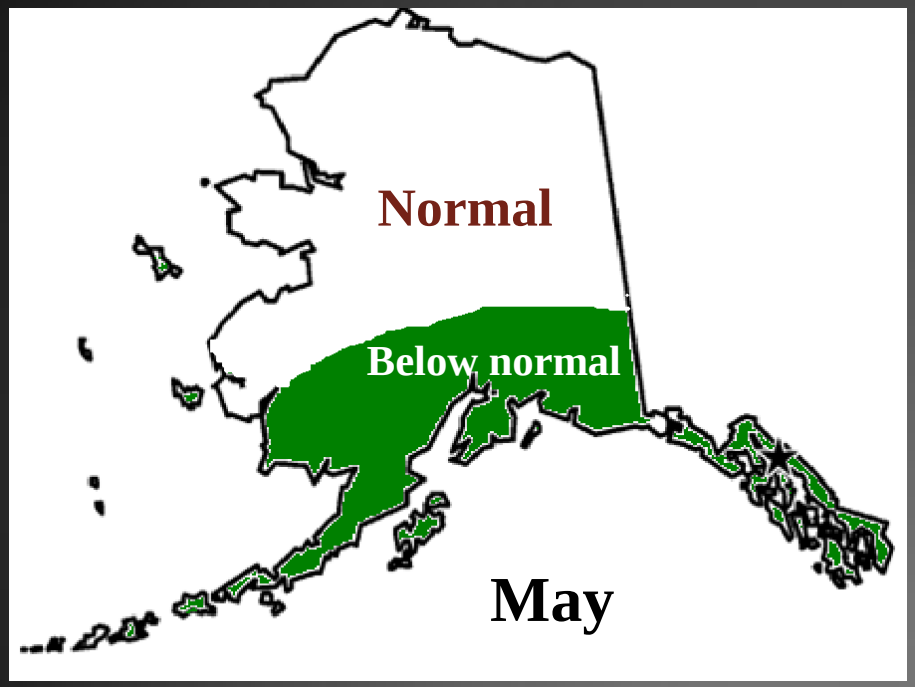
April Update…
Alaska Fire Season 2012

Sharon Alden and Heidi Strader

Alaska 2012 Fire Season Early Forecast



* Conversion to El Nino by July may lengthen and intensify the late fire season.

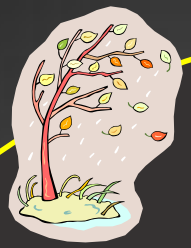
PREDICTIVE SERVICES

Overview

- General Factors
  - Three-month outlook
  - Snowpack and Fuel
- Teleconnections
  - Arctic Oscillation
  - Pacific Decadal Oscillation
  - El Nino Southern Oscillation Index
- Confidence Level
- AK and National Forecast

PREDICTIVE SERVICES

Factors Determining Fire Season



End of Season Fuels

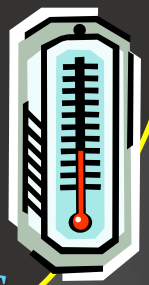
Spring Snowpack & Fuels

Atmospheric Teleconnections

August Rainfall

Showers & Thunderstorms

Human Factor



Summer Temperatures

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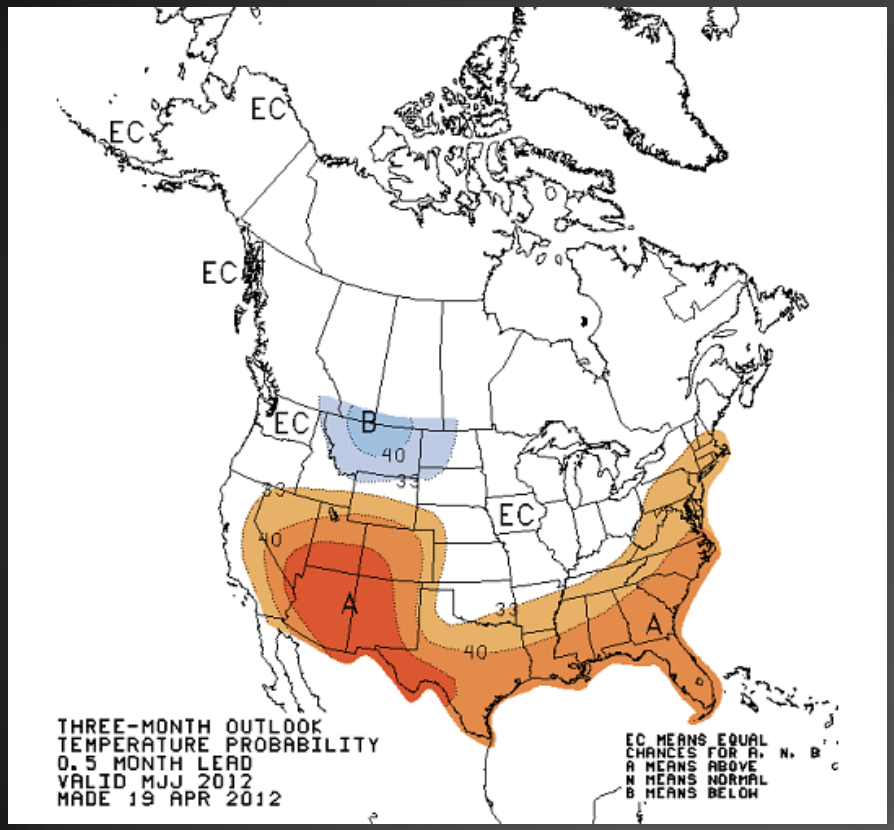
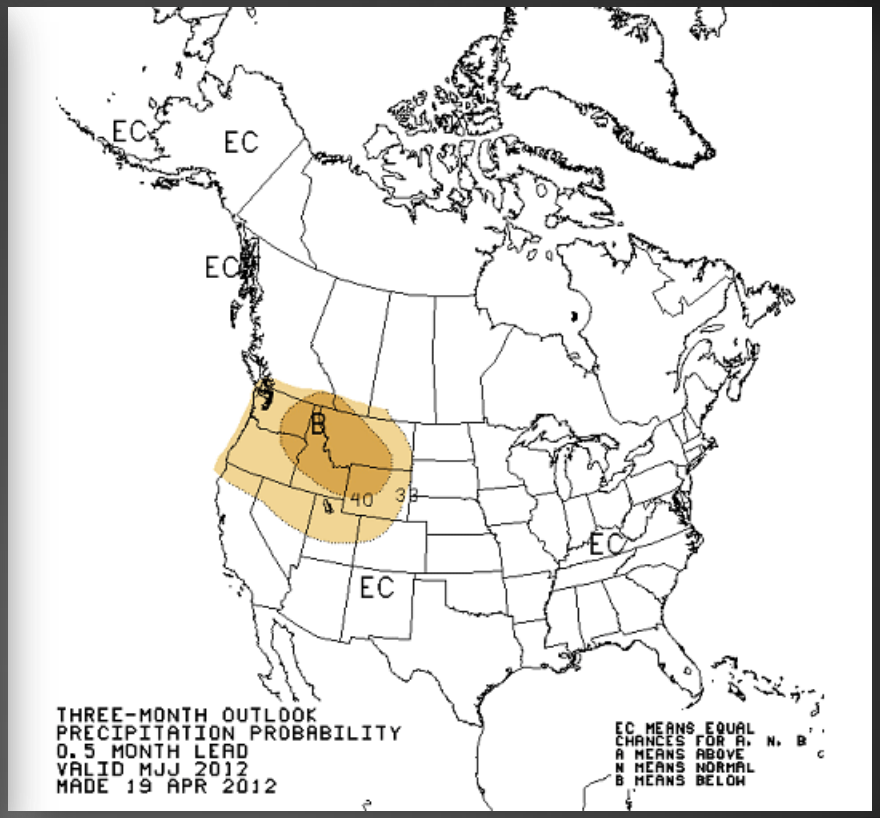
3-month Outlook





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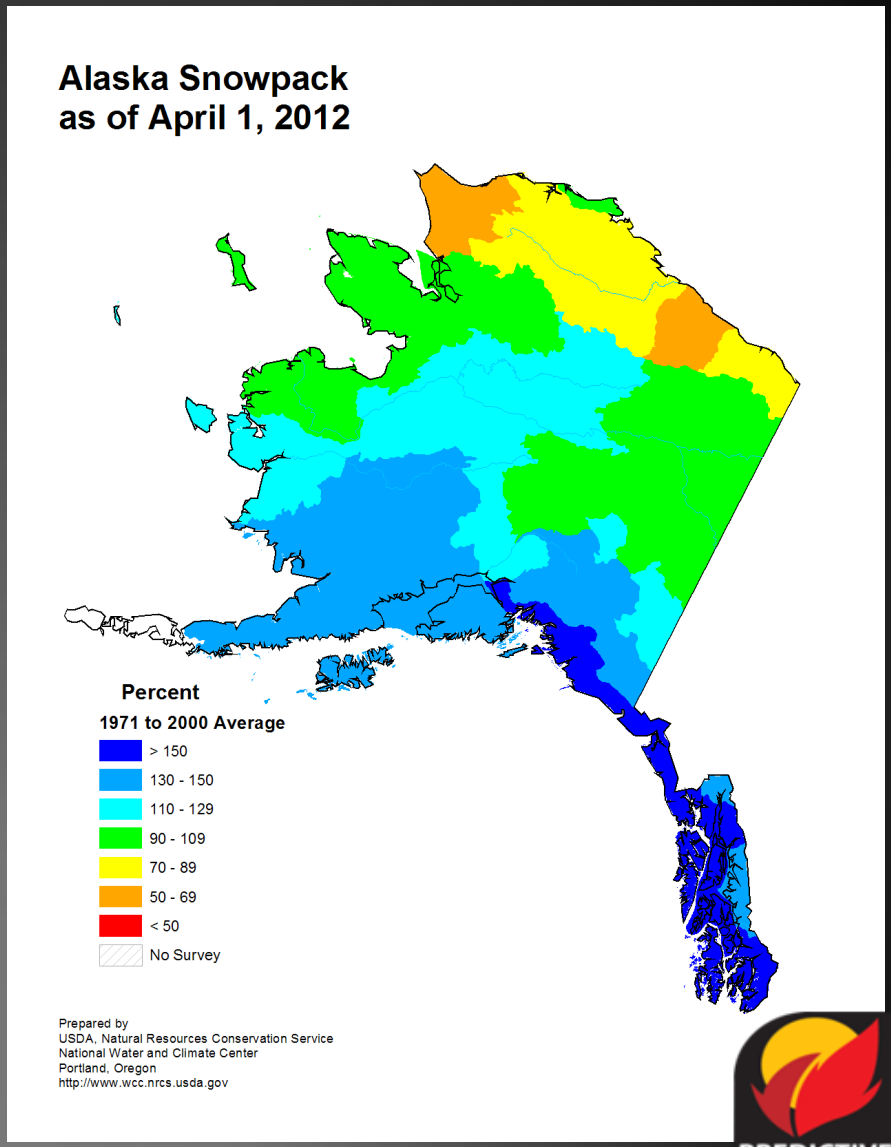
Snowpack

- Normal to high across most of Alaska.
- 150+% snowpack alg south coast
- Anchorage received nearly 11 ft of snow & broke their record!
- Widely varying, below normal on the North Slope.



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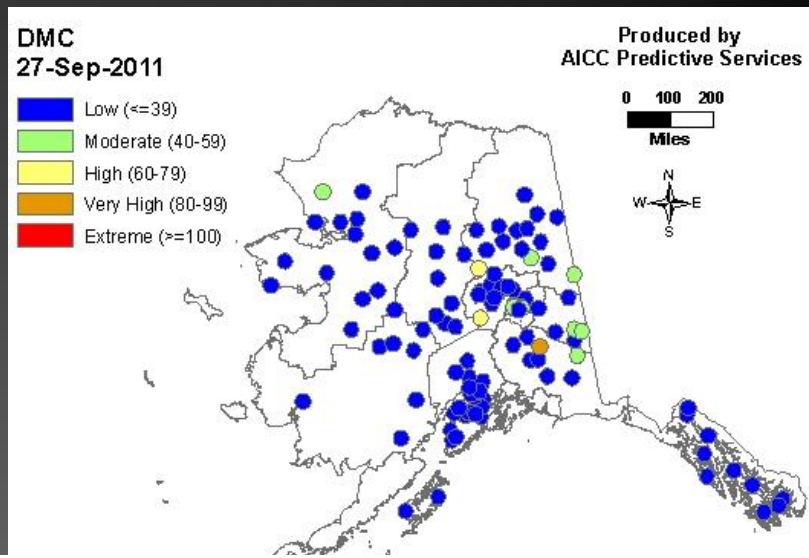
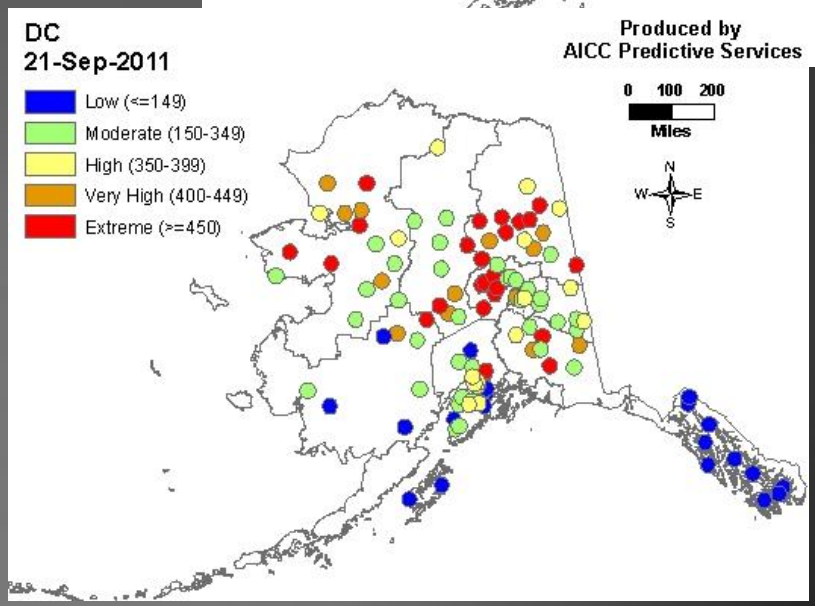
Fall Fuels

- Duff Moisture Code (DMC) showed damp mid layers
- Drought Code (DC) showed damp deep layers in south AK
- Dry areas around parts of northern AK involve only deepest layers, and are most extreme in Middle Tanana Valley and Yukon Flats
- These areas should easily recharge with melting of snowpack in spring.





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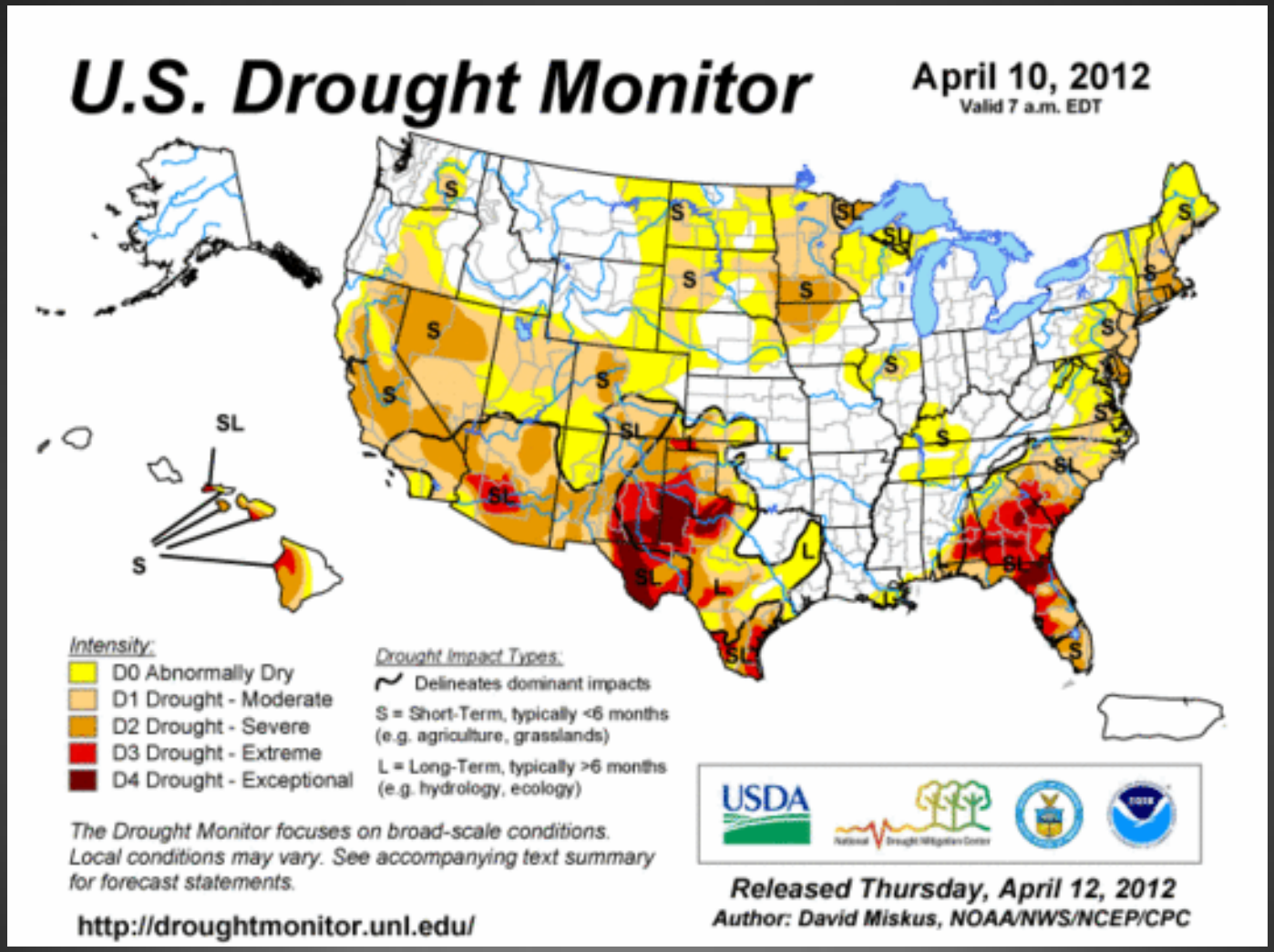
Drought Conditions



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Teleconnection (s)

Definition:

A linkage between weather patterns or changes occurring in widely separated regions of the globe.

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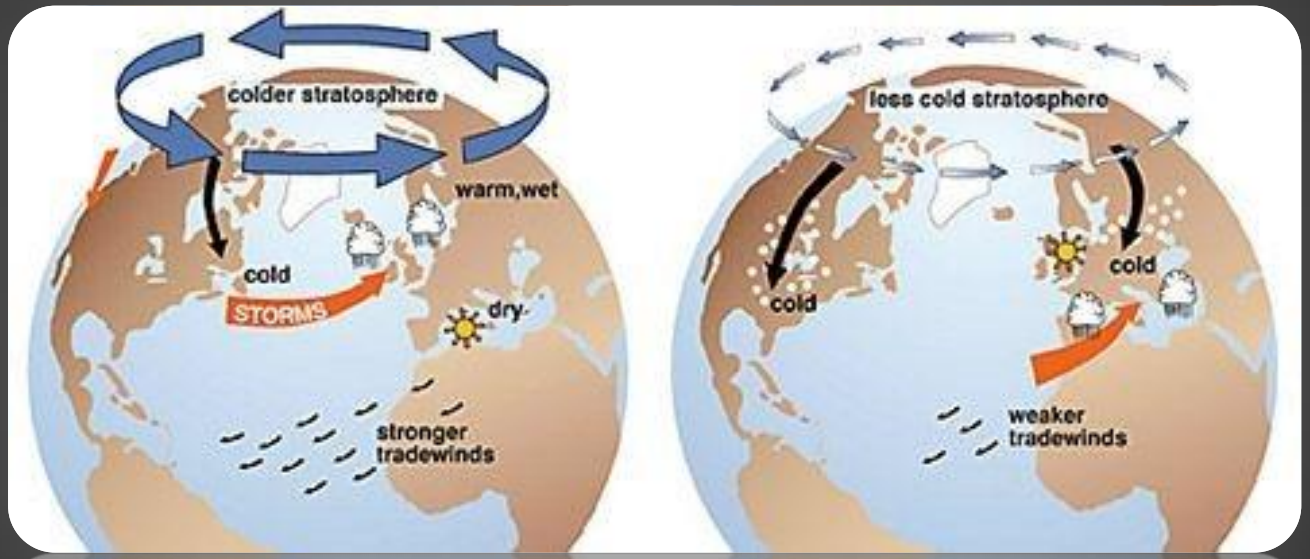
Arctic Oscillation

- Positive phase has been dominating this winter! Jet stream is farther north, along with most moisture and coldest weather.
- Lots of snow/cold for Alaska, not much for the Lower 48.
- Little value for fire season forecasting.



Positive Phase of AO

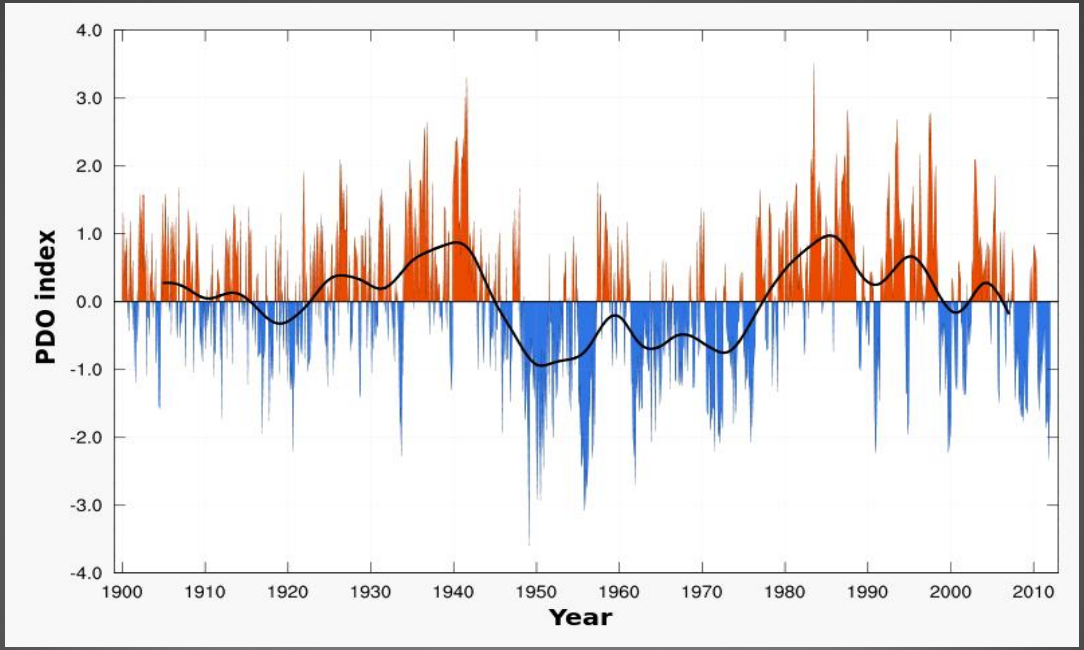
Negative Phase of AO

Figures courtesy of J. Wallace, University of Washington

PREDICTIVE SERVICES

Pacific Decadal Oscillation

- Pattern of pacific climate variability that shifts between the warm (+) or cool (-) phase, about every 20-30 years.
- Currently in cool phase.



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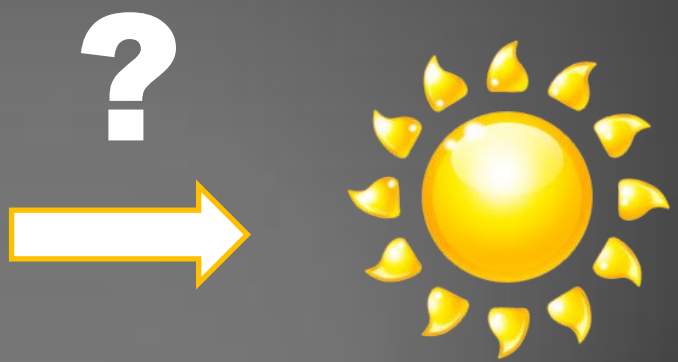
Pacific Decadal Oscillation

- In Alaska, in the cool PDO phase:
  - A dry winter is likely to be followed by a wet summer.
  - A wet winter is likely to be followed by a dry summer.
- Since winter 2011/2012 was pretty snowy…..will Alaska have a dry summer??? That would be in keeping with the pattern.



PREDICTIVE SERVICES

ENSO

- La Niña is moderating
- Most forecast models are indicating ENSO neutral (-0.5 to +0.5) for the summer
- Under these conditions, our biggest and smallest seasons have occurred

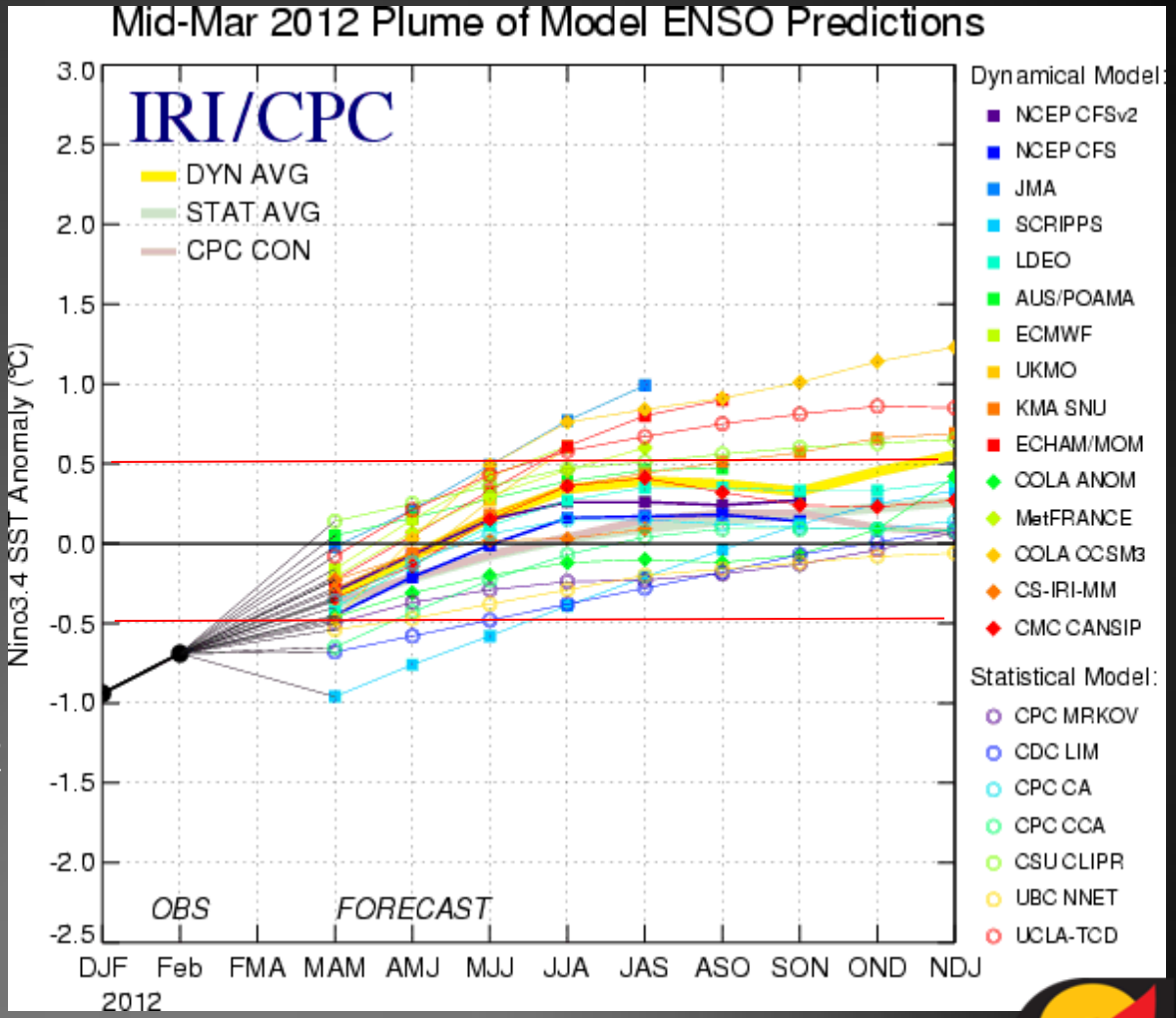


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 16 March 2011).

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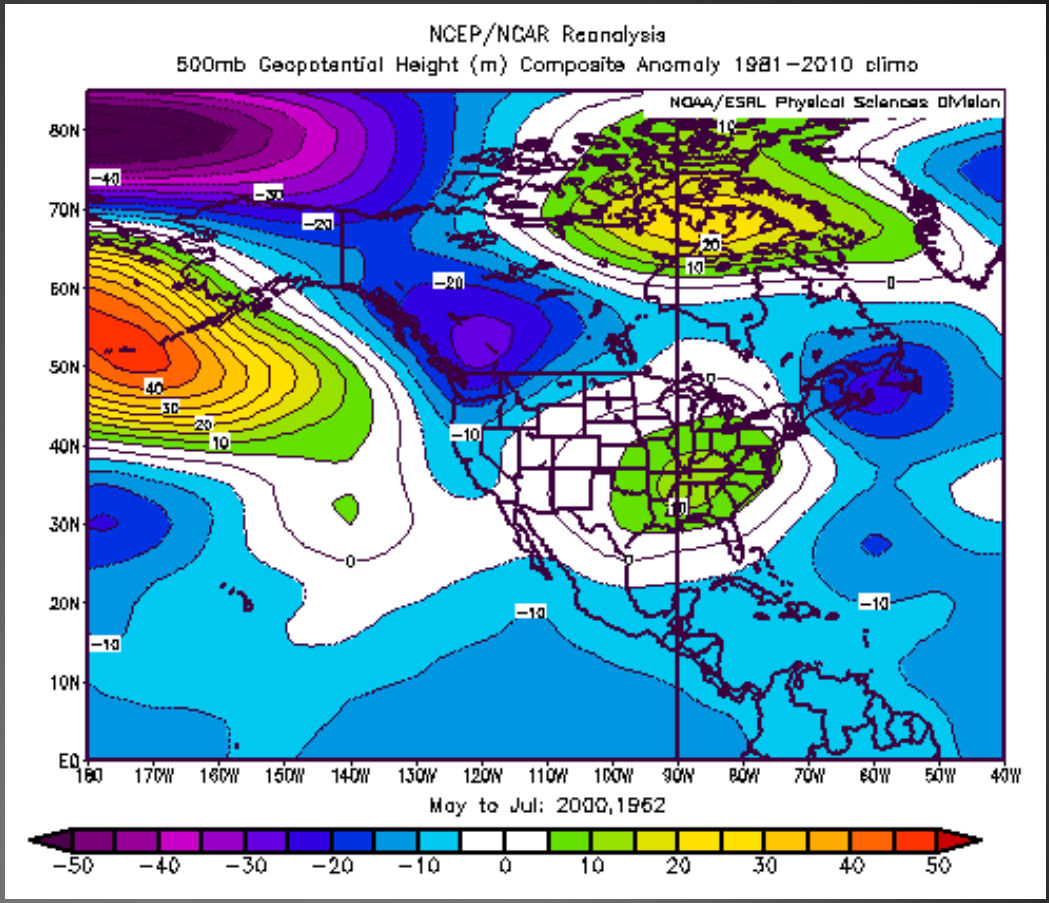
ENSO: Neutral

- 1962: 39,000 ac
- 2000: 756,300 ac

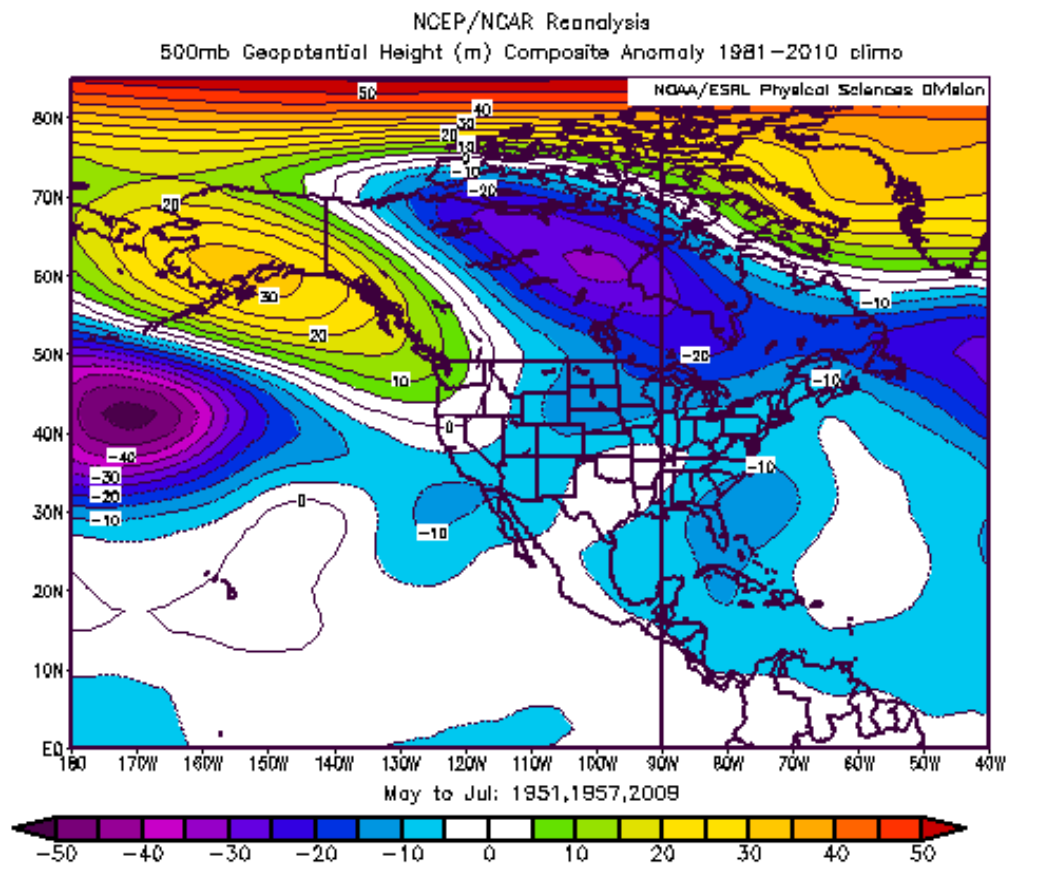


Average 500 mb height anomalies for May and June, using analog years of 1962 and 2000.

PREDICTIVE SERVICES

ENSO: El Niño

- 1951: 221,700 ac
- 1957: 5,000,000 ac
- 2009: 2,900,000 ac



Average 500 mb height anomalies for May and June, using analog years of 1951, 1957, and 2009.

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Confidence: Moderate

- Many factors are always hard to forecast before season
  - Difficult to pinpoint lightning intensity and location
  - Timing and duration of precipitation- showers
- The Big Wildcard:
  - La Niña/El Niño changes between May and July will be the key to the summer's forecast.
    - ENSO neutral will keep fire season to normal time frame.
    - El Niño state will likely prolong fire season and heat things up!

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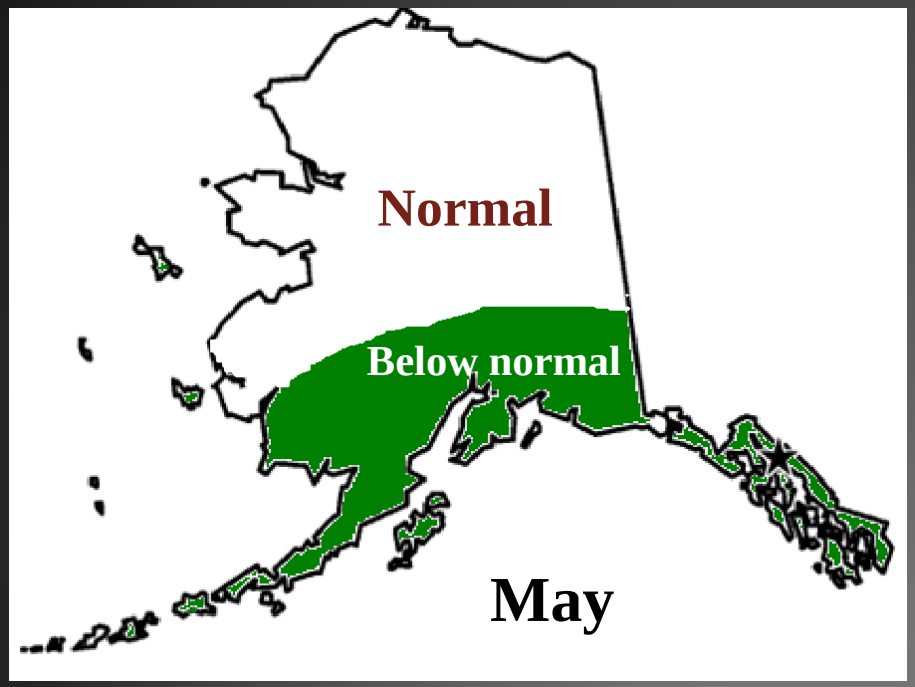
Alaska 2012
Fire Season Forecast



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PREDICTIVE SERVICES

That concludes our

2012

Alaska Fire Season Forecast!

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