

Changing Storm Tracks?

Aimee Fish
NOAA National Weather Service, Alaska Region
Coastal Hazards Workshop
May 30, 2011

Disclaimer

- NWS Forecasters: 0-7 day focus
- Not a climate expert

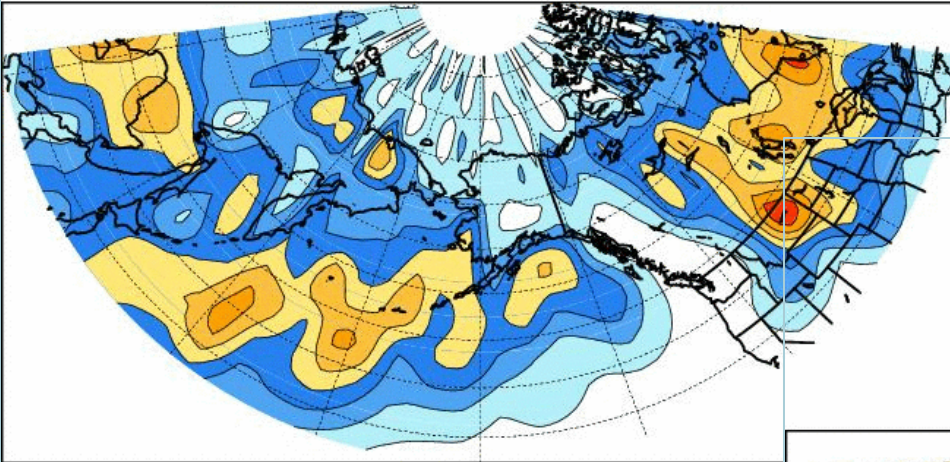
Gary wasn't
available!



Storm Frequency Climatology

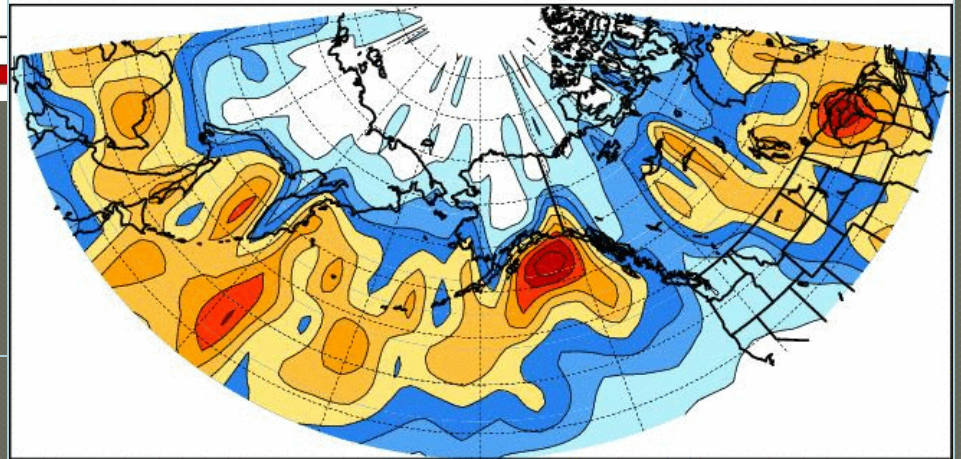
(c)

July, Aug, Sep

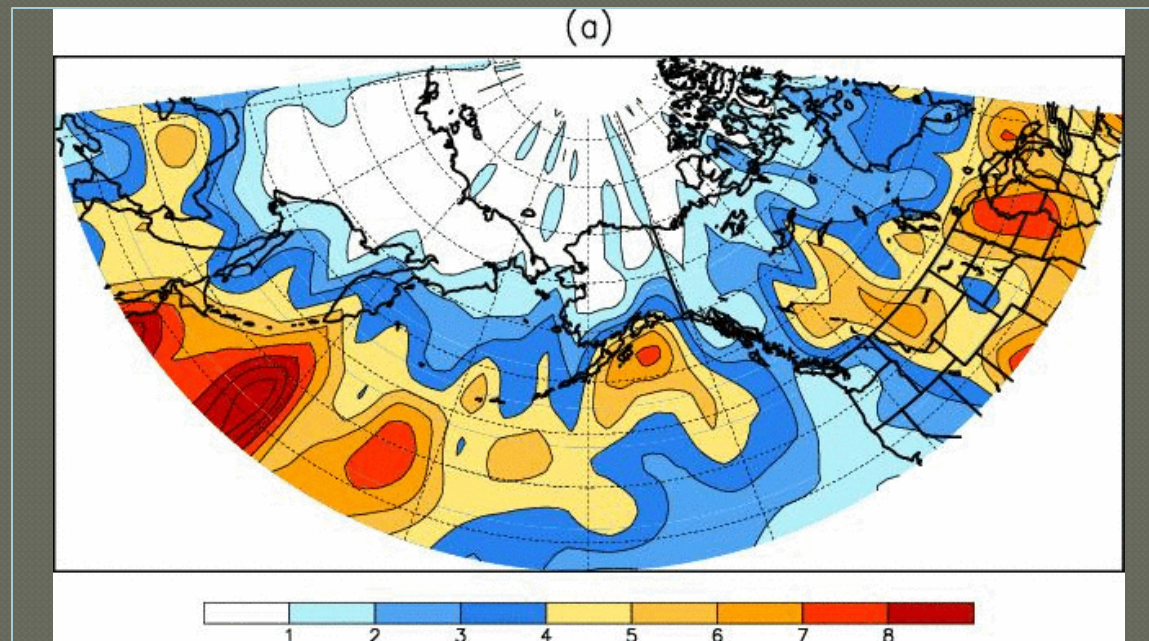


(d)

Oct, Nov, Dec

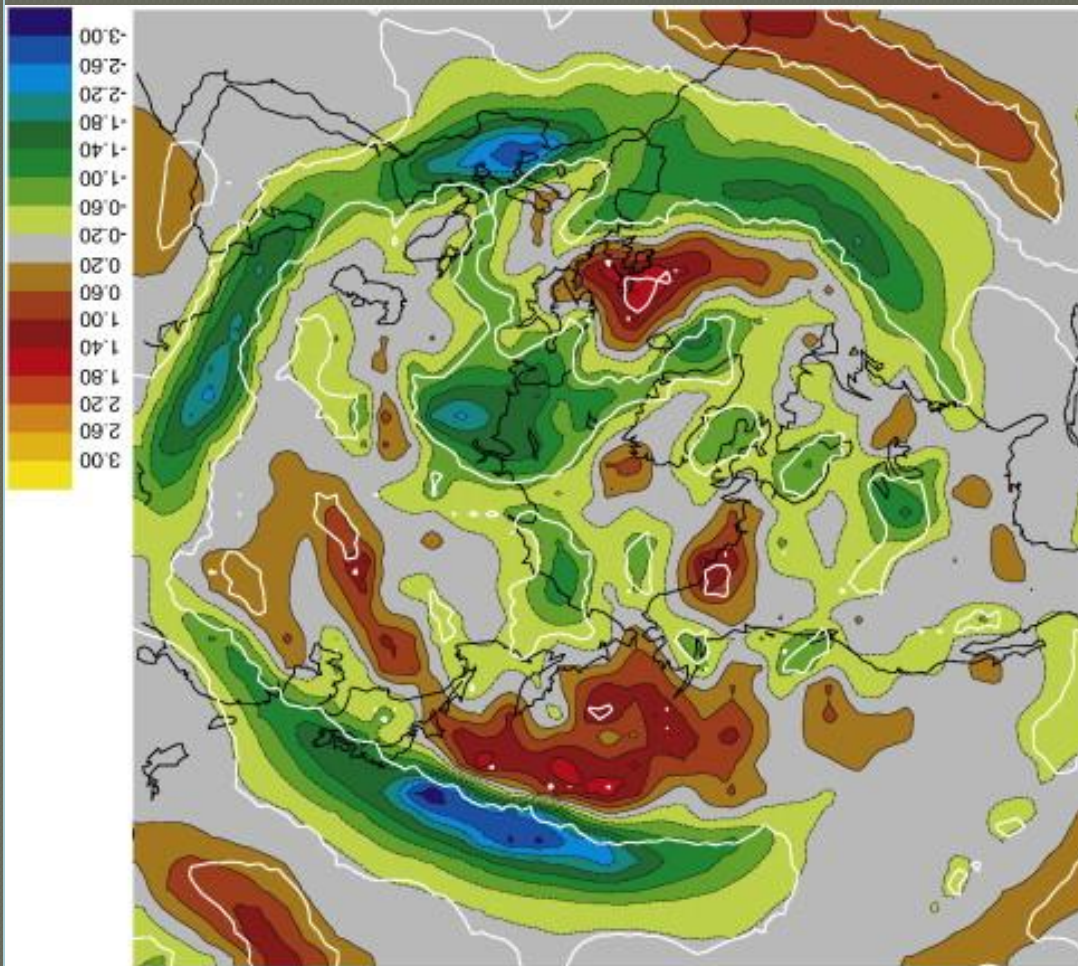


Storm Frequency Climatology



Jan, Feb, March

Storm Track and Climate Change



- Projected change in the track for Northern Hemisphere winter

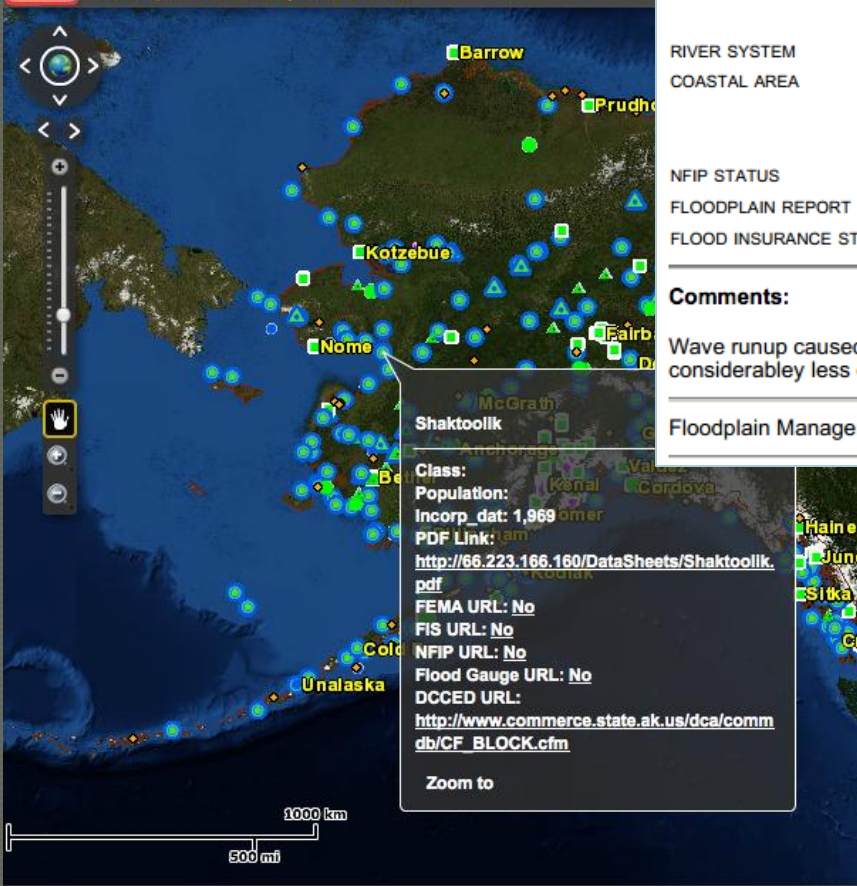
A Review on Northern Hemisphere Sea-ice, Storminess and Teleconnection patterns: Observations and Projected Changes

Mesquita, Bader, Hodges, Miles Osterhus, Keenlyside 2011

Historic Bering/Chukchi Storms



US Army Corp of Engineers Public Floodplain Viewer
Developed and hosted by Allied GIS Inc.



Shaktolik | City Office: (907) 955-3441 | Revised: October 2011

STATUS	2 nd class city	LAST FLOOD EVENT	2009
POPULATION	218	FLOOD CAUSE	coastal
BUILDINGS		ELEVATION	
RIVER SYSTEM	Tagoomenik River	FLOOD OF RECORD	1974
COASTAL AREA	Norton Sound	FLOOD CAUSE	coastal
		ELEVATION	
NFIP STATUS	not participating	WORST FLOOD EVENT	1960
FLOODPLAIN REPORT	no	FLOOD CAUSE	coastal
FLOOD INSURANCE STUDY	no	FLOOD GAUGE	no

Comments:

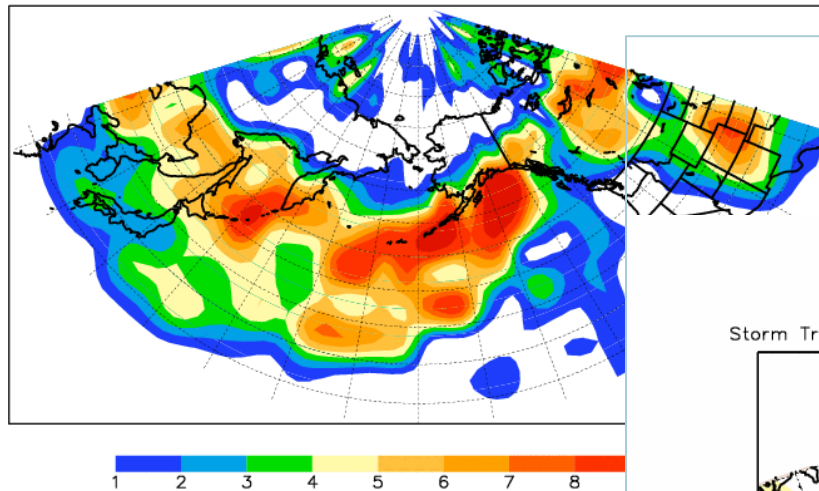
Wave runup caused damages in 2005 and 2009. Worst event was in 1960 at old site (~ 4 miles south). Flooding is considerably less on the Tagoomenik River side.

Floodplain Manager | (907) 753-2610

http://66.223.166.160/USACE_Disclaimer.html

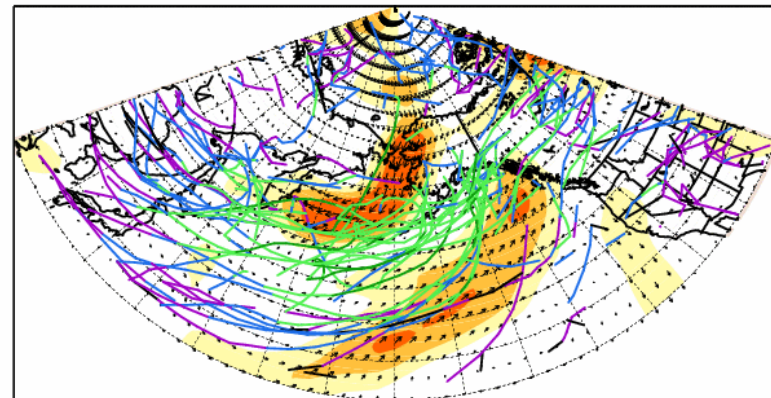
1974

Storm Track Frequency--GR2--OND--1974



Storm
Frequency

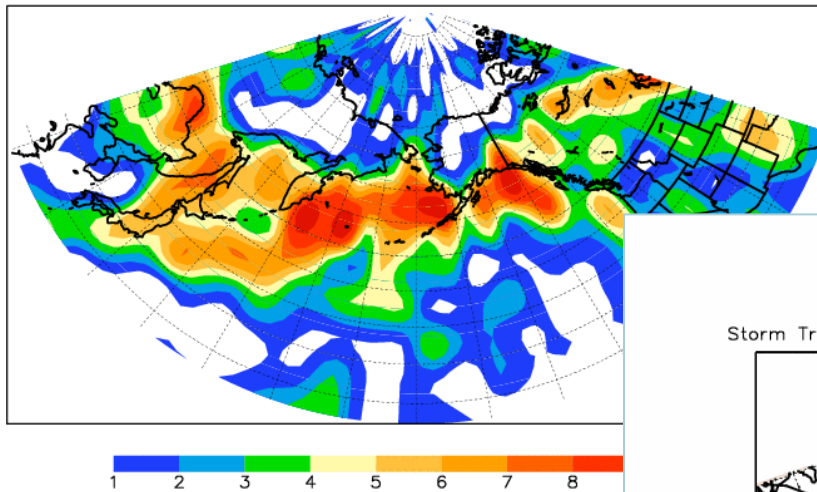
Storm Tracks/925 hPa Wind Vector/Magnitude Anomalies (m/s)--1974--OND



STORM TRACK KEY:
< 972 mb
972 mb - 992 mb
992 mb - 1004 mb
1004 mb - 1012 mb
> 1012 mb

2004

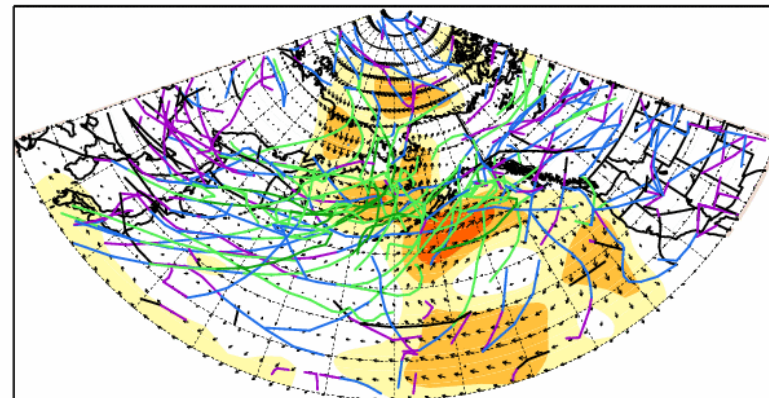
Storm Track Frequency--GR2--OND--2004



Storm
Frequency

Storm Track
& 925mb
wind

Storm Tracks/925 hPa Wind Vector/Magnitude Anomalies (m/s)--2004--OND

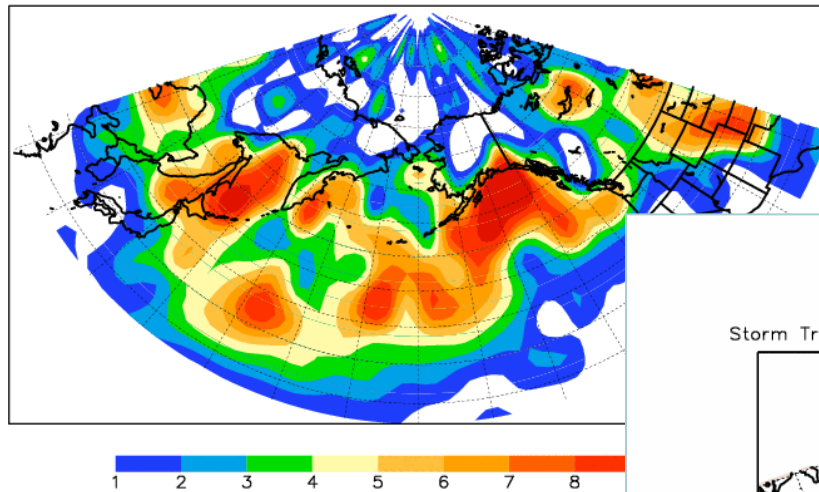


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2005

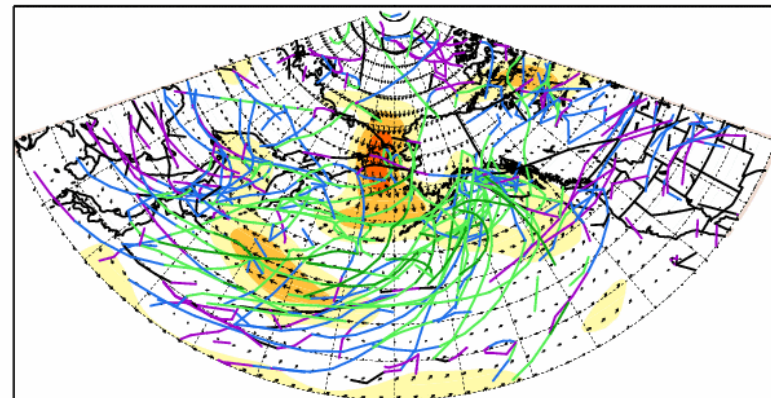
Storm Track Frequency--GR2--OND--2005



Storm
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Storm Track
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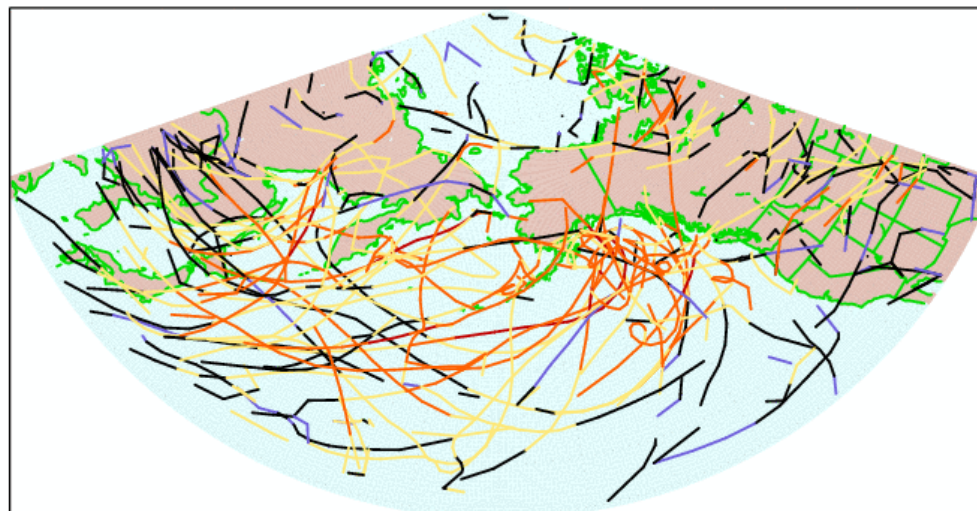
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2010

Storm Tracks--GR2--OND--2010



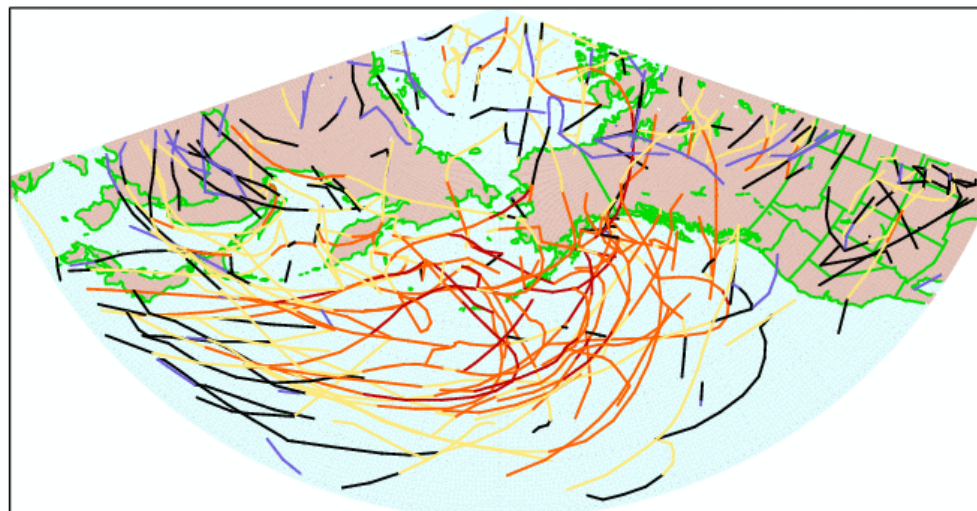
Minimum Pressure

< 972 mb	Red
972 mb - 992 mb	Orange
992 mb - 1004 mb	Yellow
1004 mb - 1012 mb	Black
> 1012 mb	Purple

Storm Track

2009

Storm Tracks--GR2--OND--2009



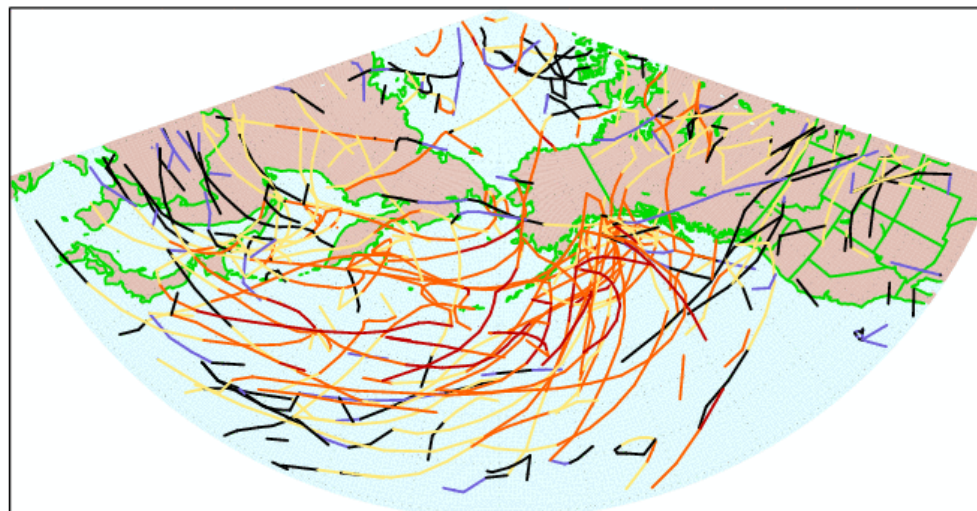
Minimum Pressure

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972 mb - 992 mb	Orange line
992 mb - 1004 mb	Yellow line
1004 mb - 1012 mb	Black line
> 1012 mb	Purple line

Storm Track

2005

Storm Tracks--GR2--OND--2005



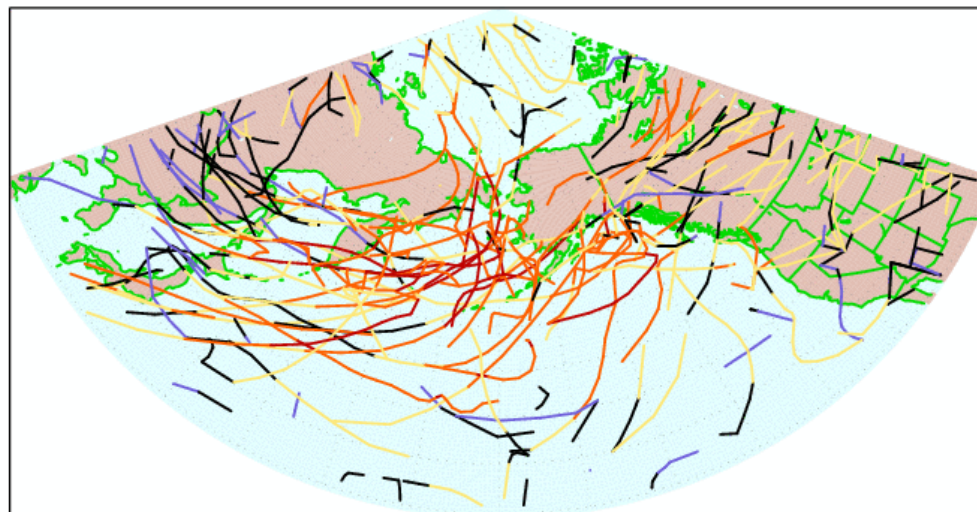
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Storm Track

2004

Storm Tracks--GR2--OND--2004



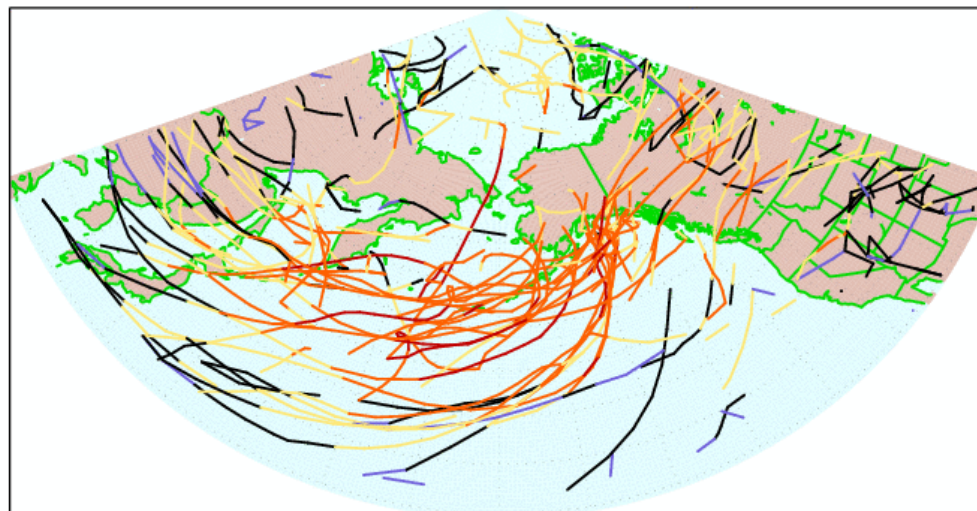
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Storm Track

1974

Storm Tracks--GR2--OND--1974



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Storm Track

Storm Track Take-aways

- 1974: Not an active storm pattern, one doozy of a storm!
- Atkinson Newtok study: No single large storm, but many “smaller” storms with eroding wave action caused damage
- The sea ice question!