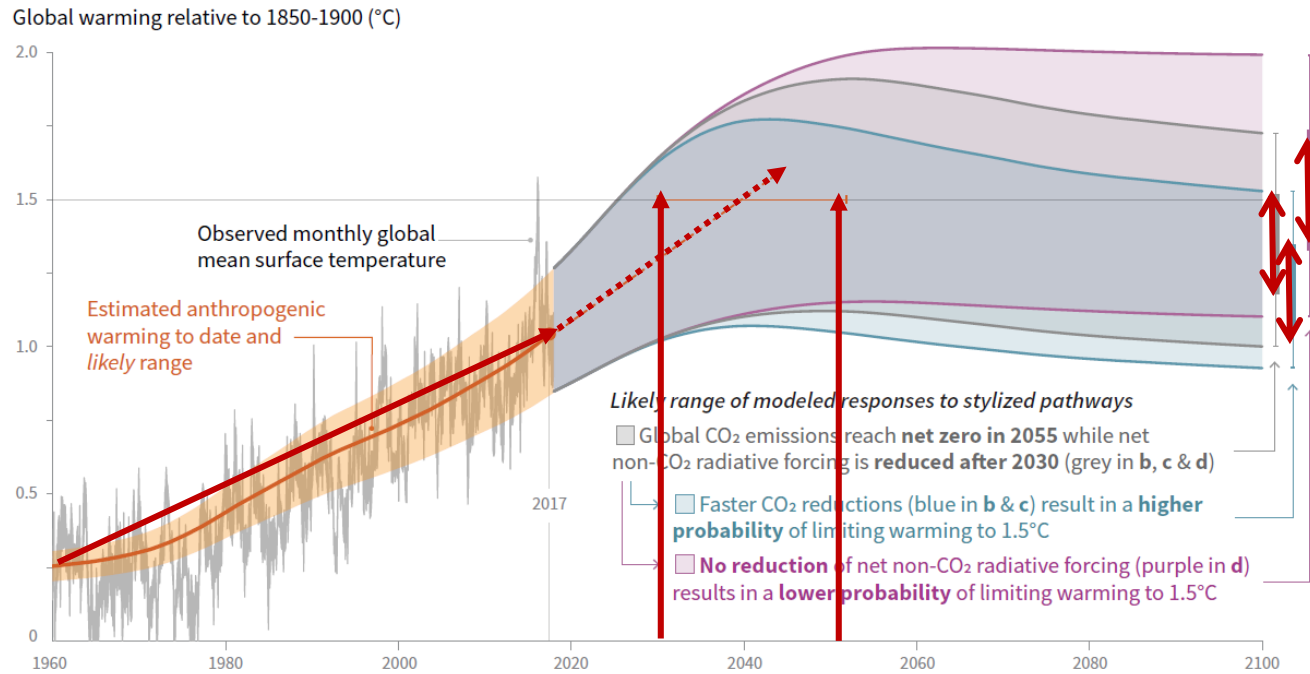


Porcentaje de cambio del rendimiento máximo sostenible de 1930 -1939 a 2001-2010 por ecorregiones marinas



N N= Número de poblaciones estudiadas

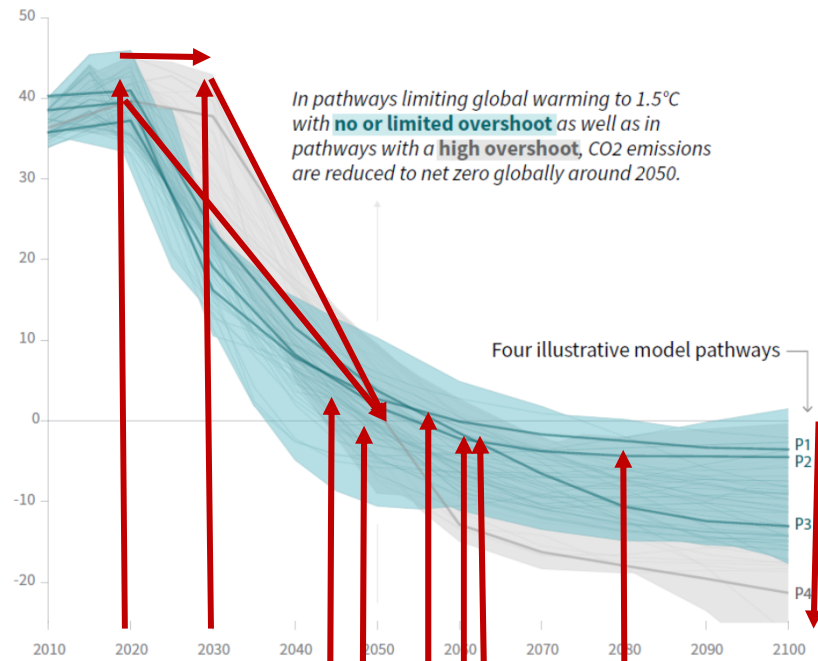
¿Qué hay que hacer para no calentarnos más de 1,5°C?



Escenarios para 1,5°C

Global total net CO₂ emissions

Billion tonnes of CO₂/yr



Timing of net zero CO₂
Line widths depict the 5-95th percentile and the 25-75th percentile of scenarios

Pathways limiting global warming to 1.5°C with no or low overshoot

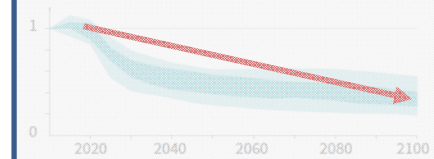
Pathways with high overshoot

Pathways limiting global warming below 2°C
(Not shown above)

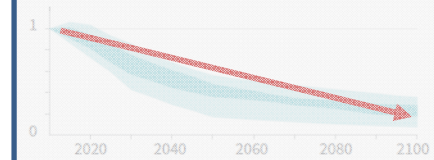
Non-CO₂ emissions relative to 2010

Emissions of non-CO₂ forcers are also reduced or limited in pathways limiting global warming to 1.5°C with **no or limited overshoot**, but they do not reach zero globally.

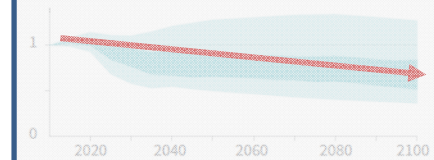
Methane emissions



Black carbon emissions



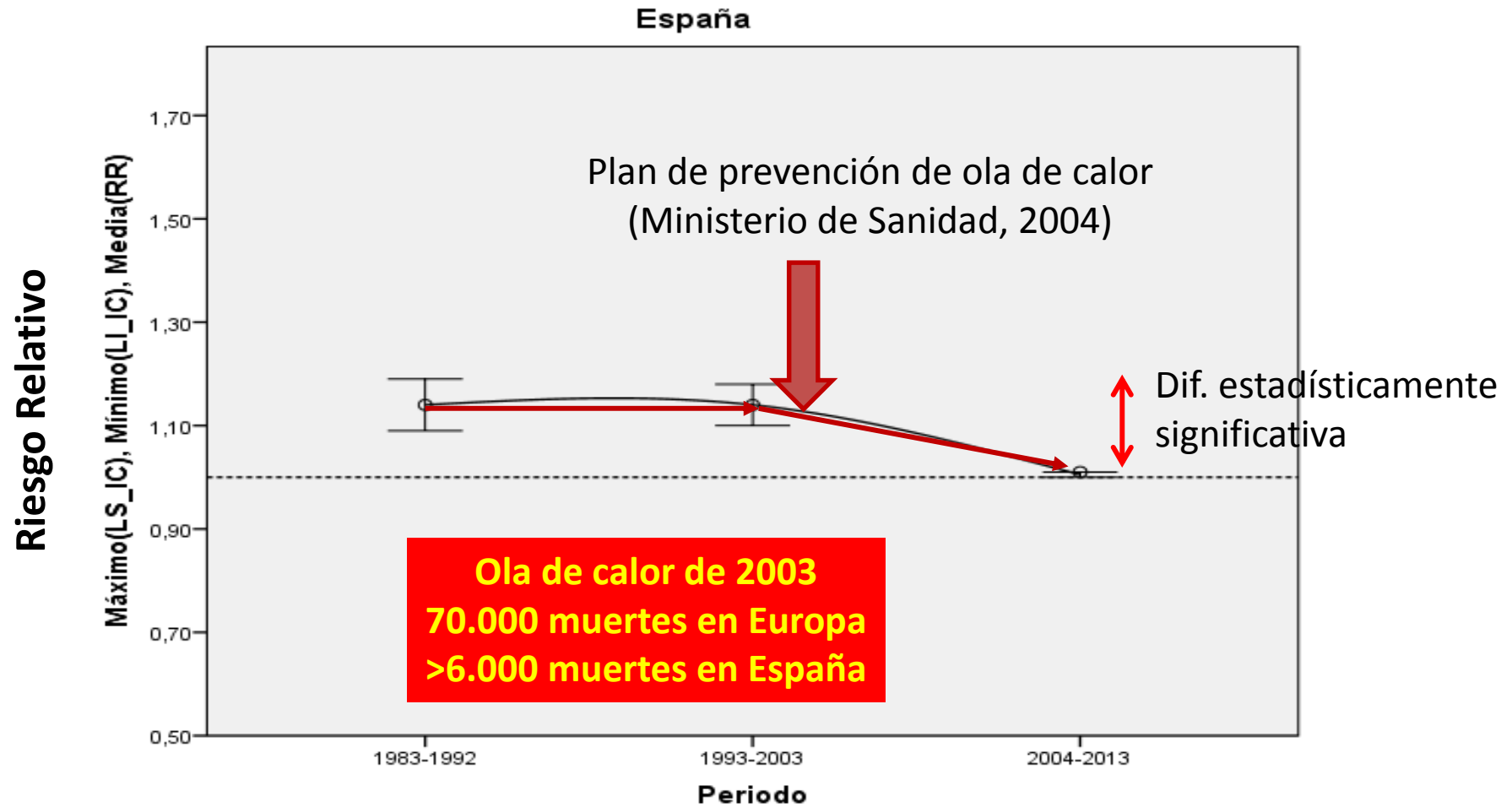
Nitrous oxide emissions



Conclusiones

- El cambio climático lleva tiempo con nosotros
- Sus impactos son generalizados y mayoritariamente negativos
- Urge reducir los GEI para no adentrarnos en un calentamiento peligroso
- La adaptación no puede esperar.... y rinde enormes beneficios

Mortalidad por calor en España





¡Muchas gracias!

Foto de C. Bardals, ClimADRM