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GG 140 - The Atmosphere, the Ocean and Environmental Change with Professor Ronald B. Smith

Lecture 24 – Ice in the Climate System

3. Sea Ice Seasonality. Image credit: National Snow and Ice Data Center, University of Colorado, Boulder. http://nsidc.org/sotc/sea_ice.html (Accessed Oct. 26, 2011)

5. Arctic Sea Ice: Summer or Winter? Image credit: Flickr user "fruchtzweg's world". <http://earthobservatory.nasa.gov/Features/SeaIce/> (Accessed Oct. 26, 2011)

7. Northern Hemisphere Extent Anomalies Sept 2011. Image credit: National Snow and Ice Data Center, University of Colorado, Boulder. http://nsidc.org/data/seaice_index/images/n_plot_hires.png (Accessed Oct. 26, 2011)

8. Southern Hemisphere Extent Anomalies Sept 2011. Image credit: National Snow and Ice Data Center, University of Colorado, Boulder. http://nsidc.org/data/seaice_index/images/s_plot_hires.png (Accessed Oct. 26, 2011)

9. Arctic Sea Routes. Image credit: Hugo Ahlenius, UNEP/GRID-Arendal. <http://maps.grida.no/go/graphic/arctic-sea-routes-northern-sea-route-and-northwest-passage> (Accessed Oct. 26, 2011)

10. Ice Sheets. Image credit: Centre for Ice and Climate, Niels Bohr Institute. http://www.iceandclimate.nbi.ku.dk/research/flowofice/modelling_ice_flow/ (Accessed Oct. 26, 2011)

Ice Sheets. Image credit: discoveringthearctic.org.uk. http://www.discoveringthearctic.org.uk/6_losing_the_ice.html (Accessed Oct. 26, 2011)

11. Ice Sheets: Ice Divide. Image credit: Centre for Ice and Climate Niels Bohr Institute. http://www.iceandclimate.nbi.ku.dk/research/flowofice/modelling_ice_flow/ (Accessed Oct. 26, 2011)

Ice Sheets: Ice Divide. Image credit: NASA/JPL-Caltech/UCI. <http://www.nasa.gov/topics/earth/features/antarctica20110818-image.html> (Accessed Oct. 26, 2011)

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12. Margin of Greenland Ice Sheet. Image credit: E. Thomson

13. Ice Shelves. Image credit: USGS. http://en.wikipedia.org/wiki/Wordie_Ice_Shelf (Accessed Oct. 26, 2011)

14. Ross Ice Shelf. Image credit: John Anderson. http://earth.rice.edu/mtpe/cryo/cryosphere/cryosphere_why.html (Accessed Oct. 26, 2011)

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15. Greenland Glaciers. Image credit: NASA. <http://www.nasa.gov/topics/earth/features/petermann-calve.html> (Accessed Oct. 26, 2011)

16. Petermann Glacier. Image credit: Jesse Allen and Robert Simmon.
<http://earthobservatory.nasa.gov/IOTD/view.php?id=7999> (Accessed Oct. 26, 2011)

17. Petermann Glacier. Image credit: MODIS/NASA.
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20. Jacobshaven Glacier Image credit: unknown.
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21. Jacobshaven Iceburg. Image credit: Ron Smith

22. Jacobshaven Iceburg. Image credit: Ron Smith

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23. Jacobshaven Iceburg. Image credit: Ron Smith

24. Major North Atlantic Currents. Image credit: US Coast Guard Navigation Center.

<http://www.navcen.uscg.gov/?pageName=iipHowDoTheLabradorAndGulfStreamCurrentsAffectIcebergsInTheNorthAtlanticOcean> (Accessed Oct. 26, 2011)

25. Titanic. Image credit: unknown. <http://www.fortunecity.com/lavender/stroheim/163/titanic3d3.jpg> (Accessed Oct. 26, 2011)

26. Titanic Route. Image credit: unknown. http://www.titanic-titanic.com/titanic_wreck_location.shtml (Accessed Oct. 26, 2011)

27. Mountain Glacier. Image credit: unknown. <http://climateaudit.org/2006/12/21/972/> (Accessed Oct. 26, 2011)

28. Tidewater glaciers in Alaska. Image credit: Norwegian Cruise Line. <http://www.susanmilne.com/glacier/glacier.htm> (Accessed Oct. 26, 2011)

Tidewater glaciers in Alaska. Image credit: Flickr user "Alaskan Dude."

<http://www.treehugger.com/files/2009/03/alaska-global-warming-fast-erosion-climate-change.php> (Accessed Oct. 26, 2011)

29. Stephen's Glacier, Alaska. Image credit: Bruce F. Molnia, USGS. <http://www.usgs.gov/features/glaciers2.html> (Accessed Oct. 26, 2011)

30. Jendalsbreen, Norway & Birksdalsbreen, Norway. Image credits: R. Allen

31. Jendalsbreen terminus. Image credit: R. Allen

32. Patagonia. Image credit: Google Earth

33. Patagonia. Image credit: Ron Smith

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34. Patagonia. Image credit: Ron Smith

35. Patagonia. Image credit: Ron Smith