

Introduction

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Welcome to IPY: It is envisioned that the International Polar Year (IPY) 2007–2008 will be an intense, internationally coordinated campaign of research that will initiate a new era in polar science. IPY 2007–2008 will include research in both polar regions and recognise the strong links these regions have with the rest of the globe. It will involve a wide range of research disciplines, including the social sciences, but the emphasis will be interdisciplinary in its approach and truly international in participation (IPY March 17:2005).

On 1 March 2007 at the Palais de la Découverte in Paris, the fourth International Polar (IPY) was launched. The opening of the IPY – the largest global scientific collaborative effort to date – in many ways was also a commemoration of a long standing tradition of international polar science collaboration. Officially coordinated by International Council of Science (ICSU), the World Meteorological Organization (WMO), the Antarctic Treaty System, as well as the Arctic Council and numerous other intergovernmental and non-governmental organizations, the 2007–08 IPY brought together over 63 nations, almost 400 projects and fifty thousand scientists. The aim, building off its three predecessors, was to better understand the geophysical, biological, and for the first time – human aspects of earth's poles in advancing the frontiers of science. This fourth IPY as part of a larger polar research tradition offered a fruitful starting point to study the complexities involved in the formation of national, regional, international as well as non-state scientific interests and the construction and governance of scientific knowledge (particularly regarding the relations between humans and the environment) over time.

At its historical origins, the first International Polar Year (1882–83) was established with the intention of expanding our global understanding of some of the most intricate scientific puzzles of its time. Likewise (and central to the scientific motivations at hand), the first IPY unfolded during an international political era where expeditions to explore and exploit polar resources and intense national competition of reaching the poles first were of global prominence. Since the first IPY, the global political context has been vastly transformed including the role and perceived relevance of the polar regions in global politics. This includes a shift in the relevance of the poles as the last frontier of national conquest to the new global frontier of scientific observation. Furthermore, in the case of the Arctic, a homeland to the indigenous inhabitants who have sustained this region for thousands of years, traditional 'modern' science is being contested by the

growing political agency of indigenous practice and methods for production of knowledge.

The second IPY took place in the interwar years from 1932–33 followed by the International Geophysical Year (IGY), which took place in 1957–58 at the height of the Cold War. Throughout this history, the international politics dominant during the IPY years helped structure the agendas and means of the scientific cooperation. As such, the goals and mission put forth for Arctic and Antarctic scientific cooperation during the IPYs can be construed effectively as signs of the times. The IGY, for instance, is not only remembered by the launching of Sputnik, but moreover, at a time when there was almost no political cooperation between the East and West, the Antarctic Treaty was put into place. The Antarctic Treaty demilitarized the Antarctic and created the first ‘international research laboratory’ to be managed by all respective states party to the treaty.

The IGY was followed by an end of the Cold War and as such the end of a political era. The perception of the Cold War as the single largest threat was soon overtaken by a new global threat through the birth of a new environmental consciousness. The implications of this new global environmental awareness coincided with the emergence of greater multilateral cooperation including the growing prominence of non-governmental actors, indigenous peoples’ groups and environmental organizations with power to help define and steer the future course of global politics. Widespread concern over climate change and its impacts in polar regions has further increased interest in the poles and awareness of their problems as part of the global environmental problematique. The polar bear has recently become a popular symbol for global efforts to tackle climate change.

The histories of the IPYs have added significance to the polar regions regarding scientific research, meeting the challenges of environmental problems and achieving new forms of global environmental cooperation. The role of weather and the atmosphere, most generally, has always been of great interest to scientists, whether as a field of study in its own right or in aiding the process of territorial expansion and resource exploration. Most recently, the role of meteorology has become central to understanding the implications of environmental degradation and the processes of climate change. These new foci for meteorologists have once again turned scientific attention to the poles. Despite this renewed interest, however, the political mindset of the poles as largely uninhabited last frontiers has not submerged. Polar climate change science is being carried out in tandem with resurgent efforts to extract and exploit the excesses of the polar region’s resources.

It was in this global context where the juxtaposition between the intensifying pressure towards the use of polar natural resources and scientific inquiry into better understanding global climate change (often phrased as sustainable resource management) that the fourth IPY 2007–08 commenced. In addition, the fourth IPY, for the first time formally included the human dimension in its research programme. As such, beyond the official incorporation of new non-state actors and organizations – including the indigenous peoples who live in and off the Arctic’s

land and resources and private companies interested in taking advantage of new opportunities which climatic changes are expected to bring out – social studies of the impacts of these changing phenomena are part of the very research plans of the IPY as well.

Uneven contours: From disciplinary bound theory to multidisciplinary issues

The chapters in this book offer a diverse set of political, legal, geopolitical and historical perspectives to the broad reach of the IPY. In the social sciences there is a growing trend towards multidisciplinary research projects that focus on particular issues and problems rather than addressing questions within the limitations of traditional disciplinary divides. This *multidisciplinary perspective* is the assumption upon which this book proceeds. Broadly speaking, this book sets out to provide a distinct contribution for those interested in the relationships between science, international politics, law and history. Most specifically, this book provides case studies and theoretical reflection of various ways in which polar knowledge is constructed, legal institutions come into practice as well as the political meaning and significance of the poles as it is played out through the IPY. The authors, coming from a multitude of backgrounds including law, history, international relations, policy, biology and journalism all focus on various aspects of the IPYs both past and present. Combining both a multidisciplinary perspective and a combination of theory, policy analysis and historical narrative this book is the first comprehensive account of its kind which focuses explicitly on the political, legal, and historical aspects of polar science through an account of the IPYs.

Polar opposites? A comparative perspective of the poles

The history and politics of the two polar regions varies greatly. The Antarctic is a frozen continent and devoid of human settlement (not taking into account the scientists who live and work there). The histories of the IGY (1957–58) and the establishment of Antarctic Treaty system (ATS) in 1959 are closely linked. The Antarctic Treaty includes nowadays several protocols to cover various environmental issues in the region. The treaty has demilitarized the region as well as made it into a scientific laboratory and area of international research cooperation.

The Arctic on the other hand is comprised of the Arctic Ocean and its limits and the very politics of its boundaries is perhaps a prelude to its complexity. The Arctic has human populations including eight states, four million people and 500,000 indigenous peoples who have varying levels of political autonomy. Since the late 1980s the region has emerged as an area for environmental and scientific cooperation, especially through the establishment of the Arctic Council

in 1996. The Arctic Council is comprised of the Arctic states accompanied by six indigenous permanent participants. Since its founding further research discoveries and receding ice have renewed an ongoing debate over how best to divide the north among those with varying degree of rights and sovereignty in the Arctic.

The contents of the book

This book is broken down into two main parts. In the first part, *Whose Arctic? Constructing Arctic politics through claims of knowledge*, the role of knowledge producers with the evolution of Arctic environmental politics, especially in climate politics is described and discussed. The development of climate science and history of IPYs is studied from the point of view of polar science, the politics of sustainable development and climate change, Arctic policy and the history of Arctic research stations.

In Chapter 1, Annika Nilsson concentrates on climate change science and the interplay between Arctic and global perspectives. In the past 150 years, the scientific image of the Arctic climate has shifted dramatically. Nilsson places the development of climate change science and its interest in the Arctic into the context of these political developments globally and in the Arctic. It highlights how indigenous knowledge is becoming increasingly recognized and connects this recognition to norms for international cooperation in the Arctic and to a challenge of the exclusive prerogative of academic science to speak for nature and to define the Arctic.

In Chapter 2, Jessica Shadian looks at the IPYs as a way in which to understand global political change. Non-state institutions are increasingly part of the foundation upon which dialogue, governance and the construction of knowledge proceeds. Building on this assumption and putting the IPY into a historical perspective of Westphalian politics, Shadian focuses on the role of the science community in shifting the boundaries of law and politics; the role of indigenous political actors in transforming the basis of IPY science and the role of private industry as another instance of non-state involvement in IPY science.

Chapter 3 by Rob Huebert examines the assumption by most scientists that science is value free. This includes the reaction of the international community to the scientific discovery of different types of environmental degradation in the polar regions. Unlike past Arctic political efforts and treaties, climate change and its implied assumption of greater maritime accessibility has not brought forward an international effort to create a diplomatic solution to this environmental problem. As such, Huebert examines why there is such a different set of reactions to what are ultimately the scientific study of the environmental degradation of the polar regions. Why did the international community respond cooperatively in one instance while presently it is adopting a much more unilateral approach?

From a more historical perspective, in Chapter 4 Urban Wråkberg analyzes the politics interwoven with the creation and maintenance of polar field stations

for carrying out scientific observation. Wråkberg concentrates on the diverse and sometimes contradictory motives for constructing polar stations which includes geographical sensationalism as well as the politics of territorial expansion and occupation and colonialism. With a broad political and social science perspective Wråkberg pays particular attention to the practices, scientific rhetoric and public goals of IPY enterprises as followed into the present IPY.

The second half of the book turns to the Antarctic. Part II, *Whose Environment? Science and Politics in Antarctica*, describes and discusses the developments of how territorial disagreements were settled and how international scientific cooperation was institutionalized in the Antarctica since the 1950s through the role of Scientific Committee of Antarctic Research (SCAR) as a scientific advisor in the ATS and principles of ATS as it developed into a more comprehensive regime over the years. Some of the new challenges in the ATS and science are discussed in this part as well, especially the issue of bio-prospecting and accompanying difficulties as regards the nature, ownership and use of scientific knowledge about the environment.

In Chapter 5, Marcus Haward and Julia Jabour provide insight into IPY 2007–08 through a history of the Antarctic Treaty. Haward and Jabour examine the ways in which, based on previous initiatives, the fourth IPY provided a significant new momentum for international collaboration and coordination in Antarctic science including the ways in which the role of Scientific Committee on Antarctic Research (SCAR), as a non-governmental body for the international scientific activity for the Antarctic Treaty System, has developed over the years and what new challenges SCAR has.

In Chapter 6, Donald Rothwell examines intellectual freedom of scientific research through a comparative case study of Antarctic research from a legal perspective with appropriate consideration given to diplomatic and political consequences. Rothwell addresses these challenges in the Antarctica Treaty by exploring several particular sets of questions including whether the Antarctic can or should be used and exploited in the name of science (as other parts of the world have been); whether or not different principles apply; and if recent developments create new challenges for the ATS.

Consuelo León Woppke in Chapter 7 highlights the influence of domestic political and scientific factors on Chile's contribution to the formation of the Antarctic Treaty. Woppke provides an account of the political maneuvering involved in Cold War Antarctic science between the Cold War 'superpowers' and Chile and the significance of this history for Chile's involvement in IPY 2007–08. To this day Chileans find it difficult to appreciate the corollary – or possible corollary – between scientific activities and the defense of their Antarctic rights.

In Chapter 8, Sanjay Chaturvedi turns to the politics of biological prospecting – or bio-prospecting – in the Southern Polar Region. In particular Chaturvedi focuses on the issues of achieving access to Antarctic resources within a regulatory framework capable of preserving the interest of humankind in the conservation and sustainable development. Chaturvedi also pays attention to questions regarding the

technological advances and financial returns emanating from bio-prospecting and how they should be equally shared under the authority of relevant international institutions or multilateral regimes. The point for Chaturvedi is to draw out the complexities putting into place (through consensus) a sound legal–political arrangement to restrict and regulate the commoditization and commercialization of polar biodiversity.

The final chapter by Monica Tennberg concludes with a discussion of the case study chapters in order to highlight the relationship between power and knowledge in polar sciences. Using Foucault, Tennberg points to the legacies of scientific and political cooperation as effects of power relations and their workings: the polar regions are established as ‘scientific laboratories’ and part of global ‘environmental panopticons’, a system of surveillance for environmental research highlighted in the tradition of IPYs in polar regions. However, as Foucault suggests, power relations are always challenged, and effects of power are contested in various ways. In the polar regions, new ways of understanding and using knowledge questions the existing modes of governing and their knowledge base.

The culmination of these ten narratives brings to bare the broad and complex political, historical and legal aspects of the IPY and the more general relationship between science and politics. In addition, these chapters draw out the way in which the practices and meanings of science changes with political and social change, including the increased authority of non-state actors such as indigenous communities as scientific experts for creating and controlling the flow of intellectual knowledge, as well as the ongoing shifting meanings of polar field stations and research institutes for defining and producing legal norms and policies. In sum, this book sets out to fill an ever growing niche in efforts to bridge various disciplines to study certain phenomena by providing a unique account of the IPY; an instance which reflects the intersection between states, non-state actors and international regimes, and the ways in which knowledge is constructed and used in changing perceptions and politics of the polar regions. The overarching research question guiding this book sets out to explore is: What is knowledge? Who knows the polar regions? Who governs polar scientific knowledge? Finally, how has the power and authority over this knowledge shifted over time and how are these changes reflected through the IPY?

Reference

Beland, M. and Allison, I. (2005), ‘Welcome to IPY’, *IPY* [Online] <<http://classic.ipy.org/about/>>, accessed 18 July 2008.