

Joint STATEMENT FOR THE RECORD OF

Mr. Vic Mercado, Performing the Duties of the Assistant Secretary of Defense for Strategy,
Plans and Capabilities,

Dr. Milan "Mitch" Nikolich, Director of Defense Research and Engineering for Research and
Technology,

And

Mr. Neill Tipton, Director of Defense Intelligence (Collections and Special Programs),

before the

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON INTELLIGENCE, EMERGING THREATS AND CAPABILITIES

on

CLIMATE CHANGE IN THE ERA OF STRATEGIC COMPETITION

December 11, 2019

As cited in the Department of Defense's report, "Effects of a Changing Climate to the Department of Defense" provided to Congress in January, 2019, the dynamics of a changing climate have the probability to impact DoD missions, operational plans, and installations in the coming years. The Department takes the effects of this evolving challenge seriously, as evidenced by the range of related partnerships and research undertaken over the last few years. Our 2018 National Defense Strategy prioritizes long-term strategic competition with great power competitors by focusing the Department's efforts and resources to: 1) build a more lethal force, 2) strengthen alliances and attract new partners, and 3) reform the Department's processes.

Making progress on these lines of effort requires DoD to ensure the Joint Force is ready and resilient for current and future operations and activities impacted by a variety of emerging operational challenges and conditions, including those posed by weather and natural events. To that end, DoD factors in the effects of the environment into its mission planning and execution to build resilience. The areas we must be most prepared for include impacts on Departmental facilities from events such as drought, flooding, and wildfires; and on changing operational demands, such as increased geopolitical instability and increased competition in the Arctic. Our partners and colleagues in the Intelligence Community (IC) assist in identifying a number of related indirect and direct effects, primarily overseas. While the IC examines the vulnerabilities of a changing climate along with other key factors when assessing threats to U.S. national security, it does not assess the direct effects of climate change on the U.S. homeland, nor does it evaluate the scientific basis for scientific reports. To manage all of the aforementioned issues, in January of 2016 the Department issued Department of Defense Directive 4715.21, “Climate Change Adaptation and Resilience.” This directive assigns responsibilities to many levels and components of the Department, seeking to incorporate climate considerations into planning for infrastructure and operations in order to assess and manage risks associated with the impacts of a changing climate.

Policy

The Department of Defense (DoD) fulfills its role to deter war and ensure our nation’s defense by remaining ready and able to adapt to a wide variety of security challenges. The effects of a changing climate are one such challenge that has potential impacts on DoD missions, planning, and operations.

Foremost among these considerations is the Department's approach to addressing strategic competition in the Arctic, which necessarily takes into account the region's changing physical environment. Due to the diminishing sea ice, the Arctic's accessibility is growing and opening the door to new economic opportunities. Strategic competitors are taking advantage of the Arctic's increased accessibility to expand their activities in the region. Thawing permafrost and coastal erosion adversely affect some defense infrastructure, complicating the Department's posture in the region. As well, the Arctic will continue to be a harsh and demanding operating environment for the Joint Force.

The 2019 DoD Arctic Strategy is anchored in the priorities of the National Defense Strategy, focusing on great power competition as the principle challenge to long-term U.S. security and prosperity. It describes the Department's desired end state for the Arctic as "a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is defended, and nations work cooperatively to address challenges."

The immediate prospect of conflict in the Arctic is low, but the Department maintains a clear-eyed approach to the differing effects of competitors' activities on U.S. interests in the region and beyond. Russia's military investments in the Arctic contribute to its territorial defense, but may have strategic implications for future access to the region. China is seeking a role in Arctic governance, despite it having no territorial claims in the region, and there is a risk that China may repeat predatory economic behavior in the Arctic that it has exhibited in other regions, to further its strategic ambitions.

The DoD Arctic Strategy establishes three defense objectives that guide the Department's approach to addressing strategic competition in the Arctic.

- 1) Defend the homeland;
- 2) Compete when necessary to maintain favorable regional balances of power; and
- 3) Ensure common domains remain free and open.

The Department is taking steps to enhance the Joint Force's ability to operate in the Arctic and project power through the region and beyond, both independently and in cooperation with allies and partners. Enhanced domain awareness, regular exercises and training, interoperable supporting infrastructure and extreme cold weather resilience are mutual areas of development we are pursuing with allies and partners. The changing environment in the Arctic highlights the need to maintain the full range of navigation and overflight rights guaranteed by international law to both military forces and lawful commerce.

Finally, our network of allies and partners are a key strategic advantage for the United States in the Arctic; they are the cornerstone of the Department's strategic approach to the region. Six of the seven other Arctic nations are either NATO Allies or are NATO Enhanced Opportunities Partners. Our allies and partners are highly capable and proficient in the Arctic region's operating conditions, and they share the United States' interest in maintaining the international rules-based order – including in the Arctic region. Defense cooperation with allies and partners complements wider U.S. Government Arctic cooperation in forums such as the Arctic Council (which excludes defense and security from its mandate).

Although the Arctic presents unique challenges to the Department, we believe we have the right strategic approach, and a strong network of allies and partners, to navigate this changing environment.

Intelligence

While the Defense Intelligence Enterprise (DIE) executes many roles within the Department, none is more vital than direct intelligence support to our warfighters. In order to stay ahead of all potential threats, we are working several initiatives within the DIE. Foremost, we are ensuring safety of navigation, monitoring geopolitical boundaries for disputes, and expanding partnerships.

Safety of Navigation. The Department of Defense maintains worldwide maritime and aeronautical safety of navigation databases, products, and services in support of US and partner warfighters. Impacts to the shorelines of the world requires continuous data collection and updating of Safety of Navigation products - most notably around areas concerning national security interests (e.g, ports and military installations) – and accounting for impacts to U.S. strategic assets and their ability to project power.

Geopolitical Boundaries and Disputes. The warming of the Arctic is leading to an increase in access to previously inaccessible areas and a corresponding increase in military & commercial activity above the Arctic Circle. To provide policy makers and warfighters with a better common operating picture in these areas, the DIE and the broader national Intelligence Community is conducting a review and detailed analysis of foreign maritime claims in the Arctic region where some states assert overlapping entitlements. While climate change may not necessarily impact the analysis of the claims, the warming of this region will increase human activity and lead to a potential for increased disputes to access and resources. Therefore, developing a more comprehensive common operating picture including competing maritime claims is paramount to providing clarity in potential disputes.

Partnerships. The DIE recognizes that it is only one stakeholder within this topic. In addition to traditional intelligence, the DIE relies on a substantial amount of scientific reports to

provide accurate assessments for decision makers. As such, the DIE is involved in a number of partnerships with academia and other Federal science agencies through a variety of channels such as working groups, grants, and so on. This enables the DIE to work in an innovative environment with America's talented scientists on extremely complex models, some which provide DoD with the ability to view changes in topographic features over time to enable predictive analysis.

Research and Engineering

The Office of the Under Secretary of Defense for Research and Engineering (USD(R&E)) ensures the technological advantage of the American warfighter. To this end, USD(R&E)'s responsibilities on climate issues fall into three areas: (1) providing guidance, direction, and oversight on climate research and technology efforts that enable the military Services to execute their missions;¹ (2) engaging in interagency and international fora on climate issues, to include the interagency sub-committee on Global Change Research; and (3) mitigating the impacts of climate issues on DoD test ranges and ensuring their availability for military training, exercises, test, and evaluation.

Guidance, Direction, and Oversight of DoD Climate Science Research

DoD's research, development, testing, and evaluation (RDT&E) efforts are tightly focused on understanding and forecasting changes in the global operational environment to inform warfighter planning and operations. Accordingly, the majority of the Department's research investments in this area reside in the Services and are tailored to their individual needs.

¹ Includes the range of activities on climate issues, from ensuring the readiness of enablers such as training ranges to direct operational support.

Within the Navy, scientists are developing methods to enable long-term observational capabilities in the Arctic, as well as developing global weather, ocean, and sea ice prediction models. This will ensure the Navy has the capability to operate and compete in the Arctic environment. The Army assesses future risks to DoD facilities and installations through the application of climate modeling and current information on weather patterns. Army research is also providing new approaches to address risks to DoD Arctic facilities posed by thawing permafrost and enabling an understanding of how equipment and systems will operate in extremely cold environments. The Air Force, Navy, and Army collaborate in the development of atmospheric modeling and weather forecasting models to predict how weather may impact military operations.

Within the Office of the Secretary of Defense, the Strategic Environmental Research and Development Program (SERDP) is funding research initiatives to determine the effect of sea level rise on military installations and develop risk mitigation strategies to increase infrastructure resilience.

More broadly, the Department supports basic research in the areas of meteorology, physical oceanography, biogeochemical sciences, terrestrial science, and polar science and engineering. The Department also has ongoing efforts through its Small Business Innovation Research (SBIR) program that include developing: data analytics platforms to anticipate where environmental stressors are likely to contribute to societal instability; re-chargeable heat storage systems for cold climate operations; and biotechnology solutions to food insecurity.

Collectively, these investments are ensuring the Department's ability to assess, anticipate, and adapt to our changing climate in a manner that enables sustained, global military capabilities to meet the objectives of the National Defense Strategy.

Interagency and International Engagement

The Department's interagency and international partners are central to our ability to manage climate risks. As the DoD Principal to the Subcommittee on Global Change Research (SGCR), R&E ensures the Department's subject matter experts in climate science are fully engaged with their interagency colleagues and rapidly benefit from the data, knowledge, and tools that result from this program.

The Department leverages the research activities of interagency partners with a primary mission relevant to climate issues, including the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the U.S. Geological Survey (USGS). Through this collaboration, the Department gains access to standardized data sets that increase the precision and timeliness of DoD's climate forecasting and analysis tools.

Climate issues also pose challenges for U.S. allies and partners. DoD has active bi- and multi-lateral engagements with other Arctic nations,² works closely with our NATO colleagues on climate research, and collaborates via The Technical Cooperation Program (TTCP)³ on global change RDT&E.

DoD Test Ranges

DoD's Test Resource Management Center (TRMC) ensures the Department's testing and evaluation capabilities meet the current and future needs of the warfighter. As part of this mission, TRMC actively monitors potential impacts of weather and natural events, as well as

² Including Canada, Denmark, and Norway

³ Canada, United Kingdom, New Zealand, Australia.

recovery efforts at ranges providing test and evaluation support to the Department. TRMC works with the ranges to build awareness of potential impacts, climate science advances, and potential mitigation approaches to assist the Services in developing resilient mitigation and recovery strategies.

Conclusion

Climate and environmental resilience efforts span all levels and across the entire Department. Additionally, resources for assessing and responding to climate impacts are provided within existing DoD missions, funds, and capabilities and subsumed under existing risk management processes. The Military Departments provide most of the resources for on-the-ground activities in the Geographic Combatant Commands and the efforts of our Combat Support Agencies can also not be understated. Finally, this is an evolving issue that we will continue to monitor to ensure the Department is appropriately prepared to address the effects of a changing climate on future operations and activities.