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Science into schools: reviewing and designing useful online teaching resources on glaciers, Antarctica and climate change.

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www.AntarcticGlaciers.org was set up in 2012 to promote public understanding of glaciers and climate change. The website aims to connect researchers to the next generation, to focus on make science accessible and interesting, and to provide an easy-to-find resource for teachers, with relevant, engaging, original content, interesting visuals and teaching resources. This approach helps scientists connect with a large community; there are 250,000 GCSE Geography school students in the UK alone.

AntarcticGlaciers.org is used as a teaching resource by numerous universities and schools worldwide, and is recommended explicitly to teachers by the UK Geographical Association, SCAR, the Quaternary Research Association, the Royal Geographical Society and the Geologists' Association, among others. Resources from the website have been used in numerous school textbooks and MOOCs. Evaluation of user statistics shows that, to date, AntarcticGlaciers.org has received >3.2 million page views from >1.7 million visitors located across the globe. It has been well cited by diverse news outlets and scientific institutions including NASA, NSIDC, AGU, EGU and RealClimate.org. Google Analytics data shows that a substantial portion of the audience are engaged in the education sector. The website is the top or second hit in Google for a number of related search terms, and the majority of the traffic originates from organic searches.

AntarcticGlaciers.org is supported by an unpaid Advisory Board comprising Higher Education professionals and practicing school teachers. The Advisory Board, in conjunction with focus groups and interviews held with teachers and teaching professional bodies, helps to guide website development. These interviews have revealed few appropriate teaching resources covering Antarctica for younger age groups (11-14 years). Resources that focused on quantitative data,

introducing GIS and mapping, and that were clearly linked into the curriculum, were particularly sought after. Teachers indicated that existing content is often too hard and needs to be rewritten. Case studies, exciting multimedia visuals, interactive GIS and interesting student exercises are intensely desired. In current times, accessibility for learners at home is key priority. The limited attention spans of children means that large blocks of text do not work well and are best broken up with multimedia resources. Interactivity engages the learner and increases knowledge retention. Supporting teachers in teaching these topics, by developing engaging and exciting introductory content, is therefore a critical outreach goal.

In this project, funded by the Antarctic Science Bursary, academic experts have worked with pedagogical consultants and ESRI educational consultants to develop a series of four ESRI StoryMap collections that cover: Introduction to Antarctica, Antarctic Wildlife, Antarctica and Climate Change, and People in Antarctica. These fully interactive StoryMaps include student mapping exercises, videos and interviews with experts, high quality photography and engaging imagery. They are tightly keyed into the national curriculum, and by working with educational experts, we have attempted to ensure that they are useful for teachers. Reviews by independent stakeholders at the final stage of the project will ensure that the StoryMaps will be effective in the classroom, especially in an online learning environment.