

Storm Track Monitoring and Prediction-Related Activities at CPC

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NOAA / NWS / Climate Prediction Center

ACCAP Teleconference – July 17, 2007



Interior Alaska

Aleutian Islands

Outline

1. Purpose and Goals of Teleconference
2. Storm Track Website Overview
3. Storm Track Website Product Examples
4. Tour of website
5. Discussion and Questions

Purpose and Goals

Purpose:

- Publicize current CPC storm track website to this user community
- Provide a tutorial for navigating/understanding website products
- Briefly describe potential future products

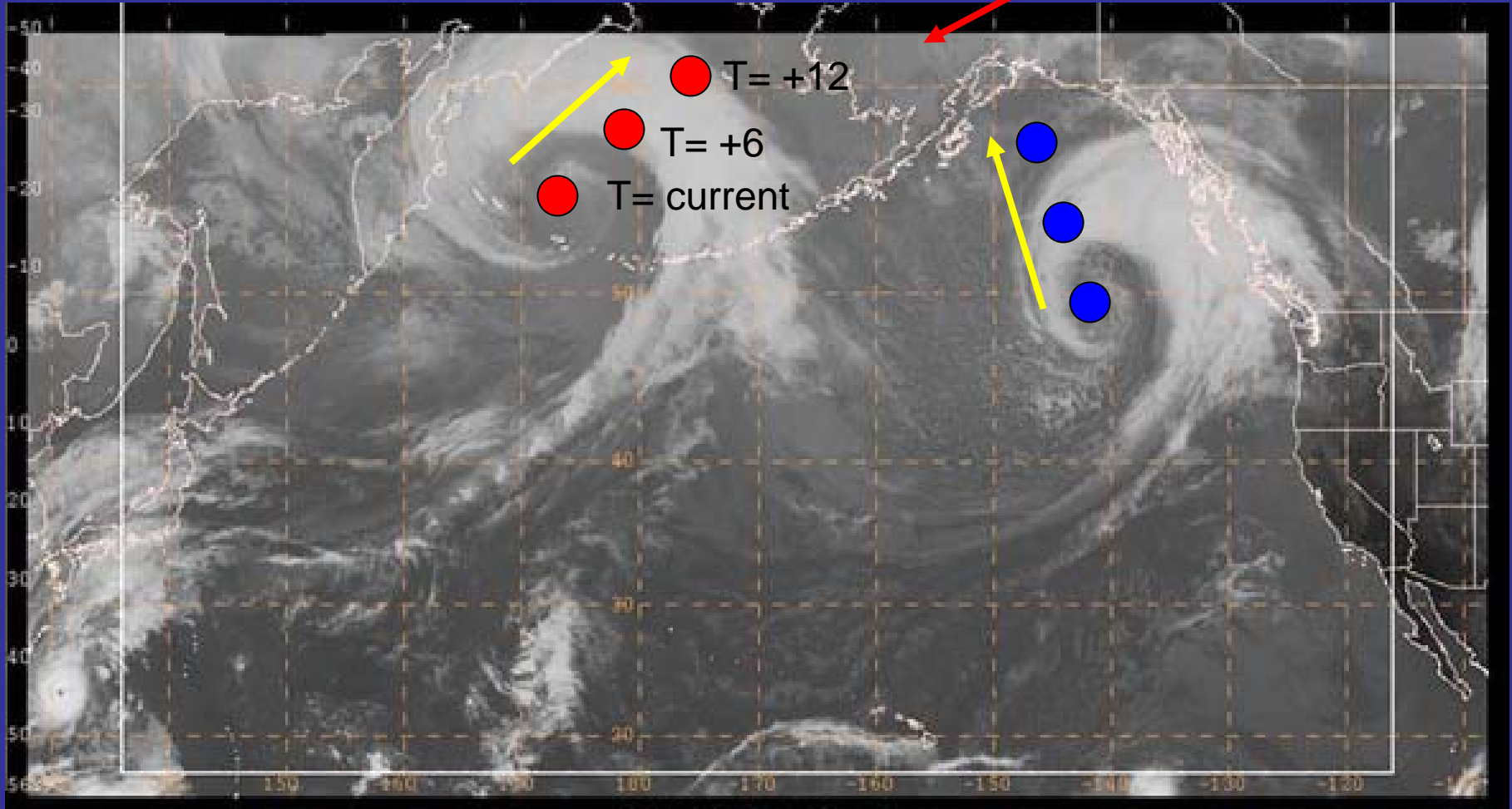
Goals:

1. Solicit feedback and obtain actionable items for improving content and usefulness (possible downscaling)
2. Outline first steps in developing a strategy for how to best focus CPC resources

Storm Tracking

→ Surface pressure used for tracking storms

Alaska



Storm Tracking Overview

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/stormtracks/strack_alaska.shtml

- Overlays of precipitation, low-level wind, wave heights, and sea ice
- Recent storms
→ (last 10, 30, 90 days)
- Cyclogenesis/Cyclolysis

Search the CPC
All CPC Go

Climate Outlooks

Climate & Weather Link
El Niño/La Niña
MJO
Teleconnections
AO
NAO
PNA
AAO
Blocking
Storm Tracks

Climate Glossary

Outreach

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Storm Tracks

- [Short-Term Monitoring, Outlooks, and Assessment](#)
- [Historical Track Database](#)
- [Research Related Information](#)
- [Publications](#)

Storm tracks are based on an algorithm originally developed at the Earth System Resource Laboratory (ESRL) [Serreze (1995), and Serreze et al. (1997)]. Storm tracks are identified by locating grid points in which the mean sea level pressure (MSLP) is less than its surrounding grid points by at least 1 hPa. The storms are tracked by analyzing the position of systems between time steps and applying a maximum distance threshold between candidate pairings (800 km) and additional other quality control checks. Red/blue dots indicate active storms as of 18 UTC for the respective plot ending date.

- **Short-term Monitoring, Outlooks, and Assessment**

Note: Move cursor over product name to display the graphic.

Storm Tracks/Precipitation						
10-day	30-day	90-day	OGFSW1	EGFSW1	OGFSW2	EGFSW2

Storm Tracks/925hPa Anomalies						
10-day	30-day	90-day	OGFSW1	EGFSW1	OGFSW2	EGFSW2

Storm Tracks/Wave Heights				Storm Tracks/Sea Ice		
10-day	30-day	90-day	EGFSW1	10-day	30-day	90-day

Cyclogenesis/Cyclolysis Locations			Storm Track Assessment		
10-day	30-day	90-day	Graphic	Discussion	Outlook

10 day Total Precip (mm)—05JUL2007—14JUL2007

5 10 20 30 40 60 90

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

Storm Tracking Overview

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/stormtracks/strack_alaska.shtml

- Overlays of precipitation, low-level wind, wave heights, and sea ice

- Anticipated future storms → next 1-2 weeks

Search the CPC
All CPC Go

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- Short-term Monitoring, Outlooks, and Assessment**

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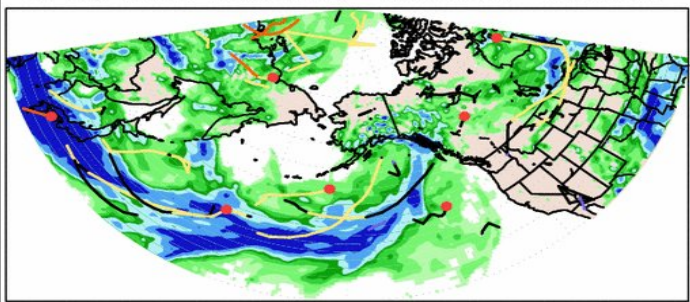
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10-day	30-day	90-day	OGFSW1	EGFSW1	OGFSW2	EGFSW2

Storm Tracks/925hPa Anomalies						
10-day	30-day	90-day	OGFSW1	EGFSW1	OGFSW2	EGFSW2

Storm Tracks/Wave Heights				Storm Tracks/Sea Ice		
10-day	30-day	90-day	OGFSW1	10-day	30-day	90-day

Cyclogenesis/Cyclolysis Locations			Storm Track Assessment		
10-day	30-day	90-day	Graphic	Discussion	Outlook

10 day Total Precip (mm) -- 05JUL2007 -- 14JUL2007



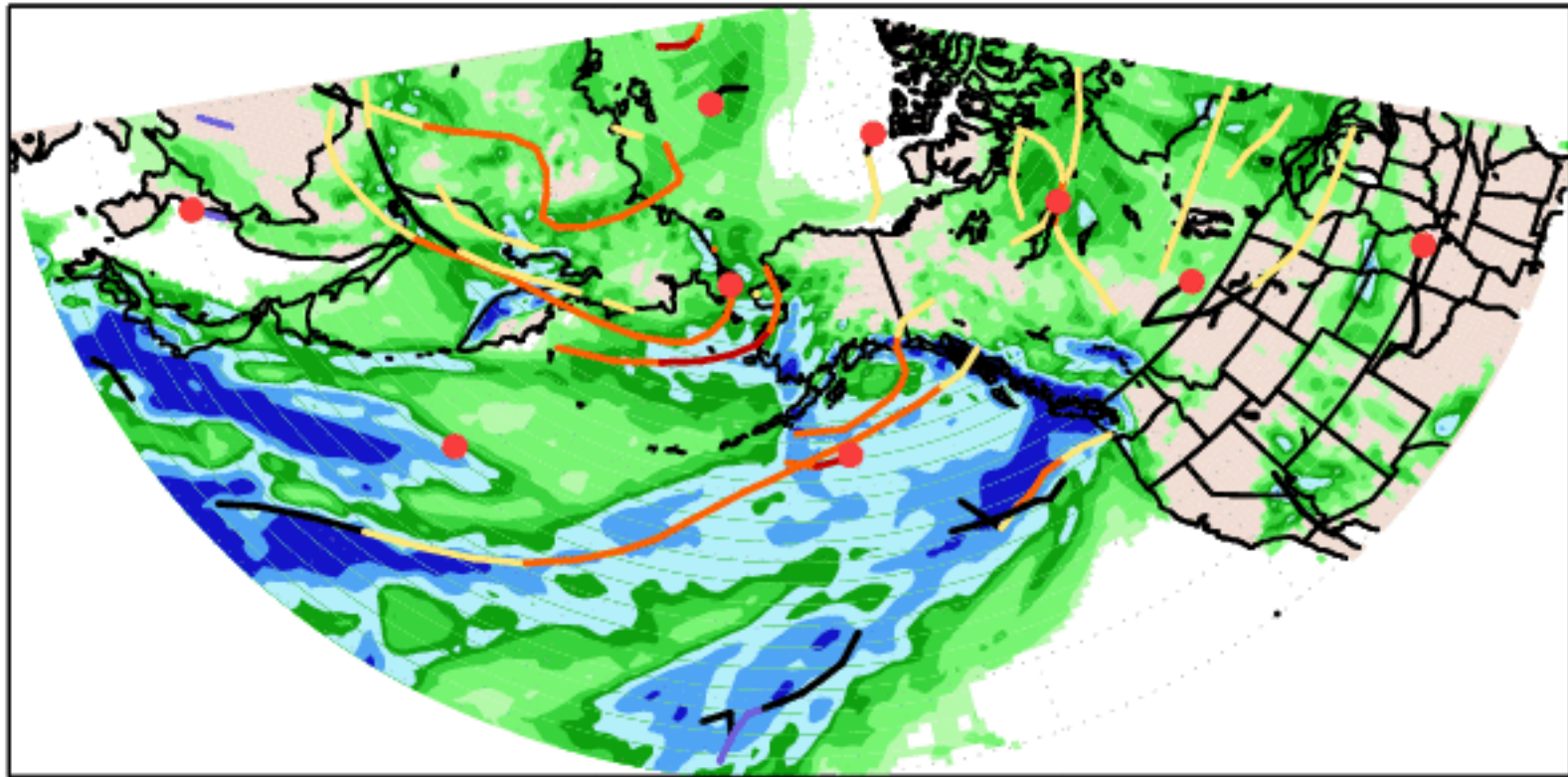
5 10 20 30 40 60 90

STORM TRACK KEY:

- < 972 mb
- 972 mb - 992 mb
- 992 mb - 1004 mb
- 1004 mb - 1012 mb
- > 1012 mb

Example 1: Storm Tracks / Precipitation

10 day Total Precip (mm) -- 11 OCT 2005 -- 20 OCT 2005

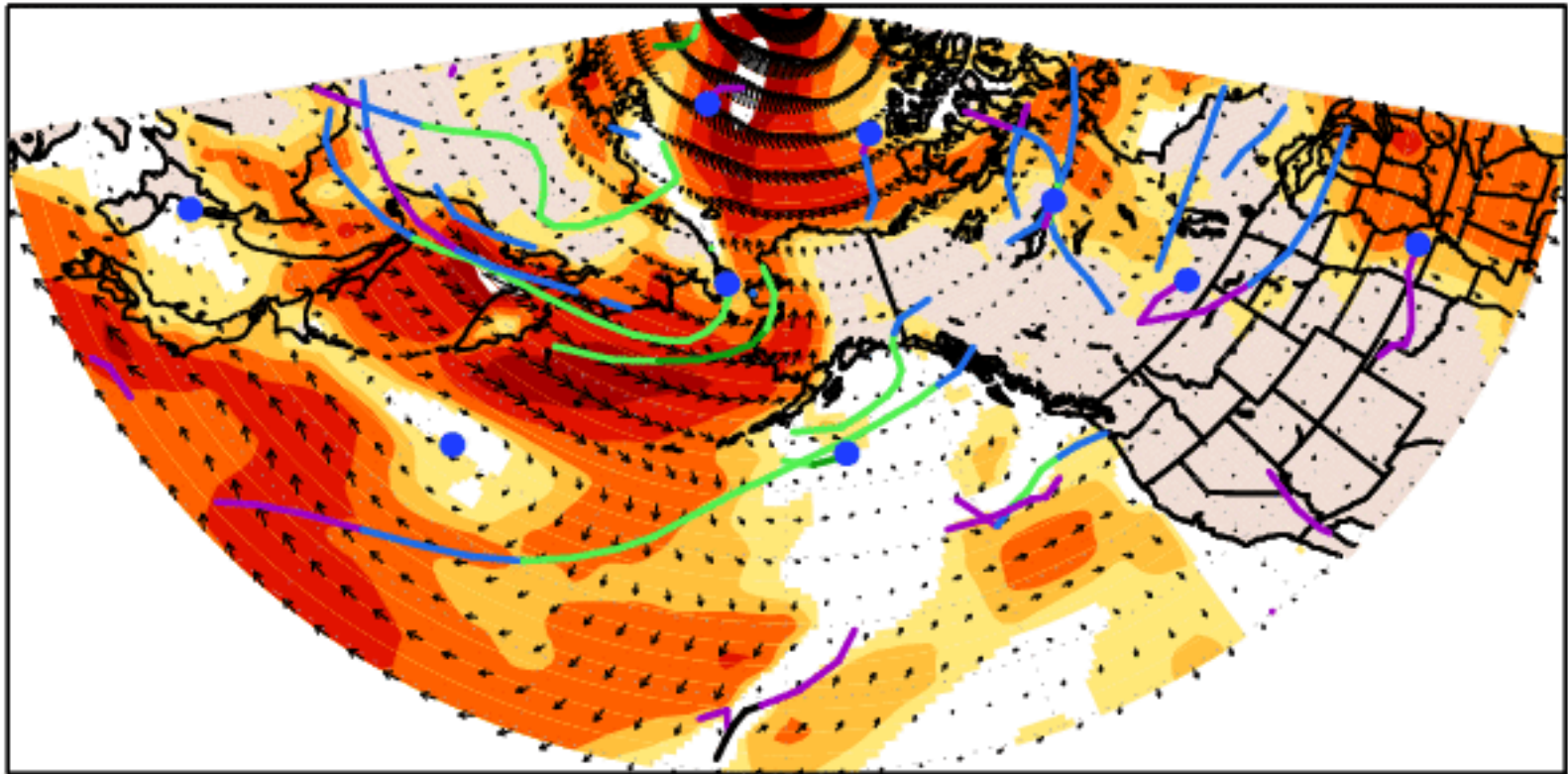


STORM TRACK KEY:

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

Example 2: Storm Tracks / Low-Level Wind

10 day Wind Speed (m/s) -- 11 OCT 2005 -- 20 OCT 2005

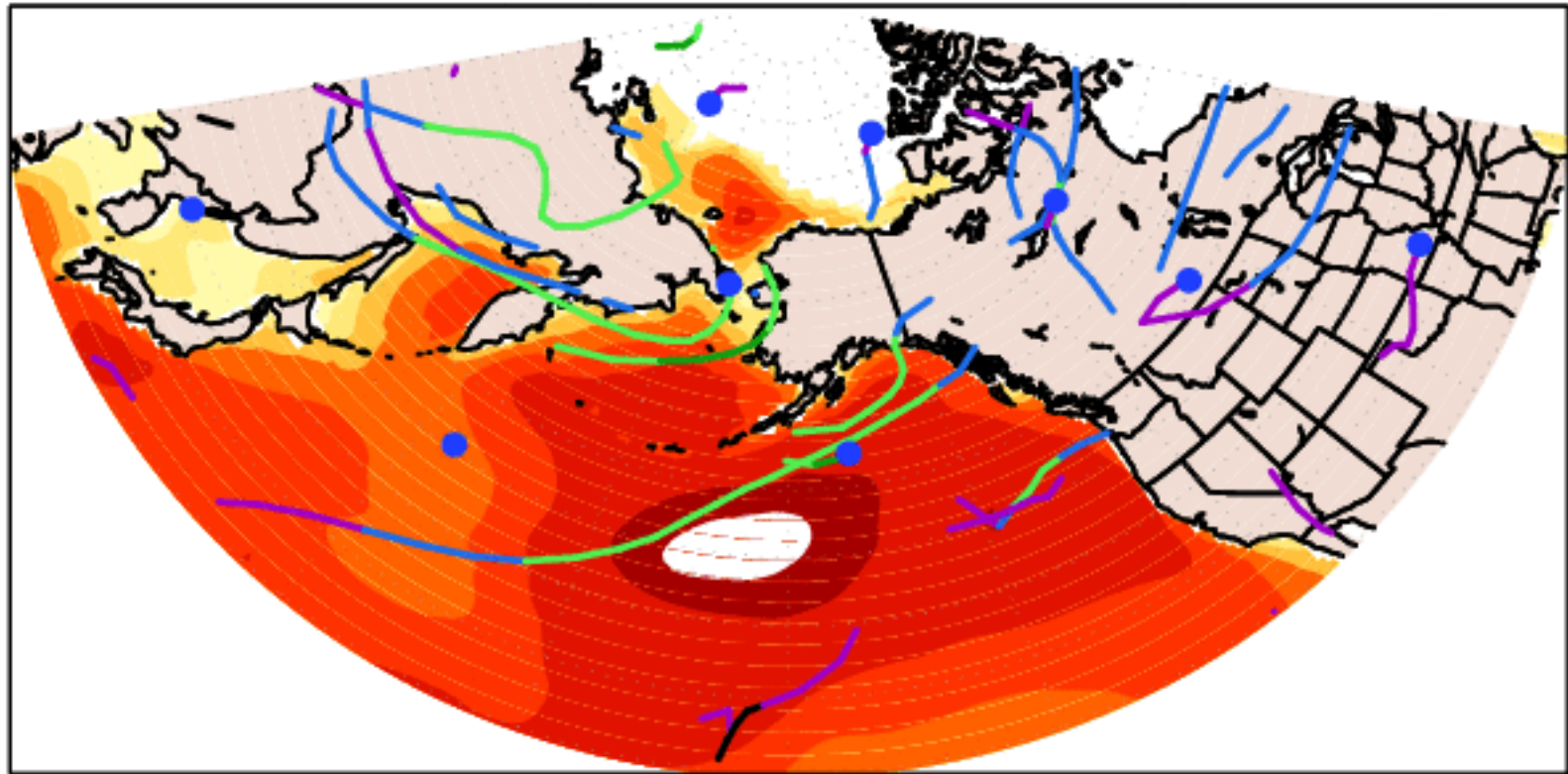


STORM TRACK KEY:

< 972 mb	—
972 mb - 992 mb	—
992 mb - 1004 mb	—
1004 mb - 1012 mb	—
> 1012 mb	—

Example 3: Storm Tracks / Wave Heights

10 day Wave Hgts (m) -- 11 OCT 2005 -- 20 OCT 2005



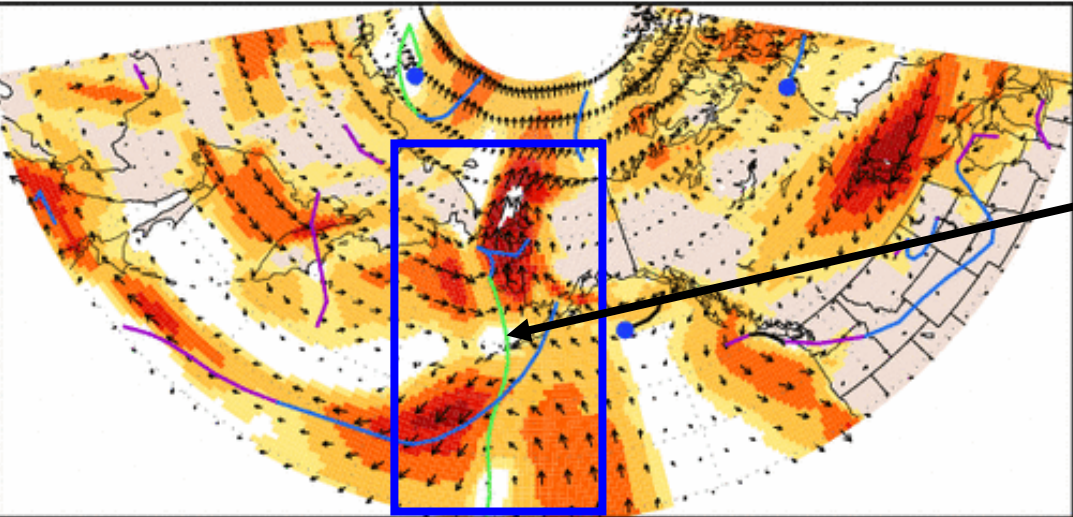
STORM TRACK KEY:

< 972 mb	—
972 mb - 992 mb	—
992 mb - 1004 mb	—
1004 mb - 1012 mb	—
> 1012 mb	—

Alaskan West Coast Impacts

925 hPa Wind Anomalies

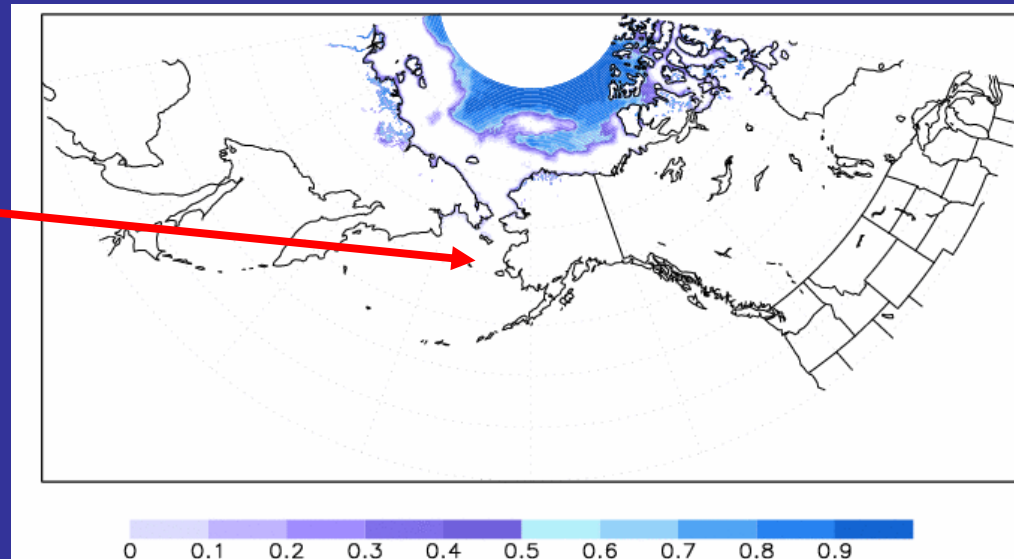
Oper GFS Wind Spd (m/s) -- 12SEP2006 -- 19SEP2006



Strong cyclone enters and slows in the Bering Sea. Wind and wave action for the west coast increases.

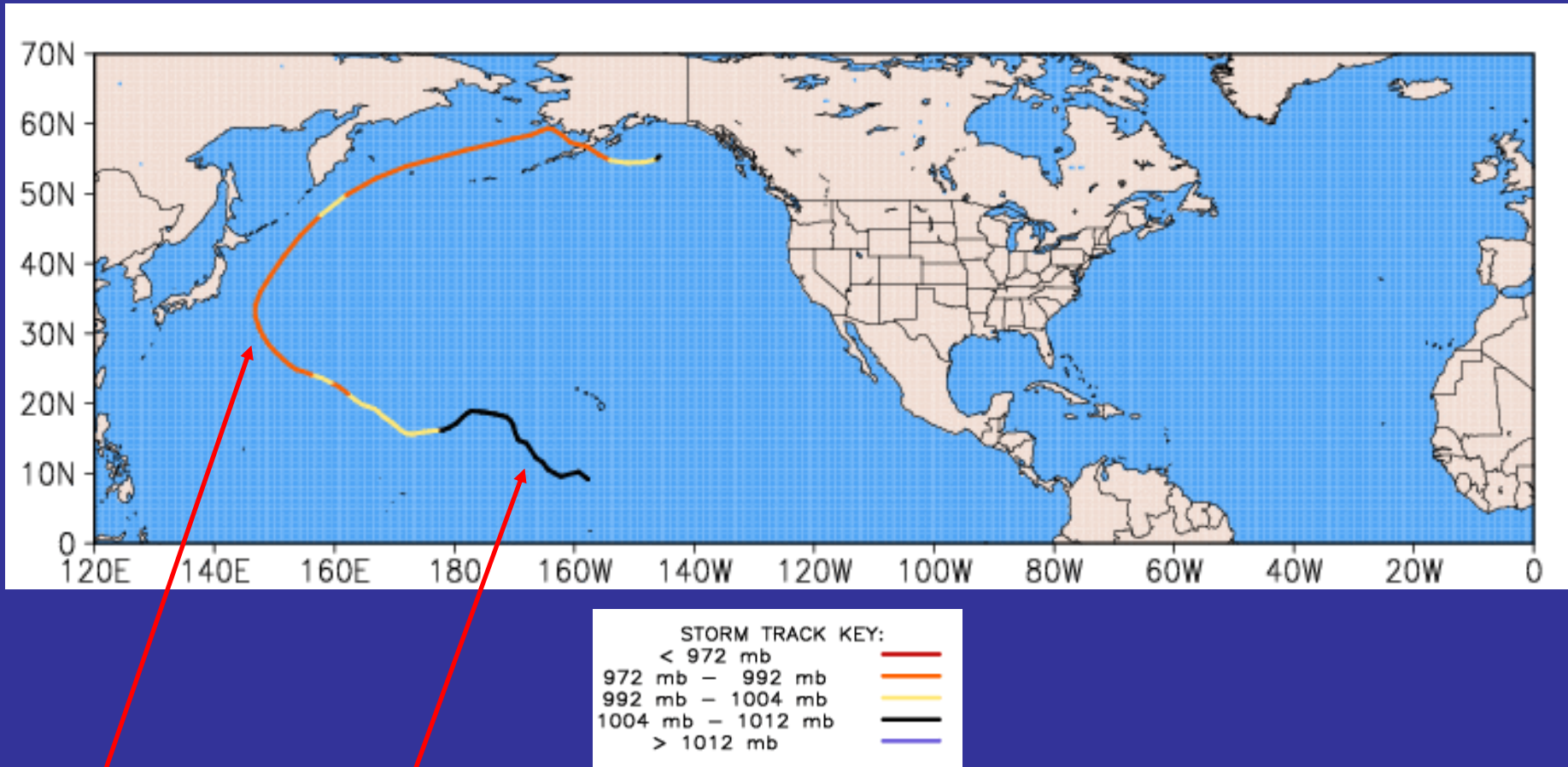
Average Sea Ice Fraction

During late summer and fall, storminess in the Bering Sea is important to monitor. Waters are free of sea ice.



Typhoon Recurvature

Hurricane Ioke August-September 2006



Hurricane Ioke develops south of Hawaii, recurves east of Japan, becomes extratropical and impacts the southern sections of Alaska.

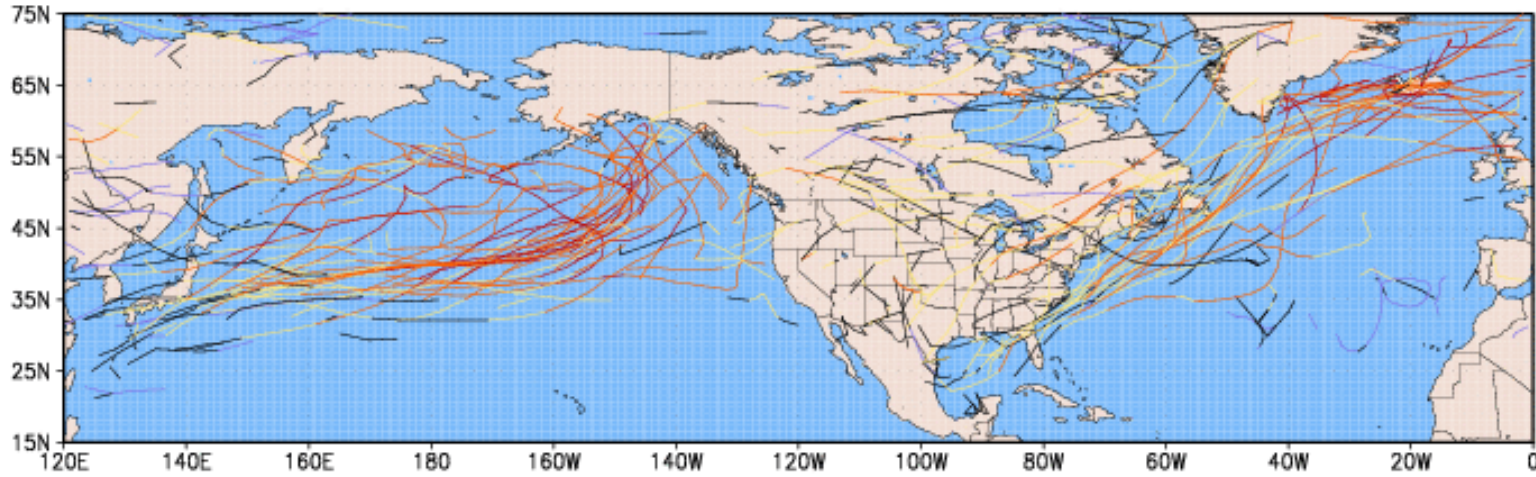
Quick Tour of CPC website

El Nino / La Nina Examples

STORM TRACK KEY:	
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972 mb - 992 mb	Orange line
992 mb - 1004 mb	Yellow line
1004 mb - 1012 mb	Black line
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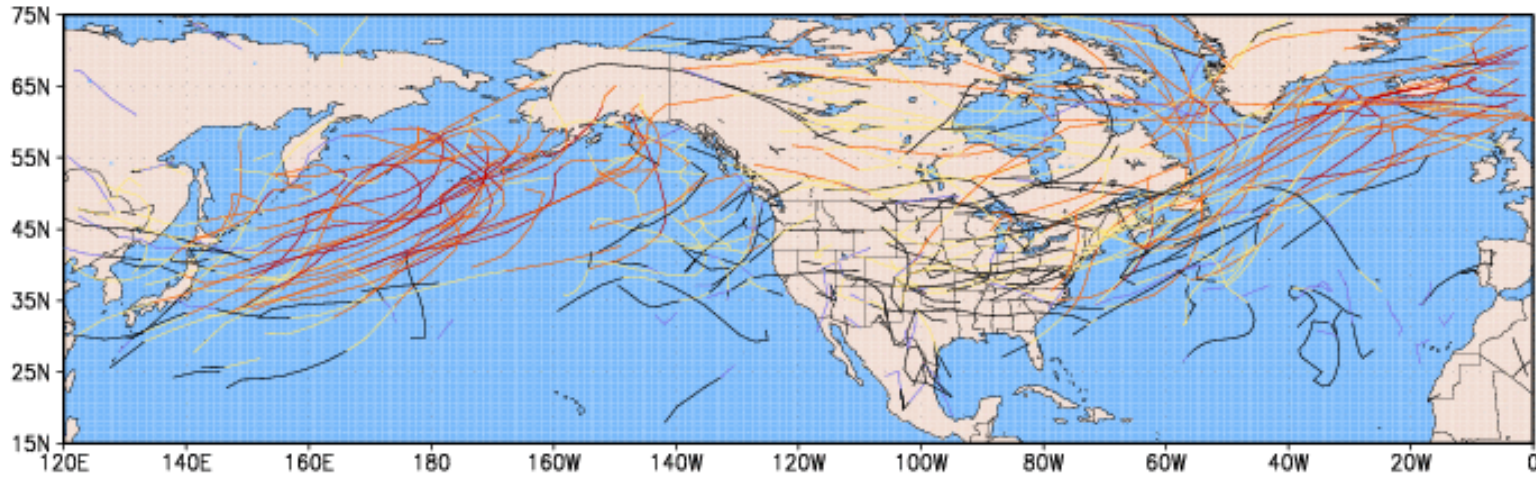
El Nino

Storm Tracks--GR--JFM--1983



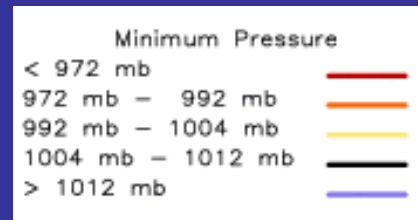
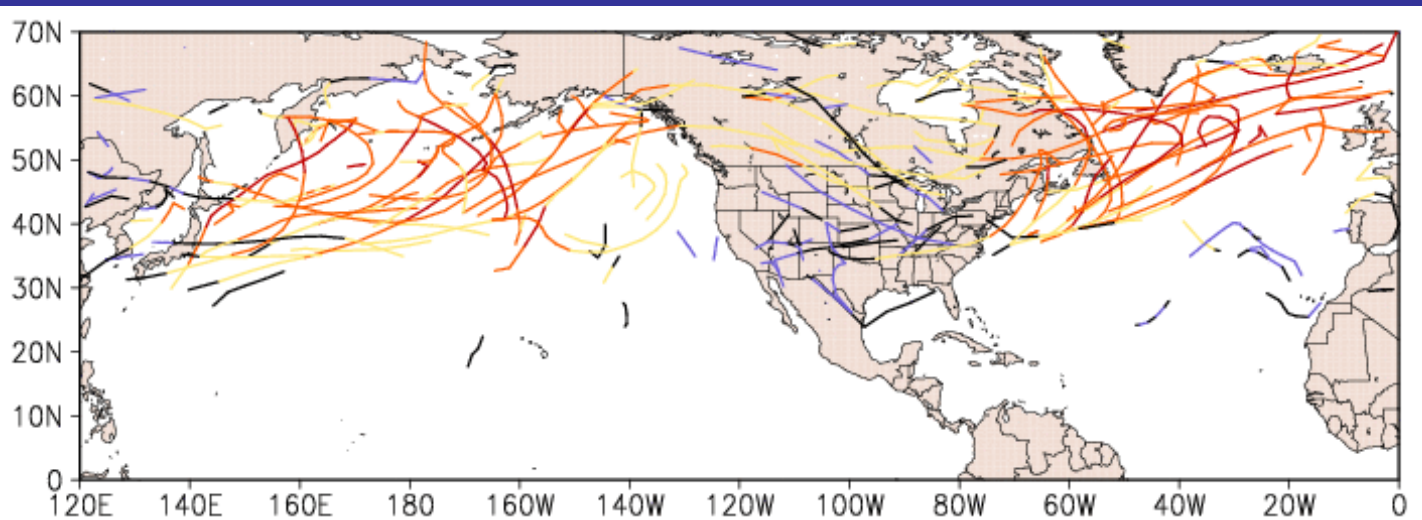
La Nina

Storm Tracks--GR--JFM--2000

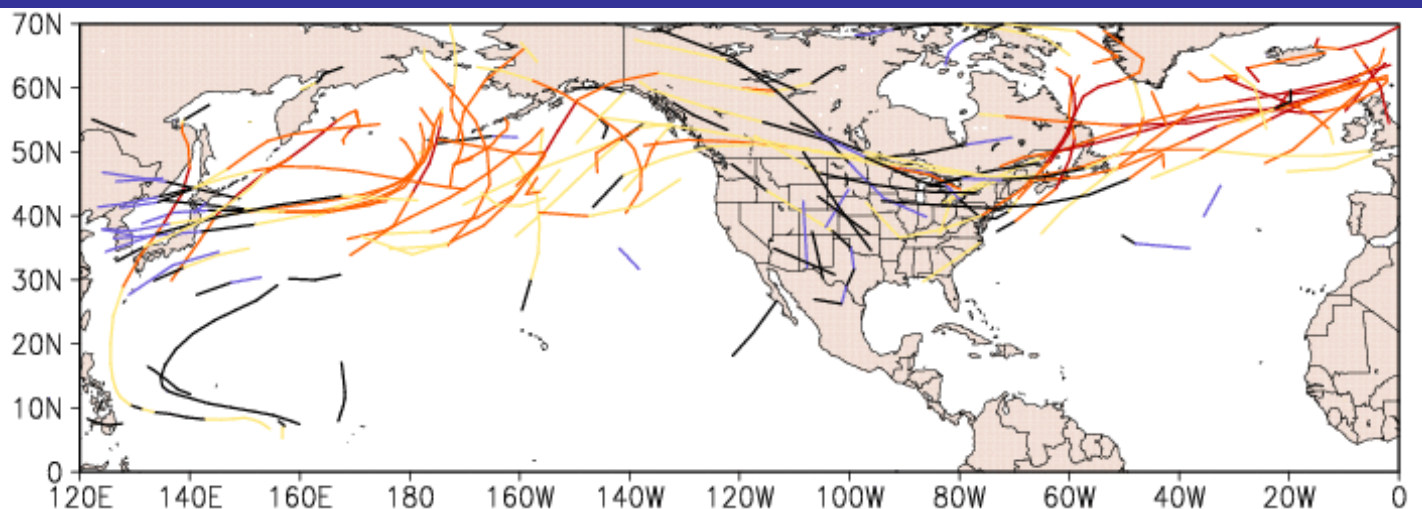


Model Storm Tracks – Subseasonal/Seasonal

Actual storm tracks (January 6, 2007 - February 20, 2007)



Weather Forecast Model storm tracks (January 6, 2007 Forecast)



Climate-Weather Linkage

- ENSO example on previous slide illustrates the relationship between climate and weather
- Would like to extend that statement to read:

Illustrates the linking of climate to weather *for realtime, specific applications*

- How can we work with you to make this happen?
- Is this information useful? If not, how can we make it useful?

Final Thoughts

- We have the potential to engage the application community with storminess related products at multiple time scales
- BUT we need to know the best way to do this!
- Please let us know if and how we can contribute!