

The Antarctic Flags project: a flagship outreach campaign for international cooperation

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Unattributed quotations throughout are based on personal interviews between the authors and those connected to the project. We thank them for their time in contributing to this work.

Antarctica does not have a flag. It is not a country, it has no indigenous population, and there is no government. Despite many countries laying claim to (often overlapping) parts of this frozen region, the continent was ultimately designated as a scientific preserve through the Antarctic Treaty. Military activity is explicitly banned by the Treaty, as are any activities that 'shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica' (Article IV, Clause 2). The resulting tenet of scientific cooperation and collaboration underpins all modern activity on the continent and, ultimately, embodies the ideals of Antarctica and notions of Antarcticness.

So why, every year, are hundreds of flags designed for Antarctica and sent to the continent from all over the world, if the continent is only to be used for peaceful activities?

Originally conceived by the Foundation for the Good Governance of International Spaces, or 'Our Spaces',¹ the Antarctic Flags project aims to connect schoolchildren to Antarctica through taking their flag designs to be flown on the frozen continent. The project was designed to be a school-level activity that could be carried out in celebration of Antarctica Day, which was established after the Antarctic Treaty Summit in 2009 to carry on the legacy of the Antarctic Treaty.² The project, devised by Julie



11.1 Members of the Mass2Ant research team, including co-author T.J. Young (last on right), showcase flags sent from Hunwick, Cedars and St Nicholas Primary Schools (UK) at their ice coring site on the Roi Baudouin Ice Shelf. Photograph by Nadine Mattielli, 2017.



11.2 Flags from 30 countries are displayed by members of the Bulgarian and Spanish Antarctic expeditions at the Spanish Juan Carlos I Antarctic research station. Photograph by Nedelcho Hazurbasnov, 2015.



11.3 Flags are displayed on the Ronne Ice Shelf from students from Escuela 163 ‘Japon’ (Bolivia), Hollybank Primary school (UK) and Woodford Primary School (UK). Photograph by Rachel Tilling and Isabel Nias, 2018.

Hambrook Berkman, and expanded by the Association of Polar Early Career Scientists (APECS), the International Polar Foundation (IPF) and Polar Educators International (PEI), is now coordinated by early career scientists from the UK Polar Network (UKPN) and has involved participants from every non-Antarctic continent. Teachers are sent lesson suggestions, so that their students gain a true understanding of Antarctica’s unique position among the Earth’s continents before they create their designs. Flags from each school are then sent on to those travelling to Antarctica for scientific purposes to display (Figures 11.1–11.3).

Here, we reflect on the impact of bringing Antarctica and Antarcticness into the classroom, discuss the evolution of the project with previous participants, and deliberate on perceptions of Antarctica, a continent which the majority of people will never visit, but still have a deep interest in.

The history of the Antarctic Flags project

On 1 December 1959, the enactment of the Antarctic Treaty established a scientific preserve free from military activity that championed the values of science, collaboration and trust, which can be argued idealistically to be the essential pillars of Antarcticness. Every year on 1 December, Antarctica Day celebrates these moral pillars through activities and opportunities that demonstrate how individuals, groups and countries can work together through science as a global language of cooperation that spans borders and boundaries and that connects people to this frozen continent.

Part of these celebrations involves a worldwide outreach project that encourages schoolchildren to learn about Antarctica and imagine what a flag for the continent would look like. The hugely successful Antarctica Day Flags project – approaching its tenth anniversary in 2021, at the time of writing – pairs schools with scientists and support personnel travelling to Antarctica, who carry copies of flags designed by students to fly on the continent, returning photos and certificates to the schools upon the conclusion of their expedition.

To fully understand the origins of this project, we retrospectively recall the underpinnings of the 2009 Antarctic Treaty Summit, conceived by Paul Arthur Berkman, then of the University of Cambridge, to celebrate 50 years of the 1959 Antarctic Treaty. Berkman had overwintered in Antarctica at the age of 22, and while there, he recognised the role of science in maintaining world peace. At that time, there was an implicit understanding among scientists that science and policy operate independently of each other, and that science should remain ‘objective’ in its approach and implementation. This independence presented a logistical challenge for effective science policy in the form of a fundamental lack of resources, networks and expertise to identify and engage with relevant policy-makers, as well as monitoring and sustaining their efforts towards impact.

As a result, there existed an underlying fear that this objectivity that underpins scientific findings may potentially be compromised when it enters the policy sphere (Montuschi 2017). From his year-long deployment on the southern continent, Berkman recognised not only the need for a combined science and policy interface, but also the importance of Antarctica as a platform for the synthesis of science, policy and diplomacy (Berkman 2019). His book *Science into Policy* recounts these experiences within the unique policy framework of the

Antarctic Treaty as an example of effective science diplomacy (Berkman 2002).

In 2007–8, as part of a Fulbright Distinguished Scholarship at the University of Cambridge, Berkman and David Walton from the British Antarctic Survey began planning an Antarctic Treaty Summit to be hosted in Washington, DC in celebration of the fiftieth anniversary of the Treaty. Berkman was insistent that the summit should occur on 1 December, the day the Treaty was signed, and that this day should continue to be celebrated in subsequent years. This annual celebration became recognised as Antarctica Day. Antarctica Day was inspired by the actions of President Dwight D. Eisenhower, who, in the 1950s, was the catalyst for global strategies to achieve ‘a day of freedom and of peace for all mankind’ by creating an international space ‘forever to be used exclusively for peaceful purposes . . . with the interests of science and the progress of all mankind’ (Berkman 2011). The establishment of Antarctica Day aimed to continue the legacy of the Antarctic Treaty and to celebrate other international spaces such as the high seas, outer space and the deep seas.

Despite the fact that it conflicted with World AIDS Day, and that Chile already had a national Antarctica Day (with a very different message from Berkman’s aims, as it commemorates Chile’s territorial claim in Antarctica), it was felt that the symbolism of this date was significant enough to warrant overlap. Chilean participants decided to adopt this date as Global Antarctica Day, in addition to their own national celebration.

Despite the enthusiasm of Berkman and his wife Julie Hambrook Berkman in celebrating the Treaty, awareness of the Treaty was not at the time a primary objective for the Secretariat, which oversees the Antarctic Treaty System. Participation in Treaty meetings is closed, involving only five delegates from each country. So what were the next steps to build on the summit and Antarctica Day? Berkman, Hambrook Berkman and Walton felt that, because Antarctica quintessentially represented the ideals of an international space, it was imperative that they devise a long-term strategy that continues to highlight its importance within the global future. Our Spaces, the Foundation for the Good Governance of International Spaces, a UK-based non-governmental organisation, was created in 2009 as a result of this momentum. Although its conception is a direct legacy of the summit, its remit has grown beyond just that of the polar regions. According to its website:

Nearly 70% of the Earth’s surface lies outside national boundaries and thus outside national laws and governance.

This surface of water and ice, stretching from the poles to the equator and upwards from the seabed to outer space, encompasses what are called “International Spaces” and their sustainability is crucial to all life on Earth.

Although these regions and their resources lie beyond national frontiers they connect into a seamless whole with national jurisdictions so that the global future can only be properly served by consensus management of these extra-territorial spaces.³

Although many treaties, such as the Antarctic Treaty, cover the majority of these spaces, Hambrook Berkman describes these spaces as being like Swiss cheese, in that although there are many holes, they are not connected, as they lie beyond international jurisdiction. In this light, Our Spaces aims to advance education, raise awareness and promote research regarding governance and management of these global commons across both disciplines and nationalities.

The idea to celebrate Antarctica with flags came from Julia Dooley, a teacher of gifted and talented elementary school students in Delaware. Dooley had spent two months in Antarctica as an ANDRILL (the Antarctic Geological Drilling Project) ARISE (ANDRILL Research Immersion for Science Educators) Educator, as part of a team of educators deployed alongside science teams (Pound et al. 2019). Dooley had asked her students to design flags for Antarctica and asked Hambrook Berkman to judge the flags. A real flag was made of the winning design and sent to Antarctica, as well as being hung on the school flagpole.

Reporting back on the project at the next Our Spaces board meeting, Hambrook Berkman later described how it was clear to everyone that this ‘Flags’ idea ‘had legs’. It was also clear that this was not a project that one person could manage, and to scale up the idea to multiple schools would require some assistance.

At the same time that Our Spaces was being established, the fourth International Polar Year (actually two calendar years, running from March 2007 to March 2009) was taking place. As part of this, the Association of Polar Early Career Scientists (APECS) was established. APECS is an international organisation for early career scientists and educators across all disciplines with an interest in the cryosphere. In addition to supporting researchers in their professional aspirations, the organisation aims to promote education and outreach as an integral component of polar research, and to stimulate the next generations of polar researchers (APECS 2019; Baeseman and Pope 2011).

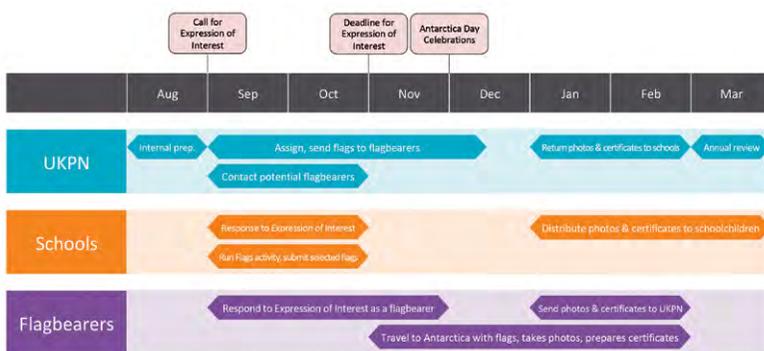
Hambrook Berkman’s flags project fell within this education and outreach remit, and it was APECS member Heidi Roop, now an assistant

professor at the University of Minnesota, who suggested sending the flags digitally. With the support of APECS, the project grew exponentially. Roop recognised that the need to send flags virtually helped to expand the diversity of participants (although she acknowledges that internet access is still a limiting factor in taking part), but was also necessary due to the large time commitment involved. When 600 flags came in from one teacher, Hambrook Berkman and her team realised that they were going to have to set some ground rules. Now, schools are limited on the number of flags that they can send, ranging from one flag per school to three flags per class, depending on the resources available for the given year. In 2015, Tun Jan (T.J.) Young, on behalf of the UKPN (the UK branch of APECS) joined the initiative, helping to automate the process through spreadsheets in order to reduce some of Hambrook Berkman's work. These have continued to develop into online forms allowing direct submission of all the information by the teachers. With the increasing support of other APECS national committees from the following year onwards, the project continues to grow both in scope and reach. The project is now a 'one-year job' for early career researchers and educators coming through UKPN, who currently handle the bulk of the project administration.

Although Hambrook Berkman believes that every young scientist ought to be able to handle some outreach, she has personally felt the advantages of being able to deliver exciting research on behalf of her more introverted colleagues. Although the UKPN is now running the project, Hambrook Berkman has had the 'fantastic' experience of hanging flags on the *National Geographic Explorer* ship in Antarctica and to personally engage students with Antarctica in classrooms around the world.

Flags in a changing world

Although the workflow of the Antarctic Flags project has continuously evolved during its decade-long history, its core components as well as its fundamental objectives remain unchanged. Hypothetical flags of Antarctica designed by schoolchildren travel down to Antarctica in the hands of researchers and expedition personnel, and evidence of their journey is presented to participating schools upon the flagbearer's return. At all points during this workflow, project coordinators from the UKPN maintain regular contact between schoolteachers and flag-bearers (Figure 11.4).



11.4 Annual workflow of the Antarctica Flags project. Image by T.J. Young, 2021.

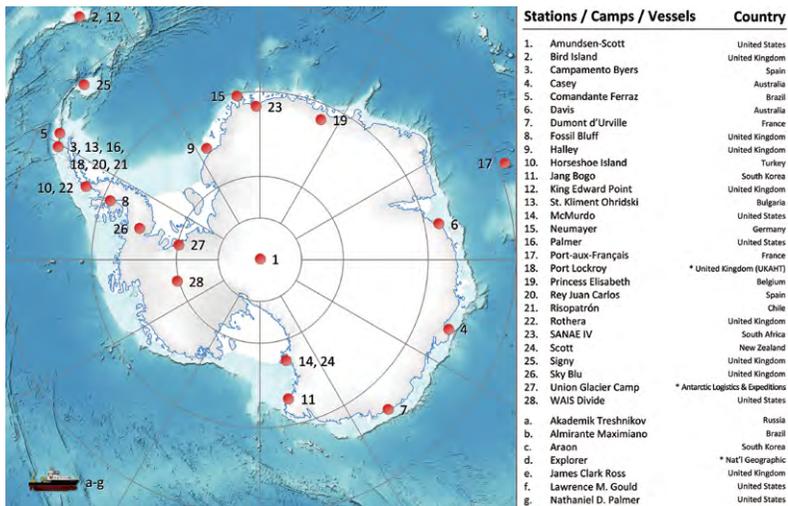
Table 11.1 Participation statistics in the Antarctic Flags project since 2015 (from UKPN’s records)

	2015	2016	2017	2018	2019	2020
Schools	38	50	107	49	70	106
Countries	11	11	13	6	7	13
Flags	284	232	675	254	323	122
Flag-bearers	18	18	45	19	24	14

While Our Spaces and the UKPN provide suggestions of how to incorporate the project into school classrooms, its implementation is completely and purposefully left open-ended. This is partially to accommodate the (sometimes rather stringent) conditions that are needed to meet necessary government-mandated knowledge requirements, depending on the age and location of the students. For example, in Malaysia, the introduction of the flags activity into classrooms required advance approval from their Ministry of Education. Although the planning was considerably more complicated in comparison to other countries, this requirement had its own unique benefits with respect to efficiency and reach. The Sultan Mizan Antarctic Research Foundation was proud to inform that they disseminated the invitation for the public and schoolchildren to participate in Antarctica Flag Day 2013 with a flag competition at science fairs and a wall mural at one school. On the other hand, many schools in Brazil allow teachers free rein to introduce new material in their individual curricula, which provided opportunities for creativity. With the strong leadership of Erli Costas, then the President of



11.5 Flags have been sent to Antarctica from all countries highlighted in red. Image by Sammie Buzzard, 2021.



11.6 Final flag destinations on and surrounding the Antarctic continent. Locations do not include temporary field camps. Cruises are collectively represented and not spatially projected. A * means that the base or camp is operated by non-governmental organisations or private companies. Image by T.J. Young, 2021.

APECS Brazil (the Brazilian national branch of APECS), the Antarctic Flags activity was innovatively incorporated in classrooms through digital books as well as in international workshops. The result was a substantial network of schools, teachers and researchers who participated in the project from the classroom to its journey to and from Antarctica.



11.7 During 2020–1 when Antarctic travel was severely limited due to the Covid-19 pandemic, those who were still travelling stepped up to take as many flags as possible. Here, a flag carried by Povl Abrahamsen (British Antarctic Survey) from Ramsey Academy (UK) is displayed next to the remnants of the huge A-68 iceberg which was originally larger than the state of Delaware. The iceberg made media headlines in 2017 when it broke away from Antarctica’s Larsen C Ice Shelf. Photograph by Alice Marzocchi and Yvonne Firing, 2021.

Within the classroom, the flexibility of the flags activity enables the project to be incorporated into a number of subjects. Although it is most commonly carried out within a geography or science class, submissions have also come from more unexpected sources, such as from a computer science project. Similarly, the level of engagement between the UKPN, participating schools and potential flag-bearers varies. While the majority of schools are self-sufficient in their implementation of the flags activity with minimal guidance from the project coordinators, flag-bearers as well as members of the UKPN have personally visited participating schools and led the flags activity along with other enrichment activities, such as science experiments and show-and-tells. These visits have even taken the form of video calls from the flag-bearers while they are physically on the Antarctic continent.

The cumulative reach of the project is global, with participation from every continent, matching the aims of the project. Antarcticness can and should involve everyone, regardless of their country of residence, since Antarctica is a space for everyone even if we cannot all physically be

there. [Table 11.1](#) shows the overall participation in the project since 2015, with [Figures 11.5](#) and [11.6](#) showing respectively the countries that have participated, and the variety of destinations of the flags around Antarctica, although the project could still be more global.

With the Covid-19 pandemic hitting in 2020 and much Antarctic research cancelled or postponed for 2020–1, the implementation of the Antarctic Flags project seemed in jeopardy for the first time in its history. The determination of the team who had signed up to take over the project ensured that flags could still travel, albeit at a reduced capacity. Jennifer Arthur, a PhD student at the University of Durham, UK, explains that due to there being considerably fewer scientists heading to Antarctica for the 2020–1 summer, the team made extra effort to start recruiting flag-bearers early. They put out calls on social media and targeted email lists such as within the British Antarctic Survey. Thanks to her efforts, and those of fellow team member geography teacher Fiona Old, flag-bearers were recruited from three different countries. These included individuals with as diverse roles as marine and zoological field assistants, an oceanographer, a ship's chief officer, a medical officer, a mechanical engineer and station leaders. The team also decided to limit entries to one per school for that year, given the shortage of people heading to Antarctica. This enabled the project to continue successfully despite the global pandemic ([Figure 11.7](#)).

Perspectives of participants

Given its creative underpinnings, the Antarctic Flags project is flexible, scalable and spans a wide range of ages. While the content depicted in their flags may vary across ages, they all centre around aspects of cooperation and harmony. [Figure 11.8](#) shows students participating in a flag creation activity in Oman. Although it was originally envisioned as a humble classroom activity, the concept of Antarctic flag design can be easily adapted, and scaled up or down, to complement a variety of outreach activities. This was perhaps best demonstrated by the Bulgarian Antarctic Expedition, which embedded the activity throughout their calendar, not only with in-person school visits by participating scientists, but also through remote video conferences, travelling photography exhibitions, science festivals and museum open days.

Given the large age range of students participating in the project, from as young as three to as old as eighteen, the motivations for schools signing up can differ. The benefits for younger students in particular were



11.8 Students at Jaifar Ibn Al Julanda School (Oman) prepare their flag designs. Photograph by Julie Hambrook [Berkman, 2019](#).

noticed by Liz Pasteur, who worked for the IPF during the early days of the project. In addition to operating the Belgian Princess Elisabeth Station in East Antarctica, the IPF implemented the flags activity alongside their own Class Zero Emission climate change project, and so became an obvious partner in the Flags project.⁴

Through incorporating the Antarctic Flags project into in-person outreach events, Pasteur found that the practical aspects of the project were more compatible with younger students, not only for curriculum-based reasons similar to those that Hambrook Berkman had discovered, but also because of the universal appeal of colouring in! While the hands-on experiments of Class Zero Emission were already inspiring to those inherently interested in science, the ability to design and colour personally designed flags appealed to a different audience that otherwise would not have been as receptive to scientific experiments. In Pasteur's experience, the Antarctic Flags project often worked best with primary schools as the teachers have comparatively more freedom and are not as restricted to specific aspects of the curriculum as their secondary school counterparts.

There are nonetheless many benefits for older students taking part. Kate Stockings is a secondary school teacher in London, and was attracted to the project due to it allowing students to see the 'bigger picture', enabling them to see intrinsic value in their creations beyond just an output of routine school work. She feels that the uniqueness of the flags activity is that there is a definite end product. Students 'hate doing

something to think it is just going to end up in the bin', but with the knowledge that their flags could be seen flying in Antarctica, they become excited that their work will be part of a bigger purpose. The project has also motivated Stockings to get more involved in polar science communication. After participating in the project as a teacher, she joined the UKPN committee as Head of Education and Outreach.

The simplicity of the project is the reason Hambrook Berkman feels it has been so successful across age groups. She says the connection to it is instant: 'When you tell people Antarctica doesn't have a flag, they get it.' Art can be an international language (see also [Chapters 6, 12, 13](#) and [17](#)). It does not necessarily matter where the flags came from when they are seen, as art connects everyone. Furthermore, the messages of how important peace is and how important science is in making good decisions translate easily across age groups and nationalities, representing key and universal aspects of Antarcticness.

The project has benefits beyond the link to Antarctica it provides for the students. For the UKPN members helping to coordinate the project, the project management experience and networks formed are a key benefit gained from taking part, as those leading the project are often PhD students, at the beginning of their scientific careers.

Regardless of approach or mindset, the joy of scientific outreach and working with children is clear to many of the project coordinators. Jenny Turton, a former coordinator of the project, explains that children are 'always so enthusiastic and amazed by everything, which always reminds me why I do my research'. For her, the project was light relief during some of the more difficult times in the research process. She describes a time when she was feeling particularly stressed and found '40 beautiful, hand-painted and crafted, colourful maps' in her postbox, speaking of the joy of spreading them out over her office floor. Of course, the humour in the drawings cannot be forgotten. As Emma Pearce, another former flags coordinator, puts it, 'Who knew a penguin could be drawn in so many different ways!'

The importance of flags for Antarctica

From the perilous expeditions of Roald Amundsen and Robert Falcon Scott to the, at times, almost daily flights that supply the bases of 42 different countries on the continent, Antarctica has always been tinted with a colonial lens ([Dodds 2006](#)). For some countries, the applicability of the colonial concept used to be palpable, such as the United Kingdom

(Chapter 5), which perceived its Antarctic activities between the two world wars as a colonial project (Dodds et al. 2017). The promulgation of the 1959 Antarctic Treaty, a rare long-standing beacon of international cooperation, in essence put the process of territorial claims on hold by bringing countries together after the Second World War. Even so, many countries still operate on a more nuanced approach through measures such as periodically reiterating their territorial claims, assigning place names or investing in scientific stations and related infrastructure in tactical locations. The outcomes of the Treaty provided a firm foundation for ongoing international cooperation to successfully manage nearly 10 per cent of the Earth's land mass.

The Antarctic Flags project aims to promote the legacy of international cooperation enshrined in the Antarctic Treaty by reshaping these colonialist perspectives associated with the southern continent into one instead associated with internationalisation and scientific cooperation. The elegant simplicity of the Treaty's 14 articles provides inspiring examples for youth of humankind working together (see Chapter 16). This international collaboration is crucial to the many successes within polar research, most notably that of multinational scientific projects and operations.

Despite the actions resulting from the Treaty, Antarctica lacks a symbol to represent its ideals of science for peace. It is this fundamental issue that the project seeks to address. Given that Antarctica has often been depicted in society as a place of mystique that provides a tabula rasa for imaginative and utopian projection (Leane 2015), the Antarctic Flags project presents a unique opportunity to tap into the creative mind and explore the possibilities presented by the Antarctic Treaty's visions. This creative aspect of the activity not only serves as a novel learning method, but also promotes the association of concepts that may at first seem tenuous and far-fetched, such as ideals of Antarcticness. Through engagement with the latest polar science, while also fostering the ideals of international collaboration and governance of common spaces, both of which are manifestations of Antarcticness, children are exposed to important ideas that are often not directly taught in schools. As a result, these ideals are often depicted by students as central themes in many flag designs.

In addition, the project capitalises on the public's fascination with Antarctica as an inaccessible and uncrossable frontier, reshaping their connection with the southern continent to one involving international cooperation and stewardship (see Chapter 3). Although the majority of the project's participants are unlikely ever to visit the continent

themselves, the project enables students to connect with the southern continent and understand that they have an important role to play as concerned global citizens.

Together, these inherent themes and connections formed the crux of recollections from past project participants and coordinators alike:

Making connections with Antarctica is so important, so that people can appreciate its complexity, fragility and importance within the global climate system and the ongoing impacts of climate change on the continent. It's important for people to understand that what happens in Antarctica affects the rest of planet Earth, including its potentially huge sea-level rise contribution. (Jennifer Arthur, PhD student, University of Durham, project coordinator of the 2020 cycle)

Antarctica is such a fundamental part of the Earth's system. From ice, to atmosphere, to ocean, to living creatures; the Antarctic is connected and impacted by them all. Lots of people can't point out the Antarctic on a map, given that it is usually cut off at the bottom, and doesn't feature heavily in school studies. But it is a place of international cooperation, research, science and peace. So educating people about any aspect of the Antarctic is important. And maybe we can inspire some people to want to go there, and to build a career in science so that they can visit and protect it. (Jenny Turton, Research Associate, Friedrich-Alexander University, project coordinator of the 2016 cycle)

People have a far greater appreciation for the vulnerability of the Arctic/Antarctic if they can feel connected to it. It's the same argument people use for having animals in zoos, if you go to a zoo and see an elephant and fall in love, you're much more likely to go home and then look up ways to save the elephants in the wild. Antarctica is far harder to make accessible to people in 'real life'; you can show pictures, and watch *Frozen Planet* [the 2011 BBC documentary], but actually seeing something you've created and been a part of makes the experience a lot more personal and connected. (Emma Pearce, PhD student, University of Leeds, project coordinator of the 2018 cycle)

Antarctica, just like the high seas and deep seabed, play a significant role in our climate system, carbon sequestration (oceans)/fresh water storage (Antarctica) despite generally being places that are not conducive to permanent human habitation. As for many people out of sight is very much out of mind, outreach bringing those 'inhospitable' (for humans only) places closer to them might remind them of the importance to treat them with respect and look after them. (Daniela Liggett, Senior Lecturer, University of Canterbury, regular flag-bearer since 2011)

The polar regions are a litmus test for the Earth's climate. Antarctica is the 'cuisine' of the climate, what happens there affects the whole Earth...and climate change is felt most clearly. Everything is connected. Our world is an interdependent ecosystem and we are part of it. We teach children to think how their actions affect nature even in Antarctica, and how to protect it more. The Flags project is connected with this knowledge. (Iglika Trifonova, journalist, photographer and President of APECS Bulgaria, regular flags activity coordinator since 2012)

Beyond the flags

The Antarctic Flags project is one of a multitude of efforts worldwide to connect the public to the polar regions (see also [Chapter 3](#)), such as Antarctica Day, which has continued to grow. Now a decade old, Antarctica Day is currently coordinated by APECS and continues to be an annual highlight within Antarctic education and outreach communities. The flags project, which historically set its submission deadline to symbolically fall on 1 December, is a major component. APECS documents all the global activities taking place each year, and Hambrook Berkman has described her surprise at seeing events as diverse and far-ranging as a concert in Australia and film festival in Arkhangelsk, Russia.

Our Spaces themselves have contributed more than just the flags project. The book *Celebrating Antarctica: A treaty protecting a continent* (Hambrook Berkman and Pope 2015) was written by Hambrook Berkman, along with Allen Pope, former president of the UKPN and now a director of Our Spaces. Published in 2015, the book explains the Treaty to children, was illustrated by schoolchildren from around the world, and has been

translated into the four languages of the original Antarctic Treaty (English, French, Russian and Spanish) in addition to 19 other languages. Crucially, the book includes many of the earliest submissions for the Antarctic Flags project as a tangible conceptualisation of the Antarctic Treaty's ideals. In turn, given its wide range of languages, the book is an integral component for many international schoolteachers who hope to incorporate the flags project into their classrooms.

The idea for the book originated from a trip to Russia, where Berkman was travelling to lecture. While there, Hambrook Berkman visited a school and discovered a fundamental lack of resources about Antarctica. After suggesting that teachers could create their own materials to fill this gap, one teacher produced a grade four book about the Antarctic Treaty. This matched Hambrook Berkman's personal passion of helping elementary school teachers to teach science subjects while helping overcome stereotypes of them being 'dry and boring'.

One of Our Spaces' key messages focuses on people working together and using science as a basis to make decisions peacefully. Hambrook Berkman noticed from the flags they were receiving that teachers were teaching what they knew already, such as climate change and marine life. Therefore, having a book about the Treaty would help with their message.

Another application to the flags project came from flag-bearer Daniela Liggett. Liggett, along with her students, enacted a mini-Antarctic Treaty Summit on the ice in the Ross Sea region of Antarctica. Students and field staff put up their own countries' flags around their campsite and, during evening briefing, talked about their own perspectives of what role the Antarctic Treaty System played in global politics and in the governance and management of human activities in the Antarctic. They also reflected on the different positions that their respective countries have in relation to the Antarctic Treaty System and what they saw as the Treaty's future. A variety of efforts to continue to raise awareness of Antarctica and the future of this frozen continent are essential.

Future of the project

With UKPN now coordinating much of the Antarctic Flags project, the programme may become susceptible to being overly UK-centric. Often, other nations are added to the project as a result of someone having connections to a British school abroad. As shown in [Table 11.1](#), the numbers of countries that participate each year is relatively low in

comparison to the total number of schools that have participated in the programme overall (Figure 11.5). Gerlis Fugmann, the former executive director of APECS, who helped advertise the programme to APECS members in its early days, is optimistic that this does not have to be the case. Fugmann is impressed that the programme has developed into something more international and grown in participation over the years, but also feels that there is potential for it to become even more international. Fugmann feels that the visibility of the project is one of the reasons it has been so successful. The visual nature of the outputs gives the students real feedback on where their work is going and gets them excited about polar research, with the displays at stations being impressive.

It would certainly be possible to expand participation and involve research bases more equally by having higher-level coordination – for example, by involving the Scientific Committee on Antarctic Research (SCAR), a thematic organisation of the International Science Council charged with initiating, developing and coordinating high-quality international scientific research in the Antarctic region. A danger of involving higher-level organisations would be that project management benefits gained by the early career researchers who currently coordinate the project may be lost altogether. International scientific cooperation, especially around ‘our spaces’ such as Antarctica, will only increase in importance in the future under changing environmental and societal conditions (Berkman 2009).

Those who currently classify themselves as ‘early career’ will be at the forefront of this cooperation. In fact, several former participants of the project were involved in efforts to increase scientific collaboration between the UK and Russia, breaking down walls at a time when the two country’s respective governments were building them, through a series of workshops held in Moscow and Cambridge in 2018 (Buzzard 2018). Although the focus of this workshop was the Arctic, and notions of Arcticness can be very different from Antarcticness due to the former having permanent human inhabitants, many researchers work across both poles, and international collaboration is essential for successful research at either pole.

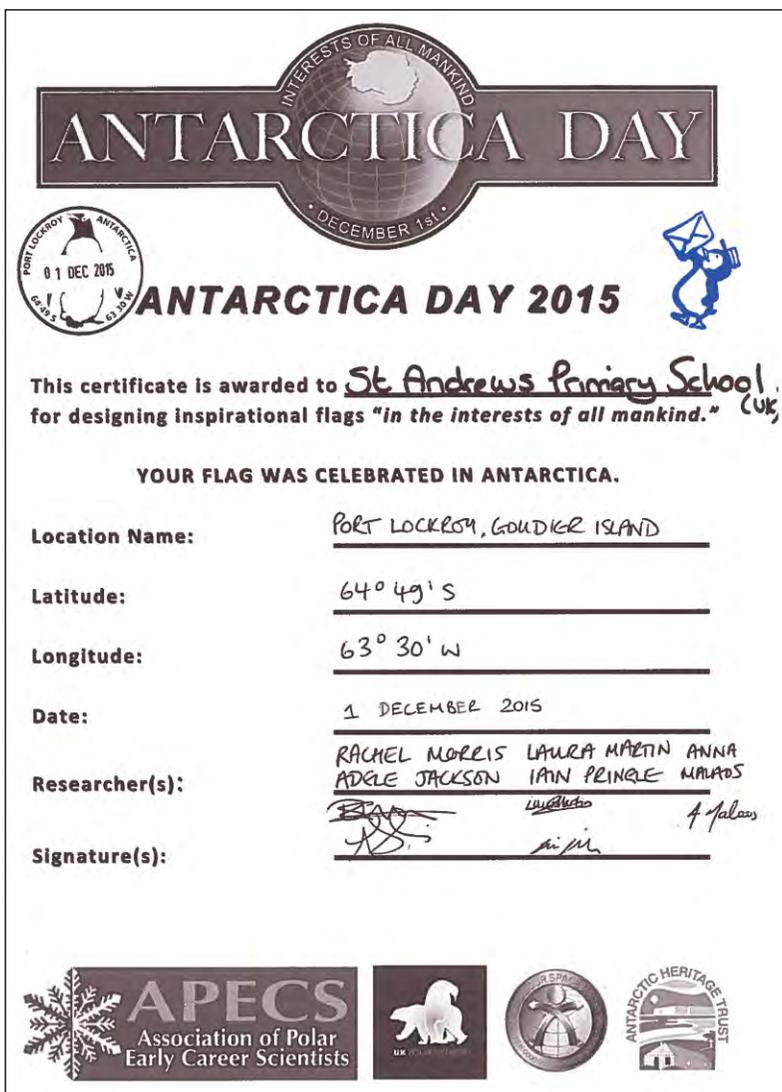
Additional work is needed to make the project truly global, especially with regards to encouraging participation in parts of Asia and Africa. A significant proportion of participating schools, especially beyond the UK, are private, and effort is needed to reach a broader socioeconomic demographic. Heidi Roop highlights the need for the project to have a way to monitor its outcomes. Beyond the numbers of flags and numbers



11.9 Marianne Karplus and Galen Kaip (University of Texas, El Paso, USA) display flags from Red Rose Primary School (UK) in front of one of the US Antarctic Program’s Twin Otters at the Lower Thwaites Glacier Camp, one of several stations supporting the International Thwaites Glacier Collaboration. Photograph by Marianne Karplus and Galen Kaip, 2018.

of students (Table 11.1), there is currently no real way beyond anecdotal evidence to know what the students gain from taking part. Although the project’s flexibility allows it to reach students of a range of ages and nationalities, the lack of clear learning objectives could be an issue. Is making people aware of Antarctica enough of a learning objective? Furthermore, does providing a photo of their flag designs and a certificate (Figures 11.9–11.11) ensure any long-term connection to Antarctica for students?

Roop acknowledges that, without partnerships with social scientists, it is difficult to know the project’s true outcomes. She would have liked to have had a chance to clearly articulate goals for the project, but she did not have the time for helping with this task alongside helping with the flags. Feelings of burnout are common among those who run the project, and although the accounts given here are generally positive about taking part, often this participation is at a very personal level and is done during the organisers’ own time. It is hard, as it is within research and teaching more generally, to derive value from these experiences and to use them



11.10 An example of a certificate from the 2015–16 campaign, signed by deployed members of the UK Antarctic Heritage Trust at Port Lockroy, Antarctic Peninsula, and returned to St Andrews Primary School (UK). Image by the UK Antarctic Heritage Trust, 2015.



11.11 Student flags produced by sixth-grade students of Centennial Academy, Atlanta, Georgia (USA). Photograph by Sammie Buzzard, 2020.

to further one’s career due to a lack of systems placing value on them, especially within hiring and promotion decisions. In evaluating polar outreach and communication activities, Salmon and Roop (2019, 297) make three recommendations that could benefit the flags project:

- Improved articulation of goals and objectives
- Acknowledgement of different drivers, voices, and power structures
- Increased practical training, resources, and reporting structures.

A further potential issue is that the uptake of the project is often from the ‘super’ teachers, tending to mean those who are often already doing more than others. Hambrook Berkman fears that they may get bored and may want variety after participating in the project for a few years. She feels there is definitely more room for creativity in connecting people with the frozen continent.

Hambrook Berkman is also ambitious that new audiences can be persuaded to take part in polar outreach. She highlights the increasing number of retirees and elderly people participating in Antarctic-bound tourist cruises. To her, it seems only natural that they would want to multiply the effect of having gone to Antarctica by recounting their

experiences in school visits. Hambrook Berkman laments that more has not been made of this. She does not know of anyone who goes to Antarctica and comes back thinking ‘well, that was just another trip’.

Hambrook Berkman’s long-term goal is that a sufficient number of the next generation understand the scientific importance of Antarctica within the collaborative context of the Antarctic Treaty. The hopeful gift from children to the world is the book they have crafted with their flags (Hambrook Berkman and Pope 2015). In turn, the future of Antarctica rests on these future leaders being able to balance national interests within an international commons. In the event that any country decides to renege on the Treaty – for example, to try to explore for minerals, metals or fossil fuels – Antarctica will then have a civil society to rely on, advocating for its ideals of Antarcticness. Essentially, in Hambrook Berkman’s words, ‘We’re all on this planet together.’

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Notes

- 1 <https://ourspaces.org.uk> (accessed 19 August 2021).
- 2 <http://www.atsummit50.aq> (accessed 19 August 2021).
- 3 <https://ourspaces.org.uk/about-us> (accessed 19 August 2021).
- 4 http://www.polarfoundation.org/projects/detail/class_zero_emission (accessed 19 August 2021).

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