



Introduction

The Russian Cold

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“In general, the country lacks heat.”¹ With this statement Paul E. Lydolph opens his introduction to climatology in the Soviet Union. Like its vast expanses of land, Russia’s cold was one of the characteristic features that travelers in Russia expected to experience—even if the actual temperatures, particularly in the European part of Russia, were in fact nearly not as extreme as they were portrayed in the persistent narratives about Russia’s legendary frosts. The explorer Alexander von Humboldt, who traveled through Russia in the early nineteenth century, noted in his report that the cold seldom reached the point that the mercury in his thermometer froze: “Even cold of -25°R is rarer in Petersburg than travelers claim.”²

Yet even though the frigid temperatures failed to live up to Humboldt’s expectations, Russia’s continental position means that the country was and is shaped by cold: a cold that has left its mark on the living environments of its residents, as well as on external perceptions and the self-image of Russia. The annually repeating cycle of cold, long winters, frost, ice, and snow is a pattern that can be interpreted as strongly influencing the social world. Connections have been frequently drawn between the development of serfdom, in particular the specific form it assumed in Russia, and the climatic conditions of the sixteenth and seventeenth centuries. Other key events in Russian history—above all wartime victories, from the Battle on the Ice, fought on the frozen Lake Peipus in 1242, to the victory over the Grande Armée in 1812 and the German forces in World War II—are similarly linked to narratives of cold. There is no doubt that these historic events reinforced the view of snow, ice, and cold as close allies of the Russians, but even more than that, as a central element of local, national, and imperial identity. The glorification of cold that flourished particularly during the Cold War era has led to Russia’s harsh climate being seen as a constant, while the climatic diversity of the country has often tended to be neglected both in popular accounts and in historical studies.³

At present, however, the idea of harsh winters and extreme cold as unchanging features of the Russian world is beginning to be threatened. As a result of climate change, which has a particularly visible impact on Arctic regions, global warming has become a source of both hope and concern for the residents of Russia and for politicians and economists. On the one hand, warmer temperatures may make it possible to grow crops in regions that have until now been unsuitable for agriculture, and they may spur on economic growth and open up the Northeast Passage for regular shipping traffic.⁴ Popular science writers like A. P. Nikonov write enthusiastically about how the thawing of the permafrost regions could extend the territory of Russia.⁵ With every degree of warming, optimists suggest, Russia could enjoy an annual savings of 120 million tons of fuel.⁶ “We are terribly lucky: Russia is the center of global warming, which means that warming has a tendency to be magnified: A 2°C increase in global temperature will in Russia result in 4–5°C, and in some places 10°C!”⁷ Soon, so goes the prediction, it will be possible to harvest grapes in Moscow.⁸ Again and again, it is suggested that Russia is one of the few countries that will profit from climate change.⁹ The yearning for an end of the cold as a consequence of global warming recalls utopias of the Cold War era in which Soviet scientists hoped that an “improvement” of the world climate would also strengthen Russia’s position in the struggle between the world powers.¹⁰ Again and again, Russia’s poor economy, its difficulties providing supplies, and its food shortages have been connected to its northern position. For example, Russia is described as disadvantaged in comparison with the United States because more than 80 percent of its farmland is located “within the least productive thermal zone,”¹¹ while in the United States this is the case for only 19 percent of the farmland.¹² A few years before the collapse of the Soviet Union, it was even claimed that “climactic limitations” were the reason why Russia had fallen behind the United States.¹³

However, there are others, particularly from within the world of science and academia, who warn that the consequences of global warming will likely not be quite so positive: Russia, they note, is extremely vulnerable.¹⁴ In their studies, researchers point out negative ways that climate change will affect the regions like the north, which are already seeing the thawing of the permafrost layer and an increase in extreme weather and droughts.¹⁵ This is felt particularly in the northern cities where the infrastructure breaks down and once-solid ground turns into marsh.¹⁶ But the greatest concern is that the thawing of the permafrost will release large quantities of methane that will in turn further accelerate climate change processes. These new insights have led to increasing skepticism among the general population of Russia about the supposed advantages of climate change, even while the topic of global warming is still a low-key problem in official and public discourses.¹⁷

The debates about climate change have also strengthened discussions about the economic and geostrategic potential of the northern, climatically poorly situated regions. For the governments of Gorbachev and Yeltsin, these regions were of little political importance; today, however, Vladimir Putin and Dmitrii Medvedev have directed the focus of Russian politics northward again. The melting polar ice has launched a new “race for the Arctic” that is reminiscent, both in terms of its political direction and in terms of the narratives and imagery it employs, of the myth of the Arctic during the 1930s and the Cold War. Once again, the Arctic regions are being valued as fundamental for Russia’s position and power as a world player and for its national security; once again the costs of living in the cold are a topic of much discussion.¹⁸ Russia dominates the Arctic region geographically, with its territory encompassing half of the Arctic coastline and 40 percent of land within the Arctic Circle. Three-quarters of the Arctic population live in Russia.¹⁹ While the major cities of the far North in Alaska, Canada, and Greenland have around 10,000 residents, Russia’s northern cities often contain more than 100,000 residents. With spectacular initiatives that have gained the support not just of the general population but also of representatives of science and industry, Russian political leaders are determined to stake their claim as masters of the Arctic and the cold. In 2007, the three-person crew of a Russian submersible descended to the sea floor below the geographic North Pole and planted a titanium Russian flag at a depth of 4,261 meters.

In an era in which the future of cold as a fixture of Russian identity has become uncertain and, simultaneously, climate awareness in Russia is growing in part due to the significance of the country for the global climate and weather system, this volume looks into the past to take stock of the historical research on Russia’s cold climate. The contributors work in a variety of scholarly traditions and offer a variety of different perspectives on how to “read” cold in Russian culture and history. Through this work, we have sought to understand and emphasize the multiplicity and ambiguity of meaning and values given to “cold” and to explore the relevance of environmental-historical research questions for writing a climate-based history of Russia. There are a number of goals connected with this interdisciplinary venture.

First, it picks up on new trends in environmental history that seek to decouple climate from its primary associations with climatology as a natural science.²⁰ Climate science, like most natural sciences, is not historically contextualized. The volume contributes both to the cultural history of climate and to historical studies into the effects of climate. It reveals moments in which the perception of climate changed in tsarist and Soviet Russia, but it will also provide insights into the ecological, social, and political circumstances that sought to promote climate stability or climate change. The volume will complement extant studies

of historical perceptions of weather, climate, and climate change, which for the most part ignore tsarist Russia and the Soviet Union and which are mostly limited to the “Little Ice Age” and the twenty-first century.²¹

While in earlier historical studies the reconstruction of climate was a central concern, our volume turns instead to the topic of climate-impact research and the history of climate knowledge. In particular, we show that it was experiences of extreme cold in particular that awakened scholarly interest in understanding weather and climate. Furthermore, the wide range of variation within Russia, which encompasses multiple and diverse climate zones, created conditions that were particularly favorable to studying weather and climatic patterns. Here the volume connects with studies that trace the emergence of Russian environmental knowledge.²²

Societies interact with the climate and its fluctuations in a wide variety of ways, from their architectural styles and construction materials to their crop choices. But they also interact with the climate and weather through cognitive constructs, through their ideas about what causes it and whether it can be influenced by human efforts. This volume discusses the ways in which Russians have adapted to cold climate in history. It shows how they have coped with the disastrous effects of cold weather conditions, and how they have instrumentalized cold, frost, and snow for their political, imperial, and scientific ambitions. The volume demonstrates that ideas about climate and weather, as well as the ways societies deal with them, have their own histories.

Second, we hope to bring about a shift in focus within the environmental history of Russia and Eastern Europe. A large proportion of environmental history studies of the Russian Empire and the Soviet Union consider nature and the environment only as a target of human activity. Therefore, they typically focus on pollution or, approaching the problem from the other direction, on conservation. Much more strongly than for other countries, the environmental history of Russia and the Soviet Union concentrates on political and economic factors.²³ But “nature” is itself a social construct that does not exist independently of us and our perceptions. This volume offers readers a chance to understand the relationship between nature and society as truly mutual, with the environment and nature playing an active role. Frost, ice, and snow are perennial phenomena. They are both the cause of events and a circumstance that has shaped daily life, science, and culture. The ways that people perceive and deal with cold reminds us that human history has always been influenced by natural factors. This volume thus also argues for including the active role of the environment and nature when considering historical causalities.²⁴

But this volume also assigns human actors more scope for action than has previously been (and often still is) the case in discussions of the significance of the environment and the climate in Russian history. We wish to counter views that hold that alterations in the climate take place in the context of immutable

social realities. Climate and weather are causal factors that can trigger action, but ultimately do not determine it. Here the volume joins other studies that have argued for a new way of looking at the environment in Russian history. For a long time, discussions were dominated by the environmental deterministic views of scholars like Sergei Solov'ev and Vasilii Kliuchevskii, which also influenced the interpretation of Russian history in the West and which enjoyed renewed popularity in the 1990s through the work of scholars like Leonid Mili-²⁵lov. In popular scientific discourses in particular, climate determinism remained alive and well—not just in Russia but also in Western Europe.

The environmental history scholarship on Russia and the Soviet Union is still strongly focused on catastrophes and ways of dealing with them.²⁶ Frost, ice, and snow are not one-time events like earthquakes, nuclear disasters, or industrial accidents but are recurrent in seasonal cycles. Although cold and frost had a central importance for Russian history, there are only a few studies that have systematically explored how people reacted to adverse climatic conditions in Muscovite and tsarist Russia, or in the Soviet Union. This volume investigates the practices with which people in Russia reacted to freezing temperatures. The focus here is on the adaptive achievements that emerged or were negotiated politically, socially, aesthetically, and economically. We have examined how knowledge and technology have restructured human ecological relations and shaped the ways uncertainty is dealt with.

By considering the preparatory and adaptive measures undertaken in Russia to deal with such recurring events and the ways these measures shape everyday life, we can also gain insights into possible ways of dealing with the consequences of climate change. Solutions meant to avert global warming must, if they are to be successful, also take into account established historical and cultural configurations. The environmental humanities can help us to better understand the social and cultural roots of our relationship to nature and the environment, and this, in turn, can help us to find and implement political solutions in the struggle against climate change, as well as against other challenges like environmental destruction and pollution.

Third, the volume adds the category of climate to the category of space. Space plays an important role in the history of Eastern Europe. Likewise, the current interest in the Arctic can also be located in this research area. The rapidly growing number of studies on the history of the Arctic usually have a spatial approach and are also frequently limited to the Soviet period.²⁷ But it is not just the vast physical space that has shaped human history in Russia; Russians have also located themselves poorly in “thermal spaces.” While political and economic decisions have stood at the center of the acquisition of northern regions as Russian territory, it is seldom asked what role the cultural and scientific mastery of the climate and the weather played in the colonization of the country. Why has the category of space determined the historical perception

of Russia, while climate has played only a subordinate role in the historical representations of the nineteenth and twentieth centuries? What would it look like to write a history of Russia in which climate is a central factor?

Fourth, this volume complements studies that investigate the “North” both as a region and as an idea and mental image and that increasingly emphasize the ways that the meanings associated with the North vary over time and in different societies.²⁸ Up until the eighteenth century, Russia was considered a northern region in accordance with interpretive schemata of the world and the character of its peoples that dated back to antiquity.²⁹ The ancient theory of climate was both simple and vastly influential: one-sided and extreme climates, such as that believed to be the case in the North, gave rise to one-sided people, while the peoples of variable and temperate climates had a complex character. The boundaries of this northern region were rather nebulous and extended from Greenland, the British Isles, and Scandinavia to Russia and Asia. With the emergence of the idea of Eastern Europe as a region, the geographic extent of the North shrank accordingly. During the course of the nineteenth century, Russia, which until that time had been considered a northern nation, gradually came to be perceived as an eastern one.³⁰ In literary scholarship in particular, Russia has been treated as part of the North.³¹ Literary scholar Otto Boele, who has studied the motif of the North in literature of the Romantic period, notes that in the first half of the nineteenth century the North became increasingly “internalized.” He has shown that ice, snow, and winter as manifestations of a northern climate were regarded as typically Russian phenomena. During this period, they lost their specifically “northern” aura and became a distinctive part of Russianness.³² The victory over Napoleon’s freezing troops, in particular, contributed to the understanding of winter as the nation’s savior and a central part of the national self-image. Foreign correspondents who reported on the events of 1812 also emphasized Russia’s acquaintance with the cold.³³ So far no systematic study has attempted to analyze the association of cold with the national character, both in the self-understanding of the Russians and in the perceptions of foreigners, and how it changed before and after the nineteenth century. The contributions to this volume take some first steps in this direction by looking at various facets of Russia’s nature and environment—for example, the steppes, the nation’s orientation in relation to the points of the compass, its harsh conditions, or the vastness of its territories—and their significance for Russia’s national and imperial self-image.³⁴ Such approaches make it possible to identify the epistemological, social, and cultural impulses that stimulated and strengthened the engagement with the physical environment.

Finally, a global perspective plays an important role both in the book project as a whole and in the individual contributions. The majority of the contributions are interested not only in Russia’s efforts to cope with the cold but also in Russia’s adaptation strategies and how they differ from other “cold”

countries. The volume shows how Russia's approach to the cold has changed as a result of the actions, politics, and scientific activities of other international actors. As several of the contributions demonstrate, Russia's relationship to the environment is not determined just by its climate and weather but also by the perception and study of climate and the scientific discussions taking place internationally. Furthermore, by looking at external perceptions of the region and its self-image as Europe's "cold realm," the book maintains a global perspective.

The contributors to this volume represent a diverse spectrum of disciplines, scholarly traditions, and countries, and they present a kaleidoscope of perspectives on the ways that cold can be interpreted in Russian history and culture. The chapters reflect the inclusiveness and rich diversity of approaches found in the field of environmental history.

Part I: Foundations

Following this introduction, chapter 1 by Julia Herzberg outlines how scholarly research has approached the question of the connection between Russia's harsh climate and its national character and what role Russia has played in international discourses about climate. The remaining contributions are divided into three additional sections.

Part II: Science and Politics

The second section explores the connection between adverse climatic conditions, science, and politics. It contributes to the history of climate knowledge and climate science—topics that, unlike climate reconstruction and research on the effects of climate, have only recently begun to receive increased attention.³⁵ What ideas about climate guided the efforts to "temper" regional and imperial weather conditions? What scientific fields took an interest in the cold, and what did scientists believe was worthy of investigation? How did scientists develop and advance their scientific disciplines by speaking about climate and cold? In contrast to the countless studies that focus mainly on polar and Arctic research during the Soviet era, this collection also looks at the period before 1917. One central theme of the volume is the Enlightenment era and the importance of the Russian Academy of Sciences for the investigation of cold and frost. The chapter by Julia Herzberg shows how the individual and collective experiences of scholars in Russia motivated them to turn their attention to the phenomenon of cold. This led them to test the various theories of the time regarding the causes of extreme cold. Herzberg's study makes it clear that, in terms of the

development of the disciplines of meteorology and climatology, as well as physics, Russia was part of European knowledge networks. Alongside literature and art, the natural sciences also contributed to cold becoming a symbol of Russia.

The conflicts that were generated as a result of the new knowledge about cold regions is the topic of the chapter by Erki Tammiksaar, who shows how the Russian South Pole expedition led by Fabian Gottlieb von Bellingshausen in 1820 later came to be used as an argument during the Cold War struggle to determine who had a right to make territorial claims on Antarctica. An important issue under dispute was the question of whether the ice shelf counted as part of the continent and whether therefore the sighting of it constituted the first discovery of Antarctica.

The chapter by Denis J. B. Shaw also examines the emergence of new knowledge. Through the example of Andrei Aleksandrovich Grigor'ev's study *Subarctic* and its reception, he shows how Russian scientists contributed to global knowledge about the environment and influenced our contemporary understanding of climate and environmental change. At the same time, Grigor'ev's scientific career reveals how political considerations facilitated these insights, for the conceptualization of these geographic ideas as dynamic processes was congruent with the political dictates of historical materialism.

Part III: Images and Narratives

The third section examines cold as an aesthetic phenomenon and a cultural construct. It is concerned with the narratives and media that have conveyed communication about climatic conditions in Russia and shows how communication about cold helped shape individual and collective identities; it also illuminates the significance these representations of harsh climate possessed for external perceptions and the country's self-image. This section supplements literary investigations that have examined the motif of the North in Russian literature, as well as comparative studies of how ice, snow, and cold are portrayed in literature across national boundaries.³⁶ The chapters show the importance of considering not just the literature of the nineteenth century but also visual media in order to understand how Russia became the land of cold. These studies reveal the degree to which perceptions of Russia and Russian identity were shaped by the association with extreme cold. Nataliia Rodigina examines discourses about the climate in the press in the years leading up to the Russian Revolution. She shows that, on the one hand, the references to Siberia's legendary cold diminished in the course of efforts to integrate the region into the communicative space of the empire. On the other hand, the revolutionary opposition characterized their experiences of extreme cold while in Siberian exile as the punishment of an inhumane regime.

Oksana Bulgakowa considers the difficulties of translating temperature into visual media in her chapter on the iconography of cold. She looks at the ways snow and ice are integrated into the language of the cinema and why the “screen temperature” changed during the Soviet period. Her study shows that in film and the visual arts the cold is not a physical or meteorological phenomenon but rather an *image* that can be linked to specific symbols, narratives, myths, and metaphors.

Roman Mauer turns to the external perspective on Russia and shows that the image of cold also played an important role in Germans’ view of the country. Much like the Russian exiles of the revolutionary era, German prisoners of war in the Soviet Union experienced cold as a punishment imposed upon them for the failed megalomaniac fantasies of the National Socialist regime. The chapter focuses on portrayals of Russian coldness within German popular film culture as a symbolic mechanism to compensate for traumatic experiences during the war. This section furthers another important goal of this volume, namely to critically examine national and imperial stereotypes about climate and at the same time to consider what made these narratives so powerful. Looking at media and discourses, can the Russian winter and the Siberian cold be understood as Russian or even European sites of memory?

Part IV: Pain and Pleasure

Although cold and frost had a central importance for Russian history, there are only a few studies that have systematically explored how people reacted to the adverse climatic conditions in tsarist Russia and the Soviet Union. The final section of this volume looks at cold and snow both as a threat and as a focal point for building a common identity, as well as their recreational function. It investigates the practices with which people in Russia reacted to cold temperatures. The focus here is on the adaptive practices that manifested themselves or were negotiated politically, socially, aesthetically, and economically. In this section, the contributors analyze the adaptive strategies that were implemented or reconstituted as a result of military conflict.

Aleksandr Kuzminykh’s chapter continues the investigation of the role of Russian cold during World War II. He examines the influence of weather and climate on the progression of the war. It becomes clear that the symbolic associations with cold seen in Mauer’s study of the film genre were fed both by real experiences as well as by Soviet propaganda, which endeavored to further weaken the fighting power of the German Wehrmacht by awakening their fears of a “white death” (*belaia smert*) awaiting them in Russia.

The contributions in this section contrast long-term adaptive practices with short-term efforts to overcome, mitigate, or utilize the cold. Here we build

on the work of Fiona Hill and Clifford G. Gaddy, whose study *The Siberian Curse: How Communist Planners Left Russia Out in the Cold* offered one of the first counternarratives to the Soviet glorification of the Arctic and cold.³⁷ At the same time, this section shows that in regions dominated by frost, ice, and snow, the climate was a source not just of struggle and suffering but also of recreation and opportunity. The chapter by Aleksei Popov, which focuses on winter tourism in the Soviet Union, examines the discourses that surround skiing and shows that during the political thaw of the 1950s and 1960s the heroization of the ability to endure snow and cold also tapered off. But during other periods, this association remained prominent: in his chapter Alexander Ananyev traces the importance of two types of heroic figures in the Soviet Union, the polar explorer and the ice hockey player, who were closely connected with the ability to master the cold. It also sheds light on why and how these discourses have undergone an update and revitalization in contemporary Russia, where the polar explorers and ice hockey players both serve as role models and identification figures. As Ananyev shows, as do all the other contributors to this volume, it is not enough to focus only on the various costs and challenges that come with the adaptation to cold in Russia;³⁸ rather, it is essential to also map out the rationales, dreams, and utopias that shape life in the cold and motivate the efforts to extend human presence ever further into extreme climatic environments.

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Julia Herzberg is professor for the history of East Central Europe and Russia in early modern times at LMU Munich. Her recent research has focused on, among other topics, the environmental history of Central Eastern Europe and Russia. She coedited *Ice and Snow in the Cold War: Histories of Extreme Climatic Environments* (2019) with Christian Kehrt and Franziska Torma, and *Umweltgeschichte(n): Ostmitteleuropa von der Industrialisierung bis zum Postsozialismus* (2013) with Martin Zückert and Horst Förster. She is currently working on an environmental history of “frost” in Russia that examines various social and cultural aspects of Russia’s harsh climate.

Andreas Renner is a historian of Russia and professor of Russian-Asian studies at LMU Munich. His interest in the Russian cold stems from his research on the Northern Sea Route.

Ingrid Schierle is a lecturer at the University of Tübingen. Her research interests include the history of concepts, the Russian language in the eighteenth century, and provincial life in the Russian empire. She coedited *Dvorianstvo, vlast’ and obshchestvo v provincial’noi Rossii XVIII veka* (2012) with Olga Glagoleva, and *“Poniatiia o Rossii”: K istoricheskoi semantike imperskogo perioda* (2012) with Aleksei Miller and Denis Sdvizhkov.

Notes

1. Paul E. Lydolph, *Climates of the Soviet Union*, World Survey of Climatology 7 (Amsterdam, 1977), 1.
2. Alexander v. Humboldt, *Central-Asien: Untersuchungen über die Gebirgsketten und die Vergleichende Klimatologie* (Berlin, 1844), Bd. 1, 30.
3. John Thompson and Christopher J. Ward, *Russia: A Historical Introduction from Kievan Rus' to the Present*, 8th ed. (Milton, 2018).
4. The opening of the Northeast Passage as a navigable sea route is a particular focus in predictions about the positive economic effects of global warming. Oliver T. Ried, *The Impact of a Warming Arctic on International Shipping: Transit Traffic along Arctic Routes; Developments, Opportunities and Imponderables* (Göttingen, 2015).
5. A. P. Nikonov, *Istoriia Otmorozhennykh v Kontekste Global'nogo Potepleniia* (Moscow, 2010), 381.
6. *Ibid.*, 374.
7. *Ibid.*, 378.
8. *Ibid.*
9. A nuanced analysis of the positive and negative consequences of climate change can be found in Marlène Laruelle, *Russia's Arctic Strategies and the Future of the Far North* (Armonk, NY, 2014), 68–93.
10. James R. Fleming, *Historical Perspectives on Climate Change* (New York, 1998); Boris Belge and Klaus Gestwa, “Wetterkrieg und Klimawandel: Meteorologie im Kalten Krieg,” *Osteuropa* 59, no. 10 (2009); Julia Herzberg, Christian Kehrt, and Franziska Torma, eds., *Ice and Snow in the Cold War: Histories of Extreme Climatic Environments, The Environment in History* (New York, 2018).
11. Nikolai M. Dronin and Edward G. Bellinger, *Climate Dependence and Food Problems in Russia 1900–1990: The Interaction of Climate and Agricultural Policy and Their Effect on Food Problems* (Budapest, 2005), 2.
12. *Ibid.*, 1–2.
13. Colin M. White, *Russia and America: The Roots of Economic Divergence* (London, 1987), 52–53.
14. Maria Rakkolainen and Monica Tennberg, “Adaptation in Russian Climate Governance,” in *Governing the Uncertain: Adaptation and Climate in Russia and Finland*, ed. Monica Tennberg (Dordrecht, 2012), 39–54.
15. Vanda Ignat'eva, “Sakha Republic (Iakutia): Local Projections of Climate Changes and Adaptation Problems of Indigenous Peoples,” in *Global Warming and Human–Nature Dimension in Northern Eurasia*, ed. Tetsuya Hiyama and Hiroki Takakura, Global Environmental Studies (Singapore, 2018), 11–28.
16. Colin Reisser, “Russia's Arctic Cities: Recent Evolution and Drivers of Change,” in *Sustaining Russia's Arctic Cities: Resource Politics, Migration, and Climate Change*, ed. Robert W. Orttung, Studies in the Circumpolar North 2 (New York, 2016), 1–22.
17. Marianna Poberezhskaya, “Traditional Media and Climate Change in Russia: A Case Study of Izvestiia,” in *Climate Change Discourse in Russia: Past and Present*, ed. Marianna Poberezhskaya and Teresa Ashe, Routledge Focus on Environment and Sustainability (London, New York, 2019), 64–79.
18. Laruelle, *Russia's Arctic Strategies*; Elana Wilson Rowe, Marlène Laruelle, and Dmitry Gotenburg, “Russian Policy Options in the Arctic,” *Russian Analytical Digest* 96

- (Bremen, Zürich, 2011); Marlène Laruelle, *Russia's Arctic Ambitions: Transforming the "Cost of Cold,"* Policy Brief 7 (Stockholm, 2009).
19. Laruelle, *Russia's Arctic Strategies*, xxi.
 20. Examples of such studies include: James R. Fleming and Vladimir Janković, "Revisiting Klima," *Osiris* 26 (2011); Jan de Vries, "Measuring the Impact of Climate on History: The Search for Appropriate Methodologies," *Journal of Interdisciplinary History* 10, no. 4 (1980); John L. Brooke, *Climate Change and the Course of Global History: A Rough Journey*, Studies in Environment and History (Cambridge, 2014); Wolfgang Behringer, "Weather, Hunger and Fear: Origins of the European Witch-Hunts in Climate, Society and Mentality," *German History* 13 (1995); Mike Hulme, "Reducing the Future to Climate: A Story of Climate Determinism and Reductionism," *Osiris* 26, no. 1 (2011).
 21. An exception is the volume by Marianna Poberezhskaya and Teresa Ashe, which investigates discourses about climate change in both the Soviet Union and post-Soviet Russia. Marianna Poberezhskaya and Teresa Ashe, eds., *Climate Change Discourse in Russia: Past and Present*, Routledge Focus on Environment and Sustainability (New York, 2019).
 22. Jonathan D. Oldfield, *Russian Nature: Exploring the Environmental Consequences of Societal Change* (Burlington, VT, 2006); Katja Doose and Jonathan Oldfield, "Natural and Anthropogenic Climate Change Understanding in the Soviet Union, 1960s–1980s," in *Climate Change Discourse in Russia: Past and Present*, eds. Marianna Poberezhskaya and Teresa Ashe, Routledge Focus on Environment and Sustainability (New York, 2019), 17–31.
 23. This tendency is particularly evident in introductions to the environmental history of Russia. Paul R. Josephson, ed., *An Environmental History of Russia*, Studies in Environment and History (New York, 2013).
 24. Nicholas Breyfogle also recently made this point in his excellent introduction to a volume on Russian environmental history: Nicholas B. Breyfogle, "Toward an Environmental History of Tsarist Russia and the Soviet Union," in *Eurasian Environments: Nature and Ecology in Imperial Russian and Soviet History*, ed. Nicholas B. Breyfogle, Pitt Series in Russian and East European Studies (Pittsburgh, PA, 2018), 14–15.
 25. L. V. Milov, "Natural and Climate Factor and Peculiarities of Russian Historic Process," *Historical Social Research* 16, no. 2 (1991); L. V. Milov, *Velikorusskii pakhar' i osobennosti rossiiskogo istoricheskogo protsessa* (Moscow, 1998).
 26. Nigel Raab, *All Shook Up: The Shifting Soviet Response to Catastrophes, 1917–1991* (Chicago, 2017).
 27. Linda Trautman, "Modernisation of Russia's Last Frontier: The Arctic and the Northern Sea Route from the 1930s to the 1990s," in *Modernisation in Russia since 1900*, ed. Markku Kangaspuro, *Studia Fennica Historica* 12 (Helsinki, 2006), 252–66; Laruelle, *Russia's Arctic Strategies*; Richard Vaughan, *The Arctic: A History*, rev. and updated ed. (Stroud, 2007); Paul R. Josephson, "Technology and the Conquest of the Soviet Arctic," *Russian Review* 70, no. 3 (2011); Paul R. Josephson, *The Conquest of the Russian Arctic* (Harvard, 2014); John McCannon, "Positive Heroes at the Pole: Celebrity Status, Socialist-Realist Ideals and the Soviet Myth of the Arctic, 1932–39," *Russian Review* 56, no. 3 (1997); John McCannon, *Red Arctic: Polar Exploration and the Myth of the North*

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28. Numerous studies emphasize the importance of “northernness” as a part of national identity, as, for example, the work of Sverker Sörlin on Swedish nationality and culture: Sverker Sörlin, “Rituals and Resources of Natural History,” in *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*, ed. Michael Bravo (Canton, MA, 2002), 73–122; Dolly Jørgensen and Sverker Sörlin, eds., *Northscapes: History, Technology, and the Making of Northern Environments* (Vancouver, 2013); Dolly Jørgensen and Virginia Langum, eds., *Visions of North in Premodern Europe*, *Cursor Mundi* 31 (Turnhout, 2018); Astrid Arndt, ed., *Imagologie des Nordens*, *Imaginatio borealis* 7 (Frankfurt/Main, 2004); Gonthier-Louis Fink, “Diskriminierung und Rehabilitierung des Nordens im Spiegel der Klimatheorie,” in *Imagologie des Nordens*, ed. Astrid Arndt, *Imaginatio borealis* 7 (Frankfurt/Main, 2004), 44–107; Dennis Hormuth and Maike Schmidt, eds., *Norden und Nördlichkeit: Darstellung vom Eigenen und Fremden*, *Imaginatio borealis* 21 (Frankfurt/Main, 2010); Hendriette Kliemann, *Koordinaten des Nordens: Wissenschaftliche Konstruktionen einer europäischen Region 1770–1850*, *Nord-europäische Studien* 19 (Berlin, 2005).
 29. Hans Lemberg, “Zur Entstehung des Osteuropabegriffs im 19. Jahrhundert: Vom Norden zum Osten Europas,” *Jahrbücher für Geschichte Osteuropas* 33, no. 1 (1985); Andreas Fülberth, “Herbersteins Rerum Moscoviticarum Commentarii als Zeugnis der frühneuzeittypischen Lokalisierung Russlands im ‘Norden,’” in Hormuth and Schmidt, *Norden und Nördlichkeit*, 31–40.
 30. Hendriette Kliemann, *Koordinaten des Nordens: Wissenschaftliche Konstruktionen einer europäischen Region 1770–1850*, *Nordeuropäische Studien* 19 (Berlin, 2005), 13–14; Lemberg, “Zur Entstehung des Osteuropabegriffs im 19. Jahrhundert.”
 31. Andreas Fülberth, “Herbersteins Rerum Moscoviticarum Commentarii als Zeugnis der frühneuzeittypischen Lokalisierung Russlands im ‘Norden,’” in Hormuth and Schmidt, *Norden und Nördlichkeit*; Ludwig Steindorff, “Bilder vom Norden in der Geschichte Altrusslands,” in Hormuth and Schmidt, *Norden und Nördlichkeit*, 13–30.
 32. Otto F. Boele, *The North in Russian Romantic Literature* (Amsterdam, 1996), 11.
 33. *Ibid.*, 71–77.
 34. David Moon, *The Plough That Broke the Steppes: Agriculture and Environment on Russia's Grasslands, 1700–1914*, *Oxford studies in modern European history* (Oxford, 2014); Christopher D. Ely, *This Meager Nature: Landscape and National Identity in Imperial Russia* (DeKalb, 2002).
 35. Matthias Heymann, “The Evolution of Climate Ideas and Knowledge,” *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 4 (2010); Spencer R. Weart, “The Idea of Anthropogenic Global Climate Change in the 20th Century,” *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 1 (2010); Poberezhskaya and Ashe, *Climate Change Discourse in Russia*; Fleming, *Historical Perspectives on Climate Change*.
 36. Boele, *North in Russian Romantic Literature*; Andrea Dortmann, *Winter Facets: Traces and Tropes of the Cold* (Bern, Oxford, 2007); Heidi Hansson and Cathrine Norberg,

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37. Fiona Hill and Clifford G. Gaddy, *The Siberian Curse: How Communist Planners Left Russia Out in the Cold* (Washington, DC, 2003).
38. Laruelle, *Russia's Arctic Ambitions*; Hill and Gaddy, *Siberian Curse*.

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