

## Guest Editorial

### Looking to the future-the poles in 2058

Chuck Kennicutt, President of SCAR, speculates on what the poles could be like 50 years from now, and what that might mean for polar science.

“The date is 2058, the end of the 6th International Polar Year 2057–2058 and of the 2nd International Polar Decade 2050–2060. The international polar scientific community now numbers 30 000 with nearly a billion people (~10% of the world’s population) reporting they regularly follow polar news. The Arctic Ocean is ice-free every summer, and summers along the Antarctic Peninsula are similar to those of southern South America 50 years ago. Sub-Antarctic flora and fauna are common around the continent whilst the northern Pacific and Atlantic marine fauna have invaded the Arctic basin. Year-round commercial activities are common throughout the Arctic and thousands of ships transit the Northwest and Northeast Passages each year. Despite the catastrophic oil spill at the International Terminal of the Arctic, commercial activities have quadrupled in the last 25 years. The trans-national Drake Passage Pipeline Company provides half of the oil and gas needs of the Southern Hemisphere. After disastrous over-fishing, harvesting in the Southern Ocean has been banned for 15 years in an attempt to allow stocks to recover. With oil at US\$450 a barrel, energy exploitation has reached the North Pole as fossil fuels still provide 15% of the world’s energy demand. The Arctic Treaty System has now been in place for 25 years and works well, whilst the Antarctic Treaty System has become gridlocked due to territorial claims, UNCLOS extensions into the Southern Ocean, and the advent of energy and mineral development in Antarctica. More than one million tourists visited Antarctica in 2057 staying several weeks at joint government/private-sector resorts along the Peninsula. Vacations can include the remotest regions of Antarctica and most tourists arrive by air via the Trans-Antarctic Airport Network from South America, Australia, New Zealand and South Africa. The Joint Committee on Antarctic and Arctic Science (JCAAS) is convening the 10th “virtual” Polar Open Science Conference with worldwide participation projected to be 20 000. Polar Regions are continuously observed by vast arrays of biophysical sensors up-linking to the network of geosynchronous satellites hovering above the Polar Regions and created because of national security concerns. Real-time observations and weekly forecasts are featured on the Earth Systems Science Network that is viewed daily by more than 500 million families world-wide. International scientific research stations are visited year-round in the Antarctic and Arctic by teams of scientists from the UN Global Sustainable Earth Program funded by global taxes on carbon utilization and tourism. A sea level rise of 1 metre since 2000 has changed the maps of the world and dire predictions of continuing sea level rise continue unabated. The theme of the conference is *Can the Poles Sustain Human Occupation? Looking back 50 years, many wonder why, in 2008, the visible and predicted changes that are now a reality, did not move us along a different path?*”

In future-gazing we cannot take into account all the unforeseen and unintended consequences of our actions today, so this is only one example of potential scenarios that will, in many different ways, depend on how we act in the coming years. While we may not yet understand all aspects of the Earth System, we can still act in positive ways to limit our impacts now, adopting a precautionary approach for our own survival. The time to act is now, the imperatives have never been clearer, and if the bleakest predictions of the future come to pass we will have few to blame but ourselves.

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