



# Procurement Issues Surrounding Climate Change

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**SAIC**

# Overview

1. Introduction to climate and climate change
2. What are the impacts.
3. What is sustainable procurement.
4. What is government doing about it.
5. Key take-aways



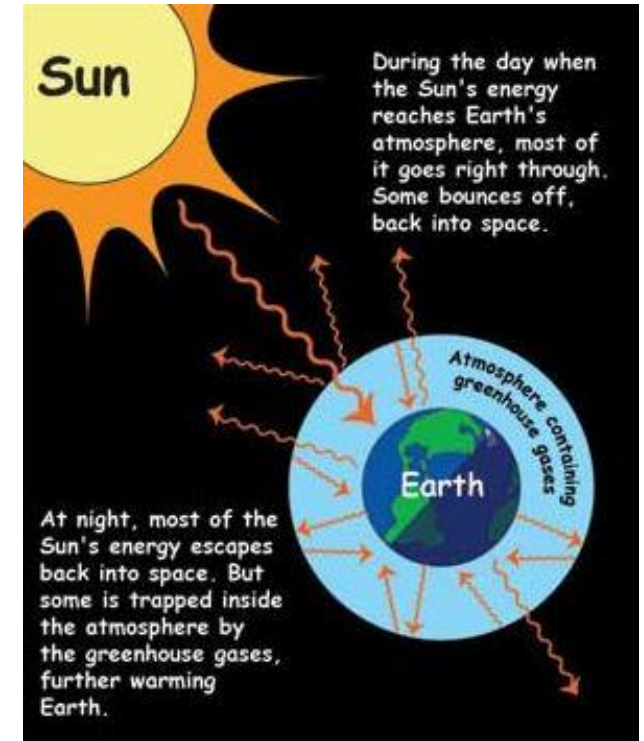
# Definitions

- Weather refers to conditions like rain, temperature and wind *over hours to days*
- Climate refers to *average weather conditions over a long period of time* (often 30+ years)
- Climate change is a statistically significant *change* in the state of the *climate (average weather) that persists for an extended period of time (decades or longer)*



# The Greenhouse Effect

- Sunlight passes through the atmosphere to earth
- At earth's surface it's reflected back through the atmosphere to space
- However, as it is being reflected, greenhouse gases can trap the resulting heat in the atmosphere!
- We call this process the greenhouse effect; as it is similar to a typical greenhouse





## News Item! Greenhouse Gases...

- Greenhouse gases do occur naturally in the atmosphere
- Without them, the Earth would be very cold everywhere! All water on earth would freeze, the oceans would turn to ice and life as we know it would not exist
- However, over the last 100 years or so, data has shown that greenhouse gases have rapidly increased in the atmosphere
- Generating electricity from coal or diesel generators and industry or pollution from factories contribute the most



# Climate Change is a global problem

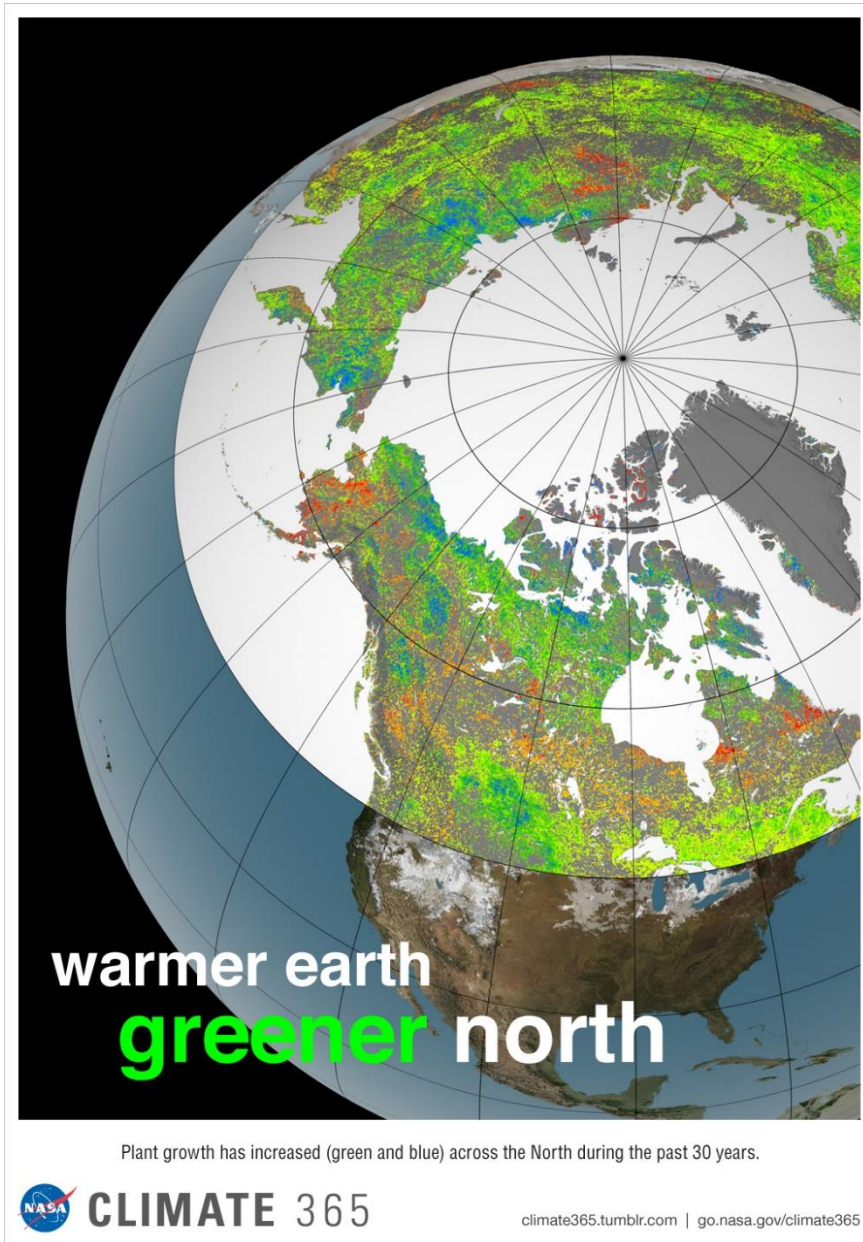
- Temp could rise by almost 5°C by 2100 (IPCC,AR5). However, countries around the world agreed to try to keep this to below 2°C
- But... so much greenhouse gas as been added to the atmosphere, that even if all emissions stopped today, the planet would still continue to warm for decades to come (i.e. the train has left the station)
- So, we need to be prepared to understand, react, respond and adapt to these changes.



# Climate Changes we see today

- Weather patterns across the world seem to be changing, becoming more frequent and intense, weather records broken, increasing disasters.
- Sea level rise appears to be making impacts today and predicted to increase tomorrow.
- We are losing some species to extinction because they don't have an compatible environment anymore to live. Right now over 10,000 species are at risk. We have lost the Bramble Cay melomys due to sea level rise.
- Human health is impacted by increasing temperatures, drought, wildfires, disease, and insects.





Over the last 30 years:

The changes are driven by enhanced warming and longer growing seasons in the North, which have led to large patches of vigorously productive vegetation that now span a third of the northern landscape, or more than 3.5 million square miles (9 million square kilometers). This landscape resembles what was found 250 to 430 miles (400 to 700 kilometers) to the south in 1982.

"It's like Winnipeg [in Canada] moving to Minneapolis-Saint Paul [in the US]," says Compton Tucker, scientist at NASA Goddard Space Flight Center.

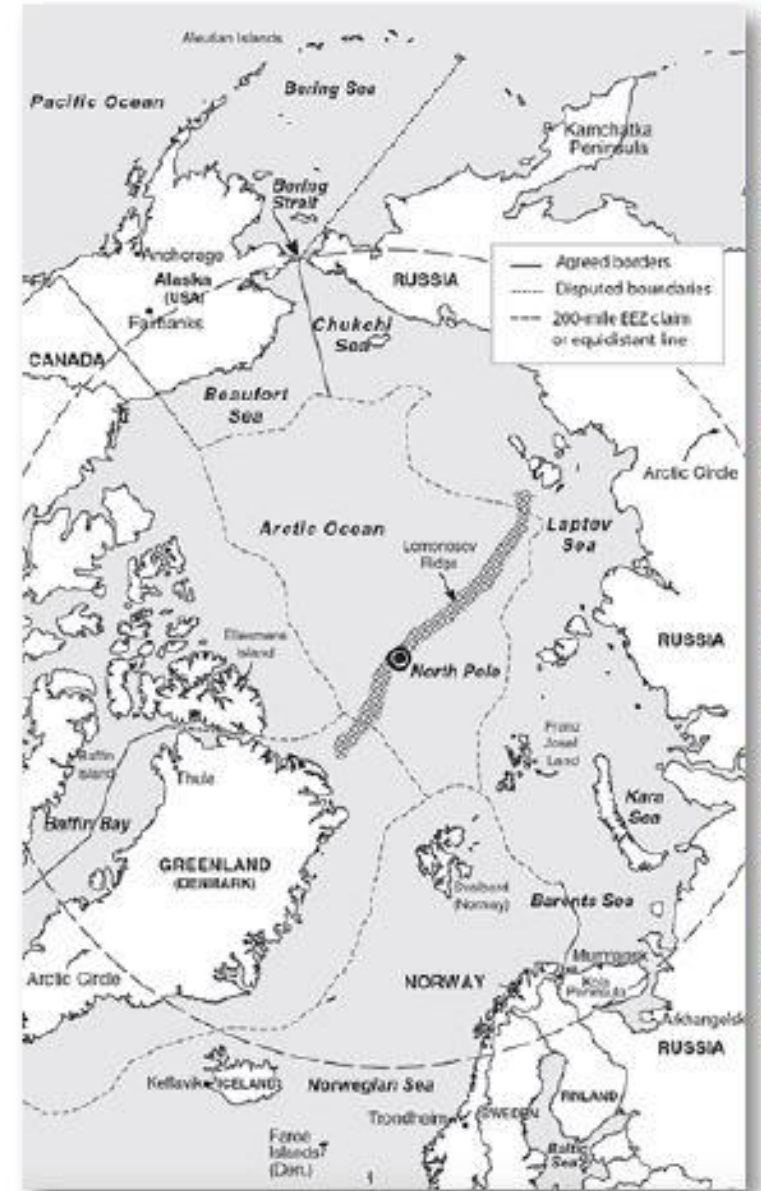




## Klare's Map of Disappearing Arctic Ice and Opening of a "Whole New Ocean"

What does this mean for defense, security, and supply chains?

- As Arctic ice melts, sea routes will stay navigable for longer periods, which could drastically change international trade and shipping.
- Control of these routes could bring significant advantages to countries and corporations looking for a competitive edge both economically and defensively.
- Underneath the Arctic Circle lies massive oil and natural gas formations.
- Russia is searching for evidence to prove its territorial claims to additional portions of the Arctic, so that it can move its Arctic borderline

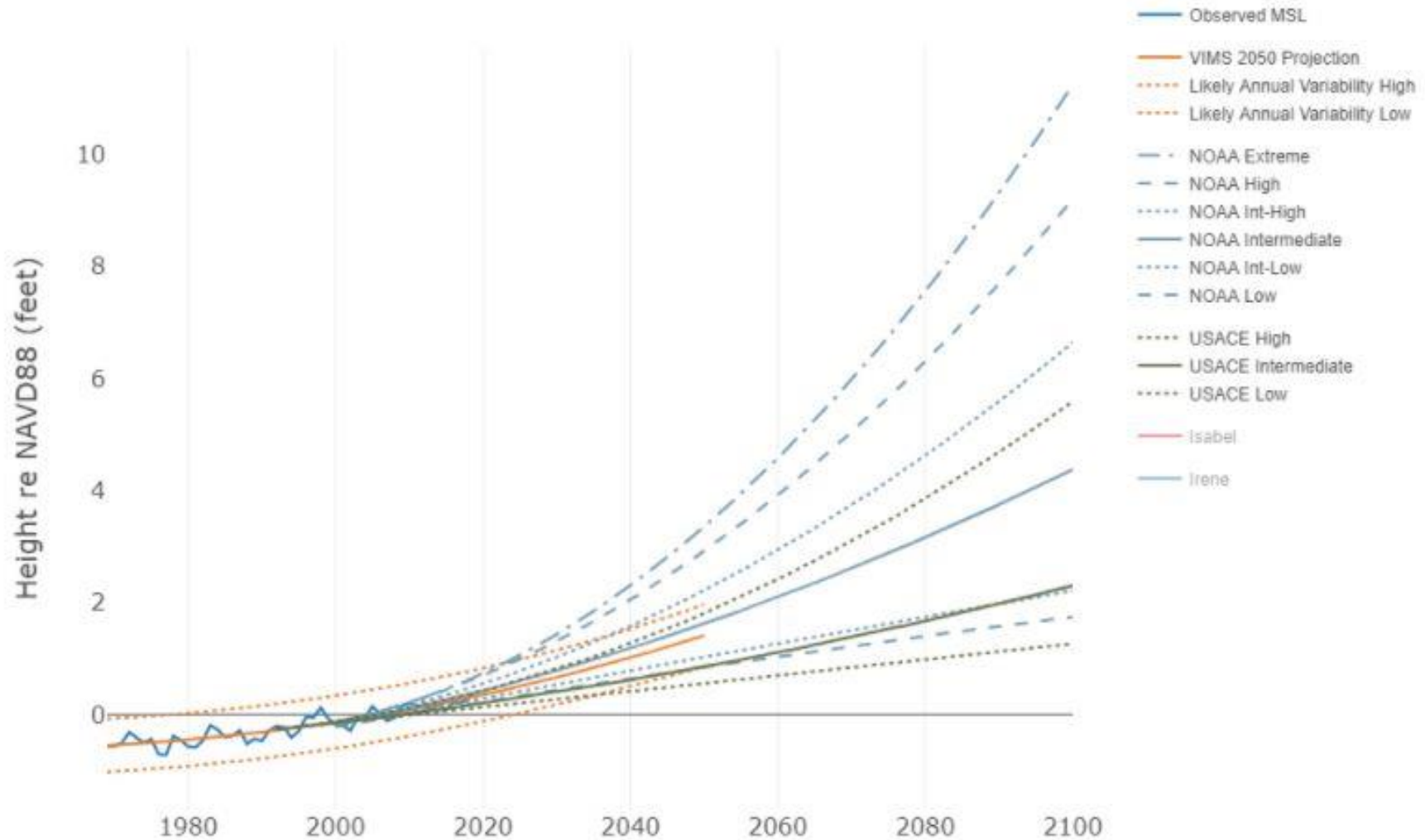


**Michael T. Klare's - All Hell Breaking Loose: The Pentagon's Perspective on Climate Change Metropolitan Books 2019**

Norfolk Virginia is surrounded by water and sits on land that is still naturally subsiding from the last Ice Age, but sea levels are rising too. This is home to the U.S Navy and Air Force (NASA Earth Observatory).



# Norfolk (Sewells Point), Virginia



📷 A range of projections exists for what sea level rise will look like at Sewells Point in Norfolk through 2050 and then the end of the century. (AdaptVa, [http://adaptva.com/info/virginia\\_sea\\_level.html](http://adaptva.com/info/virginia_sea_level.html))



## Scientists Predict:

- Temperature increase (0.3 – 4.8°C by 2100)
- Heat waves - more often and last longer
- Extreme precipitation events (rain, snow)
  - more often and more intense
- Precipitation increases in wet regions
- Precipitation decreases in dry regions
- Increase in tropical cyclone wind speeds
- Decreased snow / ice extent
- Rising sea level
- Warming and acidification of oceans



Source: IPCC 2014, 2021, AR5





# One can see the U. S. Military is concerned with climate change.

The following DoD documents provided specific climate change policy and guidance:

- Implications of Climate Change for the U.S. Army (2019)
- The Operational Environment and the Changing Character of Warfare (2019)
- Climate Adaptation for DoD Natural Resource Managers (2019)
- Report on Effects of a Changing Climate to the Department of Defense (2019)
- Report to Congress: Department of Defense Arctic Strategy (2019)
- The United States Navy: Strategic Outlook for the Arctic (2019)
- U.S. Coast Guard. Arctic Strategic Outlook (2019)<sup>50</sup> (\*non-DoD),
- Department of Defense High Performance and Sustainable Buildings (2019)
- Climate Change: Installation, Adaptation, and Resilience (2017)
- Department of Defense Strategic Sustainability Performance Plan (2015)
- Department of Defense Climate Change Adaptation Roadmap (2014)
- Army Corp of Engineers Climate Change Adaptation Statement (2011)
- U.S. Navy Climate Change Roadmap (2010)





## FOCUS AREAS FROM DOD Climate Adaptation Plan for 2021:

Ensuring a climate-ready force by implementing the following actions:

- **Train Safely in Extreme Conditions:** Review and modify existing training programs to safely develop the ability of service members to operate in extreme conditions. Include not only the individual service member, civilian, and contractor but also each unit's collective readiness to operate in extreme conditions. Adjust medical skills and first aid training for extreme heat and assess applicability of alternative training methods to improve safety. Identify equipment solutions needed to protect service members.
- **Assess Current and Future Equipment:** Assess the viability of current equipment to operate in extreme climate conditions. Identify opportunities to incorporate new technologies to improve performance or adapt existing equipment that may fill an emerging climate-related requirement. Evaluate climate performance of future weapons systems.
- **Assess and Adjust Requirements and Acquisition:** For materiel development and acquisition activities, incorporate requirements built around a realistic projection of future operating conditions, with special attention given to the Operational Energy Key Performance Parameter (KPP) as discussed in LOE 4. Identify new requirements to enable the future force such as "tactical cooling," "on-site water generation," and "arctic maneuver."
- **Test Equipment for Climate Effects:** Ensure all equipment testing realistically incorporates expected environmental conditions. In some cases, single-use, purpose-built equipment with associated redundant costs may be an effective adaptation measure. This requires flexible thinking regarding multipurpose, joint-service equipment where redundancies and commonality have reduced equipping, maintenance, and sustainment costs.



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- **Assess Current and Future Equipment:** Assess the viability of current equipment to operate in extreme climate conditions. Identify opportunities to incorporate new technologies in the formal and informal inventories of existing equipment that may fill an emerging or future state requirement. Evaluate performance of future weapons systems.
- **Assess and Adjust Requirements and Acquisition:** For materiel development and acquisition activities, incorporate climate effects into the risk profile of equipment. Give special attention given to the Operational Key Performance Parameters (KPPs) discussed in E 4. Identify new requirements to enable the future force such as "tactical cooling," "on-site water generation," and "arcade maneuver."
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**ALL RELATED TO  
PROCUREMENTS!**



## But how to make procurements “Sustainable”:

Understanding of what low price means for usability, doesn't meet your needs, or needs constant repair

Rethinking value versus cost through understanding lifecycle costs (total cost of ownership), includes transaction cost, purchase price, operating costs, maintenance cost, and disposition cost.

Paying the “real price”, meaning sometimes the benefits are greater than the actual costs, such as improved public transportation resulting in improved air quality and public health

Sustainable procurements influence innovation; acquisition professionals should be partnering with business development to build relationships with sustainable suppliers and evangelize the value proposition.

Reference Publication: ‘Warming Up’ to Sustainable  
Procurement  
Steven L. Schooner & Markus Speidel



# Congressional Efforts to Strengthen DoD Sustainability and Resilience

## Highlights in the FY 2022 NDAA:

- Authorize DOD to conduct a pilot program to evaluate software and emerging technologies to track real-time emissions from military installations and installation assets.
- Requires each military department to assess the vulnerability of all installations and National Guard facilities to the current and projected impacts of climate change using vulnerability risk assessment tools chosen or developed pursuant to sec. 326 of the FY20 NDAA.
- Amends section 2391 of title 10 to allow DOD to make grants, conclude cooperative agreements, and supplement other Federal funds for maintaining or improving military installation resilience.
- Requires DOD to improve military installation efficiency, performance, and management by ensuring that at least 10 percent of major military installations achieve net-zero energy and water by FY35.



# Building Supply Chain Resilience in the Era of Climate Change

From MIT Sloan School

- Engage in deeper, long term collaboration with suppliers
- Extend your risk horizon to adapt to long-term changes
- Take stock of geographic threats
- Start lobbying to influence policy
- Do your part to measure, and reduce emissions

Reference:

<https://mitsloan.mit.edu/ideas-made-to-matter/supply-chain-resilience-era-climate-change>





# GSA is leveraging the procurement process to respond To climate change.

To provide agencies with access to supply chains that are resilient and adaptive to actual changes in climate. GSA has been working to develop strategic plans that will set their sustainability and climate adaptation priorities for the next several years.

This will include:

- Advancing climate literacy within GSA's acquisition workforce, our customer agencies and our industry partners.
- Leveraging new resources, such as the [Verified Products Portal \(VPP\)](#), to improve the accuracy of sustainable product designations on GSA platforms.
- Exploring opportunities within GSA's e-Marketplace and its commercial platform providers to enhance sustainable product designations and offerings.
- Applying the government-wide category management approach to identify sustainability and climate-related opportunities at the individual category level.
- Continuing to apply innovative acquisition strategies that advance public policy objectives.



## GSA should also consider....

- **Consider multiple alternatives** when deciding how to best assess greenhouse gas emissions and the social cost of greenhouse gases, **including environmental justice impacts.**
- When measuring companies' efforts to reduce greenhouse gas emissions **consider the quick changing nature of industries** themselves.
- **Develop strategies for sustainable technology management** enterprise technology modernization plans that focus on adopting climate-friendly technologies as a strategic goal.
- **Include driving supply chain-related emissions down** through engagement strategies and/or supply chain emissions reductions goals, design for environment programs which include energy efficiency principles and eco-labels, sustainable innovation programs, renewable energy procurement, etc.



# Key take-aways:

1. Climate Change is real, no matter what the causes and the impacts are evident as we have seen by increasing disasters, storm intensities and sea level rise.
2. Climate Change is an enduring priority for this Administration and is likely to remain a focus in future Administrations and Congresses.
3. By making smart procurement decisions, Government and Industry has the ability to stimulate the development of technologies to mitigate the worst impacts of climate change.
4. Rethink value through lifecycle costs. Build an understanding of what low price means for usability, repair and endurance.
5. Apply innovative acquisition strategies that advance public policy objectives but balance stakeholder equities to insure success.
6. Government and industry should work together to educate, train, and shape the discussion via venues such as NDIA.



# Some References used in this presentation:

- IPCC (2014) AR5 Synthesis Report; [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR\\_AR5\\_FINAL\\_full.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf)
  - IPCC WGII (2014) Climate Change and the Ocean; [https://www.ipcc.ch/report/ar5/wg2/docs/WGII-AR5\\_Oceans-Compendium.pdf](https://www.ipcc.ch/report/ar5/wg2/docs/WGII-AR5_Oceans-Compendium.pdf)
  - World Economic Forum: The final frontier: how Arctic ice melting is opening up trade opportunities  
<https://www.weforum.org/agenda/2020/02/ice-melting-arctic-transport-route-industry/>
- <https://www.virginiamercury.com/2021/06/15/for-virginia-adapting-to-sea-level-rise-starts-with-choosing-a-curve/>

