

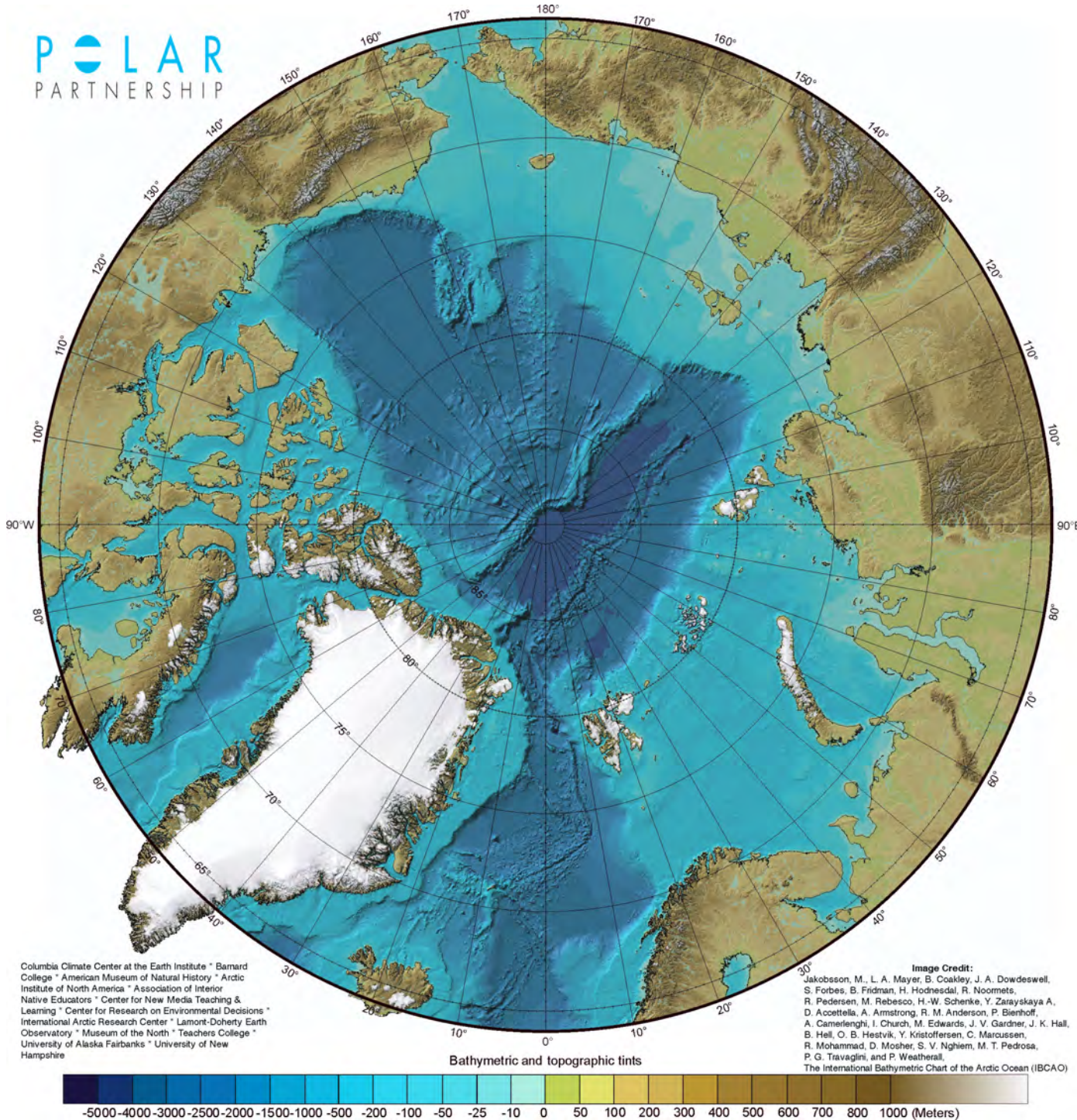
Puzzling Over Arctic Climate

Our Connections to the Arctic

Margie Turrin & Laurel Zaima



Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE



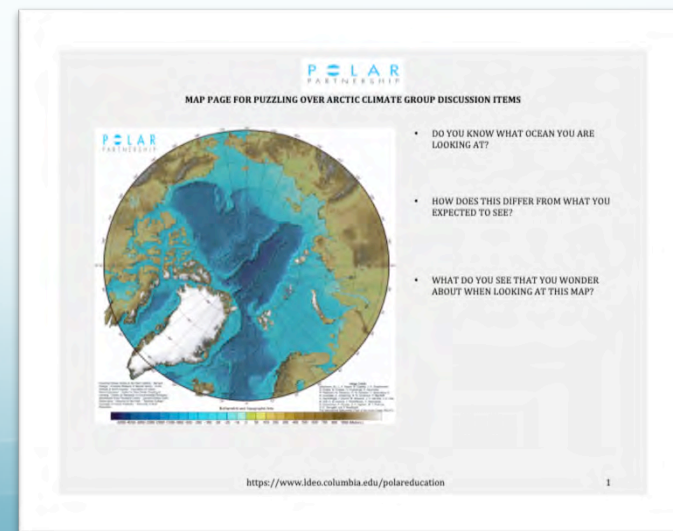
Columbia Climate Center at the Earth Institute * Barnard College * American Museum of Natural History * Arctic Institute of North America * Association of Interior Native Educators * Center for New Media Teaching & Learning * Center for Research on Environmental Decisions * International Arctic Research Center * Lamont-Doherty Earth Observatory * Museum of the North * Teachers College * University of Alaska Fairbanks * University of New Hampshire

Image Credit:
Jakobsson, M., L. A. Mayer, B. Coakley, J. A. Dowdeswell, S. Forbes, B. Fridman, H. Hodnesdal, R. Noomets, R. Pedersen, M. Rebesco, H.-W. Schenke, Y. Zarayskaya A., D. Accioppa, A. Armstrong, R. M. Anderson, P. Blenkhoff, A. Camerlenghi, I. Church, M. Edwards, J. V. Gardner, J. K. Hall, B. Hell, O. B. Hestvik, Y. Kristoffersen, C. Marcussen, R. Mohammad, D. Mosher, S. V. Nghiem, M. T. Pedrosa, P. G. Travaglini, and P. Weatherall.
The International Bathymetric Chart of the Arctic Ocean (IBCAO)

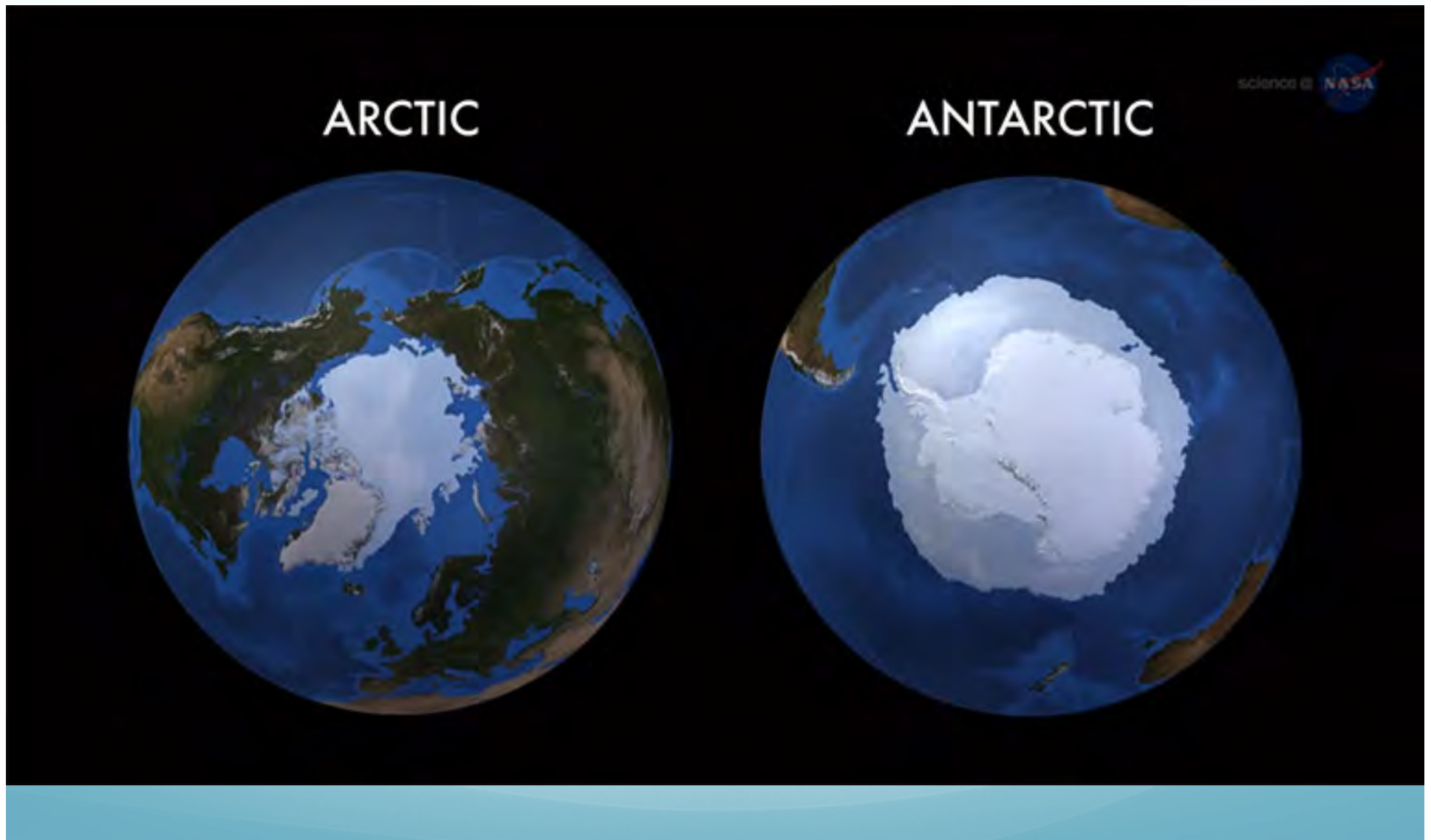
What
are we
looking
at?

Discuss & Record Responses

- *As a class or in small groups discuss and record responses on your sheet:*
- Do you know what ocean you are looking at?
- How does this differ from what you expected to see?
- When looking at the map what do you see that you wonder about ?
- **SHARE WITH THE GROUP**



The Arctic as a region is ocean covered with sea ice

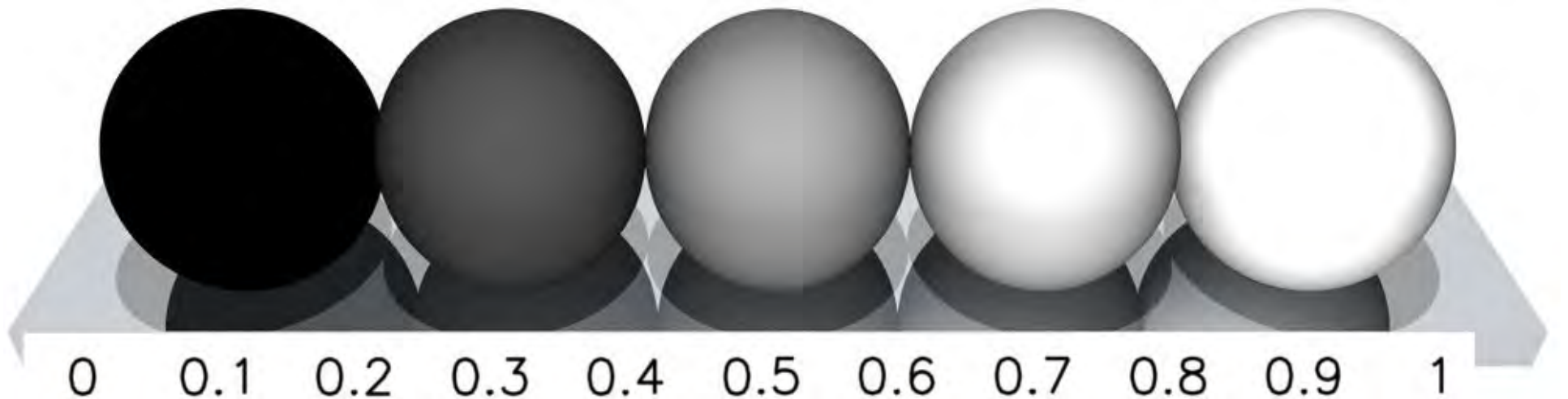


What is sea ice?

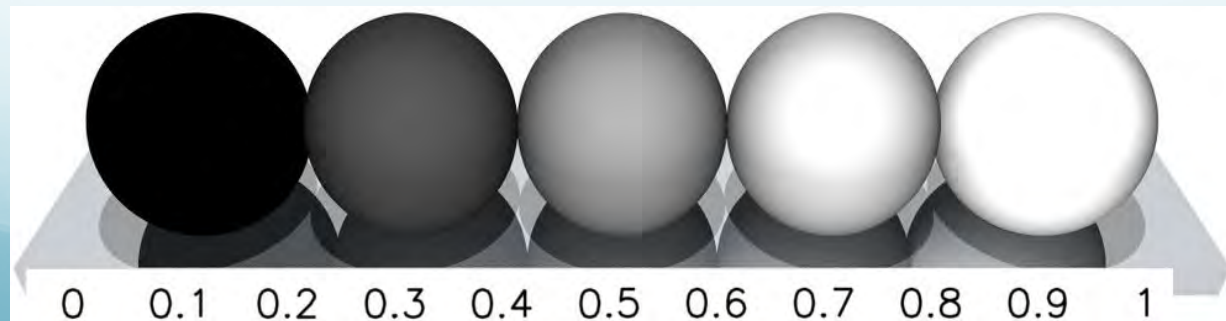


Photo M. Turrin. March 28th, 2012

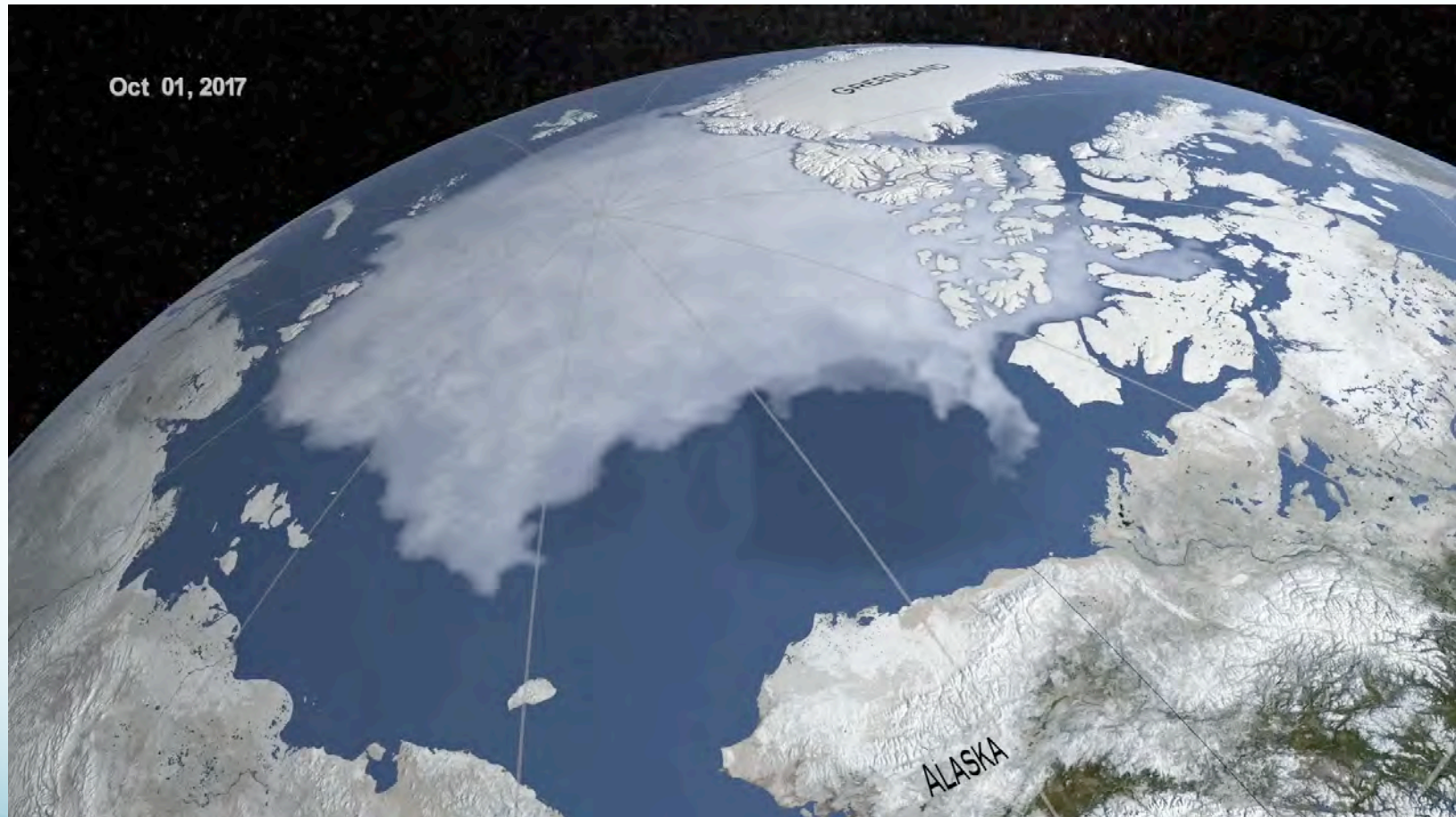
It is all about Albedo



Color of an ocean from space - estimate the albedo

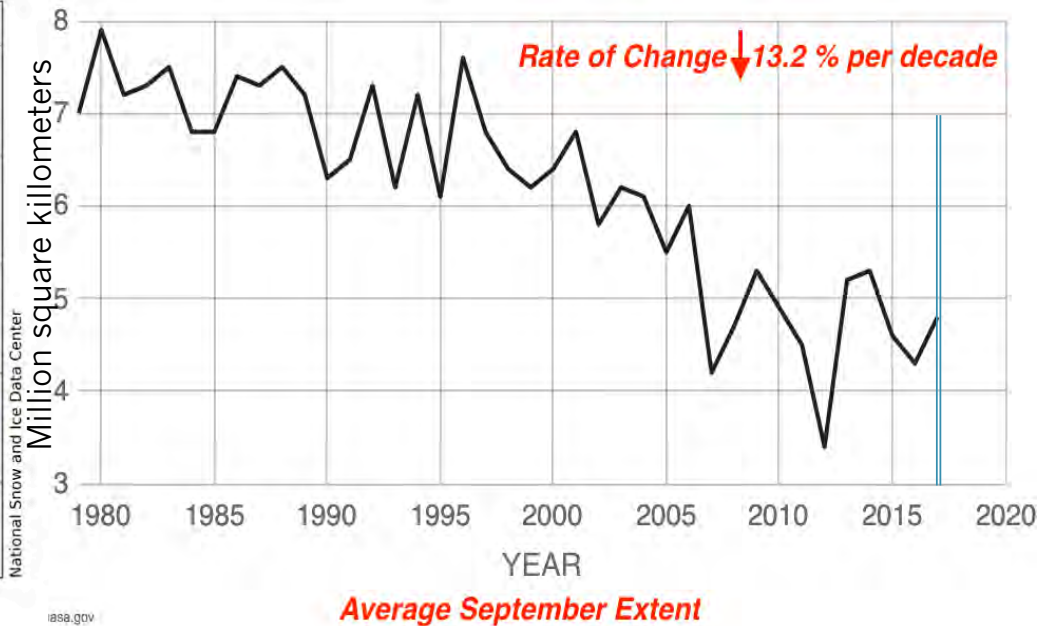
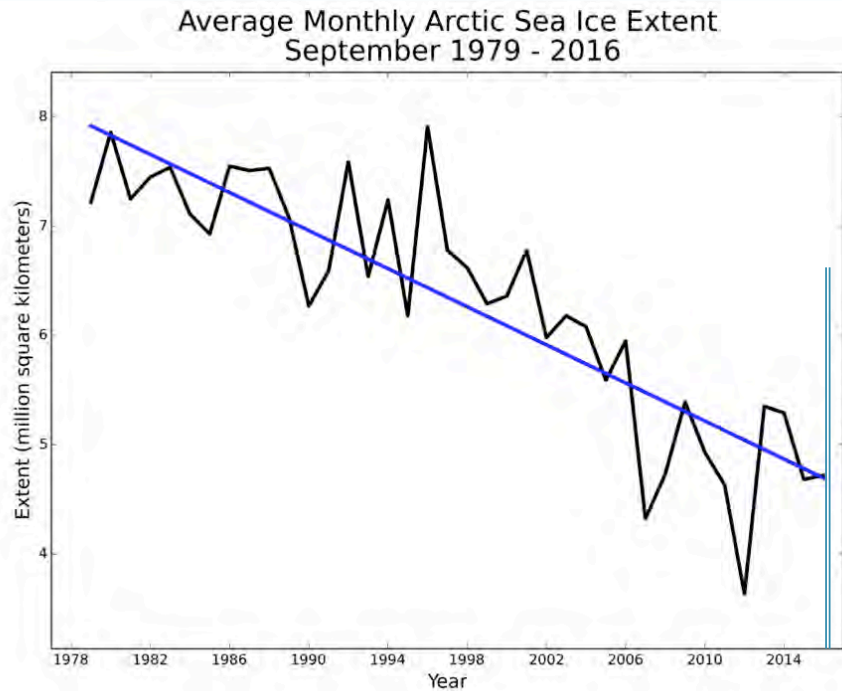


NASA Sea Ice Story



<https://www.youtube.com/watch?v=4VvSQZ3FnXQ>

Arctic Sea Ice Extent

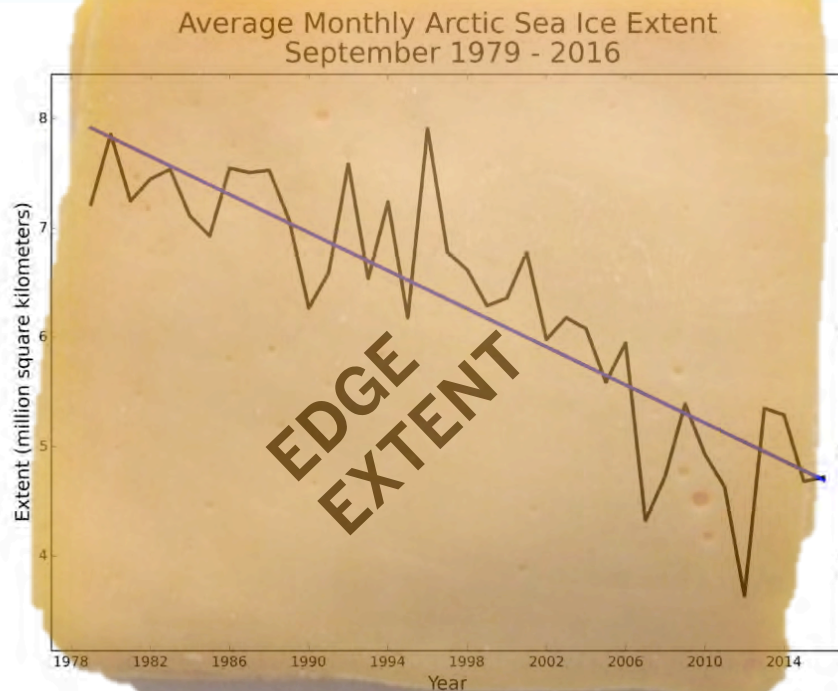


Source: National Snow & Ice Data Center (NSIDC)

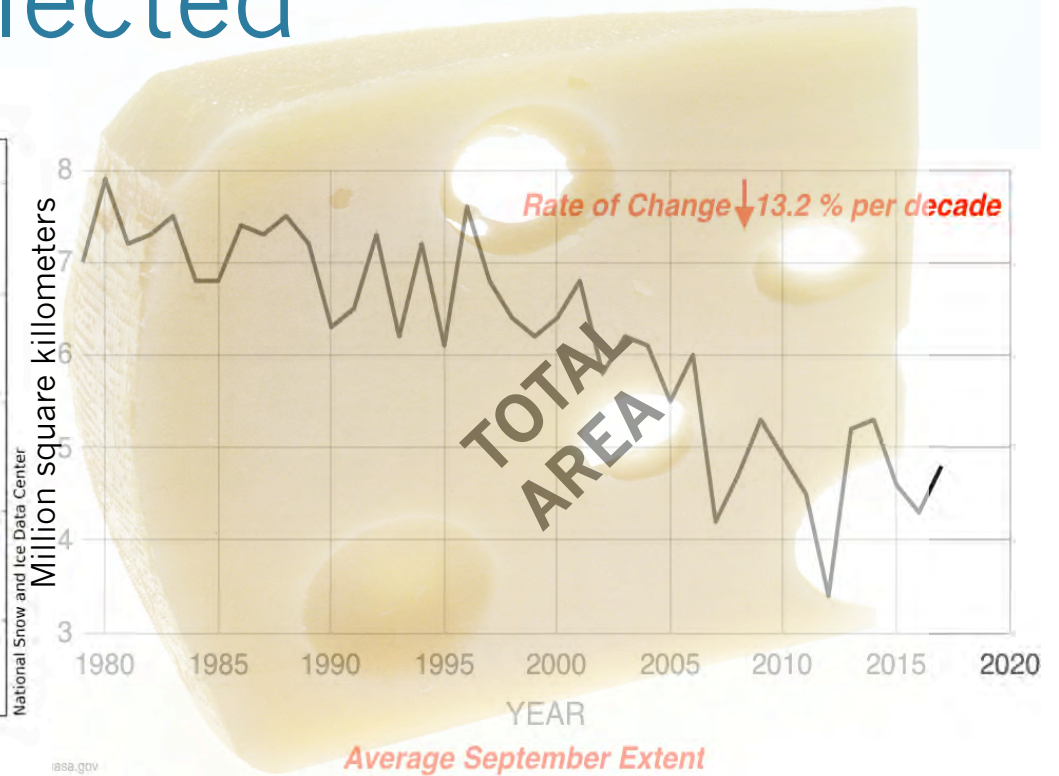
Source: National Aeronautics & Space Administration (NASA)

Which is it? Left or right graph?

Depends on the 'area' definition selected



Source: National Snow & Ice Data Center (NSIDC)



Source: National Aeronautics & Space Administration (NASA)

Which is it?

Linking to your past...



Imagine the Arctic in the year you were born.

- Was it closer to the 1980 extent or the 2012 extent?
- What about the year your parents were born?
- What do you think future Arctic sea ice will look like?

The Once & Future Arctic



2050



Can we change the projected arctic sea ice? We can make a difference through committing to **take new action(s)**.

- Read through the “*What more can you do?*” sheet and commit!
- **Be proud of the things you are already doing, but to make a difference we need to take new actions!**

What More Can You Do?

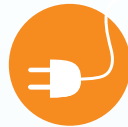
Make A Commitment to Do More to Reduce
Your Contribution to Climate Change. I will:



Walk, ride your bike,
take the bus



When leaving the room
I will turn off the lights!



Unplug! Play games,
play outside, read



Turn off your computer
when done



Take a 5 minute warm
short shower, not fill up a
hot bath



Turn down the heat at
home and wear a sweater



Pack a lunch in a cloth
bag and use refillable
containers



Skip the dryer, hang dry
your laundry

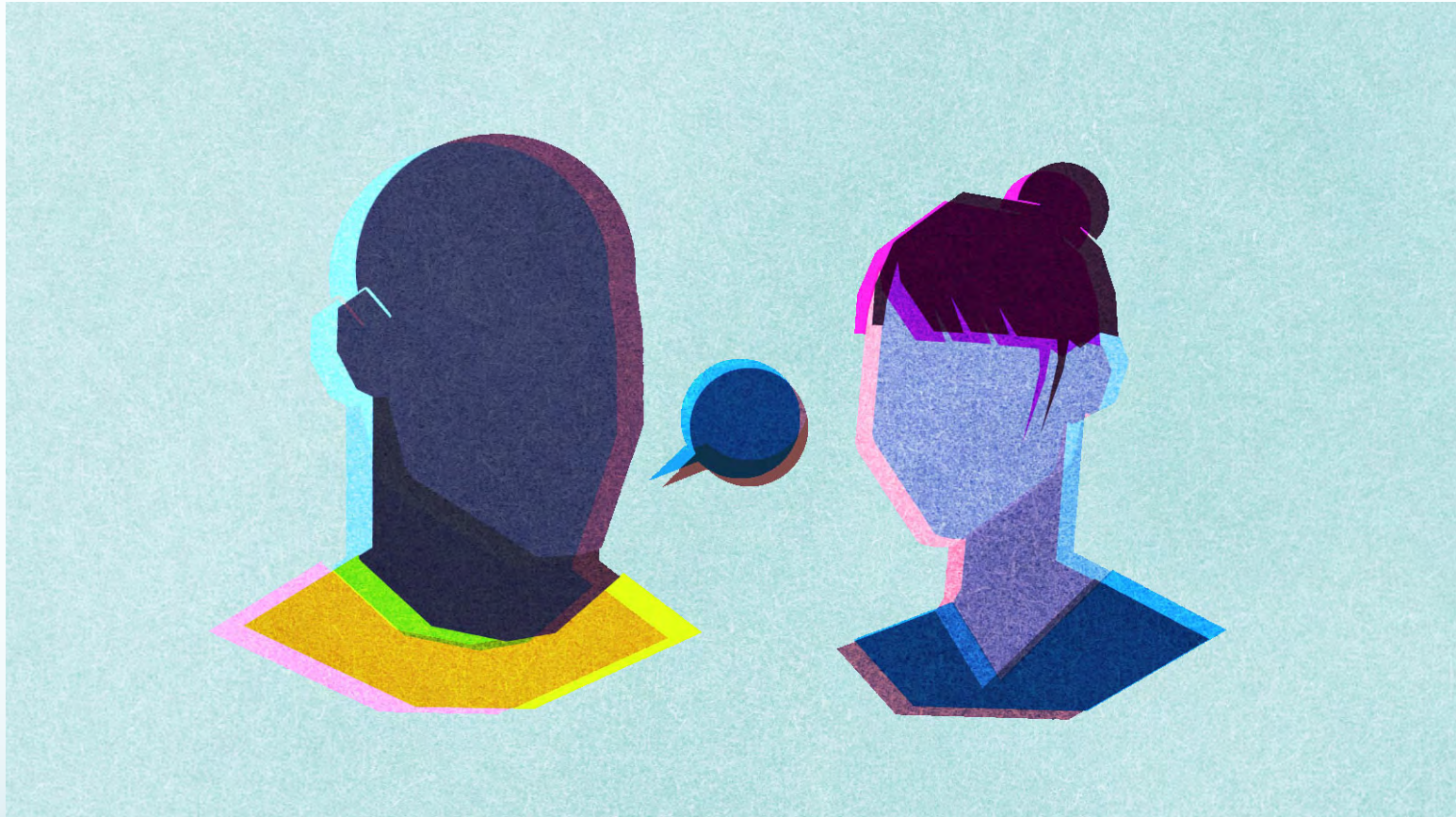


Talk to my Friends about
what I do to help! Be an
Example!



Reuse! Reduce!
Recycle!

Just talk about it already!



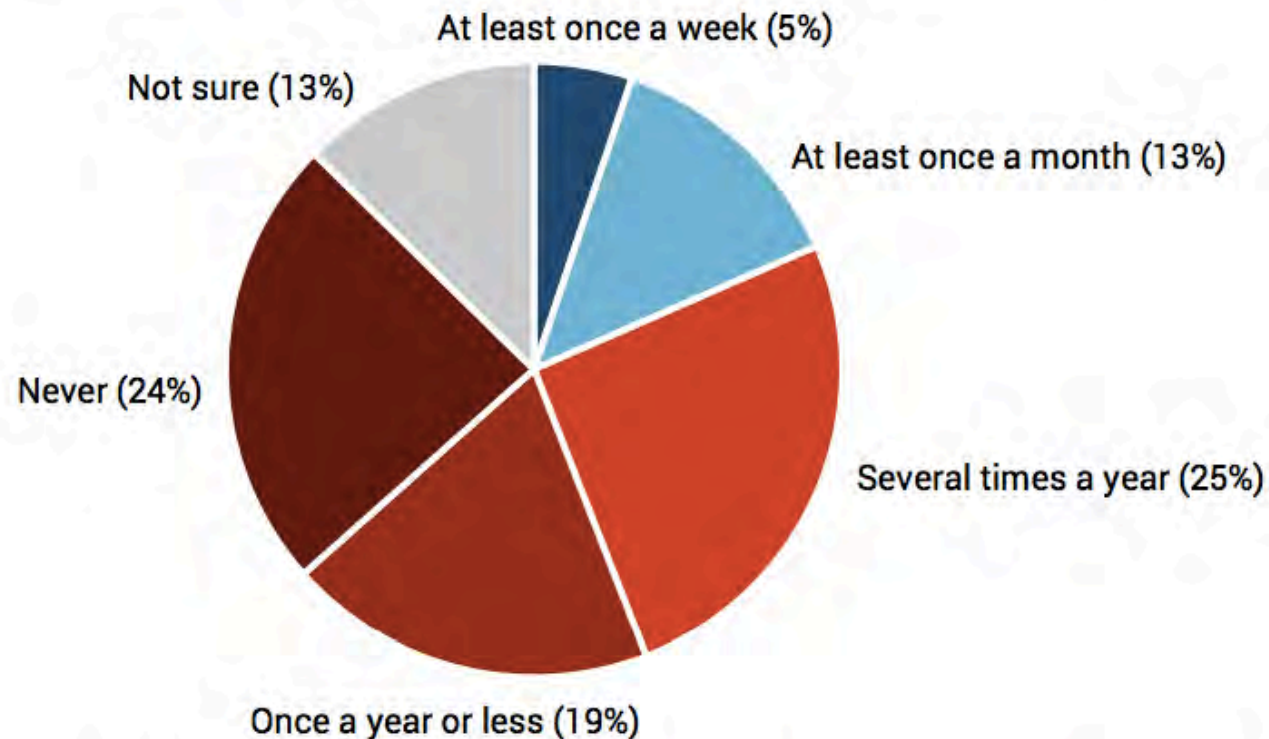
This is one of the more important things you can do! Break the 'Spiral of Silence' around climate change!

Illustration from Amelia Bates,
grist.org

Just talk about it already!

Only One in Five Americans Hear People They Know Talk About Global Warming At Least Once a Month

- One in Four Never Hear it Discussed -



About how often do you hear other people you know (your family, friends, co-workers, etc.) talk about global warming?

Base: Americans 18+ (n=1,204). March, 2016

How to start talking...



- Tell personal stories
- Focus on solutions
- Think of slogans & memorable ways to say it!

images from grist.org

**Thank you
Margie & Laurel**

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Full activity @
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polareducation](http://www.Ideo.columbia.edu/polareducation)