From Antarctica Cold to Inspiring Science

As many of you know I am undertaking an expedition to Antarctica to promote STEM at the end of December 2018. As my Antarctic trip in December looms I needed to wrap my head around the cold conditions I'll be experiencing for three weeks over the Antarctic summer (-5 to -20 degrees Celsius). So off to the snow I went. Some days we were experiencing 30cm of fresh snow fall, blizzards and crisp winds. Others were sparkly blue skies, walks by frozen lakes and along snow-banked rivers. The clean white landscapes were so inspiring, refreshing and alien to the coastal bush land where I live.

We stayed in the town of Jindabyne, which lies beside beautiful Lake Jindabyne. Lake Jindabyne was created when the Snowy River was dammed for the generation of hydropower and the valley flooded in the creation of the Snowy Mountain Hydro Scheme in the 1960s. As the valley and original town were flooded Jindabyne town was relocated from its original position further up the valley with many buildings physically relocated. Those buildings unable to be relocated still exist in the lake as a relic and interesting dive site. The 'new town' celebrated its 50th anniversary in 2014.

What was interesting to me as we spoke to locals was their recollections of the old town being covered in snow during winter, even at lower elevations. The new town now experiences light snowfalls occasionally at best during winter. In mid-July in 2004 and 2005, snow fell up to half a metre following freak snowfalls over a

large area of New South Wales - this is locals' memory of winter in the former town. The large body of water, Lake Jindabyne, is thought to hold too much warmth to enable localised heavy snowfalls in the new town.

Local water way, Digger's Creek

Joining discussions about climate change, changes in land use, localised and regional impacts is one of the driving forces behind STEM engagement – that science, technology, engineering and mathematics are accessible topics for community engagement, that we encourage studies and professional uptake of these disciplines.

The mission of Homeward Bound is to increase the engagement between our communities and the understanding and accessibility of science, technology and engineering – STEM. By developing the communication and visibility of 1,000 women in STEM professions, over the ten year program, Homeward Bound aims to create influential networks that connect science and engineering researchers to big audiences.

This idea is also being picked up by many government institutions and programs. Australia has a national strategy for public participation in science, technology and innovation, which seeks to boost the public profile of STEM research and its relationship to our future economic and social wellbeing.

Inspiring Australia is a program developed to create memorable and engaging events and programs to inspire communities with science and its relevance to everyday life and to promote the work of scientific researchers and engineers by:

- Creating great experiences of science and engineering
- Showing why science and engineering matter
- Explaining how STEM studies prepare communities for the future
- Inspiring participants with extraordinary scientific discovery
- Bringing together like-minded organisations to amplify collective impact
- Creating STEM outreach and engagement networks at a local level.

One of the key events for Inspiring Australia for the year is National Science Week 11-19 August. I am honoured as part of my Homeward Bound community engagement and as an Ambassador for the Surveying and Spatial Sciences Institute (SSSI) to be involved in this week through the Sydney Science Festival. The Sydney Science Festival has worked with 88 partners to create more than 200 events across Sydney this year in National Science week. I am delivering two of the Talking Science Series:

> Geography in the 21st century Tuesday 7 August – Chatswood Library
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> *How can geography unlock the secrets of our past and shape our future? Come and explore what modern satellite and aerial imagery techniques, web applications and geographic information systems can reveal about changes in our environment, our communities and how we use our land. These insights help us manage and protect our land and support monitoring and decision making about our*

future activities. This free event is part of Inspiring Australia's Talking Science library speaker series. See talk details here.

Homeward Bound Thursday 9 August – Castle Hill Library

What do Antarctica, women in STEM and climate change have in common? In 2017, 80 women leaders from different science, technology, engineering and mathematics (STEM) disciplines travelled to Antarctica for a symposium at sea about climate change, environmental stewardship, science policy and decision making.

Mary-Ellen Feeney will discuss her participation in the unique Homeward Bound initiative in 2018-2019 as well as the extensive history spatial scientists have in Antarctica, from surveying and mapping unknown territories, through to using modern satellite imagery techniques and remotely piloted aircraft to survey remote communities of penguins and breaking ice shelves.

These free events are part of the *Inspiring Australia* Talking Science Library Speaker Series. See more about Science Week here and I would love to see you in the audience of my Talking Science Library Speaker events!

About the author: Mary-Ellen Feeney is undertaking an exhibition to Antarctica to promote STEM at the end of December 2018. She is the first woman from the Spatial and Surveying Industry (and SSSI) to participate in the ten-year Homeward Bound Program. She does so as a SSSI Ambassador for STEM. You can follow her journey here where she will publish articles each month about her preparation for and her experiences from the expedition or on Linked In at SSSI OR Mary-Ellen Feeney