

THE MYTHS OF CLIMATE CHANGE-SCIENCE

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Thanks to popular press and the rapidly expanding blogosphere, many myths – or more accurately misinformation – abound on the science of climate change. This talk will be a myth-buster, setting the record straight about the fundamentals of climate change science. We contrast several common myths with the scientific reality based on the peer-reviewed (quality-controlled) scientific literature. Myth 1: Global warming is a hoax and there is no climate change. Reality 1: The surface of the Earth – atmosphere, oceans, land – is warming rapidly and many other aspects of the climate are changing. Myth 2: The climate is changing but it is only natural variability; the Earth has gone through cold and warm cycles in the past and this is just another one of them. Reality 2: The evidence – from the basic physics to the observations of the climate system – is very strong that human activities, mainly the emission of carbon

dioxide from the burning of fossil fuels, is the main cause of the observed warming since the mid-20th century. Myth 3: A warming of 2 or 3 degrees C is not important as the differences in temperature between night and day and between summer and winter are much larger, and we cope with them now. Reality 3: Climate-related impacts that matter for people, infrastructure and ecosystems are often related to extreme events and not to average climate. Relatively small changes in average climate parameters lead to surprisingly large changes in the frequency and intensity of extreme climate-related events. Myth 4: No matter how much Australia – or the rest of the world – cuts its greenhouse gas emissions, it won't have any appreciable effect on the climate by 2020 or even 2030. So why bother? Reality 4: This is the critical decade for taking effective action to reduce greenhouse gas emissions.