

An analysis of international trends in Antarctic publications

A recent paper in *Arctic, Antarctic and Alpine Research*¹ outlined trends in polar research papers published from 1981 to 2007. The paper analyses the number of publications different countries published in internationally peer-reviewed journals in three separate time periods; 1981-83, 1991-93 and 2005-07. The paper shows a significant increase in the number of publications across these time periods, an increase that is much faster than the global scientific output in general. It is suggested that this rapid increase partly reflects an increase in the importance of the polar regions to global climate and resource issues. The other key finding is the huge increase in the extent of international research collaboration in producing the papers across these three time periods.

The results show that New Zealand has fallen from 7th most productive nation for Antarctic publications in 1981-83, to 9th most productive nation in 2005-07. While the trend gives some cause for concern, given the very limited resources that New Zealand puts into Antarctic science, a top 10 ranking in the world should be viewed as extremely positive.

The paper also notes a significant increase in new Antarctic research activity by Asian countries (China, India and Korea) and South American countries (Chile, Brazil and Argentina).

	1981-83	1991-93	2005-07
USA	1 (273)	1 (751)	1(1,066)
United Kingdom	2 (120)	2 (297)	2 (496)
Australia	3 (69)	4 (178)	3 (359)
Germany	5 (44)	3 (233)	4 (324)
Italy	0 (0)	5 (127)	5 (250)
France	8 (27)	6 (126)	6 (204)
Japan	4 (49)	7 (97)	7 (185)
Spain	0 (0)	12 (32)	8 (146)
New Zealand	7 (29)	8 (93)	9 (140)
China	14 (2)	15 (24)	10 (136)
Argentina	12 (2)	12 (32)	11 (125)
Russia (USSR)	6 (40)	9 (77)	12 (87)
Total publications	(696)	(2,452)	(4,414)

Table 1. Number of Science Papers Published (in brackets) and Ranking of Nations Based on Papers Published for the Periods 1981-83, 1991-93 and 2005-07.

Another of the paper's key findings is the level of collaboration as evidenced by the level of co-authorship in publications. The data shows that EU nations have increased the level of co-authorship significantly over the three time periods. New Zealand is ranked 6th in terms of the level of co-authorship of publications (see Table 2 below). New Zealand's international co-authorship is particularly encouraging considering that internationally co-authored papers have a significantly higher citation score compared with papers that are written solely by domestic authors. For New Zealand Antarctic publications from 2001 to 2007, the difference in citation score between internationally co-authored papers compared with papers written solely by New Zealand authors is 36.

¹ The Structure and Development of Polar Research (1981–2007): A Publication-Based Approach (Dag W. Aksnes and Dag O. Hessen, *Arctic, Antarctic, and Alpine Research*, Vol. 41, No. 2, 2009, pp. 155–163). Abstract can be viewed at: (http://instaar.colorado.edu/aaar/browse_abstracts/abstract.php?id=2632)

	Total number of articles	Number of articles with international co-authorship	Proportion international co-authorship
Switzerland	226	200	88%
France	647	522	81%
Denmark	520	398	77%
Sweden	451	334	74%
Netherlands	293	216	74%
New Zealand	281	202	72%
Germany	1,205	821	68%
Finland	201	131	65%
United Kingdom	1,457	949	65%
Spain	300	189	63%
Norway	862	541	63%
Italy	490	296	60%

Table 2. The Proportion of Co-Authorship, 2005-07 by National Programme.

Antarctica New Zealand continues to encourage scientists to publish their results in a timely manner. Earlier this year we sent information on the number of papers each science event has published since 2002. We acknowledge that although using publications as the sole measure of the success of a research programme has significant limitations, it is an easy-to-collate and useful indicator of one aspect of success of a research programme.

Despite the limitations, publication information will be sent to all Antarctic scientists again next year. For future years the Science & Information team are working on a new review system that will require researchers to report on progress towards the outcomes written in their original proposal. We may include publications as one of the metrics in this new review system.

In the current bidding round, we have encouraged scientists to contact end users of the science to discuss the potential results of the research and how they may be useful. In some cases, this may lead to a reduction in publications as researchers produce end-user specific reports rather than scientific publications.

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