

GEOG 430, Climate Change Ecology  
Prof. J. Hicke  
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Climate change science review

The majority of students have had GEOG 313, Global Climate Change, and so I will not provide an in-class review. You will be expected to know the answers to the below questions. Please see me in my office hours if you would like to discuss your answers.

References: Hannah Chapters 1, 2; IPCC AR5 Working Group 1, Summary for Policy Makers

What is the greenhouse effect, and how does it work?

What are the three main greenhouse gases that are currently being affected by human activities?

What are the two main human activities affecting the climate?

How important are human activities relative to natural forcings of recent climate change? How do we know this?

What has the increase in temperature been in the last 150 years (approximate; in units of deg C and deg F), and how does this compare with the Earth's temperature in the last a) 2000 years; b) 2 million years?

What are general circulation models (global climate models), what are their strengths and weaknesses, and how are they used?

What are Representative Concentration Pathways, and how were they developed?

What are current projections of warming by 2100? Where is warming expected to be greatest (geographically)?

What are the projections of precipitation in the coming decades? What is the spatial variability?

What aspects of climate besides temperature and precipitation have been changing and are expected to continue to change?