

+ Scientific Uncertainty and
+ Climate Change Risk Management

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Climate Change: A National Security Issue

- UK Ministry of Defense (2006) The DCDC strategic global trends programme, 2007-2036.
- CNA (2007) National Security and the Threat of Climate Change
- NIC (2008) NIA on the National Security Implications of Global Climate Change to 2030.
- NIC (2008) Global Trends 2025: A Transformed World
- DNI (2010) Annual Threat Assessment of the Intelligence Comm.
- White House (2010) National Security Strategy
- DOD (2010) Quadrennial Defense Review
- Joint Forces Command (2010) Joint Operating Environment
- Joint Chiefs of Staff (2011) National Military Strategy of the U.S.

+ Climate Change: A National Security Issue

- Competition in and governance of the Arctic
- Intrastate conflict over natural resources
- Increased frequency of weather disasters
- Water supply volatility in glacier-fed regions
- Rising and volatile food prices
- Storm/tsunami damage on deltas/small islands
- More permanently displaced persons
- Heightened resentment toward West/USA

Risk Management/Reduction

“Responding to climate change involves an iterative risk management process that includes both adaptation and mitigation...”

IPCC 2007

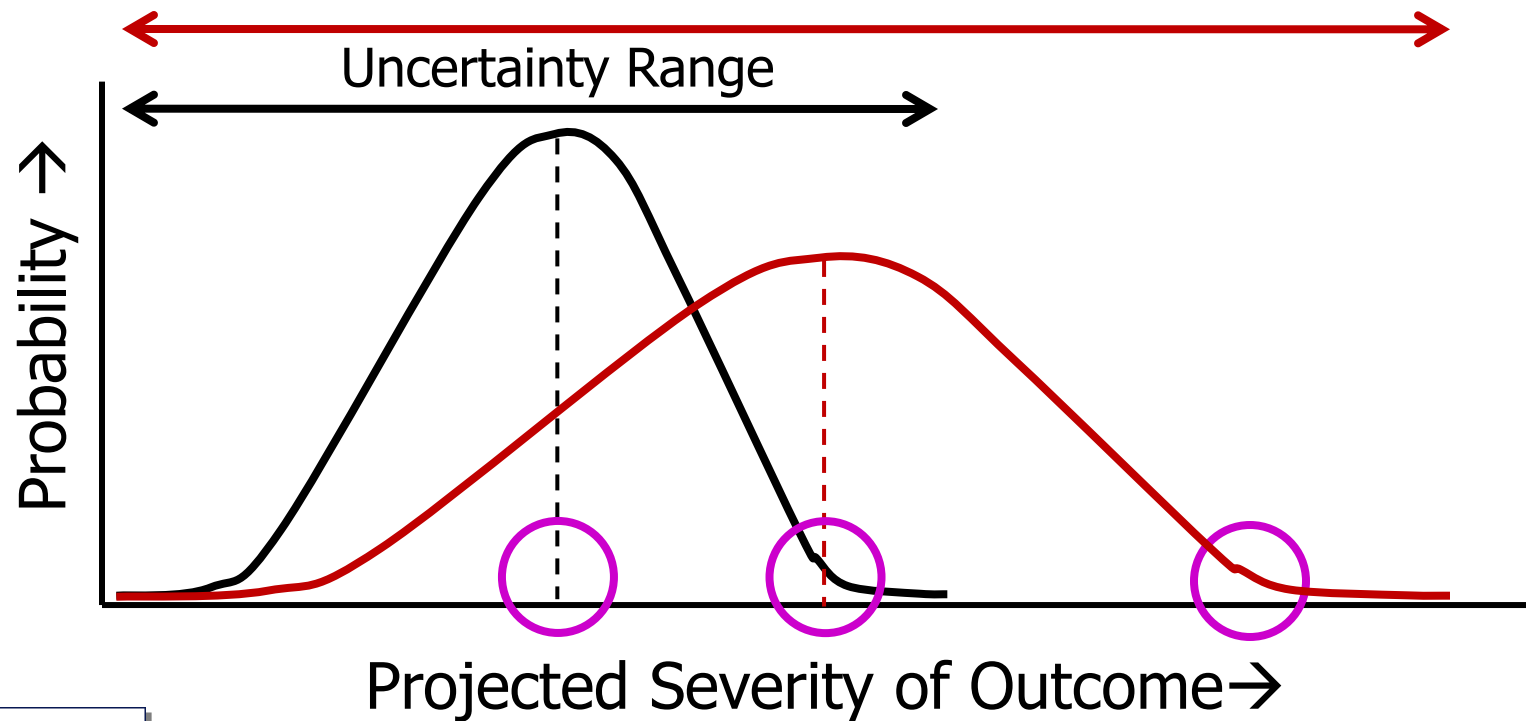
Risk: Severity of outcome x probability

Risk management:

- Actions to reduce probability (*mitigation*)
- Actions to reduce potential severity (*adaptation*)

Uncertainty and Risk

- Uncertainty tempts people to disregard risk
- Risk = Probability X Severity
- Risk can be significant when uncertainty is large
- Risk can be high when probability is low (**house fire**)



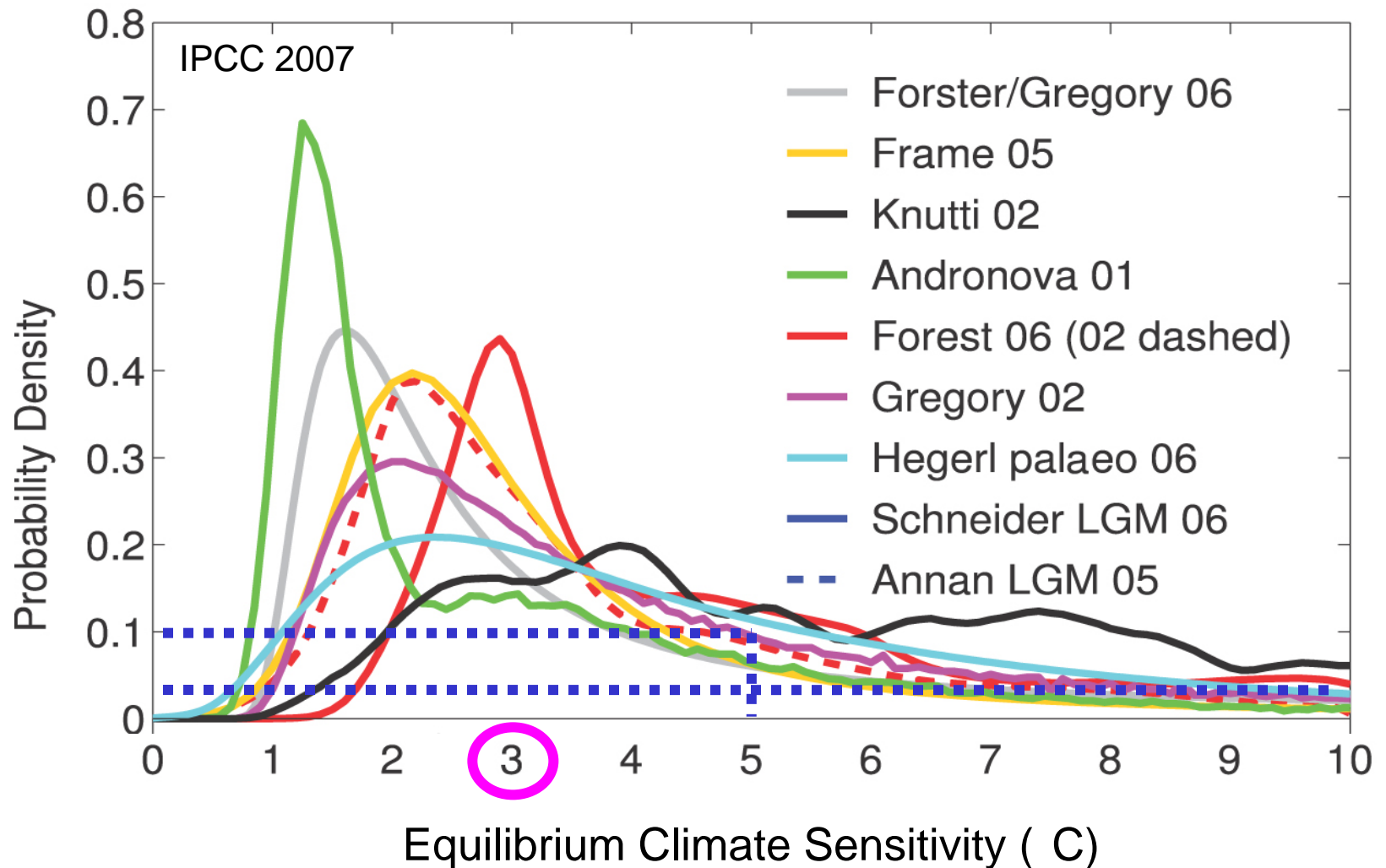
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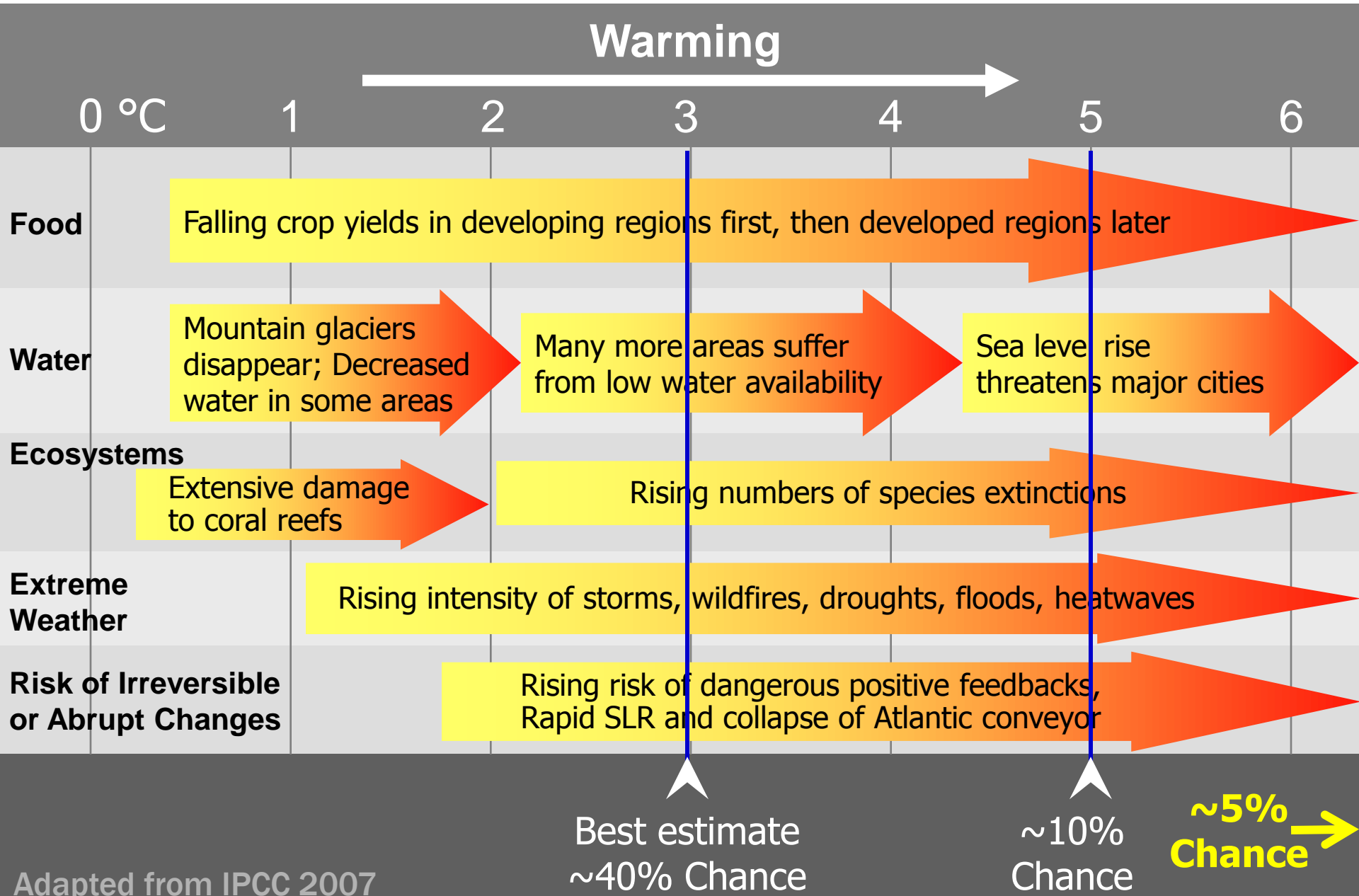
Scientific uncertainty is Information.

Uncertainty informs risk management.

Uncertainty and Risk: Climate Sensitivity



+ Impacts Risk for Doubled CO₂ (560 ppm)



Reduce Uncertainty & Risk: Mitigate Emissions

