Keynote sur les conclusions du SR1.5 – partie 1. pourquoi 1.5°C?

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It is the scope of chap.3, where are compared the risks at +1.5°C to +2°C global warming

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Impacts of 1.5°C of Global Warming on Natural and Human systems

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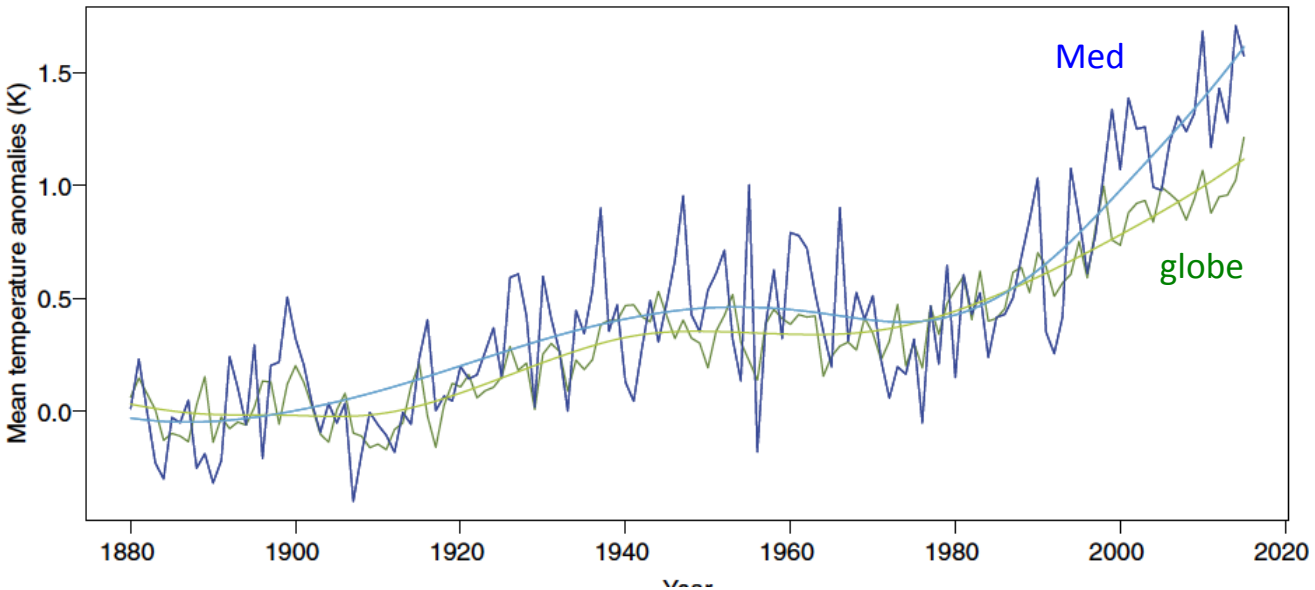
Where are we now?

Ashley Cooper / Aurora Photos

Since pre-industrial times, human activities have caused approximately 1°C of global warming.

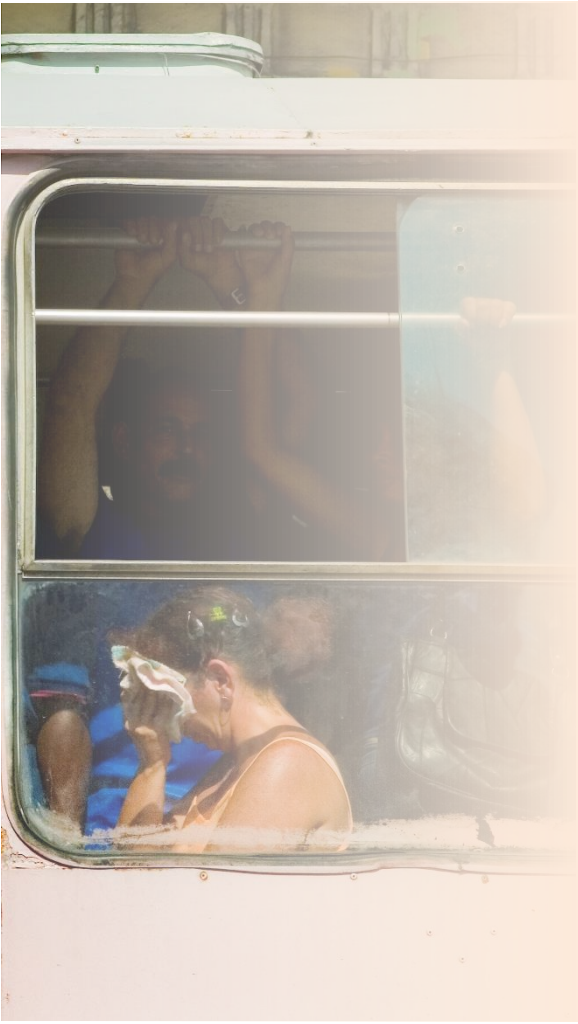
- Already seeing consequences for people, nature and livelihoods
- At current rate (0.2°C/decade), would reach 1.5°C between 2030 and 2052
- Human induced global warming has already caused multiple observed changes in the climate system and in the ecosystems (high confidence)

Le globe s'est déjà réchauffé de 1°C, la région méditerranéenne de plus de 1.5°C



Variation de la temperature annuelle par rapport à la période 1880-1920

- Les dix années les plus chaudes depuis 1880 ont toutes été enregistrées au XXIe siècle
- Depuis les années 90, la région Méditerranéenne se réchauffe 20% plus vite que le globe



Jason Florio / Aurora Photos

Impacts at global warming 1.5°C are significantly lower than at 2°C

- Less extreme weather where people live, including extreme heat and rainfall
- Global mean sea level rise around 10 cm lower
- 10 million fewer people exposed to risk of rising seas
- Half species saved from extinction
- 2 million km2 permafrost saved
- Coral reefs saved of quasi total decline

Synthesis of the impacts and risks for regional and extreme climate

Pop exposed to floods: -170% vs -100%

global

Heavy precip, P(>99.9th pp): N.S.

global

Runoff decrease: -17% vs -9%

Mediterranean

Heat waves: -420Mp exposed

Mid-latitudes

Extreme droughts: 4 days saved

Mediterranean

more than in the last 10 kyrs

Significant gains by maintaining the global temperature increase at 1.5°C instead of 2°C

Synthesis of the impacts and risks for terrestrial ecosystems

Spring phenology: -24 days vs -14 days

Temperate forests

Insects, plants, vertebrates: 50% less extinction

global

Dryland ecosystems: 70% less degraded

Mediterranean

Biome shifts: 13% area vs 7%

global

Permafrost area: 2 M km^2 saved

High latitudes

Significant gains by maintaining the global temperature increase at 1.5°C instead of 2°C

Synthesis of the impacts and risks for ocean

Sea ice in summer: 1/100 vs 1/10 free

Arctic

Coral reefs: 70-90% vs 99%

Warm waters

Ocean acidification: -0.2 pH vs -0.1

global

Mean sea level: 10 cm saved, -10 M pop exposed

coast

Significant gains by maintaining the global temperature increase at 1.5°C instead of 2°C

Synthesis of the impacts and risks for food security

Water scarcity: 60 Mpop saved

Urban

Fisheries & aquaculture: M/H vs H/VH

Medium risk
High risk
Very High risk

Crop production: -10% vs -15%

Global - May be partly compensated by fertilization

General food security: M/H vs H

Significant gains by maintaining the global temperature increase at 1.5°C instead of 2°C

Synthesis of the impacts and risks for health

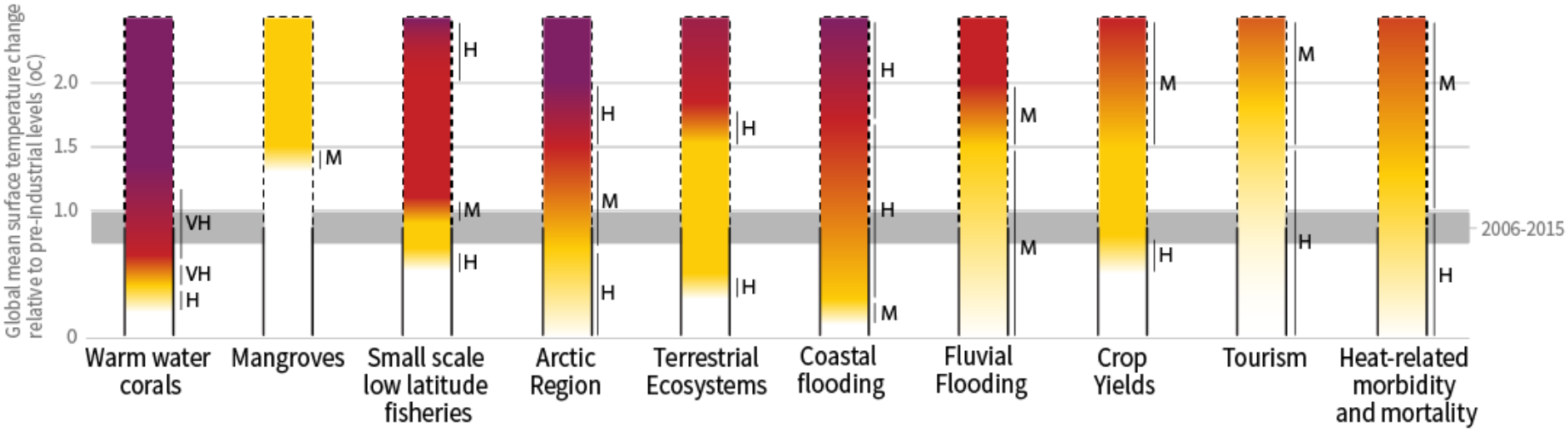
Variables	Present impacts	Risks at 1.5°C	Risks at 2°C	Gains
Morbidity due to air quality (ozone)		Medium	Medium/high	HC
Heat related morbidity/mortality		Medium	Medium/High	HC
Vector borne diseases			Dengue, chikunguya, yellow fever, Zika	HC
denutrition		Medium	Medium/high	HC
poverty	increased	+3 to 16 M pop		Urban areas, Africa, SE Asia

Synthesis of the impacts and risks for several economical sectors

Variables	Present impacts	Risks at 1.5°C	Risks at 2°C	Gains
Global economic damages		54 trillion $	69 trillion $	20%
Tourism	Low	Medium/High	High	HC (coastal, warm regions)
Carbon uptake in terrestrial ecosystems (GPP)	Tropics: 0 GtC yr^{-1} Mid-Lat: 3 GtC yr^{-1} High-Lat: 1 GtC yr^{-1}	Tropics: 0 GtC yr-1 Mid-Lat: 4 GtC yr-1 High-Lat: 2 GtC yr-1	Tropics: 0 GtC yr-1 Mid-Lat: 5 GtC yr-1 High-Lat: 3 GtC yr-1	High uncertainty
Power production (vulnerable pop)		30 (6-76) Mpop	38 (9-94) Mpop	MC

SPM2 | How the level of global warming affects impacts and/or risks and selected natural, managed and human systems

Impacts and risks for selected natural, managed and human systems



Confidence level for transition: L=Low, M=Medium, H=High and VH=Very high