

Salt Lake City Tribune August 2015

INDESCRIBABLE...

INDESTRUCTIBLE!

NOTHING CAN STOP IT!

THE BLOB



STORY BY
**STEVEN
McQUEEN**

ANITA CORSEAUT · EARL ROWE

PRODUCED BY JACK H. HARRIS · IRVIN S. YEAWORTH, JR. · THEODORE SIMONSON AND KATE PHILLIPS

DIRECTED BY

SCREENPLAY BY

FROM AN IDEA BY HOWE H. TULLOCH
A TONY V. IN. PRODUCTION · USA IN BY DE LORE

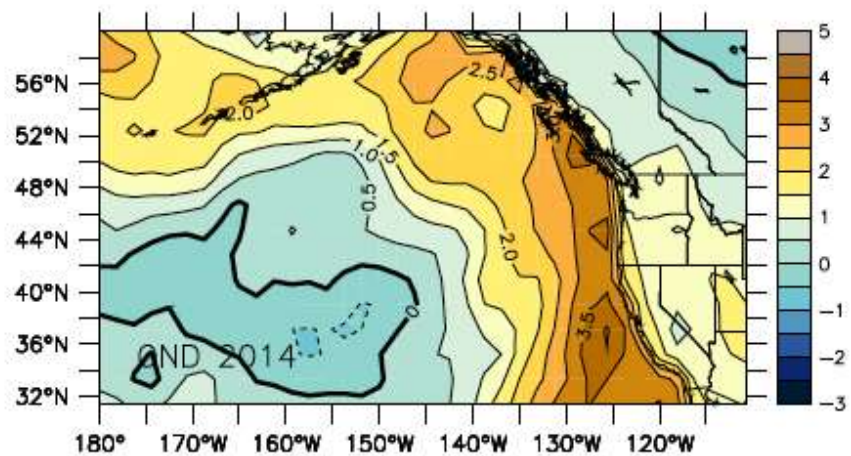
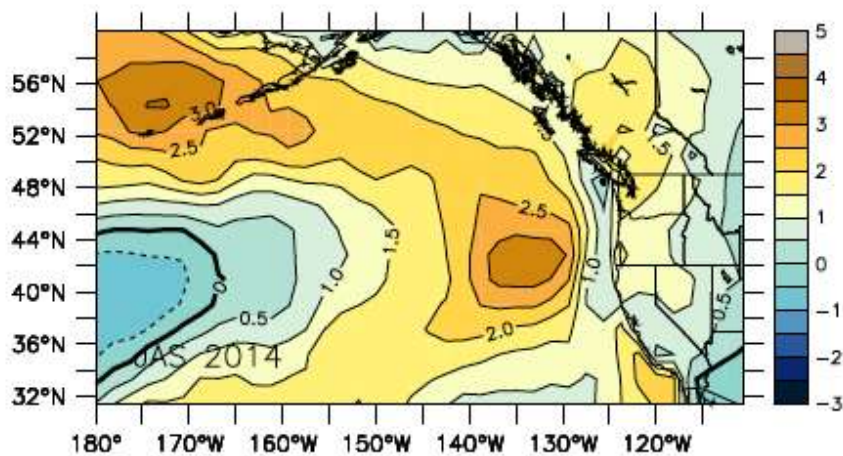
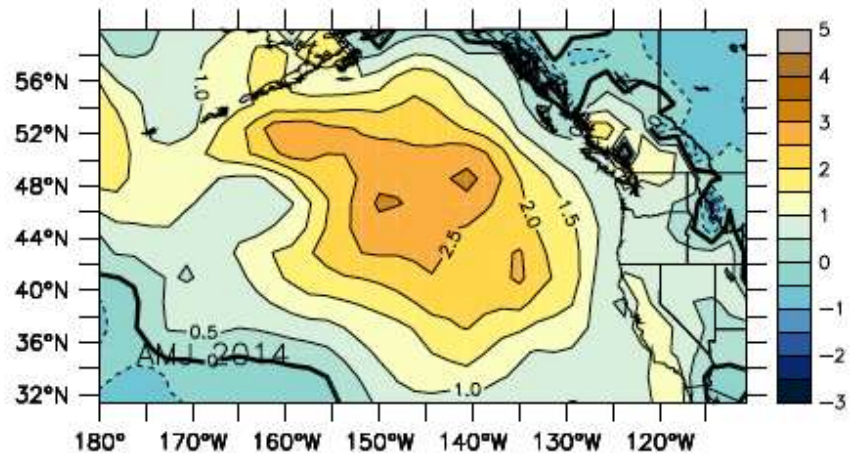
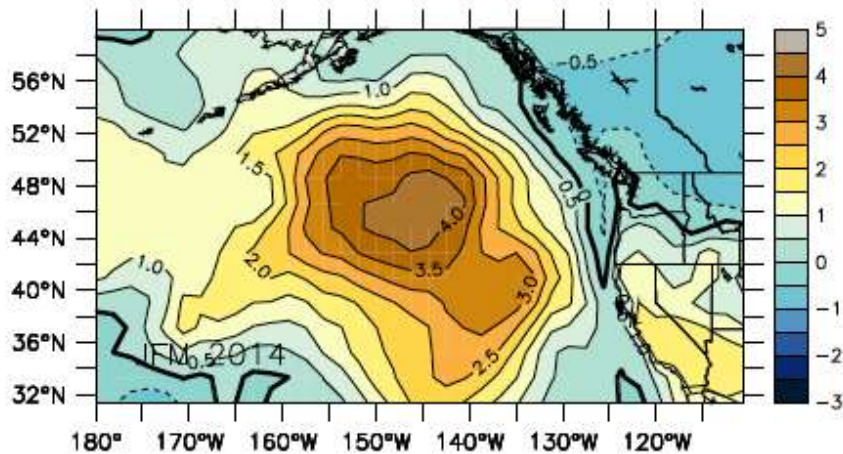
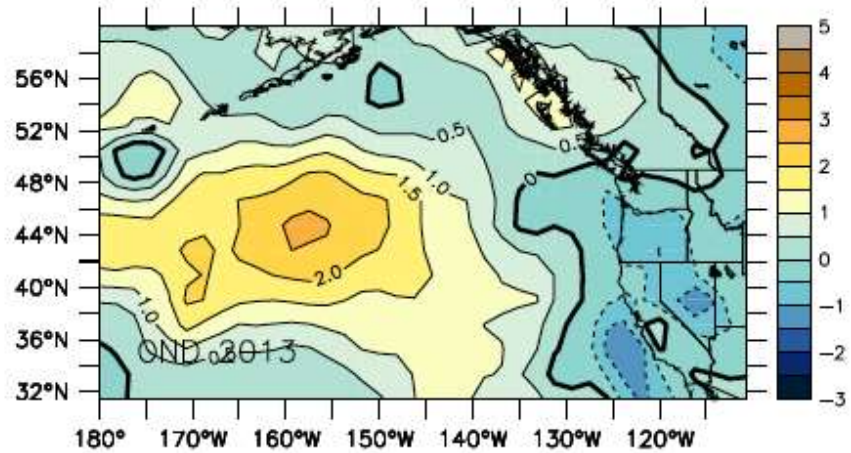
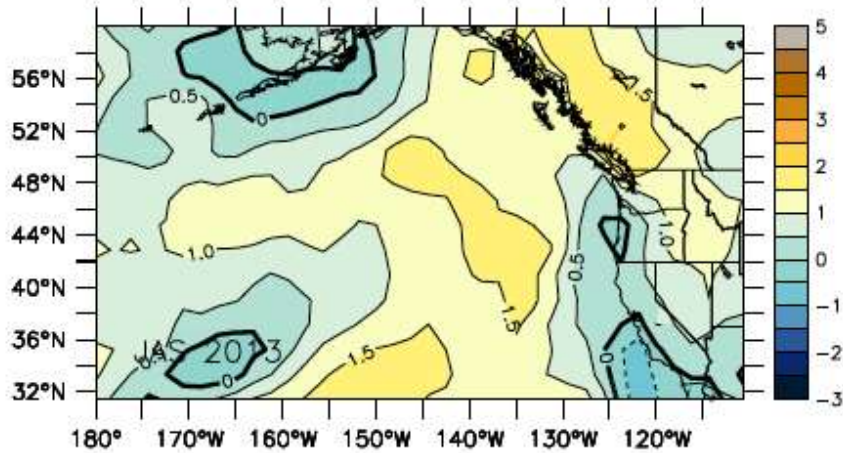
Physical Ocean Conditions and Development of the Blob



Evolution

Predictability

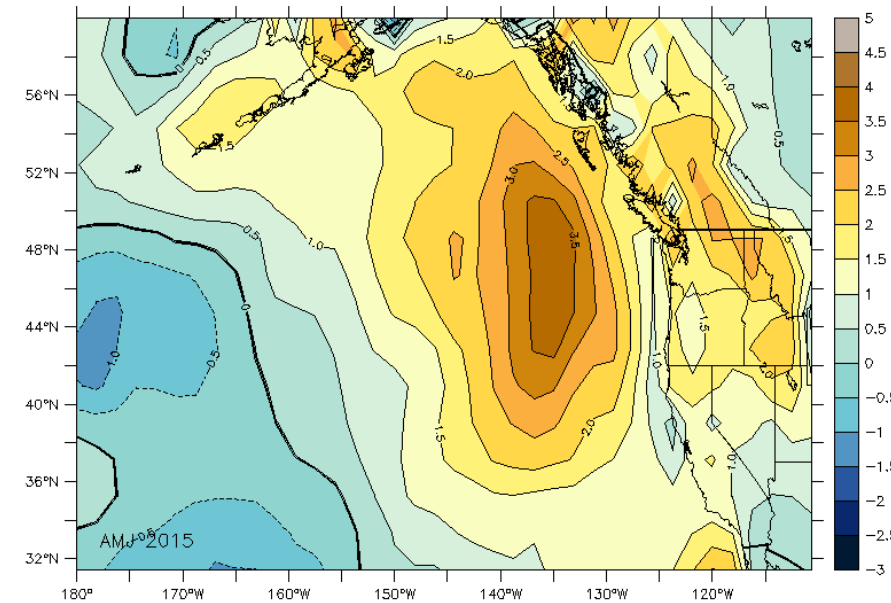
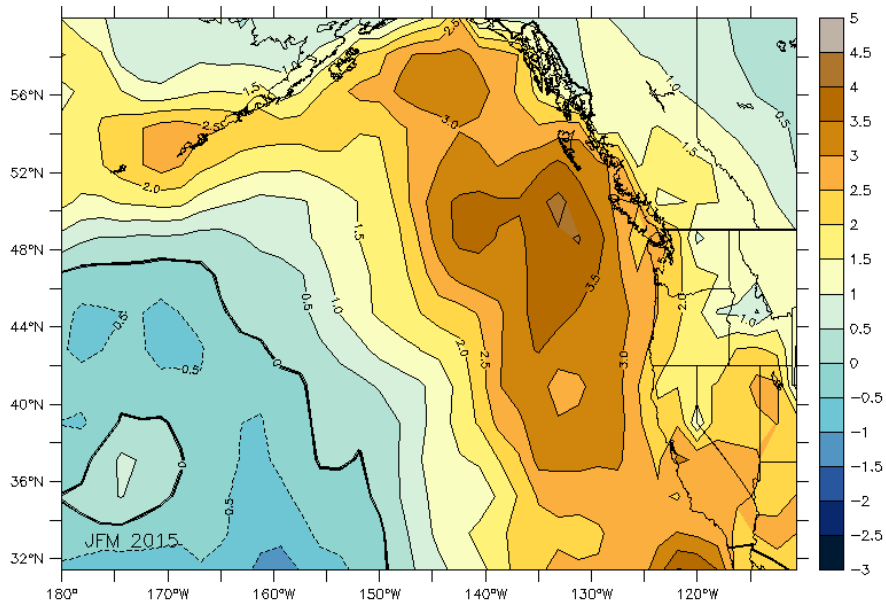
Climate Change Context



Jan-Mar

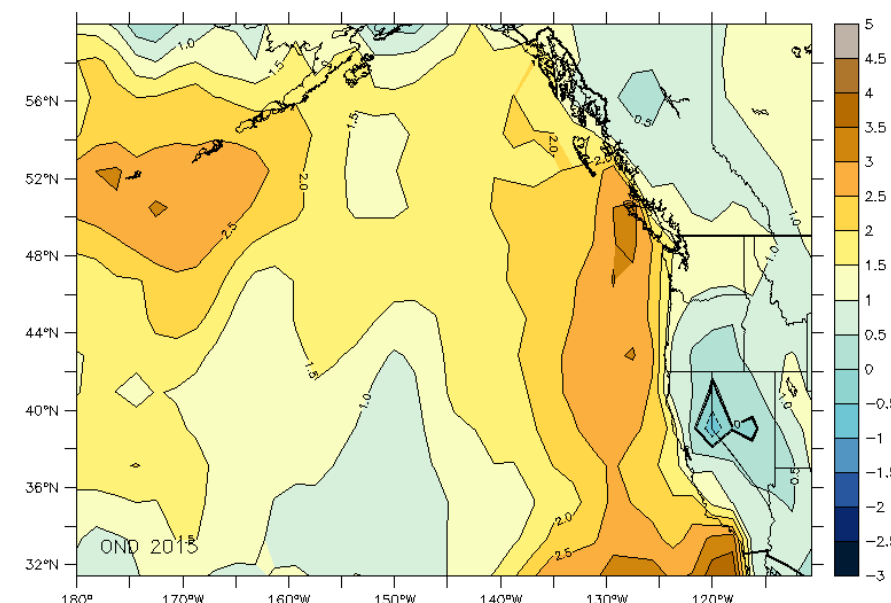
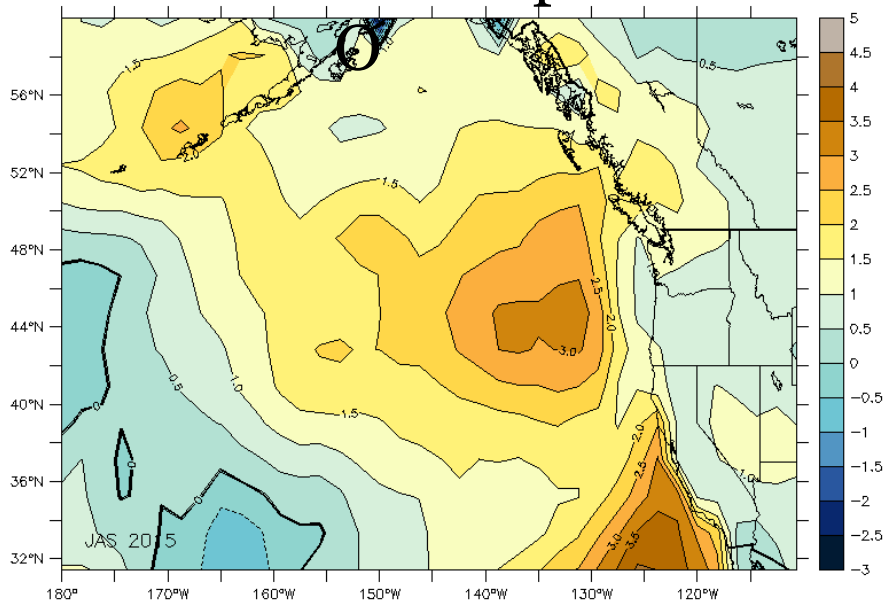
2015

Apr-Jun

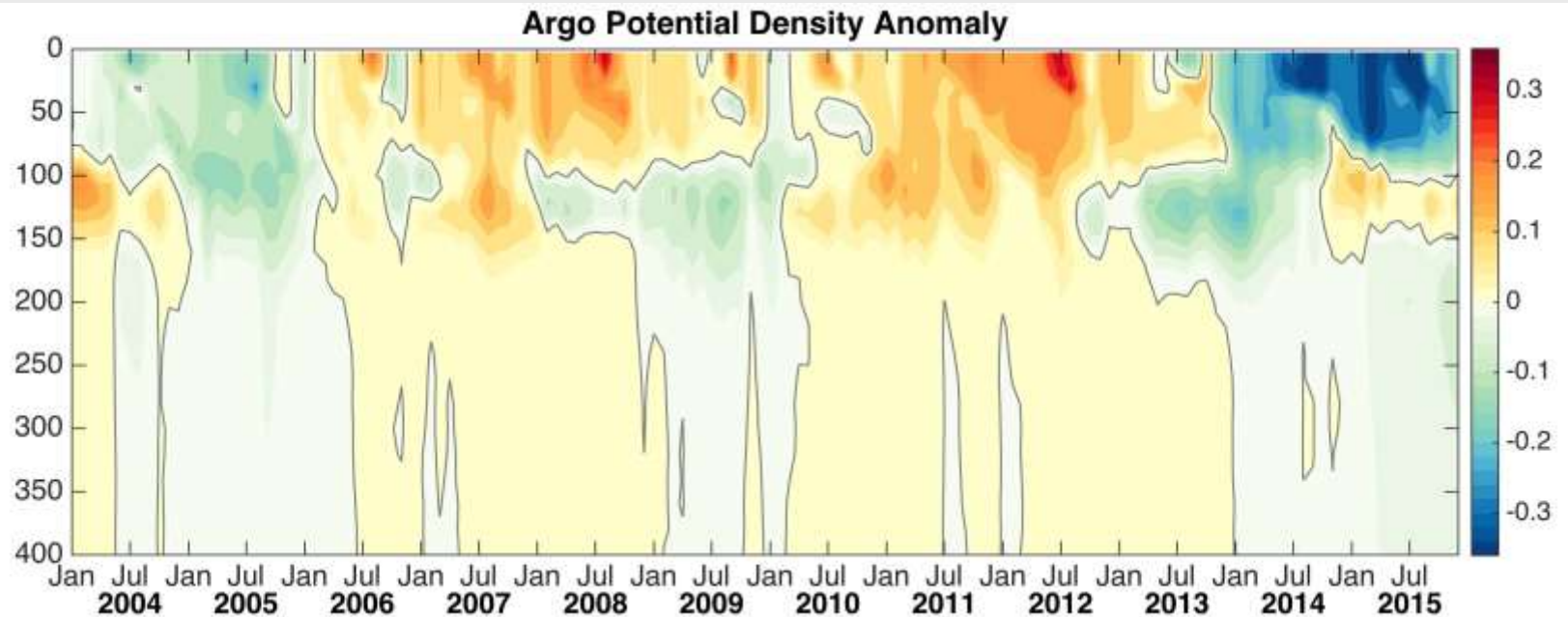
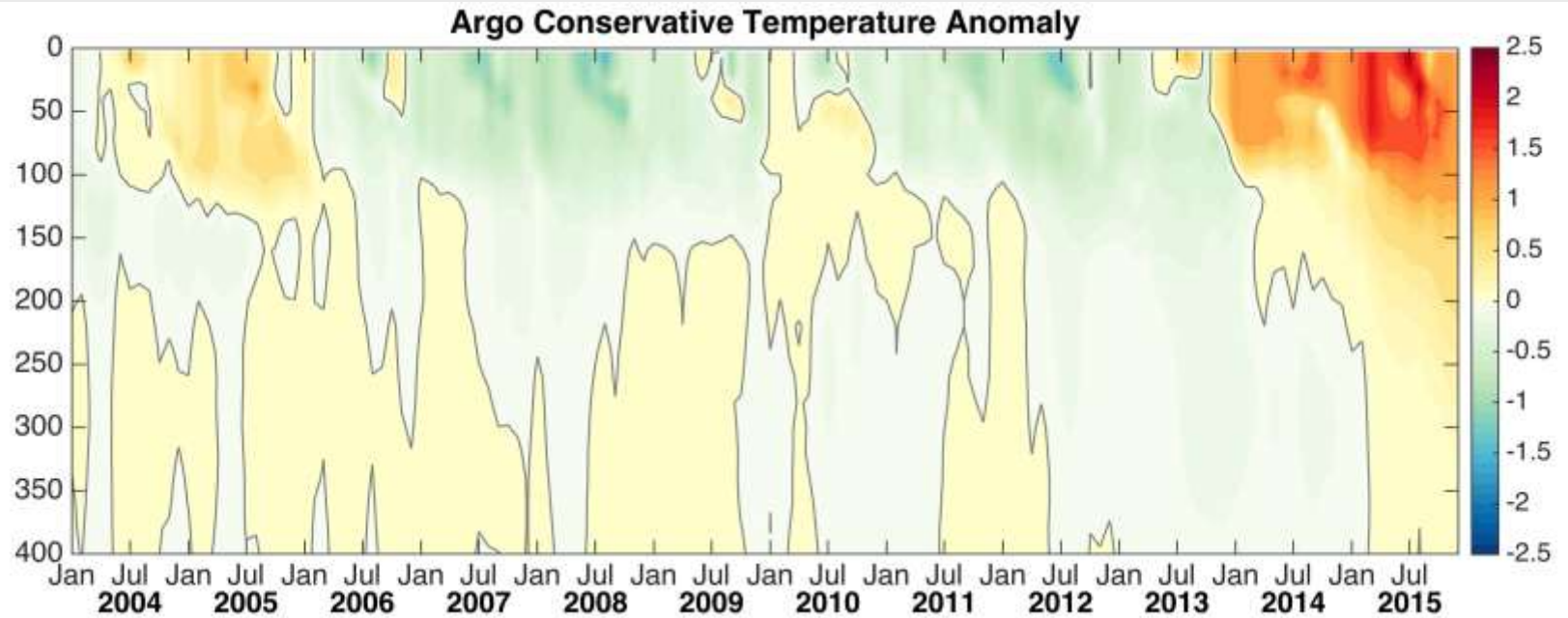


Jun-Sep

Oct-Dec

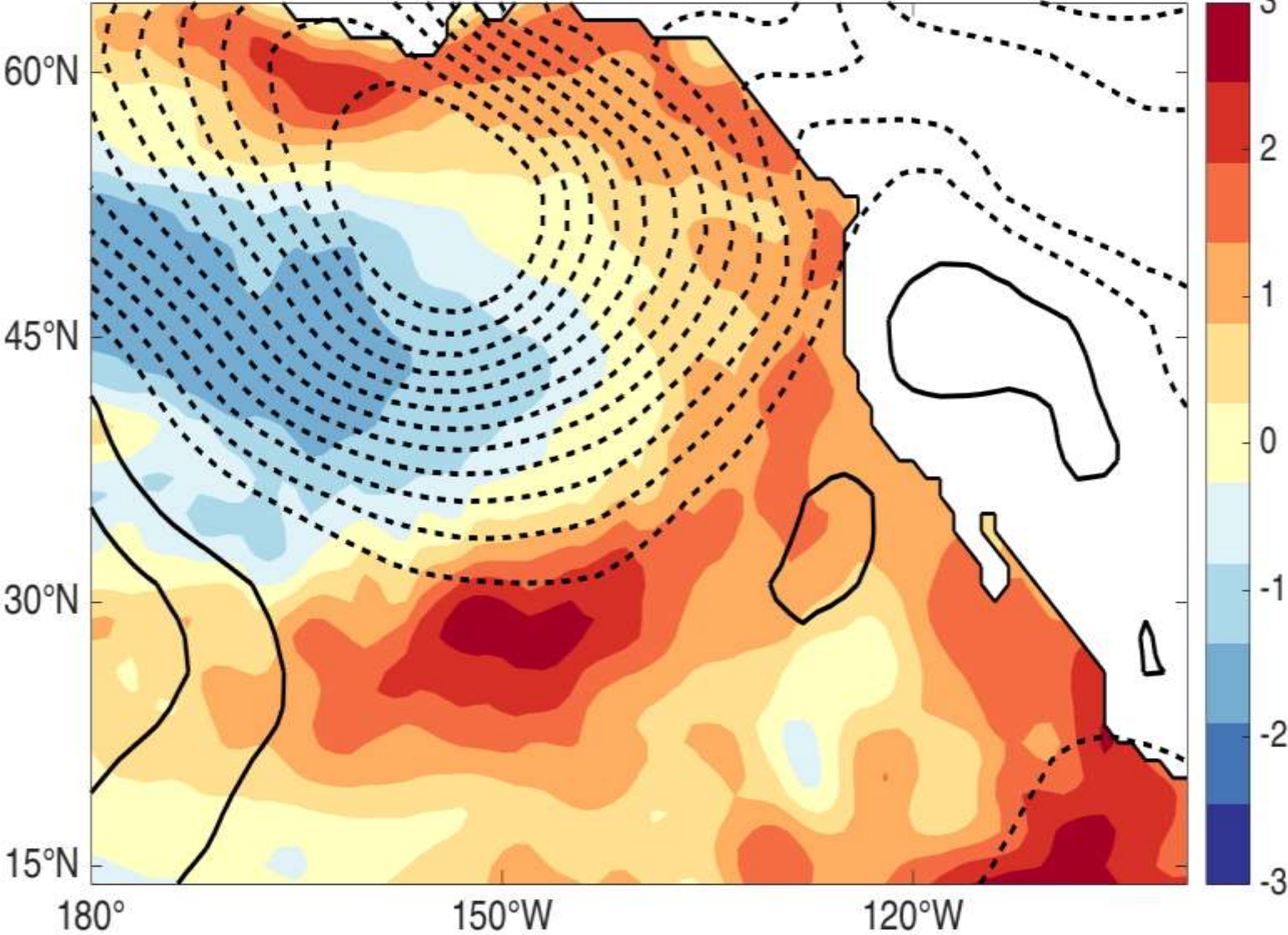


Time-Depth Averages for 45-55 N, 145-135 W



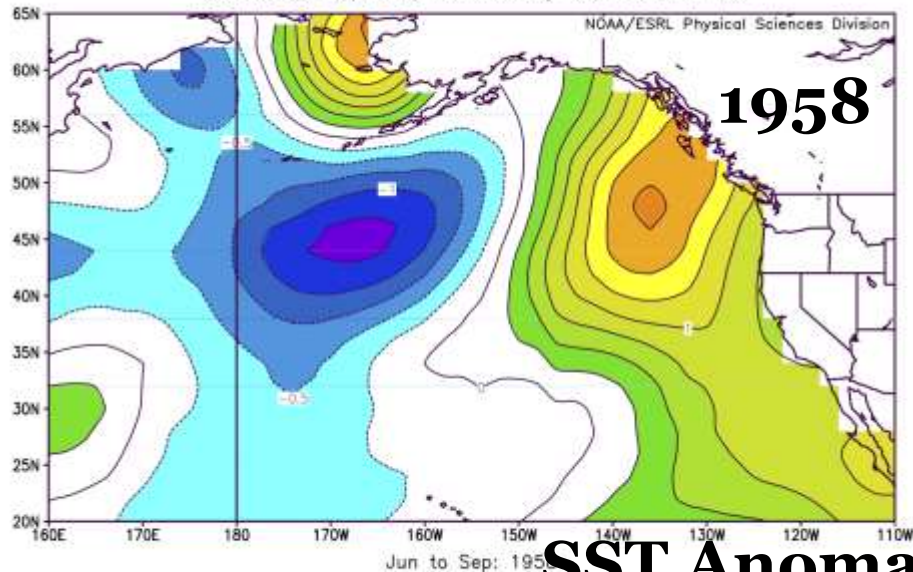
Recent SLP (contours) and SST (color fill) Anomalies

JFM 2016

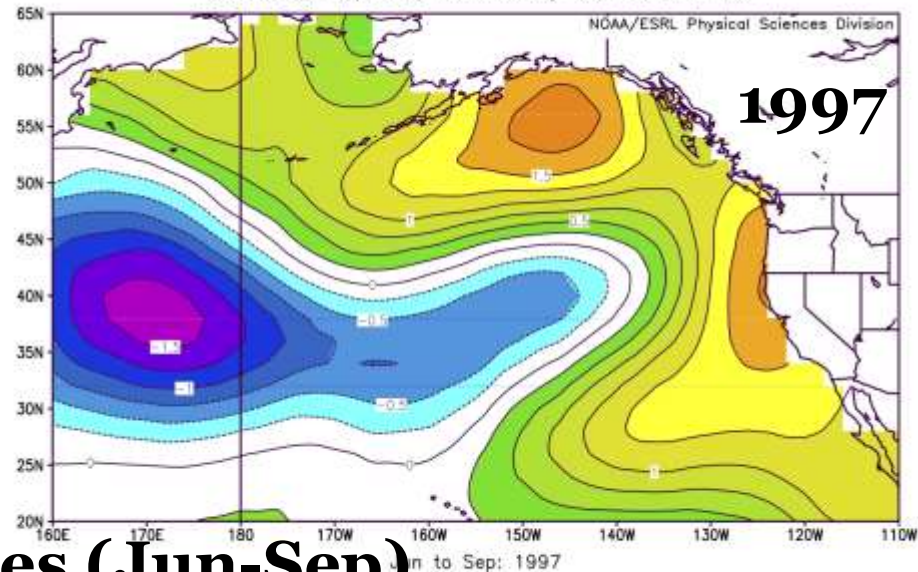


Is there precedent for the recent warmth in the NEP?

NOAA Extended SST V4 (ERSST)
Surface SST (C) Composite Anomaly 1981–2010 climo



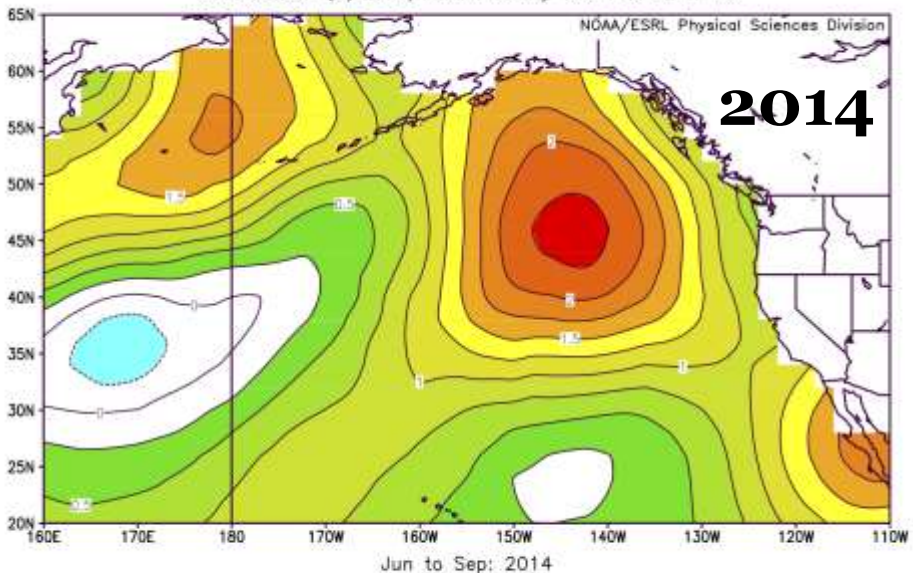
NOAA Extended SST V4 (ERSST)
Surface SST (C) Composite Anomaly 1981–2010 climo



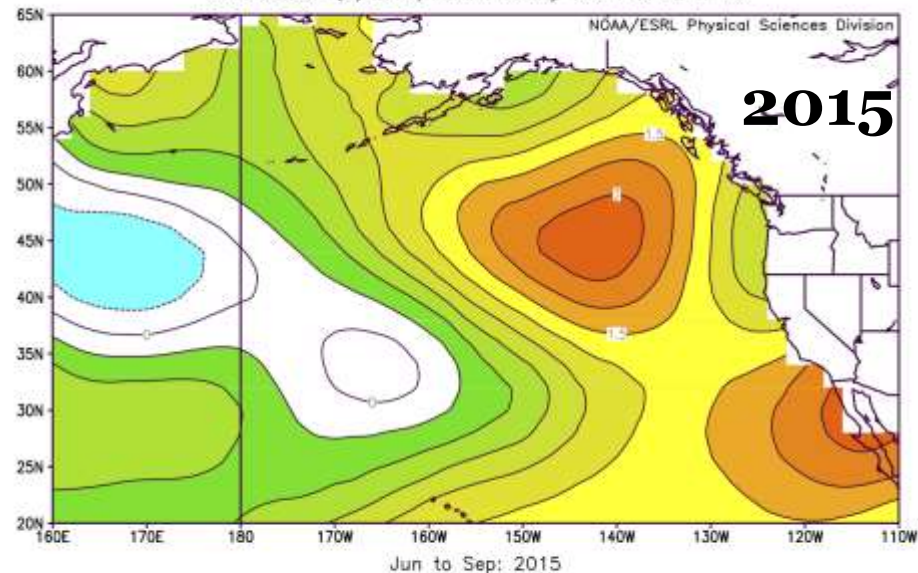
SST Anomalies (Jun-Sep)



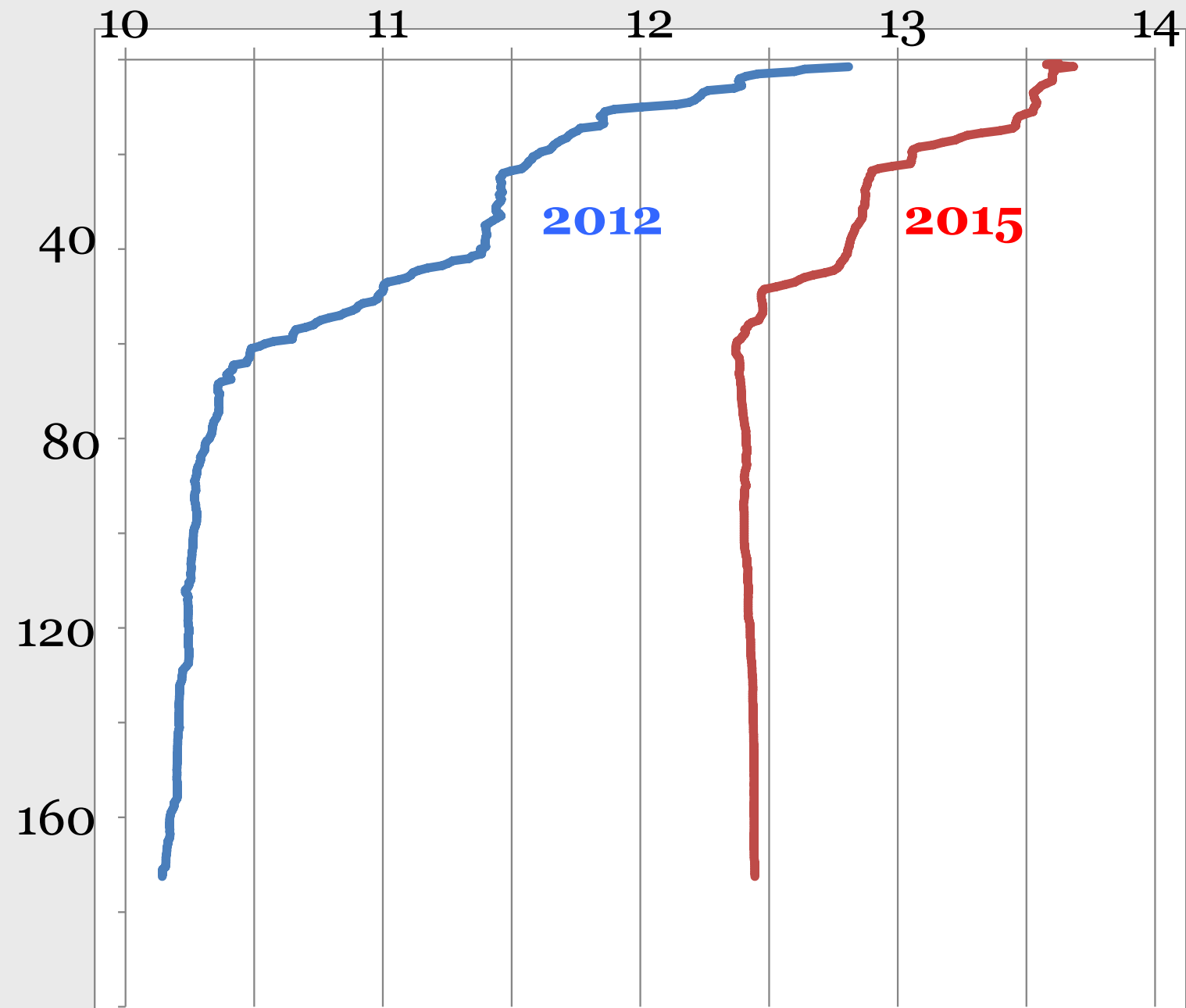
NOAA Extended SST V4 (ERSST)
Surface SST (C) Composite Anomaly 1981–2010 climo



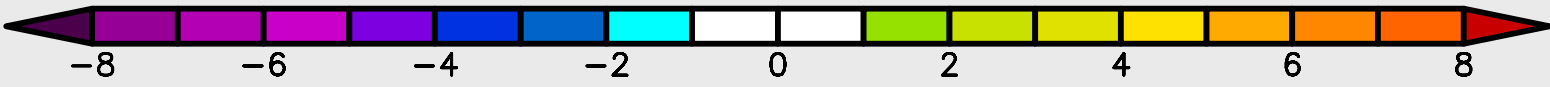
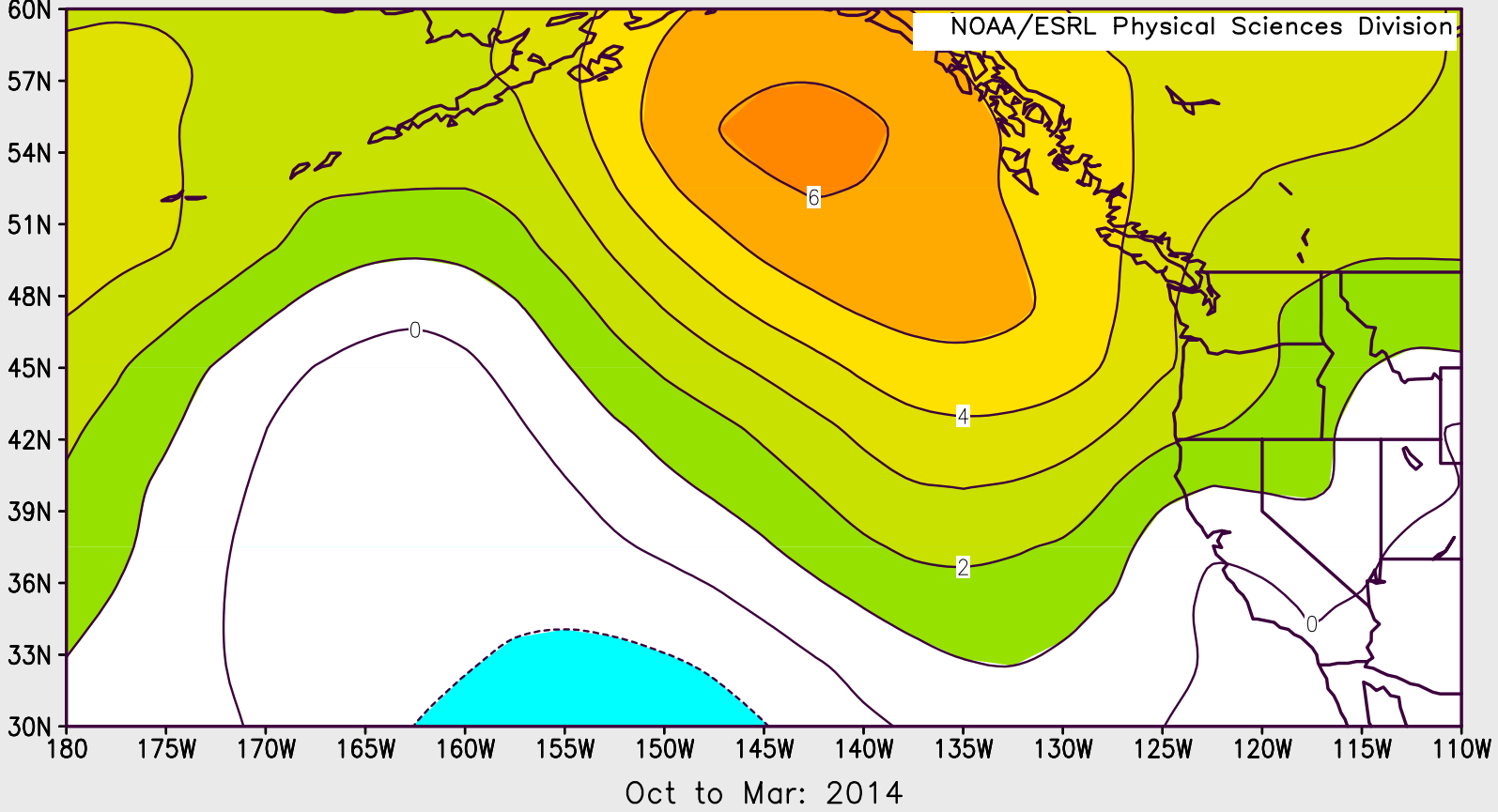
NOAA Extended SST V4 (ERSST)
Surface SST (C) Composite Anomaly 1981–2010 climo



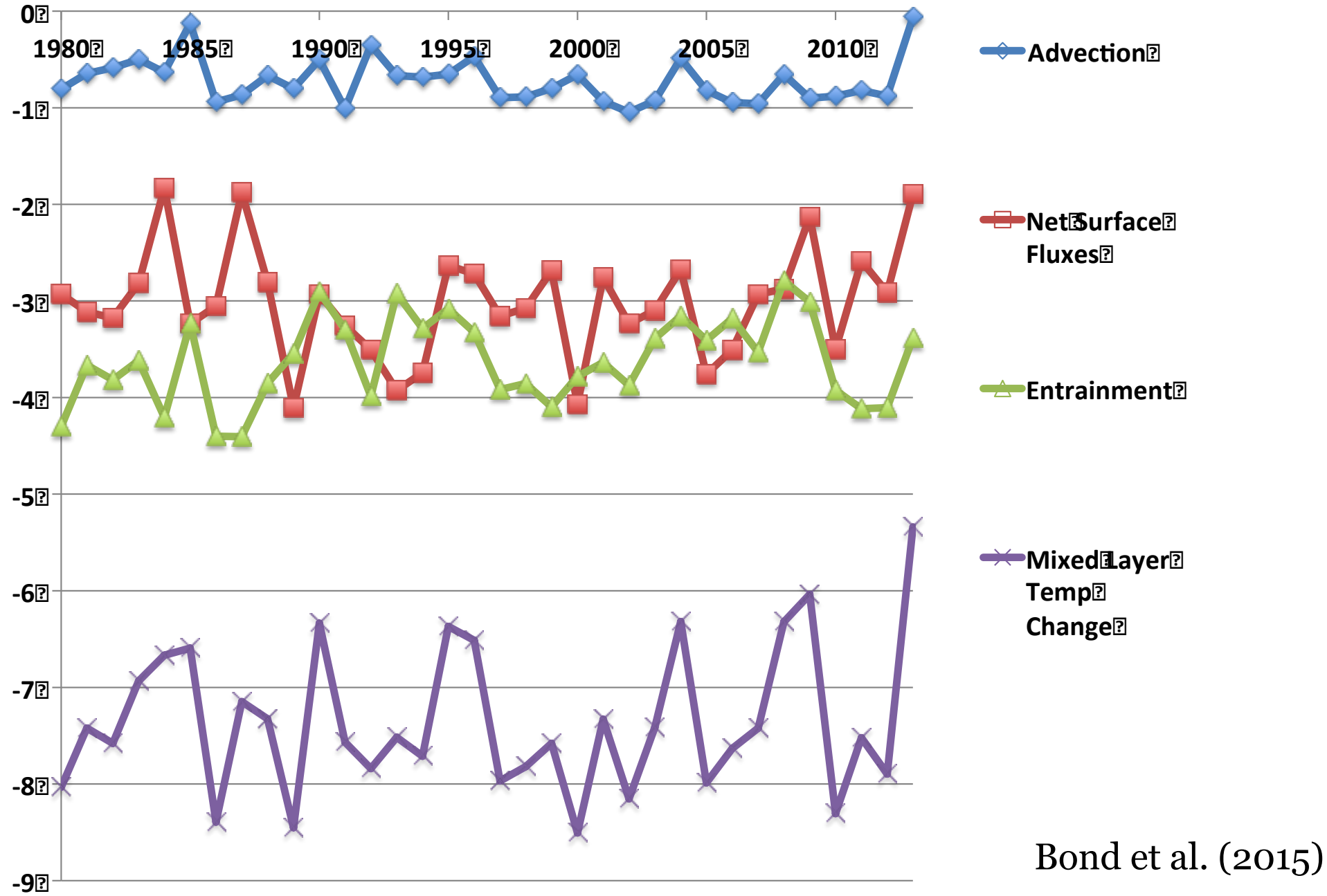
Temperature Profiles in Puget Sound July 2012 and 2015



NCEP/NCAR Reanalysis
Sea Level Pressure (mb) Composite Anomaly 1981–2010 climo



Terms in Oceanic Mixed Layer Heat Budget (Oct-Feb)

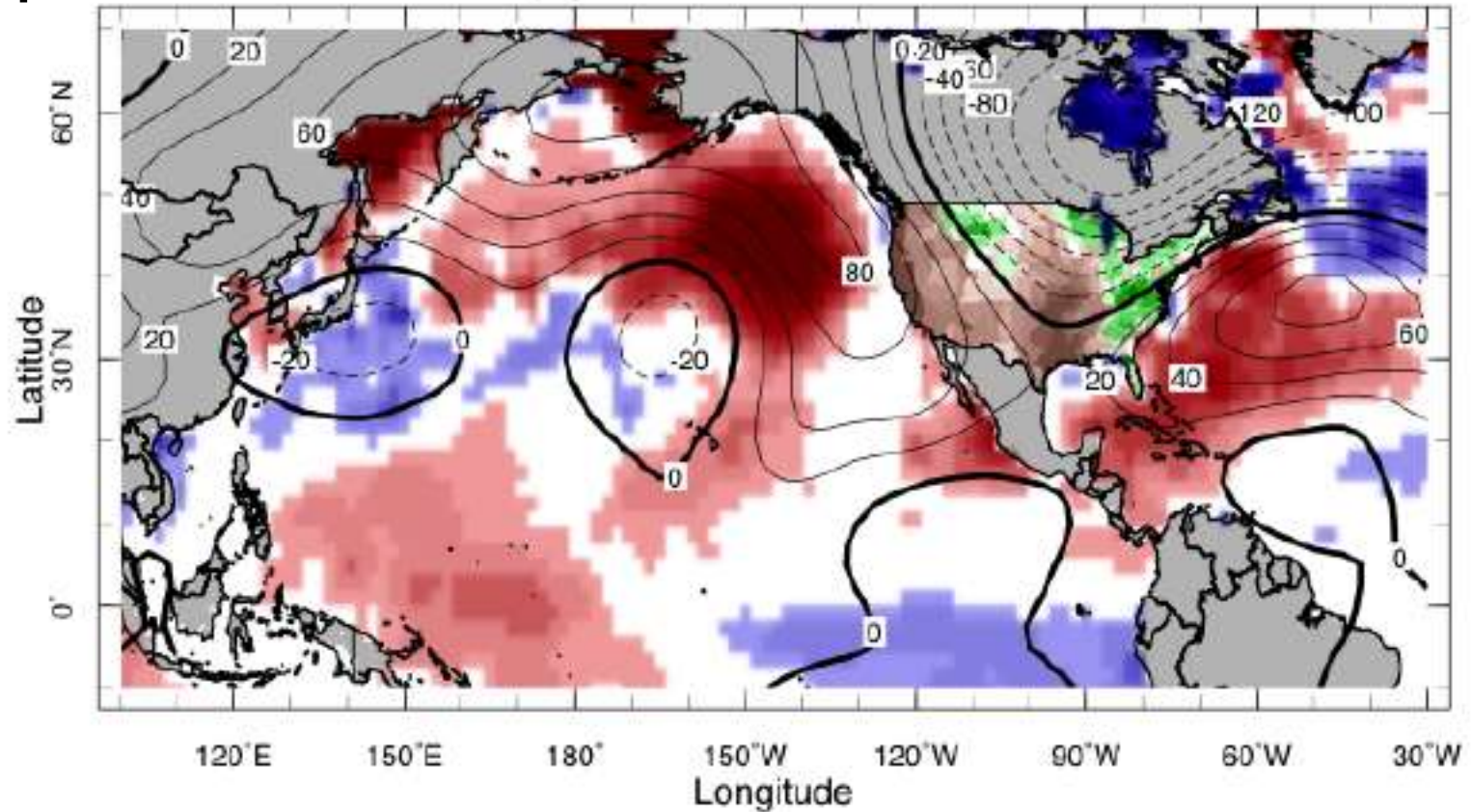


Bond et al. (2015)

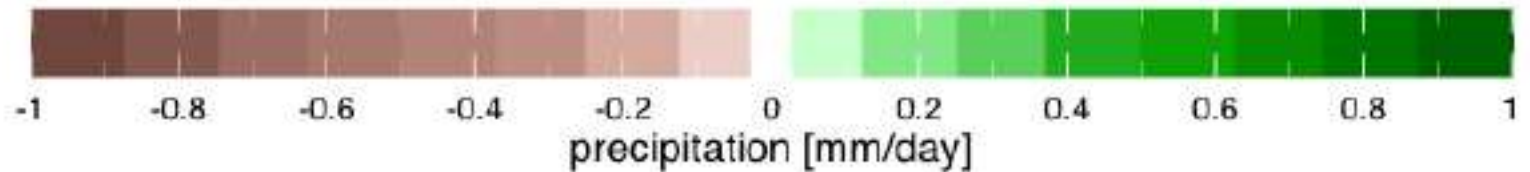
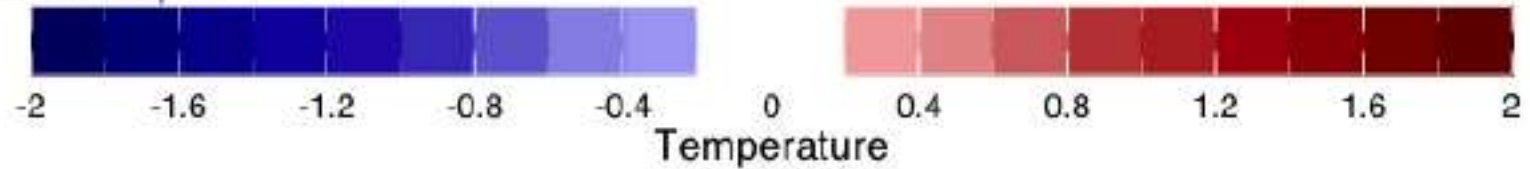
Observed 200 hPa Z, SST & Precipitation Anomalies

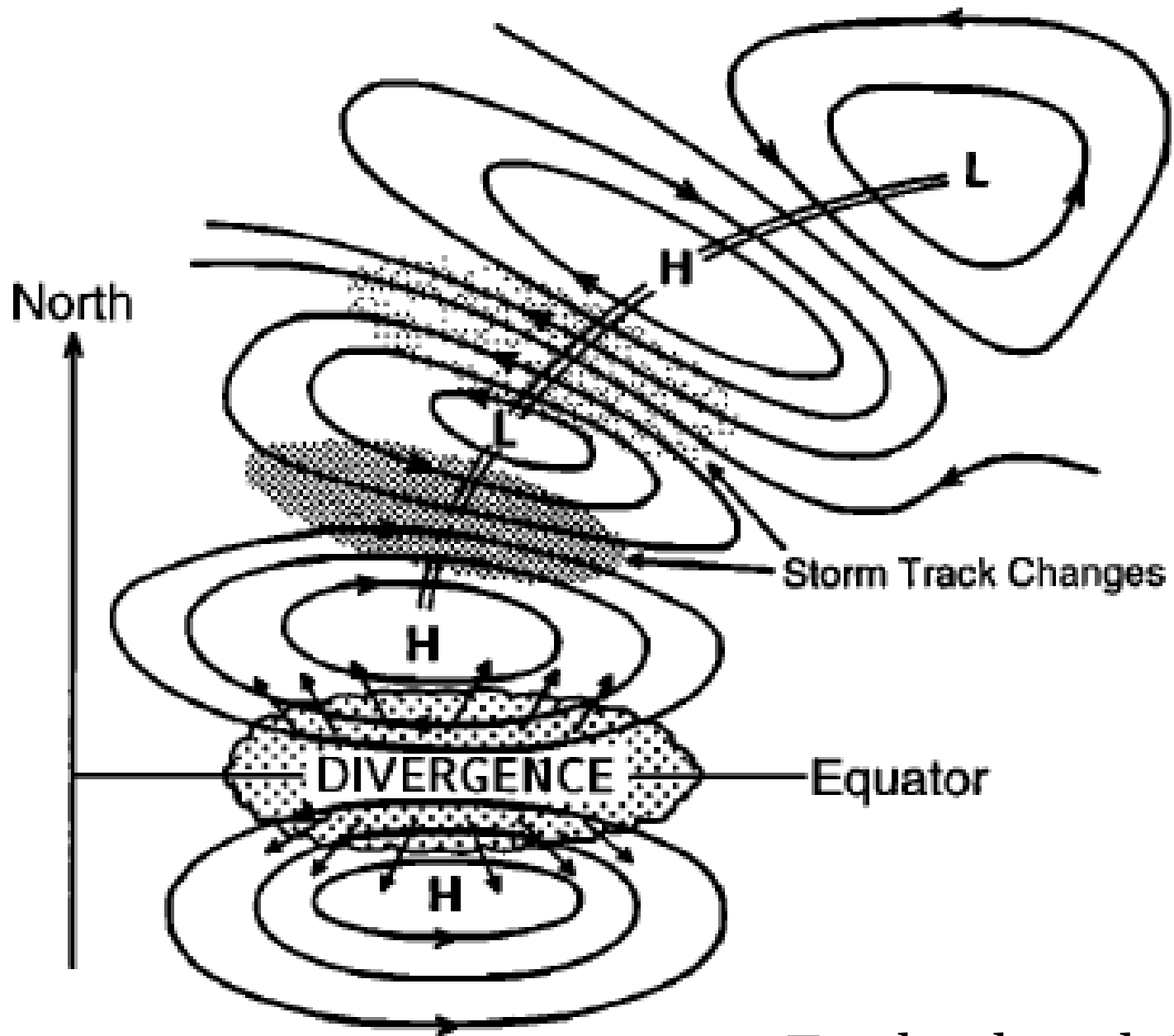
(c) 2013-2014

Seager et al. (2015)



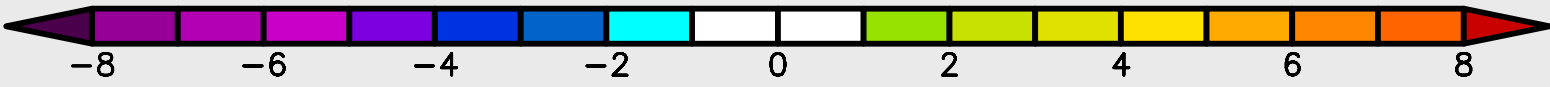
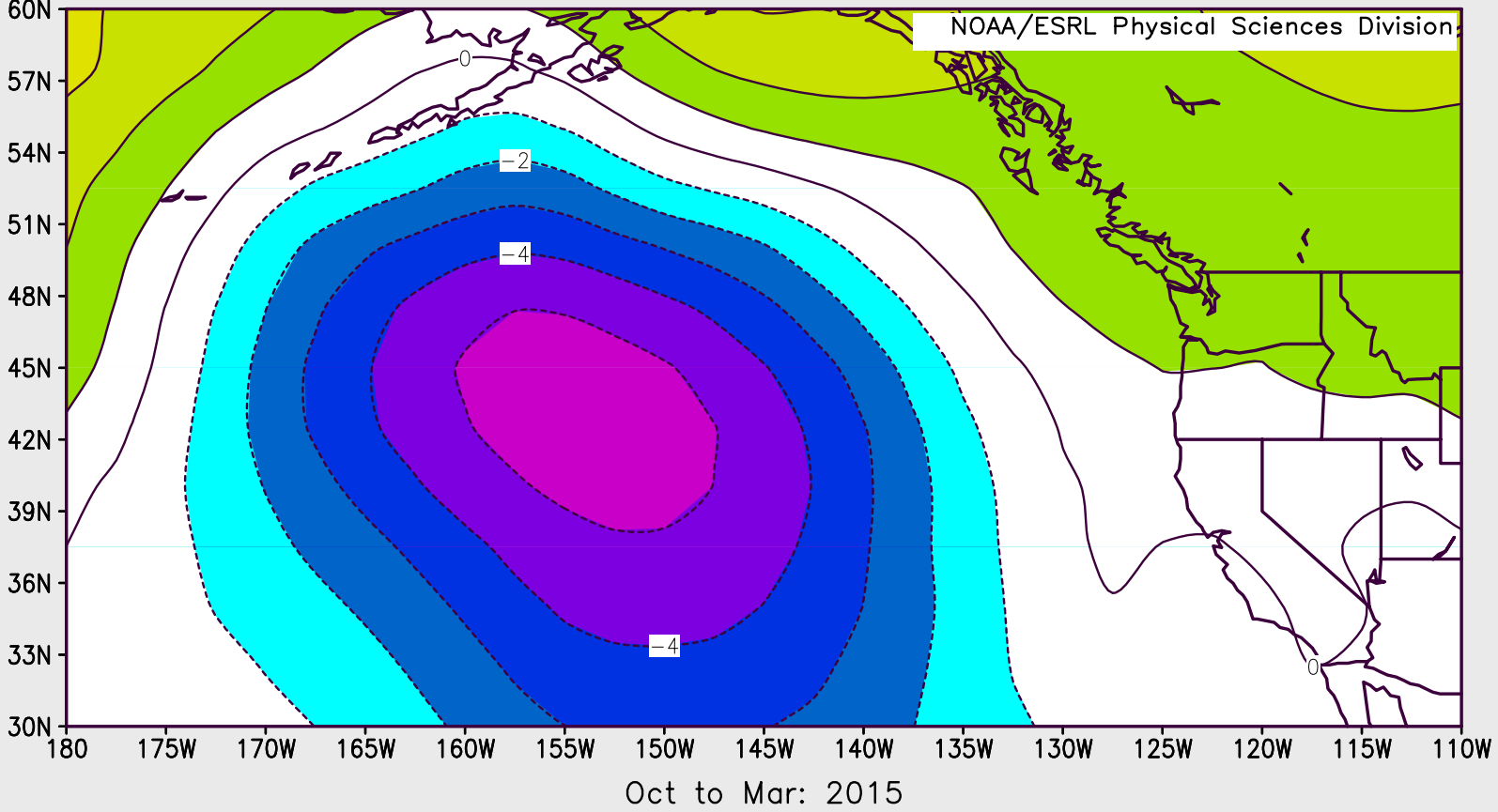
Nov 2013 - Apr 2014



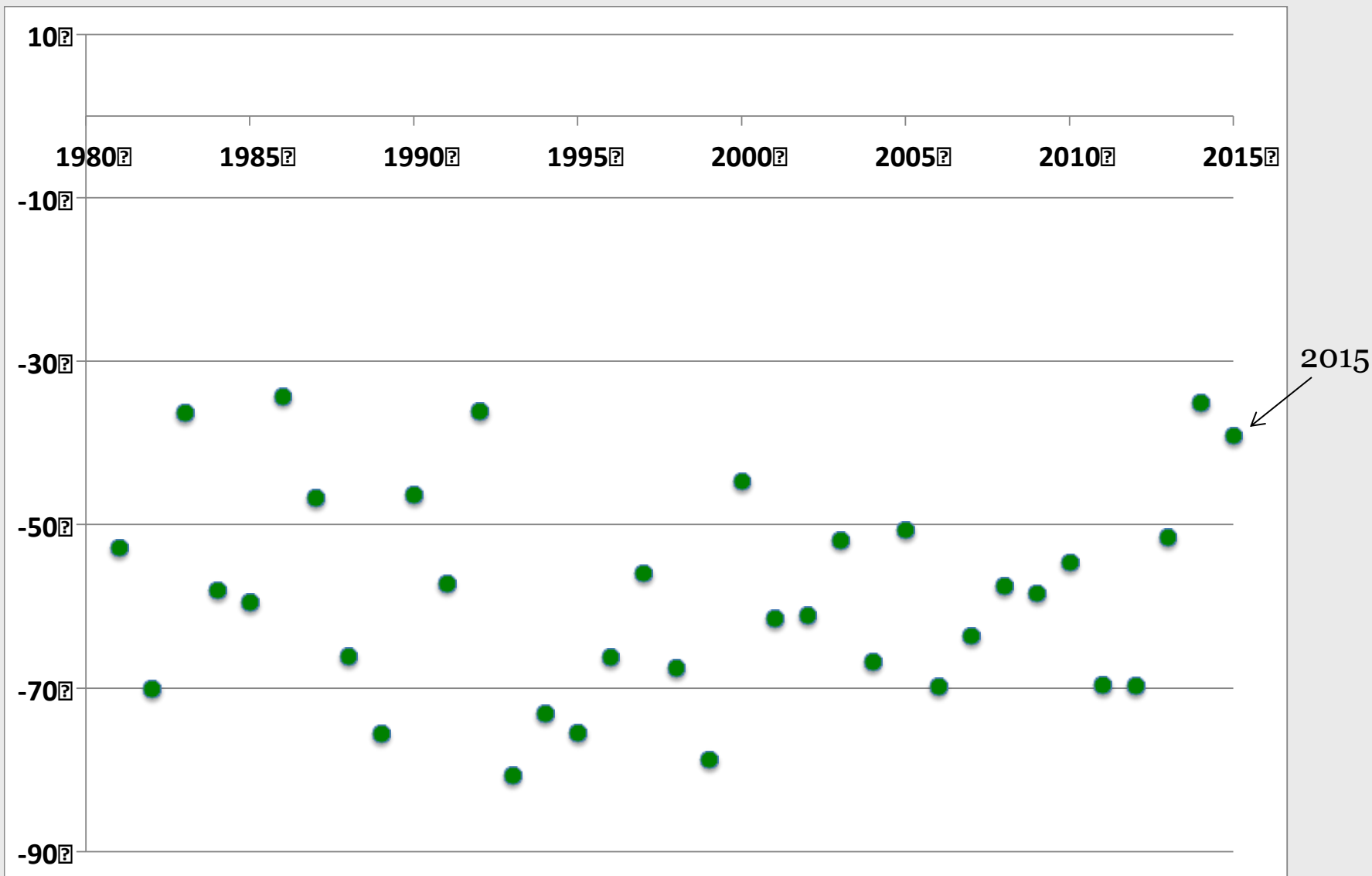


Trenberth et al. (1998)

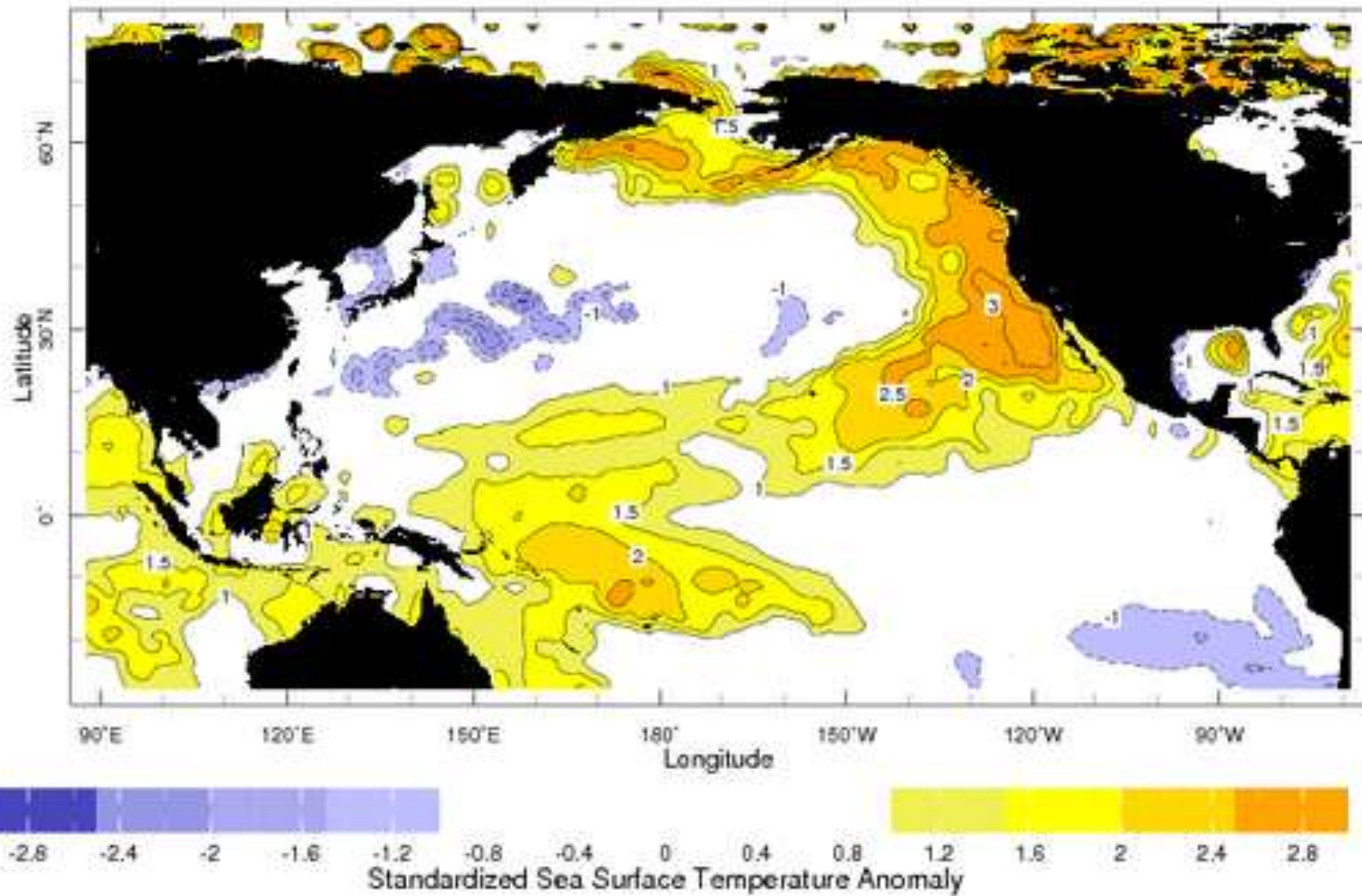
NCEP/NCAR Reanalysis
Sea Level Pressure (mb) Composite Anomaly 1981–2010 climo



Net Loss of Heat from Ocean to Atmosphere in Pac NW Coastal Waters (Nov-Mar)

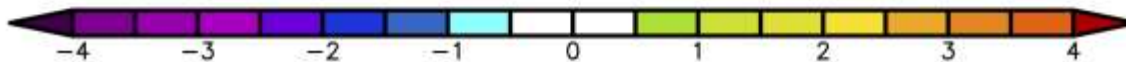
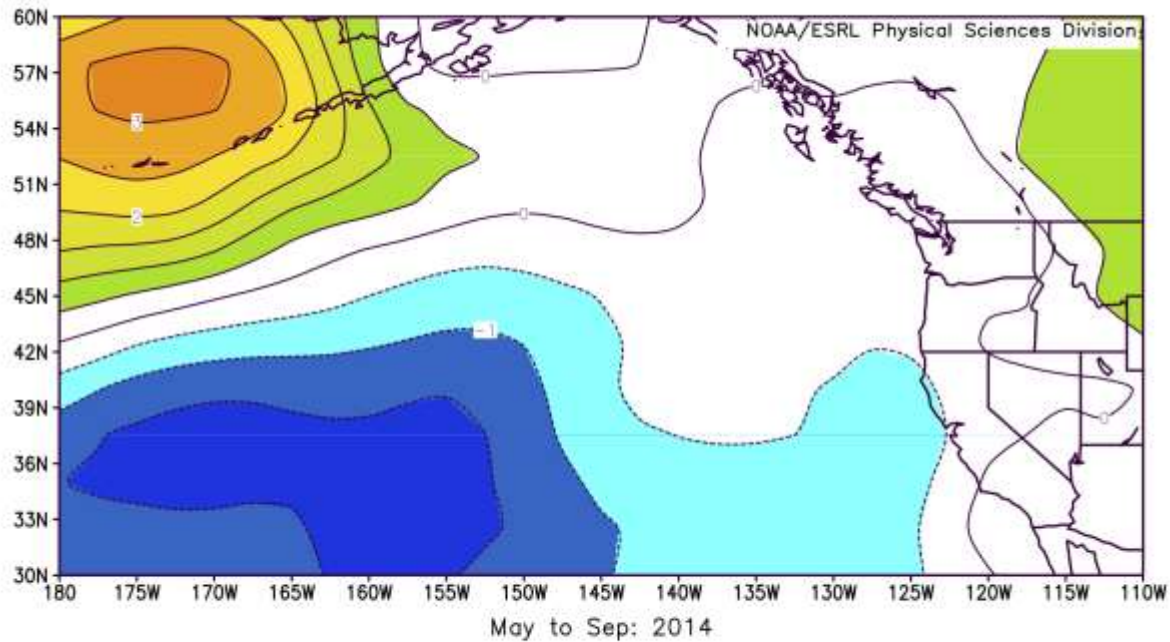


Dec 2014 - Feb 2015



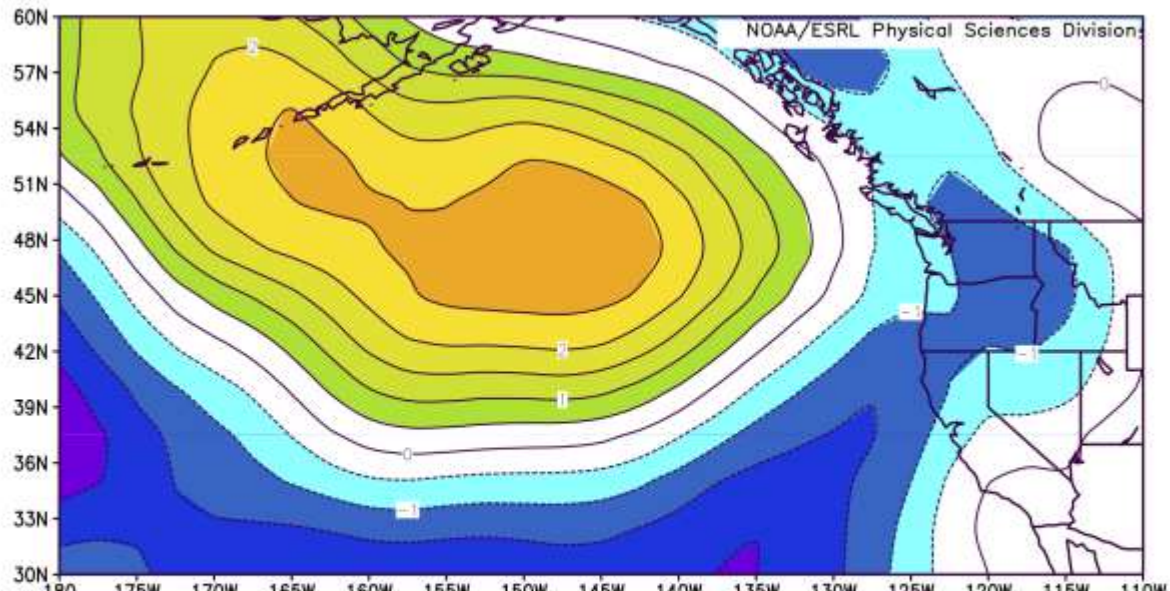
SLP Anomalies

**May-Sep
2014**

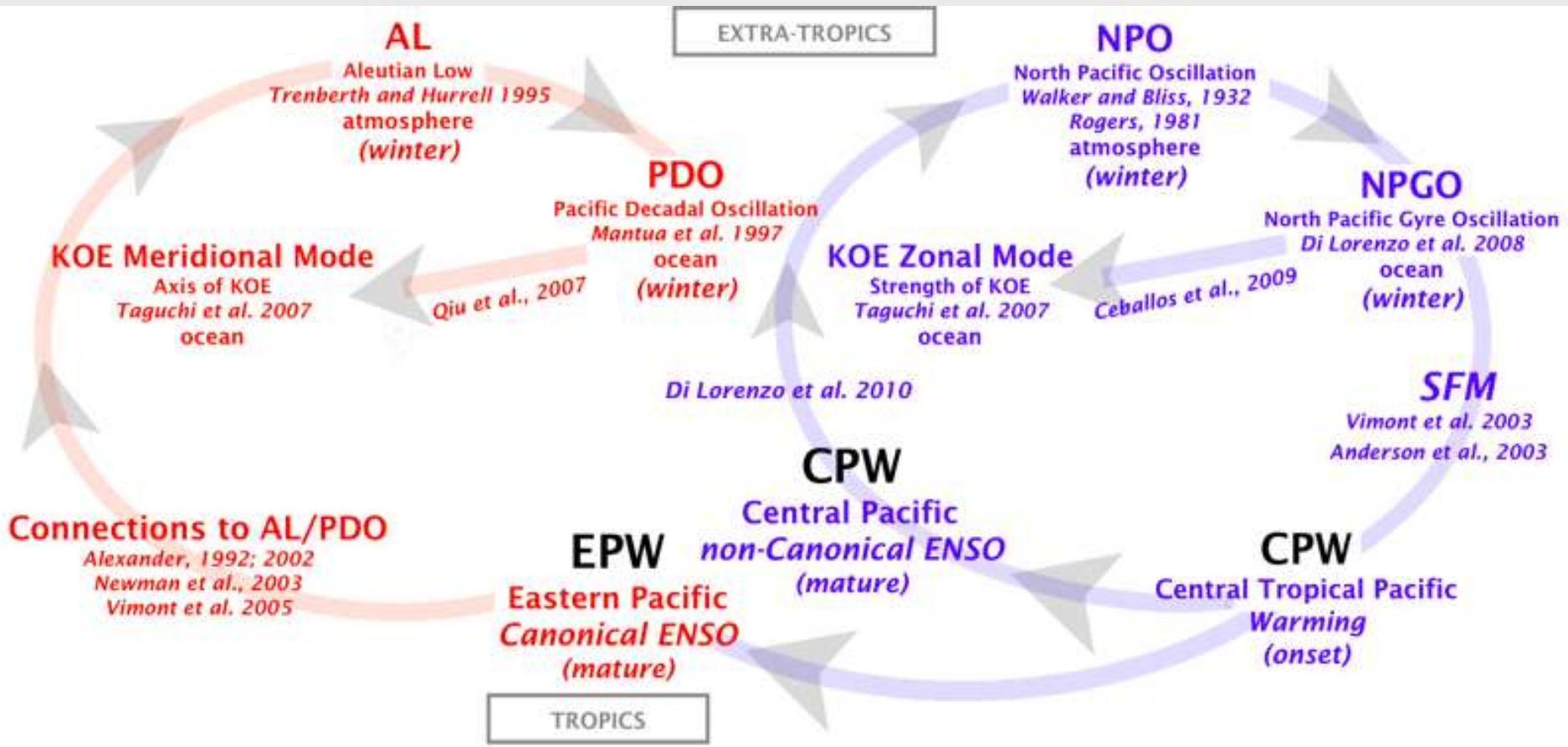


NCEP/NCAR Reanalysis

Sea Level Pressure (mb) Composite Anomaly 1981–2010 climo



**May-Sep
2015**



Unsettled Issues (Climate)

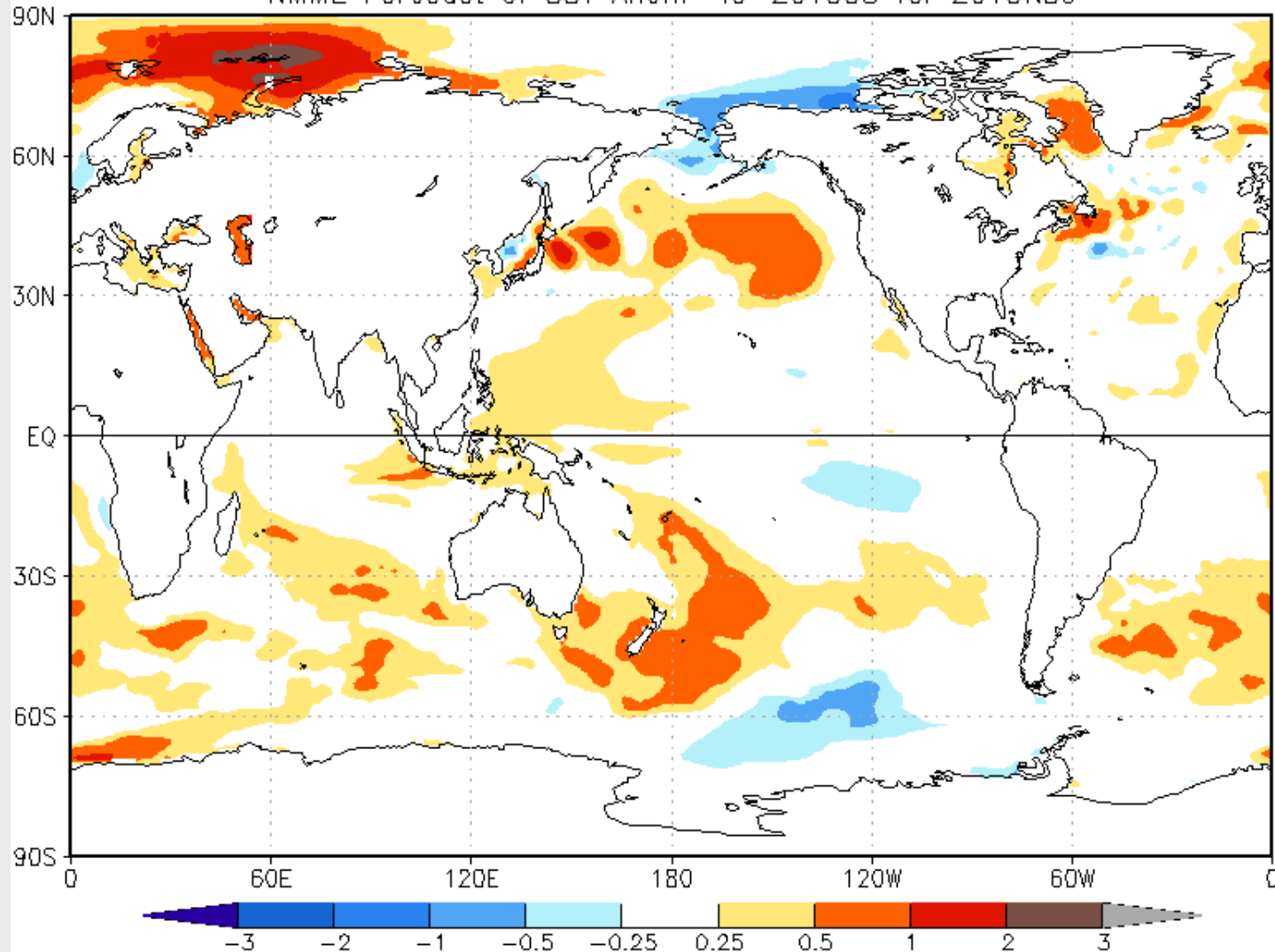
- How well do we understand the source(s) of climate variability for the winters of 2013-14, 2014-15, 2015-16? How about the summers?
- How well do we understand the impacts of upper-ocean temperature anomalies, once formed, on atmospheric properties downstream over the Pacific NW?
- Are SST anomalies predictable on seasonal time scales?

Could the Blob have been
predicted?

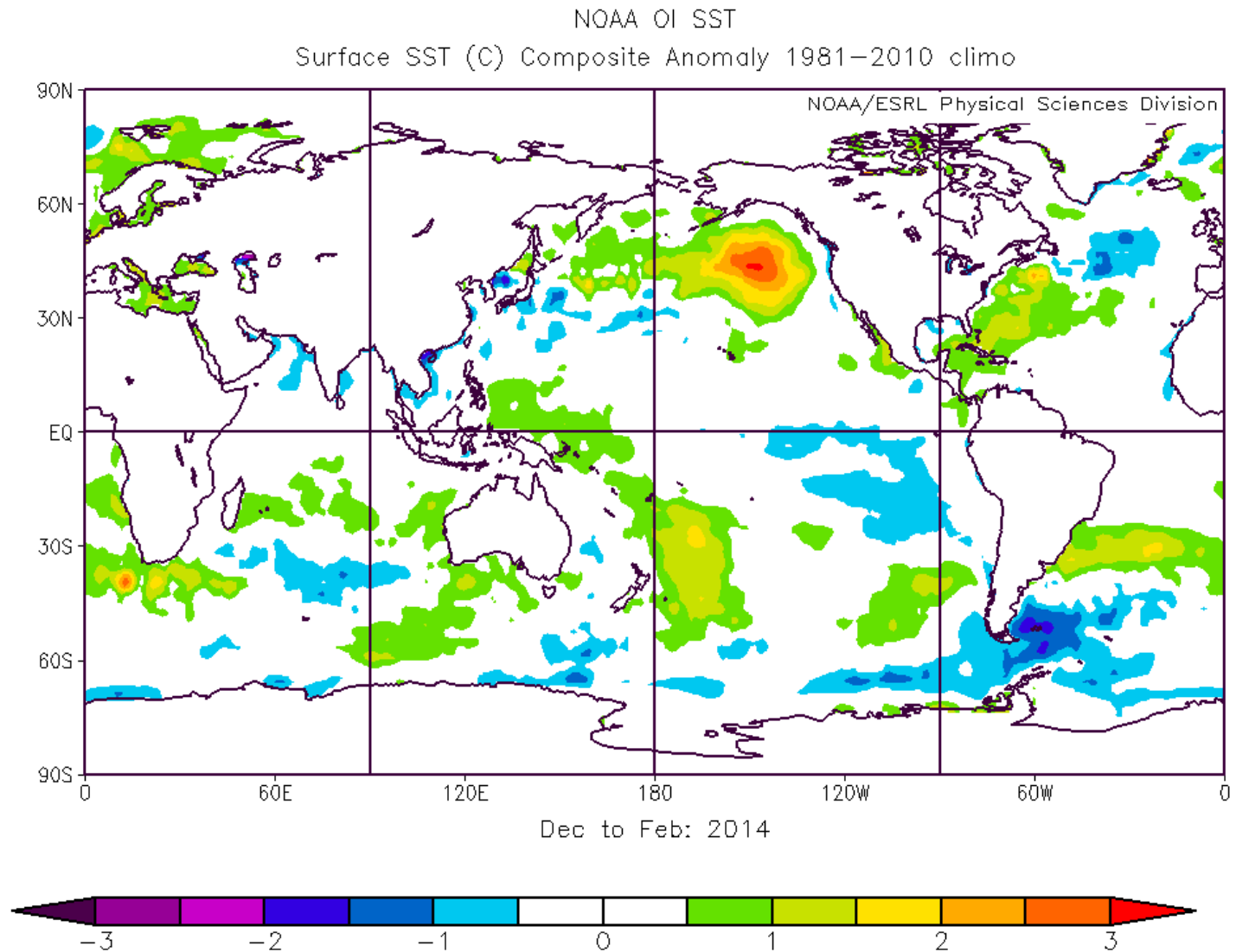
NMME SST Anomalies

August 2013 for DJF 2013-14

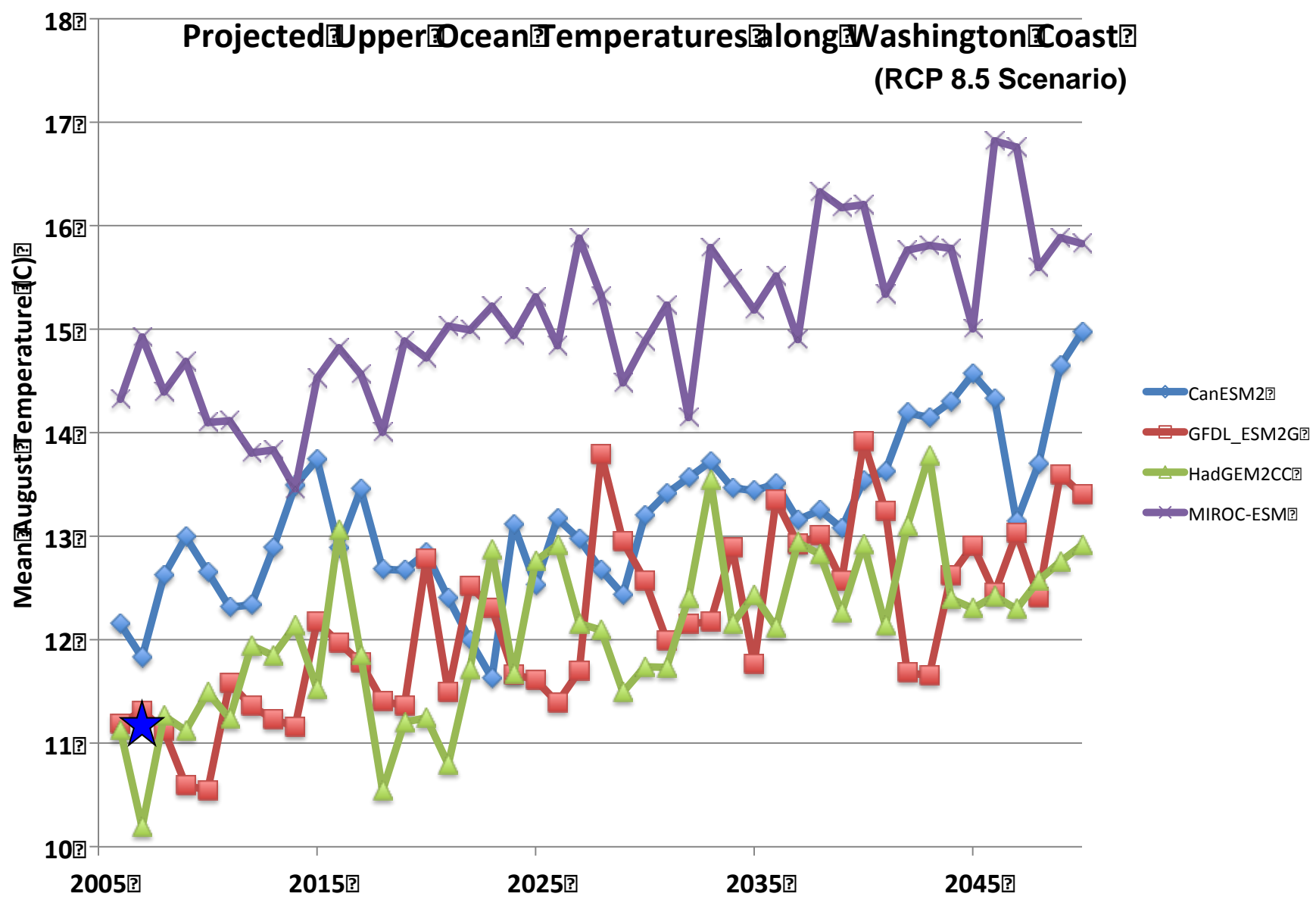
NMME Forecast of SST Anom IC=201308 for 2013NDJ



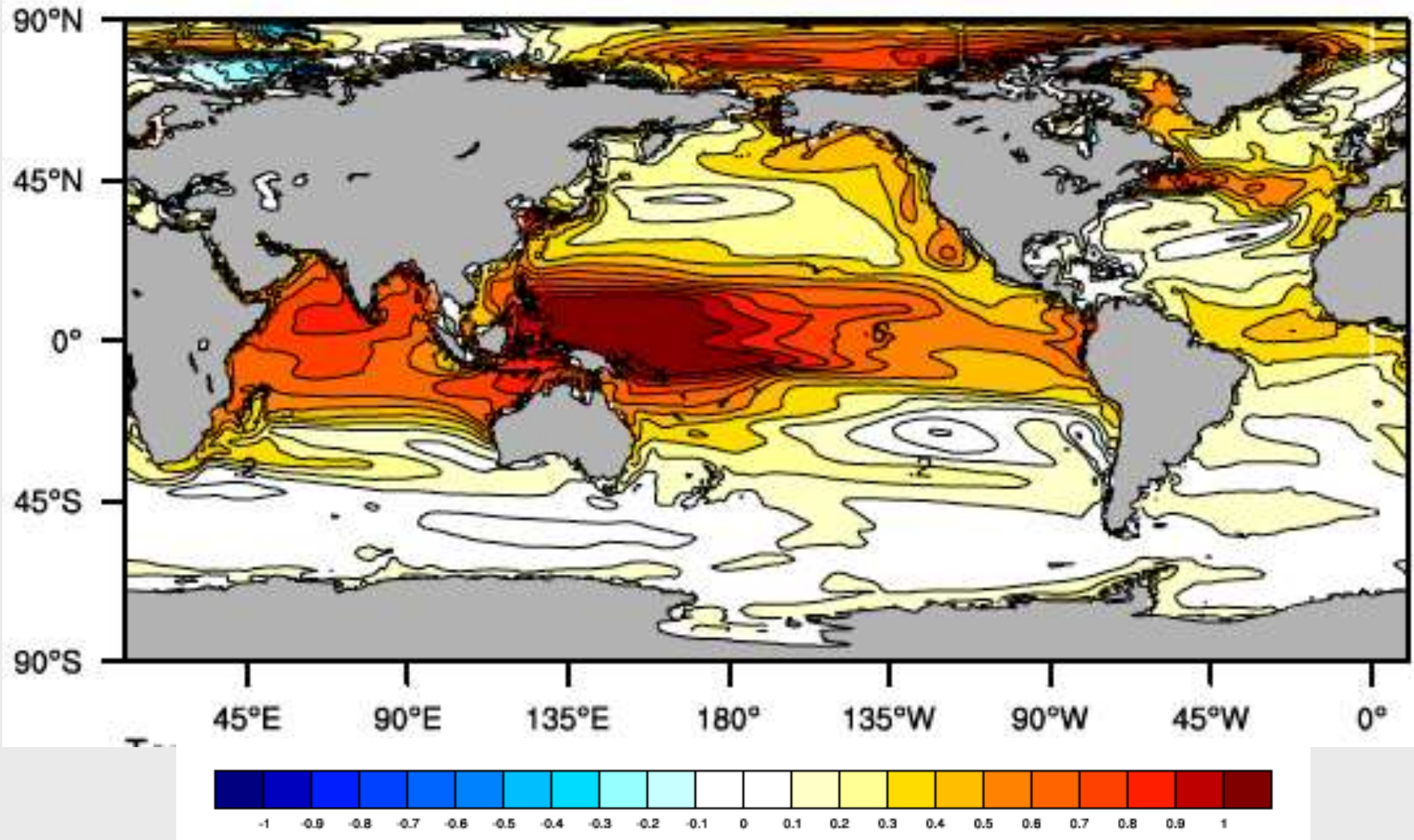
DJF 2013-14 observed SST Anomalies



Projected Upper Ocean Temperatures along Washington Coast (RCP 8.5 Scenario)



Stratification difference (Surface to 200 m)

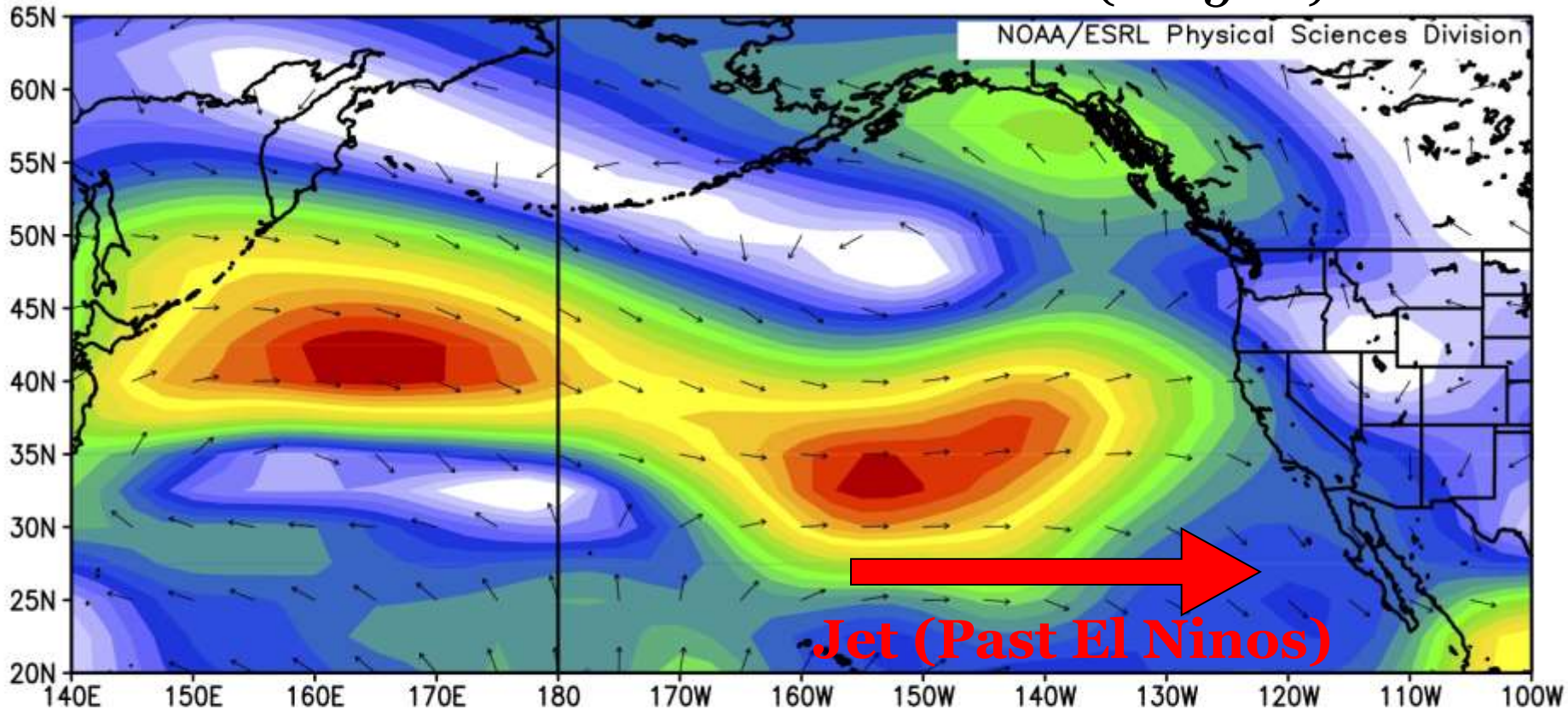


Climatologist warns of "Godzilla El Nino"

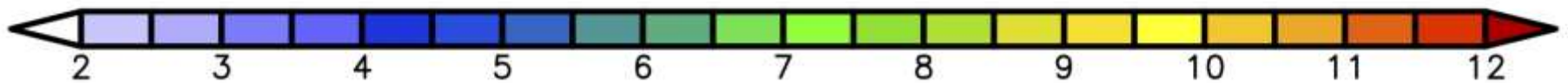


CREDIT: WIKIPEDIA

Jet Stream Level Flow Anomalies (2015-16)

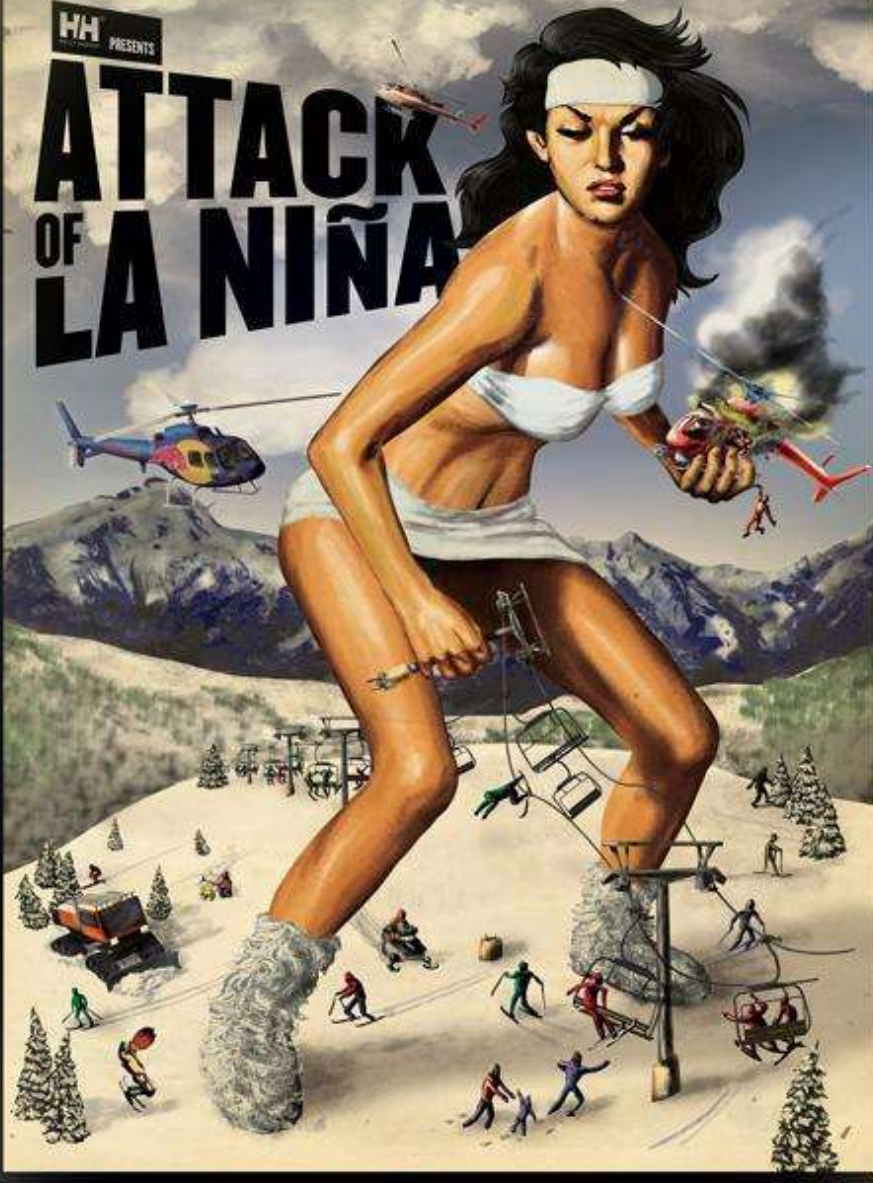


200mb Vector Wind (m/s) Composite Anomaly (1981-2010 Climatology)
12/1/15 to 2/29/16
NCEP/NCAR Reanalysis



HH PRESENTS

ATTACK OF LA NIÑA



DVD

msp

How are the upcoming fall and winter seasons liable to play out?

- Floods – Increased chance of moderate events
- Windstorms – More than usual (but not for extreme events)
- Cold-air Outbreaks – Higher odds
- Fog/Air Pollution – Mixed message
- End of Season Snowpack – Probably more than recent years

NMME Forecast of SST Anom IC=201605 for 2016OND

