

Germany's Arctic Policy Guidelines

Germany and the Arctic in the context of the climate crisis and the Zeitenwende

The
Federal Government

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Summary

With these Arctic policy guidelines, the Federal Government is reaffirming its readiness to assume responsibility for the Arctic region through stronger engagement. Together with our partners in the region and in Europe, it is thus confronting the great challenges facing the Arctic.

Security and stability

Russia's war of aggression against Ukraine has **fundamentally changed the geopolitical environment for Germany's Arctic policy**. The principle of Arctic exceptionalism propounded in the past (the Arctic as a place of cooperation regardless of global developments) is being challenged by Russia in particular. In view of the changed situation, Germany's Arctic policy is based on the guiding principles of the National Security Strategy: robustness, resilience, sustainability.

The **Federal Government is committed to fostering security and stability in the Arctic as the foundation for the protection and sustainable development of the region**. The importance of the Arctic to security policy has increased – far beyond its geographical boundaries. The Federal Government is thus playing its part in protecting the entire NATO Allied territory. It supports its EU and NATO partners in the region in defending shared security interests.

Rules-based order and resilience

The **Federal Government is committed to the peaceful use of the Arctic within the framework of the rules-based international order**. The impact of Russia's war of aggression against Ukraine is affecting the international cooperation in the region needed to tackle the effects of the climate crisis and to preserve the Arctic's ecologically sensitive environment.

Climate action, environmental protection and nature conservation efforts, as well as sustainable development:
The warming of the Arctic due to the global climate crisis with its geoecological and geoeconomic changes is progressing at a rapid pace. The **accelerated melting of the polar ice sheets and its global and regional consequences are having a direct impact on living conditions and security in Germany**. The Federal Government therefore emphatically supports global climate action in line with the Paris Agreement and is playing its part both within the framework of international climate cooperation and through its efforts to meet its national climate targets. In this context, cutting-edge research is one of the cornerstones of Germany's involvement in the Arctic. The aim is to develop an improved understanding of the Arctic's role in the global climate system.

Due to its ecological sensitivity, the region must be specially protected and, in line with the precautionary and polluter-pays principles, only be developed sustainably and with care. The Federal Government is committed to this aim – particularly in view of the fact that achieving the Sustainable Development Goals of the UN 2030 Agenda in good time is jeopardised.

All activities in the Arctic must take into consideration the interests of the people living there and protect the rights of indigenous peoples.

The Arctic's economic potential will change in the future in light of the rapid pace at which the region is warming. Among other things, this has an impact on the availability of critical raw materials, which are becoming increasingly important for the green transition and raw materials security in Germany and Europe, too. Raw materials extracted sustainably and responsibly in the Arctic in compliance with the strictest environmental standards can help make the supply of raw materials more resilient. The Federal Government advocates for the binding review of the environmental compatibility of potential deep sea mining projects and will continue marine scientific research in order to increase knowledge of the deep sea. Without a sufficient knowledge base and the completion of exploitation regulations for the effective protection of the marine environment, the commercial extraction of mineral resources from the deep sea will not be supported (c.f. p. 25).



The Federal Government …

… is working closely with allies and partners to guarantee security and stability in the region and intends to assume an active role in security policy in order to support its NATO allies and EU partners in the region;

… is reacting to the increased security threat resulting from Russia's activities in the Arctic, which also affect German security interests. It is also observing the challenges which have emerged as a result of China's greater engagement and the closer cooperation between Russia and China in the region;

… is fostering multilateral cooperation, particularly within the framework of the Arctic Council, in which Germany has observer status, and advocates for to resolving overlapping sovereignty claims in the Arctic in a cooperative manner;



… is committed to all international and regional agreements and supports the development of and compliance with legally binding regulations on the exploration, protection and sustainable use of the Arctic while placing equal importance on the rights of the local population;

… is committed to freedom of navigation in Arctic waters in accordance with the regulations of the UN Convention on the Law of the Sea and to improving the framework conditions for coordinated, safe and environmentally sound shipping in the Arctic;

… is committed to a systematic climate and environmental protection policy in the Arctic with the aim of keeping the 1.5-degree limit within reach in line with the Paris Agreement, strengthening climate resilience and protecting the sensitive ecosystems – and thus also protecting the livelihoods of local communities in the Arctic;



... recognises the precautionary and polluter-pays principles as fundamental principles of all environmental and economic activity in the Arctic;

... is committed to the further designation of protected areas and non-intervention areas[1] on land and at sea, as well as to the sustainable use of living marine resources in order to preserve the Arctic's unique biodiversity;

... firmly believes that Germany can contribute to protection and sustainable economic development as well as the predictability of future developments in the Arctic on account of its great expertise in research, technology and environmental standards;

... is working to maintain and expand free and responsible Arctic research as the basis for political action;

... does not currently regard Russia – as a result of its war of aggression against Ukraine and its move away from the international rules-based order – as a partner in Arctic research and instead is intensifying cooperation with like-minded partners;

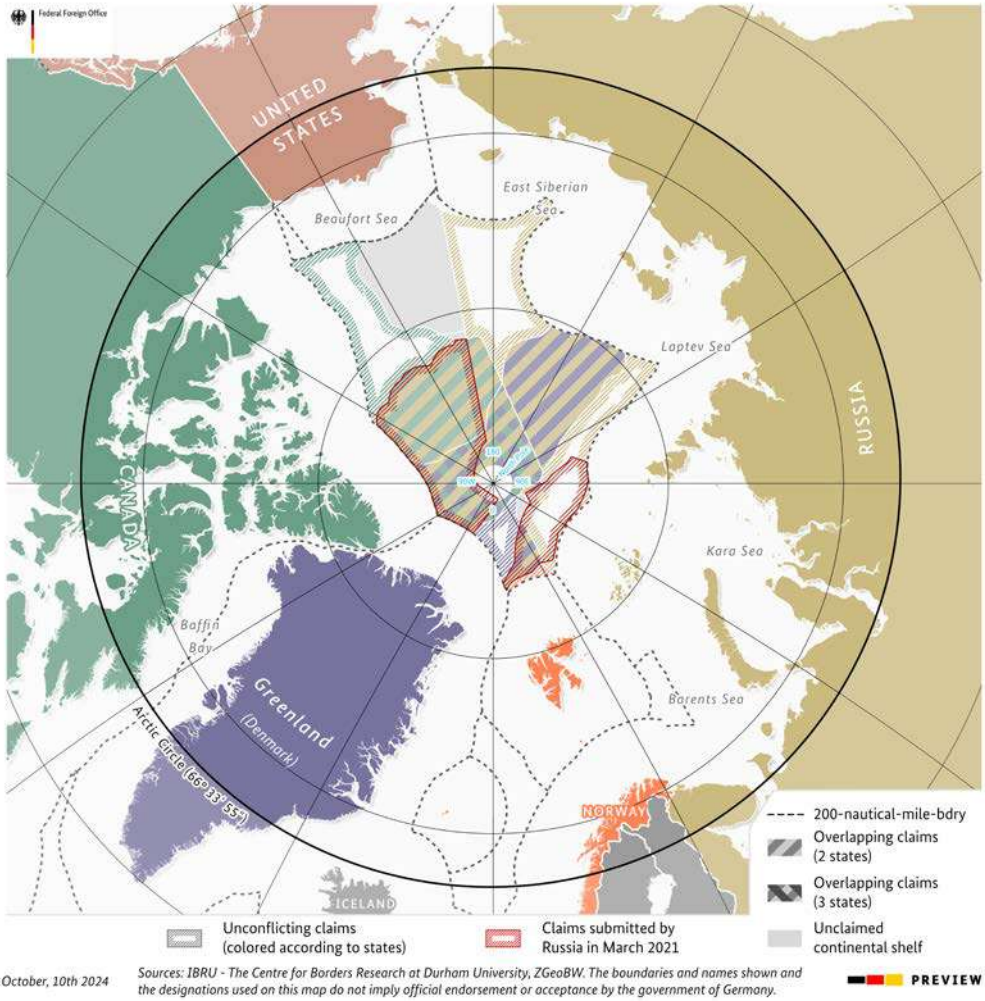


... is committed to strengthening the rights of indigenous peoples to freedom, good health and self-determination in their homeland, and respects the desire for economic development of all Arctic communities;

... recognises that raw materials extracted sustainably and responsibly in the Arctic in compliance with the strictest environmental standards can help make the supply of raw materials more resilient;

... advocates for compliance with legally binding international regulations regarding the exploration and extraction of mineral resources and considers it vitally important to set the highest environmental standards.

1 A *protected area* is a clearly defined geographical space which is recognised, dedicated or administered through legal or other effective means in order to safeguard the long-term conservation of nature and the related ecosystem services and cultural values. *Non-intervention areas* are strictly safeguarded protected areas. To protect biodiversity, and possibly also geological/geomorphological features, visits, use and the impact of human beings are strictly monitored and limited.



Territorial claims in the Arctic

Contents

1. The importance of the Arctic to Germany 10

2. Safeguarding security and stability in the Arctic 14

3. Defending the rules-based order and strengthening resilience 19

4. Fostering climate action, nature conservation and environmental protection, as well as sustainable development 26

4.1 Consistently advancing climate action, nature conservation and environmental protection 27

4.2 Fostering cutting-edge research in the Arctic 34

4.3 Safeguarding sustainable development 40

1.
The importance of the Arctic to Germany



A polar bear mother and cub near the research vessel Polarstern

In addition to the Arctic Ocean, the Arctic covers the northern landmasses of the eight Arctic states the Kingdom of Denmark (Greenland), Finland, Iceland, Canada, Norway (including Svalbard/Spitsbergen), Russia, Sweden and the United States (Alaska).

The importance of the Arctic to Germany has continued to grow during the last few years. For instance, Russia's war of aggression against Ukraine has **fundamentally changed the security environment for Germany's engagement in the Arctic.** The Arctic can no longer be regarded as an isolated region. Security and stability in the Arctic are closely tied to the security situation in the North and Baltic Seas, as well as the North Atlantic. The Arctic is of increasing geostrategic and geoeconomic significance, a view also shared by Russia and China. During the last few years, Russia has pushed forward with a re-militarisation of the Arctic. At the same time, the melting of ice is opening up new possibilities for the Arctic states and other actors to use resources in the Arctic and access to the region for economic, political and military purposes. The region is therefore increasingly becoming an arena of geopolitical tensions. The significance of the Arctic for protecting NATO's northern flank, which now also includes Finland and Sweden, is growing.

The region is not only a sensitive indicator of climate change, but is also **an important part of the Earth's overall climate system**. The decline in the extent of sea ice, the melting of the ice sheets and the thawing of the permafrost in the Arctic are due to global warming. In turn, these processes have a global impact and intensify the related challenges, also for Germany. According to a study published in 2022 by Norwegian and Finnish researchers, the Arctic is warming at least four times faster than the rest of the world. Few regions of the world are as vulnerable and influence the global climate to as great an extent as the Arctic. The surface area of Arctic Sea ice has shrunk by 50 percent since the 1980s. The density of sea ice is diminishing and the share of perennial sea ice is falling at a dramatic pace. Sea levels are rising due to

50%

The surface area of Arctic Sea ice has shrunk by 50 percent since the 1980s.



Icebergs near Ilulissat, Greenland

melting inland ice. Where less ice reflects the sun, temperatures continue to rise; thawing permafrost that releases large amounts of greenhouse gases reinforces this trend. At the same time, global climate developments are having a considerable impact on the Arctic. The consequences of this are as comprehensive as they are far-reaching. They range from changed food chains in wildlife with a global decline in biodiversity to new sea routes becoming viable and, in the long term, will make it possible to extract and use raw materials in the Arctic.

By updating the Arctic policy guidelines, the Federal Government wishes to underscore the central importance of a comprehensive German policy on the Arctic and to emphasise the joint responsibility of all actors for this sensitive region, which is of importance to Germany, too.[2]

2 All statements about planned measures that require funding from the Federal budget are subject to the budgetary and financial planning rules. All measures are thus contingent on funding being secured. Any measures taken must be kept within the framework of available financial resources and staffing. This is without prejudice to both current and future budget negotiations.



Remnants of the Greenland Ice Sheet off Ilulissat, Western Greenland, May 2019

2. *Safeguarding security and stability in the Arctic*



The supply vessel Main during an exercise off the coast of Norway in 2021

The international rules-based order must also be defended in the Arctic. It forms the basis for security and stability in the region and thus also for Germany's efforts to help protect the Arctic and to foster its sustainable development.

Russia's war of aggression against Ukraine has changed the security environment for Germany's Arctic policy on a permanent basis. Our security is linked to the security and stability of other regions in the world. In line with the National Security Strategy (published in June 2023), Germany's Arctic policy is therefore also oriented towards the principles of robustness, resilience and sustainability.

The aim of Germany's Arctic policy is to ensure that the region is as free of conflict as possible. At the same time, the Federal Government must react to new security challenges: developments in the Arctic are closely tied to the security situation in the North and Baltic Seas, as well as the North Atlantic – especially in light of Russia's war of aggression against Ukraine. The rise in temperature and the related melting of polar ice sheets and permafrost are also increasingly giving rise to security issues, including questions regarding the security of infrastructure (also military infrastructure) and easier access to sea routes covered in ice until now.

The region is increasingly developing into an arena of geopolitical tensions. Russia already expanded its military presence and its activities in the Arctic before its war of aggression against Ukraine and is taking an increasingly aggressive stand vis-à-vis Arctic



The German Navy's Sea Battalion during the NATO exercise Cold Response 2022 in northern Norway

NATO allies. The Russian navy, in particular the Northern Fleet based in the Arctic, has gained in importance as an instrument of Russian foreign and security policy. Russia's capability to hamper freedom of navigation in the North Atlantic is a strategic challenge for the Federal Government and its allies. The strategic and military significance of the Arctic will continue to grow for the foreseeable future. In key Russian strategy papers, the importance of relations with multilateral forums such as the Arctic Council has been greatly played down. Furthermore, Russia withdrew from the Barents Euro-Arctic Council in September 2023.

At the same time, China is increasing its strategic presence in the Arctic and investing economic and scientific resources – yet it is also developing military capabilities. Germany wants to safeguard security and stability in the region. All activities in the Arctic must therefore be based on international law, in particular the United Nations Convention on the Law of the Sea.

Russia's increasingly aggressive stance and the ever-closer cooperation between Russia and China in the region are having an impact on the security of the NATO Allied territory and that of Germany's EU and NATO partners, international shipping and aviation in the region, as well as the defence of the international rules-based order. Germany's security is indivisible from that of its European partners and transatlantic allies. That also applies to the Arctic. Protection of the territorial integrity of the allies lies at the heart of NATO's security guarantees. The allies also protect NATO's area of responsibility in the Arctic with military contingency planning for the defence of Alliance partners, as well as for day-to-day reassurance and as a deterrent vis-à-vis Russia. The presence of military units and the conduct of military exercises, either within the NATO framework or on the part of individual allies, are of relevance. Germany welcomes the accession of Finland and Sweden to NATO as a significant contribution towards strengthening NATO's northern and eastern flanks, which is in Germany's interest.

Moreover, Germany is actively participating in regional forums where security issues and questions are discussed. As a non-Arctic state, Germany is represented both in the Arctic Security Forces Roundtable and at the regular sessions of the Nordic Chiefs of Defence (ChoDs). Germany supports



A U 36 submarine entering a Norwegian fjord during Exercise Arctic Dolphin in 2024

the strengthening of the regional security and defence cooperation within the framework of the Nordic Defence Cooperation (NORDEFCO), for example by taking part in exercises and training courses (e.g. German participants in courses at NORDEFCO training facilities).

The growing expansion of infrastructure in the Arctic also gives rise to security questions. Resilience and protection from hybrid activities therefore already play an increasingly significant role in the Arctic. The Federal Government attaches great importance to the exchange of experiences and best practices – including on questions of resilience – especially with the European Arctic states. In a world of globalised flows of goods and trade, open international shipping routes as well as the security of critical maritime infrastructure are of key interest to the Federal Republic of Germany. That also goes for the High North.

The Federal Government will …

… **contribute to security and stability in the Arctic, foster cooperation projects and support the peaceful use of the Arctic on the basis of recognised norms and codes.** *The aim of Germany's Arctic policy is to ensure that the region is as free of conflict as possible;*

… **react to the increased security challenges in the Arctic.** *Germany will continue to closely observe Russia's actions in the Arctic, including its closer cooperation with China, and closely coordinate its response with its allies in NATO and the EU;*

… **strengthen the security role of NATO and the EU in the Arctic.** *The Federal Government is committed to its Alliance defence obligation, which stems from membership of NATO, and supports an increased focus of NATO and the EU on the Arctic's security policy implications;*

… **expand the mutual exchange of experiences and Bundeswehr exercises together with partners and allies in the region.** *To this end, the Bundeswehr has earmarked the relevant capabilities for reconnaissance and is planning regular training activities in the region;*

… **continue and further expand its defence cooperation and joint procurement initiatives with NATO and EU partners in the Arctic region;**

… **further integrate the Arctic into a system of multilateral cooperation.** *Regional bodies are essential components in this regard. Within this framework, the Federal Government is committed to ensuring that conflicts of interest are resolved amicably and on the basis of existing legislation;*

… **continue to work resolutely to safeguard the applicable freedoms of navigation and transit rights in Arctic waters in accordance with the United Nations Convention on the Law of the Sea.** *The Federal Government regards the EU Maritime Security Strategy (EUMSS) as an essential basis for this. The measures contained in the strategy are intended to build resilience against external interference and to expand capabilities contributing to joint situational awareness as regards shipping, aviation and space capabilities in and above the Arctic.*

3.
Defending the rules-based order and strengthening resilience



The 11th Arctic Council Ministerial Meeting in Rovaniemi, Finland, May 2019

The Federal Government is committed to the peaceful use of the Arctic within the framework of the rules-based international order and founded on international law.

Preserving this order creates stability and the conditions for peace, security and human development. It is an essential basis for Germany's engagement in the region. Regional multilateral formats play an important role in this context.

The Arctic Council, which was established in 1996 with a permanent secretariat in Tromsø, Norway, is the main intergovernmental forum seeking to reconcile the interests of the eight Arctic states, as well as of the cross-border indigenous peoples. The Arctic Council's work focuses in particular on environmental protection and sustainable development in the region. In addition to the Arctic states, six umbrella organisations of indigenous peoples are therefore Permanent Participants of the Arctic Council; a further 37 states and organisations, including Germany, are admitted as observers.

The cooperation between Arctic states, experts and indigenous peoples in the Arctic Council facilitates exchange of information and expertise and helps to balance international and regional interests with a multilateral approach. The practical work of the Arctic Council is coordinated in six working groups, including groups on research efforts and on development projects for the conservation of biodiversity as well as on sustainable development.

Arctic Council



The Arctic Council is the main intergovernmental forum seeking to reconcile the interests of the eight Arctic states, as well as of the cross-border indigenous peoples.

German experts are currently members of four of the six working groups[3] and make valuable contributions to their work. Since the start of Russia's war of aggression against Ukraine, however, the Arctic Council's ability to work effectively has been greatly impaired, especially at the political level.

With its Joint Communication **"A stronger EU engagement for a peaceful, sustainable and prosperous Arctic"** of October 2021, the European Union reacted to changes in the Arctic: in particular to geopolitical changes (e.g. changed threat perceptions) as well as to the increased impact of the climate crisis on the Arctic and thus on the entire global ecosystem and the resulting increased economic interest throughout the world (for instance, new shipping routes due to melting ice). In the communication, the EU pools its programmes and projects which can (also) be implemented in the Arctic.

The **UN Convention on the Law of the Sea (UNCLOS)** forms the universal legal framework for the use and conservation of marine resources, marine environmental protection and marine scientific research, and also applies to Arctic waters. In addition, UNCLOS includes obligations for cooperation between coastal and other states. Moreover, the aim is for the States Parties to cooperate at national, regional and global level and to work towards effective marine protection.

Given the increasing interest in the Arctic, the UNCLOS provisions are becoming vitally important. It governs, among other things, the establishment and demarcation of continental shelves, shipping rights, transit passage and peaceful transit, the freedom of marine scientific research and the use and conservation of living resources, as well as the prevention, reduction and control of pollution of the marine environment, including ice-covered areas. So far, the **Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement)** adopted in 2023 by the UN General Assembly has already been signed by 90 states and the European Union, so far. Eight states have already ratified the agreement (as of

3 Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna Working Group (CAFF), Protection of the Arctic Marine Environment (PAME) and Sustainable Development Working Group (SDWG).

August 2024).[4] Germany and the European Union member states are working to ensure the agreement's swift entry into force and are aiming for its ratification by the 3rd UN Ocean Conference in June 2025. The BBNJ Agreement will enter into force 120 days after the deposit of the 60th instrument of ratification and will also be of particular importance for protecting the Arctic Ocean in future.

The implementation of the **Kunming-Montreal Global Biodiversity Framework** of 2022 of the Convention on Biological Diversity is vitally important for conserving the Arctic's unique biodiversity. The designation of further protected areas is of particular significance to the Arctic. In addition to this, the goals with respect to the sustainable use of species living in the wild are important in order to conserve the biocultural diversity of the Arctic region and, in particular, the livelihoods of indigenous peoples. This requires involving the local population as well as consistently taking into account indigenous and traditional knowledge with a view to finding sustainable solutions in nature conservation.

The United Nations **International Maritime Organization (IMO)** governs international maritime affairs with the aim of ensuring freedom of navigation, improving maritime safety and reducing environmental pollution by shipping. The **Polar Code** is a collection of binding regulations and recommendations on all aspects of shipping in the polar seas and is intended to make shipping safer and more environmentally friendly. The Polar Code covers the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to shipping operating in the inhospitable waters around the two Poles. As of 1 July 2024, there is a ban on the use and transport of heavy grade oil as a fuel in Arctic waters, although exceptions are provided for until 2029.

4 Belize, Chile, Cuba, Mauritius, Micronesia, Monaco, Palau and Seychelles.

The regional **1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR**, based on the Oslo Convention of 1972 and the Paris Convention of 1974) is an international treaty for the protection of the marine environment in the North-East Atlantic, including the North Sea and parts of the Arctic Ocean. In particular, this is to be achieved by preventing and eliminating marine pollution and designating a coherent network of marine protected areas. The **North-East Atlantic Fisheries Commission (NEAFC**, 1982) aims at the sustainable exploitation of fish stocks on the high seas in the North-East Atlantic and in parts of the Arctic Ocean.

The Federal Government intends to …

… **contribute to the preservation of the Arctic Council and the continuation of its important work**, *especially in the field of interdisciplinary climate research and the inclusion of indigenous voices. At the same time, there can be no business as usual with Russia in the Arctic Council for as long as it wages its war of aggression against Ukraine;*

… **further strengthen Germany's commitment by playing an active role as an observer in the Arctic Council**, *for example through the participation of experts from German institutes and technical authorities in all Arctic Council working groups, German expertise in the field of polar research as well as nature conservation and environmental protection, and the co-financing of research initiatives and projects. Both this cooperation and tangible research projects are to be stepped up. For the Federal Government, cultivating bilateral relations with like-minded states of the Arctic Council and with other observer states (also within the framework of the Warsaw Format) represents an additional platform for exchange on Arctic policy;*

… **continue to support the involvement of the indigenous population in the Arctic Council's decision-making processes.** *The working groups of the Arctic Council must consistently and throughout the entire process work together with the indigenous population in order to learn from their knowledge and make use of their expertise;*

... **work to boost the EU's role as an independent geopolitical actor, also in the Arctic.** *The EU is a major champion of the international rules-based order and can use its instruments to make an even bigger contribution towards protecting the region. The Federal Government coordinates closely on this with the EU institutions and the other EU member states, especially with the EU Arctic states and the EU observer states in the Arctic Council;*

... **continue working for the universal relevance of UNCLOS as a comprehensive legal framework for all activities in the seas and thus also in the Arctic.** *In particular, this includes the demarcation of waters and continental shelves by way of dialogue, cooperation or the peaceful settlement of disputes, as well as the conservation and sustainable use of the biodiversity of the oceans in areas beyond national jurisdiction (BBNJ Agreement);*

... **work towards universal respect of the Polar Code in order to ensure the safety of humans and nature in Arctic shipping.** *The Polar Code is binding, both within the framework of the* **International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL).** *The Federal Government supports IMO resolution A.1137(31) adopted in 2019 which calls on member states to implement on a voluntary basis safety measures contained in the Polar Code on ships which are not certified under the SOLAS Convention;*

... **foster preventive measures aimed at protection from oil pollution in the sensitive Arctic region;**

... **remain committed to strengthening cross-sectoral international cooperation and to the coherent and effective implementation of the 2030 Agenda.** *It is making good on this commitment, for instance via the further development of the Collective Arrangement of OSPAR, NEAFC and other international organisations for the joint management of human activities in areas beyond national jurisdiction in the North-East Atlantic;*

... **continue working for the implementation of the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity to conserve the unique biodiversity in the Arctic;**



Participants attending the 11th Arctic Council Ministerial Meeting in Rovaniemi, Finnish Lapland, May 2019

... **continue advocating strict legally binding regulations on the extraction of mineral resources within the framework of the International Seabed Authority (Part XI of UNCLOS).** *It considers it imperative that the highest environmental standards are set, indigenous rights are safeguarded, multinational strategies for protecting the environment in the event of accidents developed and a binding regime for environmental damage and liability established. The Federal Government advocates the binding review of the environmental compatibility of potential deep sea mining projects and will continue marine scientific research in order to increase knowledge of the deep sea. Without a sufficient knowledge base and the completion of the exploitation regulations, which in line with UNCLOS must guarantee the effective protection of the marine environment against harmful effects of activities in the area, the commercial extraction of mineral resources from the deep sea will not be supported;*

... *support the* **designation of marine protected areas in Arctic waters** *(under OSPAR and the BBNJ Agreement), as well as of* **Particularly Sensitive Sea Areas (PSSAs)** *under the IMO, in order to lessen the pressure on sensitive ecosystems and to improve their protection.*

4. Fostering climate action, nature conservation and environmental protection, as well as sustainable development



View of the northern Norwegian port city of Tromsø from 420-meter-high Storsteinen Mountain

Curbing the climate crisis and dealing with its consequences is one of the fundamental and most pressing tasks of this century. We need climate-crisis adaptation strategies to protect people and natural spaces. We also require equally great momentum to overcome the biodiversity and ecosystem crisis. That applies in particular to the Arctic.

4.1 Consistently advancing climate action, nature conservation and environmental protection

The Arctic is regarded as an early warning system for global warming. This is because in the region the impact of the climate crisis is becomes apparent earlier and more clearly: temperatures in the region are currently rising around four times as rapidly than in the rest of the world. The melting ice, whose shrinking surface reflects solar radiation less strongly, also reinforces the change in temperature. The melting of sea ice surfaces is further accelerated by soot particles on the ice, which are mainly produced as a result of the combustion of fossil fuels.

According to the latest report by the Intergovernmental Panel on Climate Change, it is forecast that in the scenarios with high CO_2 emissions the Arctic Ocean will be practically free of sea ice in late summer by the end of the 21st century. The exact point in time cannot be predicted precisely. In all climate scenarios, however, at least one ice-free summer is expected by 2050. The decrease in sea ice is leading to substantial shifts in the marine biomass and the distribution ranges of Arctic marine flora and fauna.



Temperatures in the region are currently rising around four times as rapidly as in the rest of the world.

The Arctic Ocean is one of the most important carbon sinks in the climate system: due to the low water temperatures, large amounts of CO_2 can be absorbed from the atmosphere and bound on a long-term basis. The increasing global warming could endanger this. Among other things, the serious changes in the heat balance cause permafrost on the Arctic mainland to thaw and release highly potent natural greenhouse gases – particularly methane – over large areas, which are also contributing to the warming of the atmosphere. Furthermore, the methane emissions caused by oil and gas production on the Arctic continental shelf and the flaring of associated gas, a by-product of oil production, are main sources of air pollution in the Arctic.

The climate-induced decline in sea ice makes it possible to access considerable oil and natural gas resources, thus rendering the extraction of fossil raw materials in Arctic areas ever more attractive. The use of raw materials extracted in the Arctic, such as oil and natural gas, contribute in turn to greenhouse gas emissions, thereby accelerating the climate crisis. The changes observed in the Arctic as a result of global warming affect the entire Earth system via feedback processes and are thus reinforced. Atmospheric circulation over the northern hemisphere is already changing, and thus also weather patterns in Europe and Germany. In addition to the temperature-dependent expansion of the oceans, the melting of the Greenland ice sheet contributes to rising sea levels globally. By the end of the century, sea levels are expected to rise by up to one metre or possibly even more, which would have serious consequences, both in Europe and around the world.

Today, almost four million people live in the Arctic. Around 10 percent of the inhabitants are indigenous to the Arctic. They continue their traditional way of life in the context of a constantly changing environment. Yet the changes in the Arctic environment are also changing their living conditions. This has an impact on the cultures, traditions, languages and identities of indigenous peoples and the local population. Arctic communities are already facing challenges resulting from the impact of the climate crisis. This shows that measures aimed at strengthening resilience and enhancing adaptation are needed. At the same time, the Arctic has the potential for sustainable economic development which both brings

advantages for the local population and offers scope for innovations across the regions.

The Arctic's terrestrial and marine ecosystem is considered to be particularly sensitive due to the extreme living conditions, which result in a high level of specialization of flora and fauna, which had to adapt to these conditions. Decreasing sea ice, progressive ocean acidification and changes in sea and air currents threaten species that depend on the Arctic for their habitat. In view of the growing possibilities for economic exploitation, comprehensive and cross-sectoral regulations on protecting the increasingly ice-free areas of the Arctic marine environment are needed.

In addition, contamination from persistent organic pollutants, mercury and litter from other regions of the world endanger the Arctic's flora and fauna. Sea ice acts as a mode of storage and transport for microplastic particles. There are fears that considerable quantities of plastic particles could be released when it melts, which would inflict even more damage on the marine environment.

Changing environmental conditions are making it easier to access the region for research and the exploitation of Arctic resources. This affects not only oil and natural gas production and mineral resources but also fishing grounds. What is more, the decline in sea ice enables more intensive use of shipping routes through Arctic waters,



Dunøyane archipelago, Spitzbergen/Svalbard, Norway

thus placing an increasing burden on them. In recent decades, exhaust gases, wastewater and waste have increased significantly, as have underwater noise pollution and the risk of introducing non-native species.

As is stated in the Federal Government's National Security Strategy of June 2023: We need climate-crisis adaptation strategies to protect people and natural spaces. This also applies to the Arctic where considerable efforts are required to overcome the biodiversity and ecosystem crisis.

The establishment of special areas with stricter rules for the discharge of wastewater, the dumping of waste and the introduction of Emission Control Areas (ECAs) to reduce sulphur and nitrogen oxides is therefore of great significance. Of equal importance are the measures to reduce the black carbon emissions of shipping, among other things by introducing a Polar Fuel Standard and appropriate specifications for new vessels. It is vital that emissions are reduced in their entirety and do not shift from the air to the sea.

The warming of the Arctic region, the increasing economic development and exploitation of Arctic mineral resources and increased levels of shipping are endangering the natural livelihoods and cultural traditions of the indigenous population through environmental damage, changes in ecosystems and increased health risks. One of the greatest challenges is reconciling local needs, the protection of indigenous rights, national and international policies as well as global conditions.

In Germany, among others, the Federal Environment Agency and the Federal Agency for Nature Conservation have comprehensive and wide-ranging expertise in environmental protection and nature conservation, which they also contribute to the working groups and expert groups of the Arctic Council.

The Federal Government is committed to...

... **a consistent climate and environmental protection policy in the Arctic.** *Both are key elements of Germany's Arctic policy and also of the National Security Strategy;*

... **climate action nationally, at EU level and internationally.** *The Federal Government stands by the Climate Action Plan 2050 and the reduction targets that it lays down. In order to limit human-induced global warming to well below 2°C – with efforts to limit it to 1.5°C – and thus achieve the goals of the Paris Agreement, necessary measures to reduce greenhouse gases must also be strictly implemented in Germany. The Federal Government's Climate Action Programme 2030 and the Federal Climate Change Act are intended to ensure that the climate protection targets are achieved;*

... **reducing black carbon emissions, sulphur and nitrogen oxides in Germany and in relation to international activities, including shipping, in order to avoid negative impacts on the Arctic environment.** *The Federal Government is working intensively to advance action taken by the IMO in this field;*

... **the activities of the World Meteorological Organization (WMO) and the Arctic Regional Climate Centre Network, which is currently in the process of being set up, as well as other international institutions,** *in order to close gaps in climate monitoring systems and to transform them into a long-term climate monitoring system. It is also important to raise awareness among the population in Germany of the important relationship between Germany and the Arctic environment;*

... **the preservation of the unique environment and living conditions in the Arctic as well as the protection of biodiversity.** *These provide a livelihood for indigenous peoples and local communities in the Arctic and must therefore be given priority;*

... **the systematic application of the precautionary and polluter-pays principles, also in the Arctic.** *Developments that could lead to environmental pollution in the future should, wherever possible, be avoided from the outset. Targeted research to close existing gaps in knowledge regarding the impact of human activities on the Arctic environment is required. As a matter of principle, those who caused the environmental damage in question should, in so far as it was unavoidable, pay for the elimination or*

reduction of the damage caused. The systematic application of both principles creates incentives to avoid or put an end to harmful activities;

... **the devising of binding rules on the environmentally sound development of mining of raw materials on land and at sea with the highest possible environmental standards.** *The aim must be to ensure that environmental pollution and destruction in the Arctic do not increase in the face of the rising global demand for raw materials. The approach to mining waste also warrants special attention in this sensitive system;*

... **the reduction of the pollutant input in the Arctic and the identification of the sources of environmental pollution, also in the Arctic.** *At international level, Germany has undertaken to reduce the input of harmful substances, in particular within the framework of the OSPAR Convention and through the implementation of the Stockholm and Minamata Conventions on preventing and reducing the release of persistent organic pollutants and mercury into the environment;*



Polar bears on the sea ice of the Arctic Ocean

... **the international and regional efforts to eliminate marine litter and the development of a regional action plan including monitoring for the Arctic.** *It is continuing the strong commitment it showed in promoting the adoption of G7 and G20 action plans on marine litter during Germany's presidencies and in implementing the action plans against marine litter of OSPAR and the Convention on the Protection of the Marine Environment of the Baltic Sea Area (the Helsinki Convention, HELCOM) – as well as within the framework of the negotiating process on a UN convention on plastic pollution, including in the marine environment;*

... **the reduction of the overall volume of waste generated and thus also of marine pollution.** *Regional and local measures to tackle environmental pollution, for instance through the use of environmentally friendly technologies and fuels as well as responsible behaviour, also help to reduce the harmful impact on the world's oceans. This applies to industrial polluters, tourism, shipping, fisheries and research, as well as to private households in the region and around the world;*

... **the designation of effective protected areas on land and at sea to protect biological diversity and the Arctic environment.** *The aim should be to advance this* **while safeguarding indigenous rights** *in order to avoid a conflict of goals between economic use and environmental protection. Both the designation of marine protected areas and the implementation of environmental impact assessments in the marine environment are boosted by the BBNJ Agreement. That is why Germany is working hard at international level to ensure that this agreement enters into force as soon as possible. Research findings on identifying environmentally and biologically unique or significant areas can help here;*

... **effective protection of migratory marine mammals, fish and migratory birds that spend part of their lives in the Arctic,** *for instance through its engagement for their protection outside the Arctic in the form of national protected areas and international projects such as the Arctic Migratory Birds Initiative (AMBI) within the framework of the Arctic Council working group Conservation of Arctic Flora and Fauna, as well as marine protection.*

4.2 Fostering cutting-edge research in the Arctic

The global impact of changes in the Arctic is making research into those developments increasingly pressing. Knowledge concerning the vulnerability and resilience of the Arctic environment and the impact on people in the Arctic is vital for ensuring the sustainable development of the region.

In addition to global effects, the climate crisis has a considerable impact on the way of life of the approximately four million people living in the Arctic region. A participative approach which integrates the knowledge of the indigenous population from the outset is of vital importance in Arctic research. This fosters an understanding of the environmental, social and economic impact of changes in the Arctic. To this end, the indigenous and local population will be integrated into the research process at an early stage.



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With a high profile in polar research, strong political engagement and active participation in discussions about the future and sustainable development of the Arctic, Germany is an international actor in the High North. The Federal Government cooperates with the Arctic states in bilateral and multilateral projects both on land and in the Arctic Ocean. The research cooperation with Russia was suspended on 25 February 2022 in response to Russia's illegal war of aggression against Ukraine, which had begun the previous day. This ongoing war of aggression undermines the foundations of international law and the peaceful cooperation among states, and thus also the basis for scientific freedom and opportunities for scientific cooperation. It makes cooperation with Russia impossible at present, also with regard to free and responsible research in the Arctic.



Staff of the Alfred Wegener Institute for Polar and Marine Research in the Arctic Ocean

The Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) is the German centre of excellence in Arctic research. German Arctic research benefits from an excellent research infrastructure. This includes the research icebreaker Polarstern operated by the AWI, the ice-edge research vessel Maria S. Merian operated by the Leibniz Institute for Baltic Sea Research in Warnemünde, the HALO aircraft of the German Aerospace Center (DLR) and the research aircraft Polar 5 and Polar 6 of the AWI. Together with the French Polar Institute (IPEV) and the Norwegian Polar Institute (NPI), the AWI operates the AWIPEV research station in Spitsbergen. One focus of German polar research is the role of the Arctic in the global climate and biodiversity systems.

Back in 2017, the AWI established the **German Arctic Office** in close coordination with the competent federal ministries in order to improve the exchange of information and cooperation between German Arctic stakeholders from science, politics and business. The Arctic Office provides scientific advice to

political decision-makers. By way of the twice-yearly Arctic Dialogue, it provides a platform for an effective interministerial exchange with the key actors in German Arctic research. This direct access makes it possible to contribute scientific results to relevant political decision-making processes at an early stage and thus make an active contribution to a science-based German policy on the Arctic.

Germany has actively supported the development of the **Agreement on Enhancing International Arctic Scientific Cooperation** of 2017, initiated by the Arctic Council, and is committed to its implementation.

The strategy for Germany's Arctic research is based on the research programme of the Federal Government, MARE:N: Coastal, Marine and Polar Research for Sustainability (2016). The most urgent questions of German Arctic research are set out in the Research Agenda: Polar Regions in Transition (2021). The goals it sets out focus in particular on the polar amplification of the climate crisis, the ice sheets and their tipping points for sea levels, the polar ocean as a reservoir for heat and carbon, the future of permafrost ecosystems, marine polar ecosystems under climate stress, the science for sustainable development in the Arctic and the impact of human activities on Arctic ecosystems. Cross-cutting issues and the entire research environment are addressed by developing models and making use of future projections and forecasts. The research agenda also concentrates specifically on social science and humanities aspects of Arctic research and in particular on transdisciplinary (co-creative) research. This holistic approach enables in the corresponding funding measure "Polar regions in transition – influence of global and regional stressors (2023-2026)" to foster the evaluation of the regional impact of the climate crisis to be channelled into operational concepts for policymakers and society.

Furthermore, the Federal Government is committed to the strategic goals which the Research Ministers of the Arctic states and countries engaged in Arctic research undertook to pursue in the joint statements signed at the **Arctic Science Ministerials** (Washington 2016, Berlin 2018 and Tokyo 2021). The objective of the statements is to achieve enhanced and better coordinated international cooperation with a view to understanding the rapid changes taking place in the Arctic. International cooperation in Arctic research is to be improved and

expanded in the three areas: (1) observations and data sharing, (2) regional and global changes, and (3) challenges facing people in the Arctic due to global change.

At the initiative of the Second Arctic Science Ministerial (held in Berlin on 25 and 26 October 2018), the Arctic Science Funders Forum (ASFF) was officially established on 30 March 2020. It is a multilateral body offering international funders the opportunity to coordinate and initiate new and improved joint scientific activities in the Arctic. The forum acts as a coordinating body which facilitates information-sharing on national and international research calls without creating additional administrative burden for the funding organisations. The forum itself is not a funding organisation, nor does it organise research calls or fund research projects.

German Arctic research is primarily supported via the institutional funding of the Helmholtz centres AWI, GEOMAR – Helmholtz Centre for Ocean Research Kiel, the Research Institute for Sustainability – Helmholtz Centre Potsdam and the German Aerospace Center (DLR), as well as via targeted research programmes. In addition to this, many universities and several other scientific authorities and institutions are active in various sectors of Arctic research. The Federal Institute for Geosciences and Natural Resources conducts research on fundamental issues relating to geological development and the formation of deposits and focuses on marginal areas of the Arctic Ocean and the assessment of the Arctic's raw materials potential. The Federal Environment Agency investigates, among other things, ways of reducing Arctic marine litter and the impact of shipping on marine organisms. The Federal Agency for Nature Conservation focusses on measures to help protect Arctic biodiversity. Polar research is a joint task which depends on the collaboration of all disciplines. Financial support for inter- and transdisciplinary projects as a basis for a science-based climate, environmental and economic policy is therefore key.

In view of the changed geopolitical situation, the necessary stop to research cooperation with Russia and the dramatically growing impact of the climate crisis on the Arctic, the research strategy needs to be adjusted. However, it must continue to be marked by exchange as well as interdisciplinary cooperation.

The Federal Government intends to

... **step up research cooperation in the Arctic with like-minded partners,** *also by shifting research projects previously implemented in/with Russia geographically. Germany is open to continuing cooperation with Russia as soon as the right conditions for this are in place again;*

... **call for continued access to Arctic areas in the exclusive economic zone on the basis of UNCLOS for marine scientific research in all disciplines.** *Some Arctic states are continuing to actively pursue their claims to an extended continental shelf in accordance with UNCLOS;*

... **make a significant contribution through Germany's Arctic research to understanding the Arctic and its regional and global changes** *and to pass this knowledge on to society and decision-makers in order to help conserve the Arctic environment and to foster biodiversity. To enhance the resilience of the sensitive ecosystems, in future hazard assessments and strategies on regulating human intervention or recommendations on setting up protected areas should be developed;*

... **ensure responsible implementation of German research activities in keeping with the highest environmental standards.** *Greater joint use of Arctic research infrastructure strengthens the cohesion of like-minded nations and creates synergies for the operators;*

... **increase activities within the framework of German research work to take into account the interests of the Arctic states, as well as those of the indigenous and local population.** *Indigenous and local partners will be included in all project phases as equal partners. Indigenous rights (e.g. the right to self-determination or involvement in decisions and projects which affect local livelihoods or territories) must also be respected in the research. In doing so, the research will benefit from a holistic, co-creative research approach which draws on indigenous knowledge;*

... **continue implementing the Future Research and Innovation Strategy and its goals, as well as the national Research for Sustainability (FONA) Strategy.** *It stresses the dialogue on research policy within the framework of the research programme of the Federal Government, MARE:N: Coastal, Marine and Polar Research for Sustainability and the related Research Agenda: Polar Regions in Transition, the aim being to highlight solutions for the Arctic's future on the basis of scientific findings.*



A break in Arctic sea ice in front of the Polarstern

4.3 Safeguarding sustainable development

The Arctic reacts especially sensitively to changes which pose a risk to the stability of the Earth's ecosystem and thus the livelihoods of people living in the Arctic. The inhabitants of the Arctic depend on a healthy environment as well as ecologically stable conditions. They need social and economic prospects for the future. Through its activities, Germany will help to shape these prospects in the most ecologically sustainable manner possible, in a way that respects indigenous rights and is in harmony with indigenous ways of life.

Large quantities of natural gas are already being extracted in Russia, Norway and the United States (Alaska). This could be considerably increased as a result of the climate-related decline in sea ice. Moreover, there are substantial amounts of rare earths and other mineral resources in the Arctic. Maritime traffic within the Arctic could therefore greatly increase due to the exploration of new raw material deposits. In particular Russia, in cooperation with China, is massively expanding the infrastructure for extracting these raw materials and their transport via the northern sea routes.

The Northeast and Northwest Passages along the northern shorelines of Europe, Asia and the United States are becoming increasingly navigable during the summer months. An ice-free Northeast Passage would be the shortest and thus lowest-emission, most energy-efficient and most economical shipping route between the ports of Europe's Northern Range (the most important continental European North Sea ports) and ports situated in East Asia and in some cases the North American West Coast. The advantages of a shorter shipping route must be weighed against several factors: the sea ice's unpredictability, the fact that, as of yet, there is insufficient emergency rescue capacity, and the lack of Arctic-capable cargo ships.



The inhabitants of the Arctic depend on a healthy environment as well as ecologically stable conditions.



View of Tromsø harbour

The same applies to tourist cruises in Arctic areas, the demand for which has increased significantly in recent years. Heavily frequented routes and places of interest have already had a visible impact on the ecosystem in some areas. Special efforts are therefore required to ensure sustainable and safe tourism in the Arctic. In order to protect the sensitive Arctic ecosystem, tourism activities should in future be subject to special requirements concerning the environment and nature conservation, as well as social aspects (including indigenous rights).

All economic activities in the sensitive Arctic ecosystem must be governed by the highest environmental and security standards. In order to ensure an orderly development of fishing activities in the Arctic high seas, in 2018 China, the Kingdom of Denmark (for the Faroe Islands and Greenland), the EU, Iceland, Japan, Canada, the Republic of Korea, Norway, Russia and the United States concluded the **Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Central Arctic Ocean Fisheries Agreement**, entered into force in 2021). In application of the precautionary approach, a fisheries moratorium will be in place in this part of the high seas for a period of 16 years (until 2037).

Germany, in common with all EU member states, is bound by the agreement via the EU.

With the adoption of the **2030 Agenda** in 2015, the UN defined the new frame of reference for sustainable development, including the Sustainable Development Goals (SDGs). The 2030 Agenda is the central compass for steering the world in the direction of more just, more climate-friendly and more inclusive co-existence. As the shared basic consensus of the international community, it encourages all states to advance concrete steps to resolve global and national challenges on the road to sustainable development for all. Germany, too, has undertaken to integrate the global Sustainable Development Goals into national policies and to actively contribute to their realisation at national, European and international level. Germany's commitment to the 2030 Agenda and its goals remains unchanged.



Melkøya gas complex near the town of Hammerfest



Inuit riding a small all-terrain vehicle, Alaska's North Slope area

In the future, northern sea routes could create significant opportunities for German shipping, thanks to shorter travel times, reduced fuel use and lower costs. The Federal Government is committed to freedom of navigation as well as to the safe and peaceful passage of vessels through Arctic coastal waters and straits in accordance with UNCLOS, with due regard being given to strict environmental stipulations and the rights of the indigenous population being included and safeguarded. It is strongly committed to the development and implementation of the highest environmental and safety standards in all economic activities in the Arctic's sensitive ecosystem.

Thanks to the increasing navigability of the Arctic Ocean, there is a market with great potential for innovative, especially environmentally and climate-friendly shipbuilding. This will require the establishment of high environmental standards. As one of the world's leading technology suppliers, Germany's shipyards and suppliers have specialised in innovative, particularly environmentally friendly and efficient ship propulsion systems as well as in the construction of special ships, including ice class, and state-of-the-art marine technology.

The Federal Government intends to

... **include the indigenous people of the Arctic as key partners in all decisions affecting them and to respect their rights to freedom and self-determination.** *In accordance with the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), the Federal Government supports the indigenous peoples of the Arctic and is implementing ILO Convention 169 on the protection of indigenous peoples. It takes them into account in projects financed from public funds, as well as in investments in the Arctic regions. Special attention must continue to be paid to nature conservation and environmental protection, safeguarding livelihoods, the right to preserve cultural identity, the right to participate in state decisions as well as the indigenous population's right to land and resources and their participation in the economic exploitation of the Arctic;*

... **work to ensure that the Arctic is used in close cooperation with the local population while safeguarding their interests and indigenous rights in the spirit of the 2030 Agenda and the Sustainable Development Goals. In addition to state protection obligations, it is also important that companies operating in the Arctic live up to their responsibility to respect human rights, as well as to comply with the requisite environmental and social standards in keeping with their statutory due diligence obligations;**

... **examine whether all investments in the Arctic regions financed through public funds, as well as guarantees for private investments in Arctic regions using public funding are in line with the principles governing the implementation of the Sustainable Development Goals.**[5] *With a view to implementing the central principle of leaving no one behind, the 2030 Agenda emphasises the involvement of particularly vulnerable groups, especially indigenous peoples, and the consideration of their specific needs;*

5 Objectives for the sustainable use of ecosystems relevant to the Arctic are included, for example, in SDG 12 "Ensure sustainable consumption and production patterns", SDG 13 "Take urgent action to combat climate change and its impacts", SDG 14 "Conserve and sustainably use the oceans, seas and marine resources", and SDG 15 "Protect, restore and promote sustainable use of terrestrial ecosystems".



Icebergs near
Ilulissat, Greenland

... **work to strengthen the links between existing structures of regional and multilateral institutions promoting scientific cooperation and international cooperation.** *Local and regional administrative and economic models should serve as a starting point in these efforts;*

... **work together with the Arctic states on balanced and sustainable solutions for safe shipping in the long term.** *The international community must develop a binding disaster response mechanism for the Arctic Ocean that facilitates an early warning system, prevention and the elimination of damage;*

... **work within the IMO to achieve improved maritime surveillance, infrastructure expansion, as well as Arctic search and rescue capabilities.** *It is involved in the development and implementation of the measures contained in the Action Plan complementing the EU Maritime Security Strategy, including those relating to the Arctic. In dialogue with the European Arctic states, and contingent upon available resources, it is examining the fields in which the development of own civilian capacities is expedient and feasible. Navigation aids, lines of communication and bases need to be*

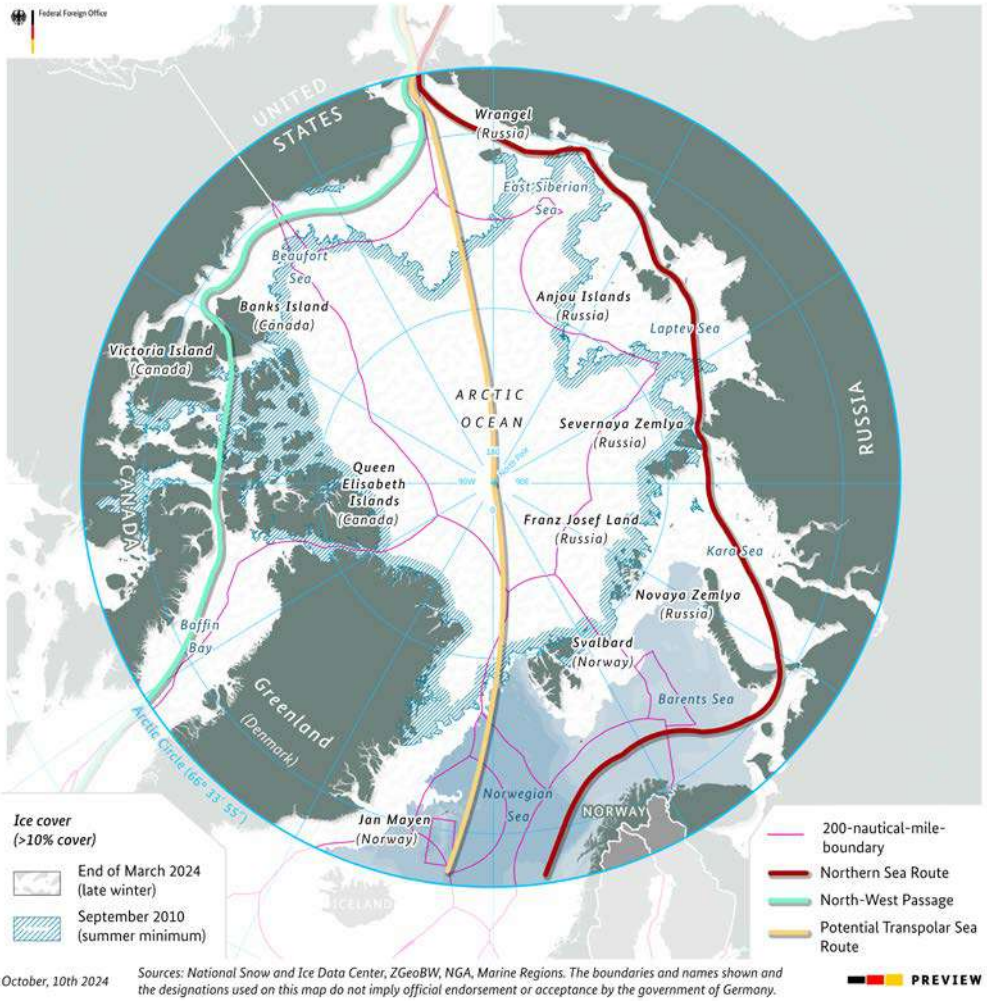
established as widely and extensively as possible. The Federal Government supports measures to improve the validity and quality of electronic nautical charts;

… as an observer state support the Arctic Council and its working groups in their efforts to make tourism in the Arctic sustainable, as well as nature and environmentally friendly, protect Arctic biodiversity on land and at sea, prevent or minimise environmental pollution, as well as respect and support indigenous rights;

… advocate among the Arctic states, and within the framework of regional and international conventions, the designation of effective protected areas on land and at sea without economic exploitation. *In order to reduce the demand for primary raw materials, the Federal Government will continue to promote the development and expansion of raw material cycles, promote reuse and recycling, as well as improve resource efficiency;*

… keep as limited as possible the negative impact on the Arctic, as the climate regulator, and to that end – in keeping with the COP28 decision – advance at international level the transitioning away from fossil fuels in energy systems as well as the acceleration of carbon-free and low-carbon technologies including carbon capture and storage, thus also gradually ending the fossil age in Germany and achieving climate neutrality in 2045. *A marked increase in energy efficiency as well as a more energetic and accelerated expansion of renewable energy is needed in order to meet the ambitious statutory climate targets. This will also strengthen Germany's energy security;*

… work through international fisheries organisations, in particular with the EU, to promote the conservation and sustainable use of living marine resources in the Arctic. *The aim in particular is to ensure the effective prevention of illegal, unreported and unregulated fishing.*



Shipping routes in the Arctic



www.bundesregierung.de
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