**OUTLINE FOR DISCUSSION AND THIN ICE FILM SEGMENTS**

**FOLLOWING THE SCICON FIELD TRIP ON 13 JULY, 2016**

Our aim in both the field trip and this discussion is to reinforce your confidence in climate science through the Thin Ice film, and for us all to see where it can help young people understand the basis for the changes we all need to make for a sustainable society.

**Pre-field trip - Introductions – Cliff/Peter/Shane.** Who’s who. Distribute field trip guide. Screen trailer.

**Discussion at VUW Antarctic Research Centre after the trip – Peter/Shane/Suze/Cliff**

1. **[5 mins] Introduction – Outline plan for the next 1 ½ hours.** Peter/Shane]

See what issues participants would like discussed about climate science or its teaching

*Note: There are two versions of the film – the original 73 minute version (labelled Extended) and the 56 minute version (labelled Broadcast) and made for American Public Television. The 56 minute version leaves out 5 minutes on the measurement and history of atmospheric CO2 between the ice coring section and the physics, and leaves out another 5 minutes from the sea voyage including “the forests of the ocean”. Both topics are covered by video shorts on the DVD and website. The extended version also includes two more young female scientists and another young male – all great role models, but the 56 minute version is more direct and accessible for a first viewing, and shorter.*

1. **[5 mins] What the film aims to do, and does not aim to do. Updates since it was made** [Peter]

The idea in March 2006 was to allow the public to learn from climate scientists themselves the science behind climate change – giving climate science a human voice. It was launched in 2013.

The film concludes the core problem is CO2, and emissions need to be reduced to zero before 2100 carbon, also the message from the IPCC. It does not provide solutions – these vary with countries and communities. The science in the film is still valid but addressing the problem has become more urgent. The global increase in concern and activity, symbolised by the 2015 Paris agreement, indicates stabilising climate is still possible if we all do our share.

1. **[30 mins] Screen the physics and recent warming sections and seek teacher queries** [Shane]

The physics is the core of the film and while it got high praise from a NASA engineer not everyone gets it first time. This is followed by climatologist Phil Jones briefly explaining how global average temperature has changed over the last 100 years or so with a NASA video clip showing this to 2010 in the background. lthough it seemed the curve was flattening in the 2000’s it has now started to rise again with 2014 and 2015 being the warmest ever. See video at <http://climate.nasa.gov/climate_resources/139/> and data at

<https://www.ncdc.noaa.gov/sotc/global/201513>. [14 mins starting at 18:41]

1. **[30 mins] Screen final section (paleoperspective, future climate), and seek teacher queries**  [Peter]

Some people say climate has always been changing, which is true. However, through physics, chemistry and earth sciences we now know from observations, experiments and history how and why it changes, and especially how climate has changed over thousands to millions of years. In the last two decades mathematical models of the Earth’s climate system have been developed and tested against the geological record of past climates. These same models can explain the major features of past climates and are now being used to project climate change and consequential sea level rise to 2100 and beyond. This section summarise the state of play around 2010, and reveals the concerns scientists have for what they are finding. [13 mins starting at 43:57]

1. **[15 mins] Field general queries and seek comments and suggestions.**

We’d like to learn about both opportunities for and also challenges in using Thin Ice material in providing a solid platform for climate science, and hence solutions. [Suze, all]

**TOTAL TIME 1:30 HOURS**

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