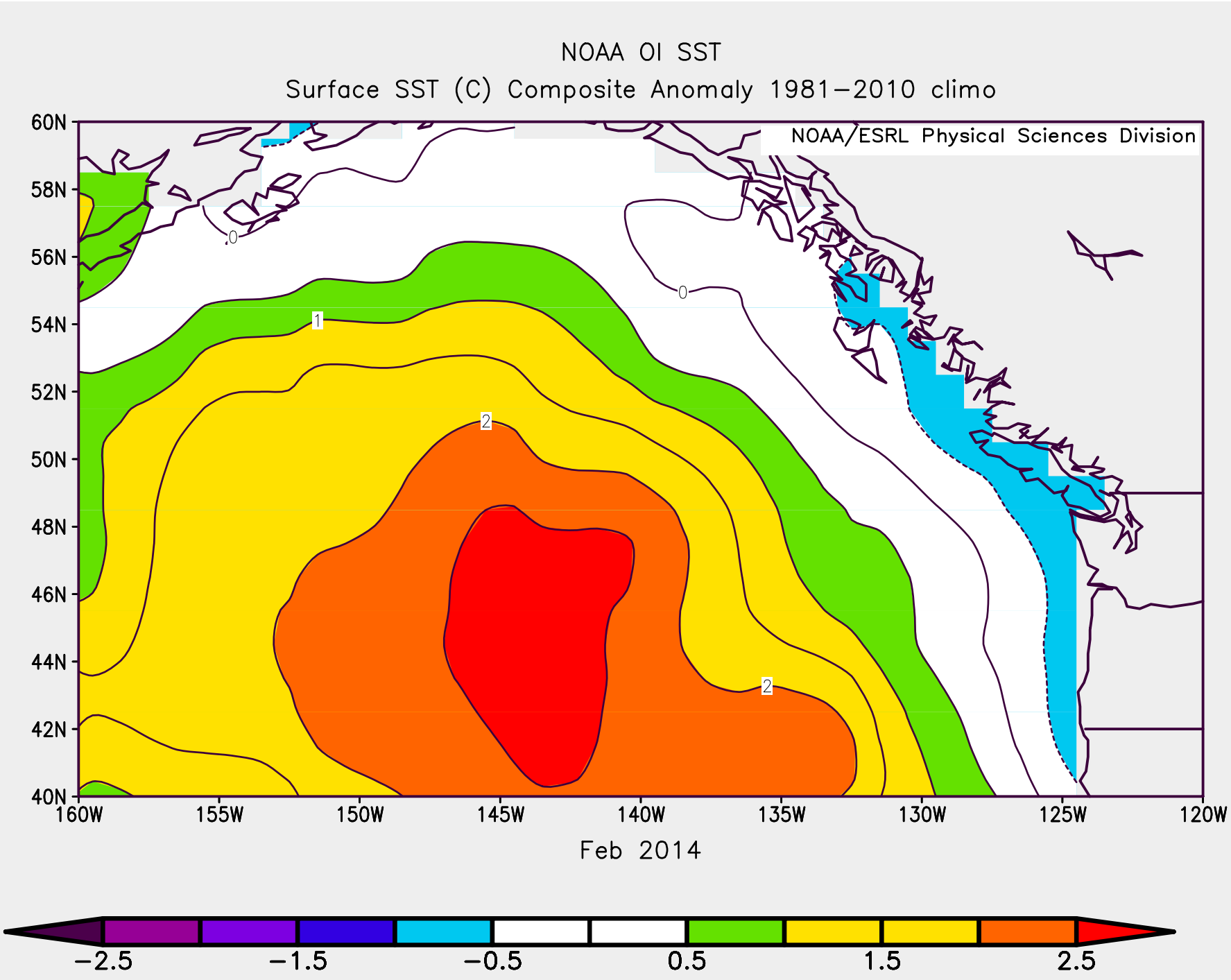
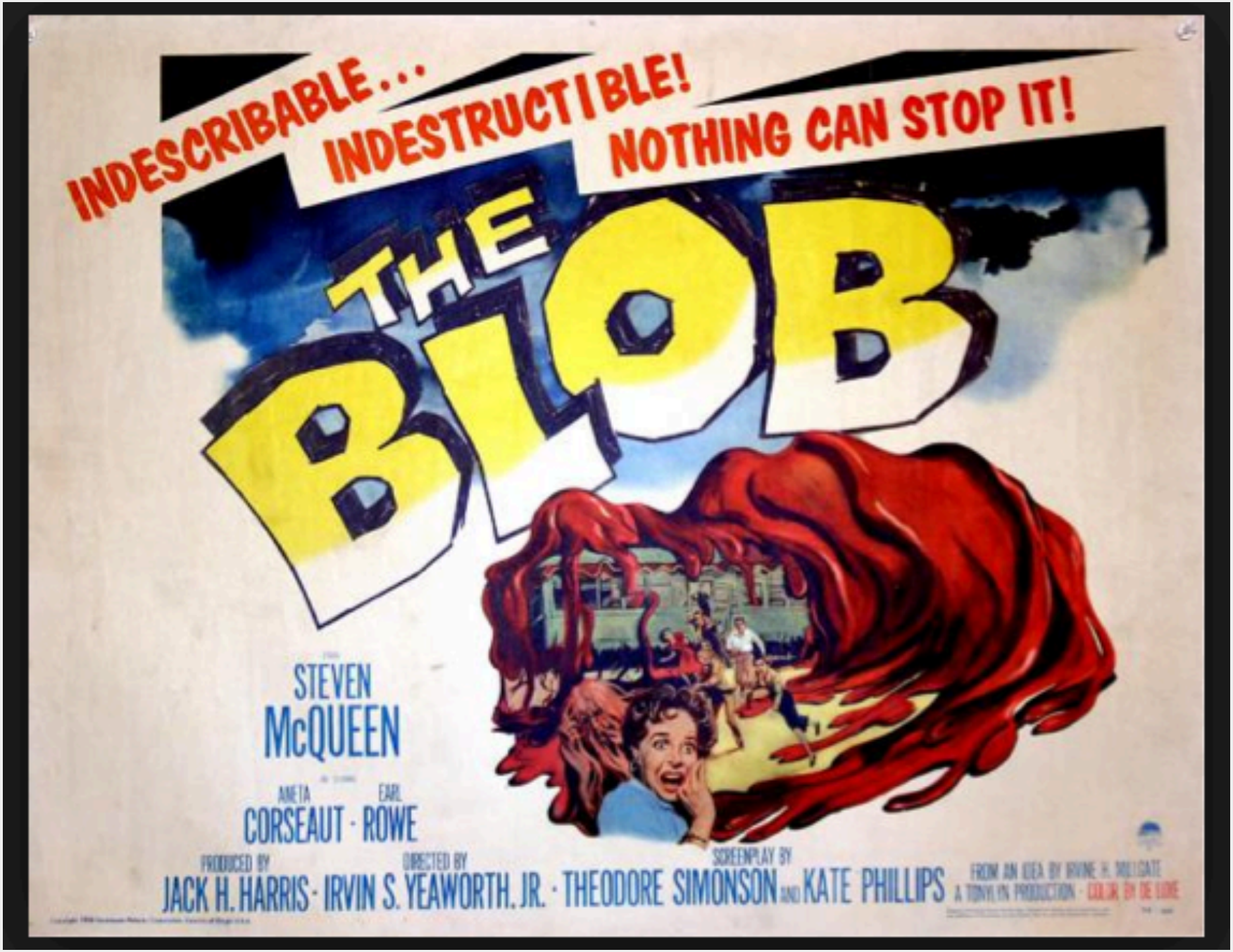

NOAA OI SST
Surface SST (C) Composite Anomaly 1981–2010 climo
NOAA/ESRL Physical Sciences Division
60N
58N
56N
54N
52N
50N
48N
46N
44N
42N
40N
160W
155W
150W
145W
140W
135W
130W
125W
120W
0
0
1
2
2
Feb 2014
−2.5
−1.5
−0.5
0.5
1.5
2.5

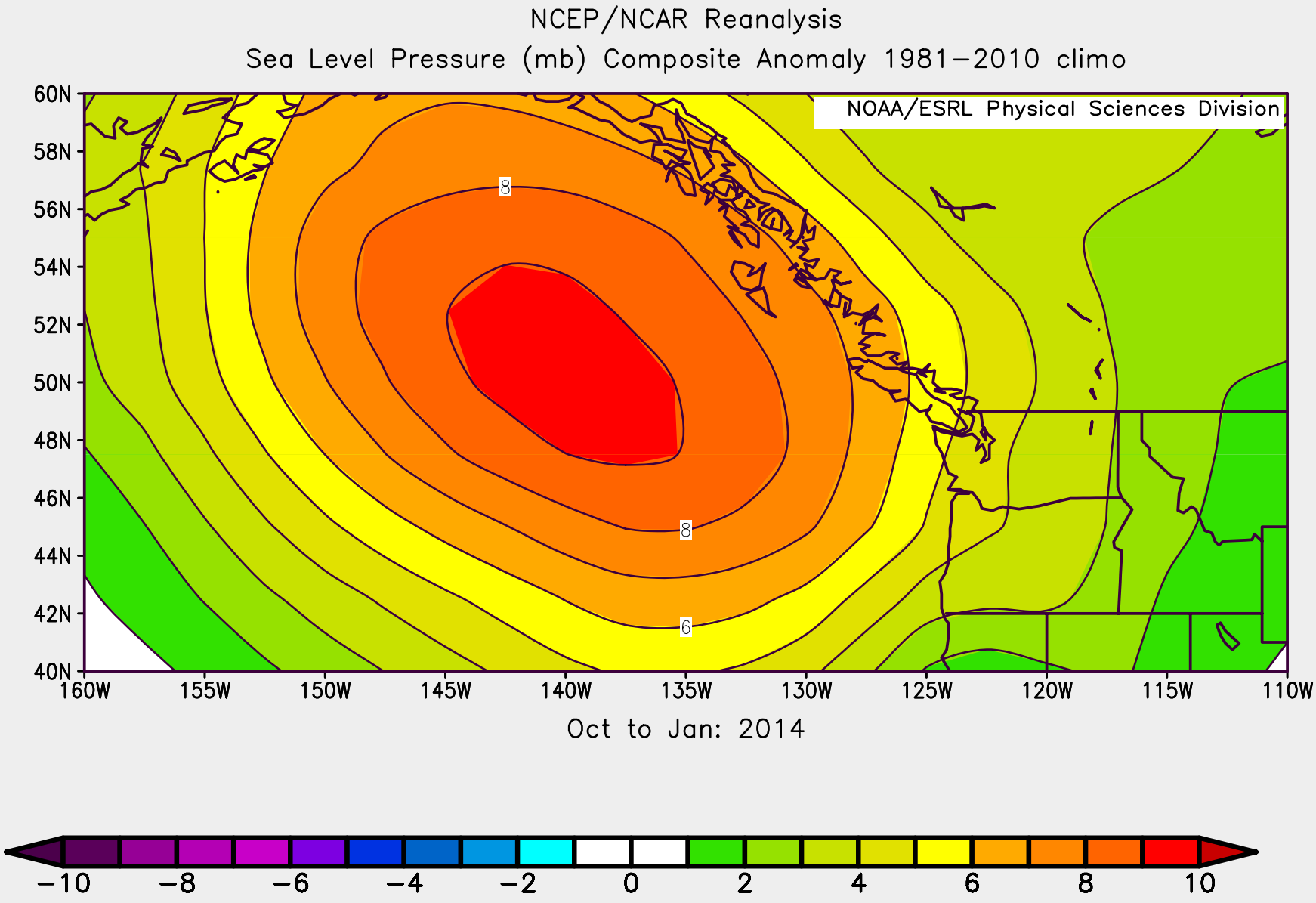

INDESCRIBABLE...
INDESTRUCTIBLE!
NOTHING CAN STOP IT!
THE BLOB
STEVEN McQUEEN
ANETA CORSEAUT · EARL ROWE
PRODUCED BY JACK H. HARRIS · DIRECTED BY IRVIN S. YEAWORTH, JR. · SCREENPLAY BY THEODORE SIMONSON AND KATE PHILLIPS
FROM AN IDEA BY IRVINE H. MILLIGATE
A TONYLYN PRODUCTION · COLOR BY DE LUXE

Persistent High Pressure over the NE Pacific during the Winter of 2013-14: Upper Ocean Response and Implications for the Weather of the Pacific Northwest in Summer 2014

Nick Bond
Karin Bumbaco
Meghan Cronin

Formation of the Blob

Relationship to Regional Weather


NCEP/NCAR Reanalysis
Sea Level Pressure (mb) Composite Anomaly 1981–2010 climo
NOAA/ESRL Physical Sciences Division
60N
58N
56N
54N
52N
50N
48N
46N
44N
42N
40N
160W
155W
150W
145W
140W
135W
130W
125W
120W
115W
110W
8
8
6
Oct to Jan: 2014
−10
−8
−6
−4
−2
0
2
4
6
8
10

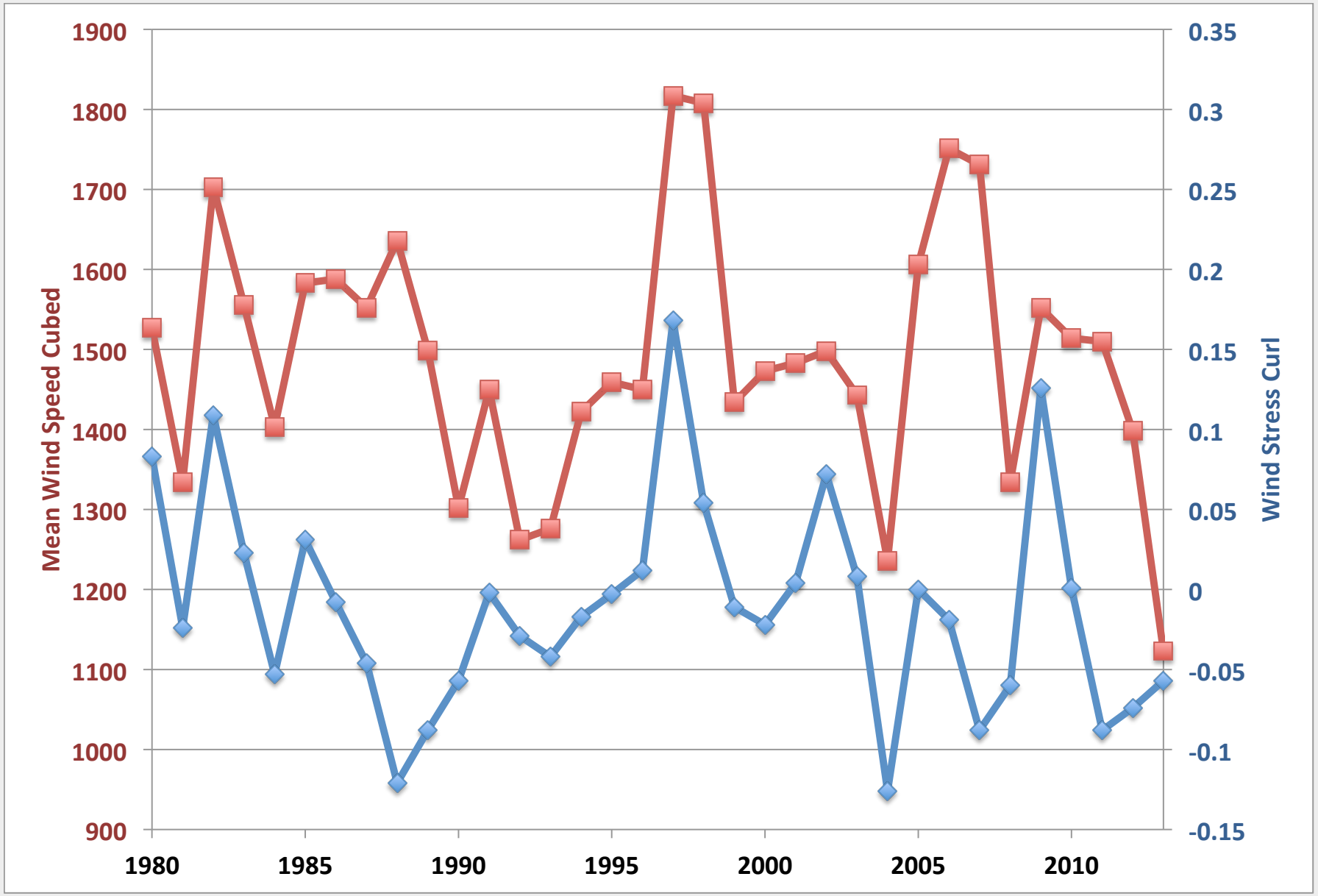
Data Sources

Upper Ocean Properties and Atmospheric Forcing (1980-2014) from NOAA/NCEP's Global Ocean Data Assimilation System (GODAS)

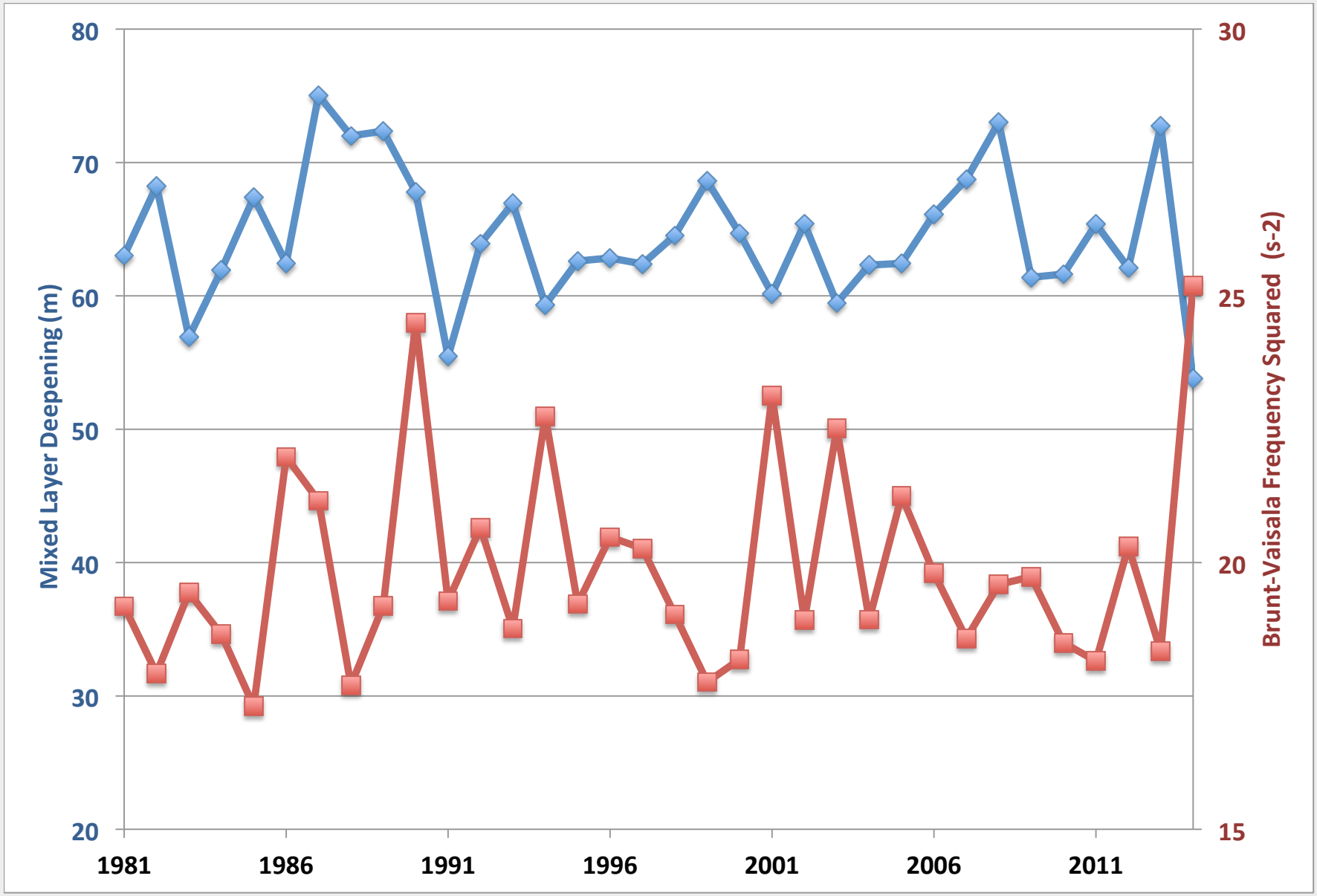
SST and Atmospheric Boundary Layer Properties (1948-2013) from NCEP Reanalysis

Predictions from NCEP's Coupled Forecast System for Summer 2014

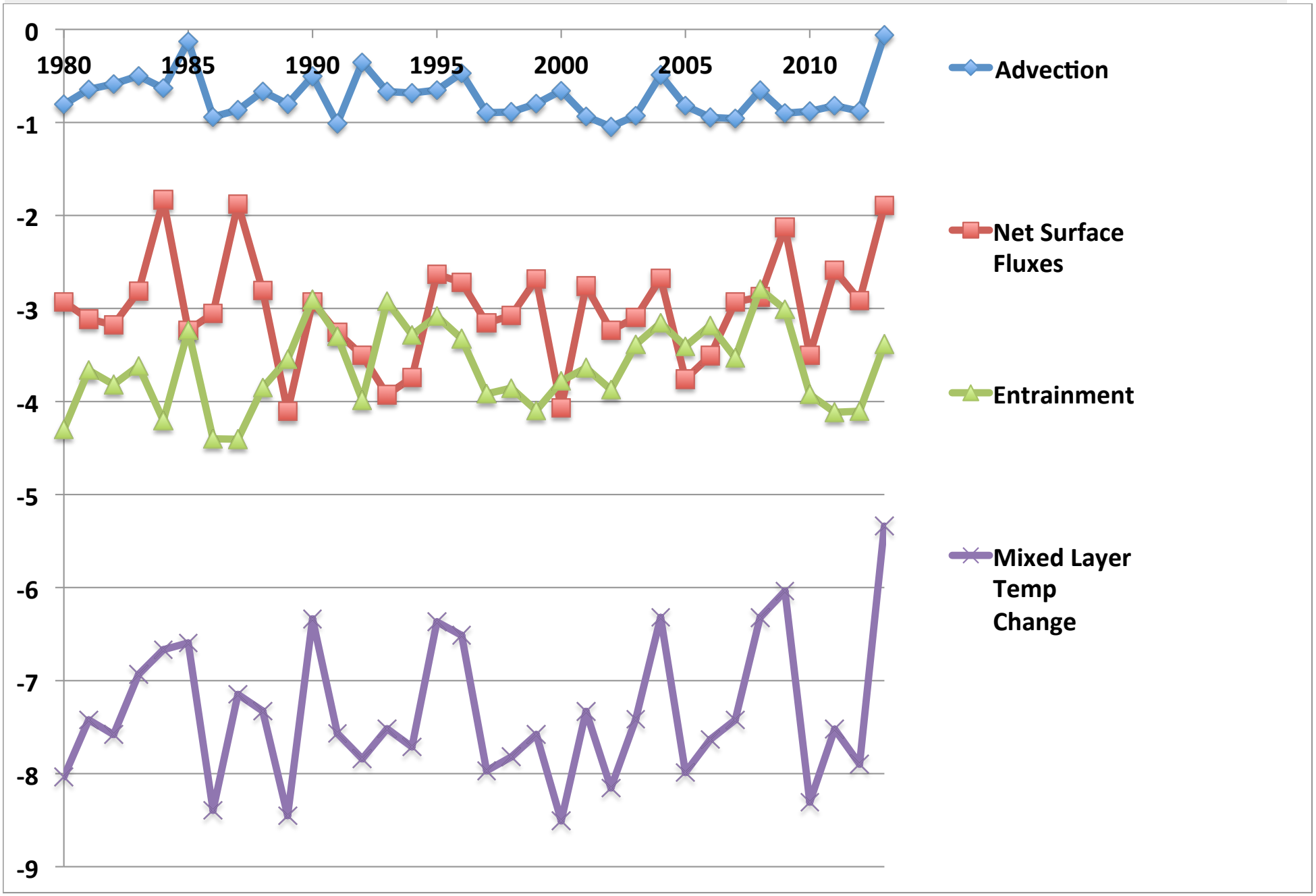
Atmospheric Forcing (40-50˚N, 150-135˚W)

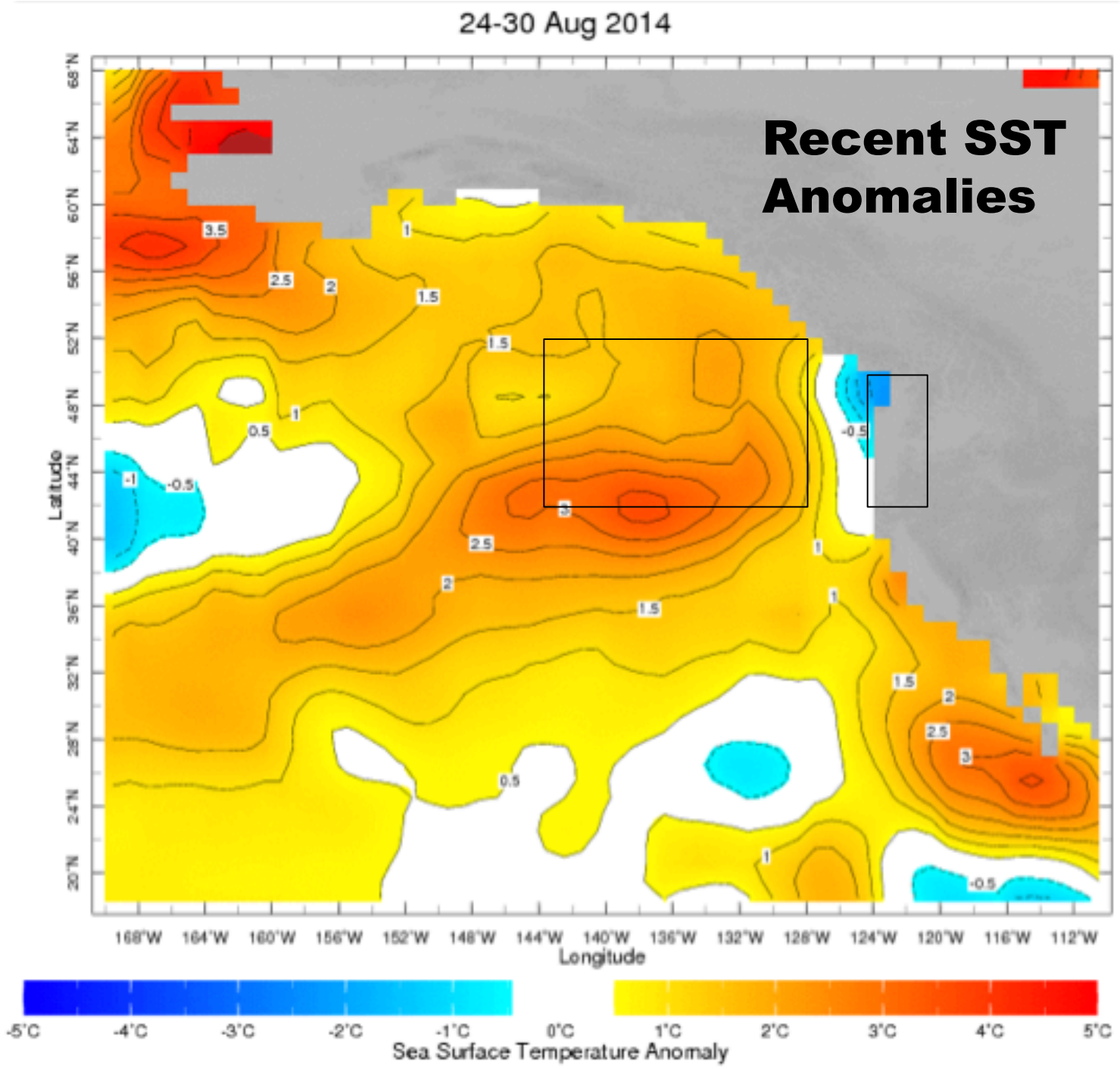


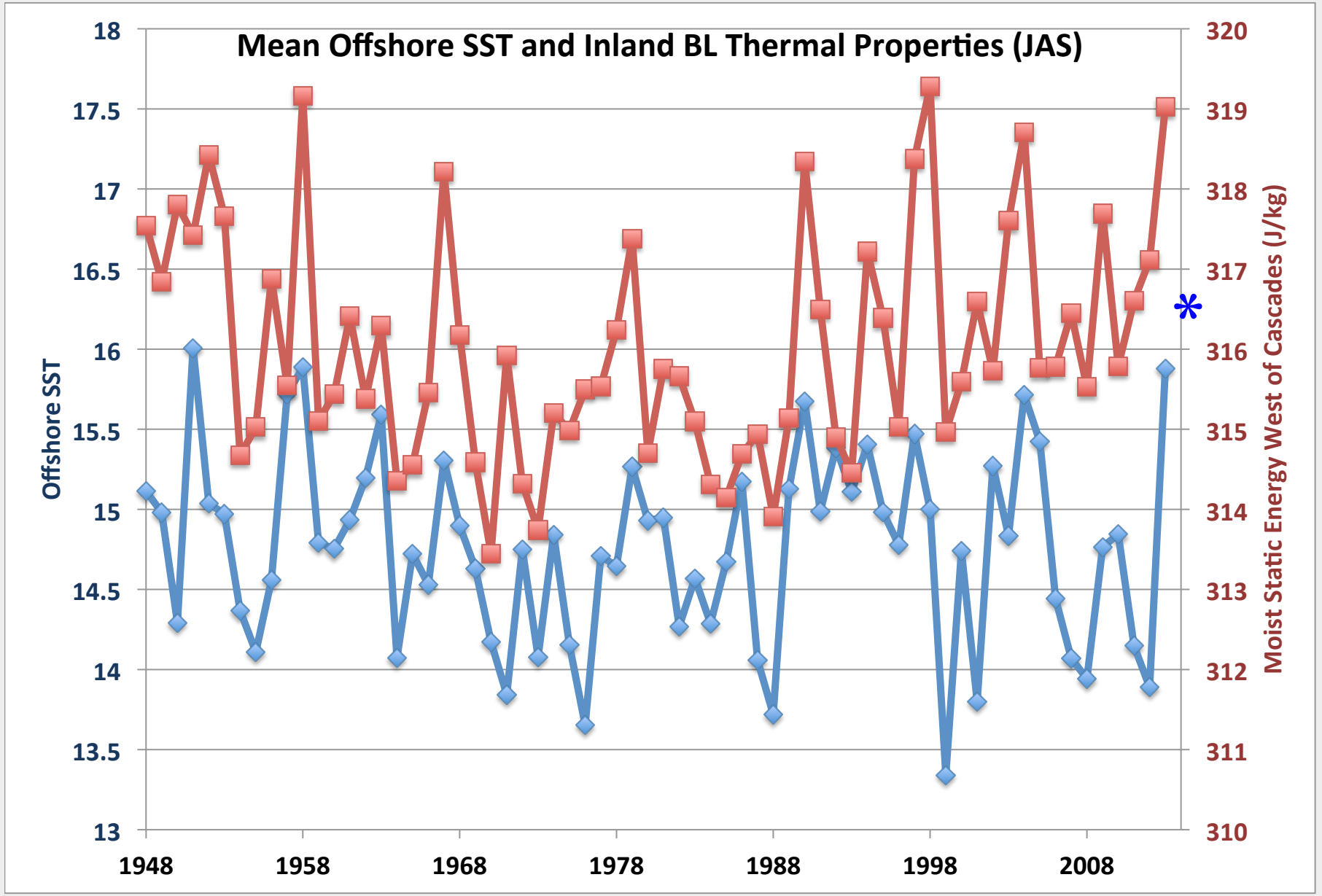
Oceanic Response (40-50˚N, 150-135˚W)



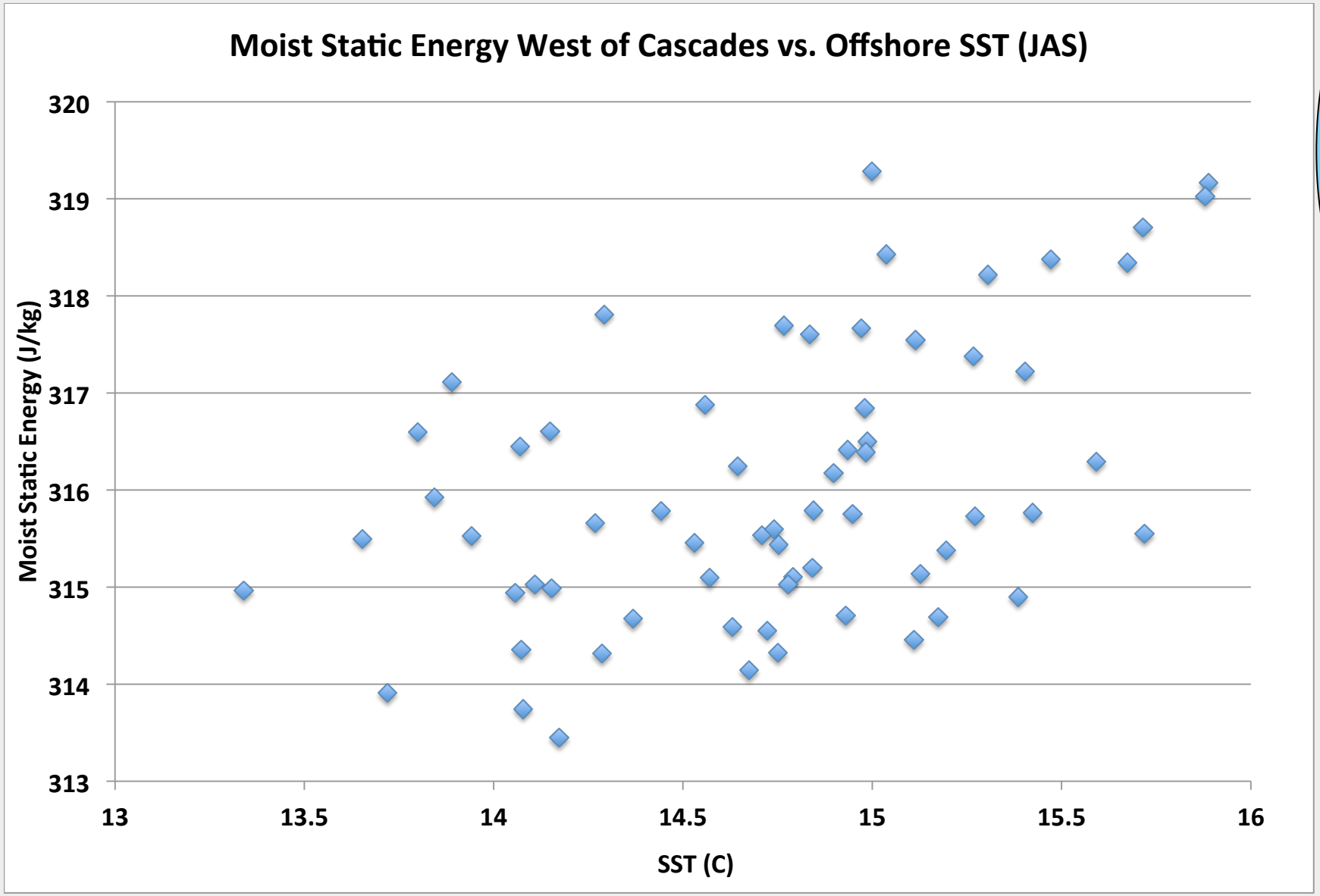
Terms in Oceanic Mixed Layer Heat Budget (Oct-Feb)

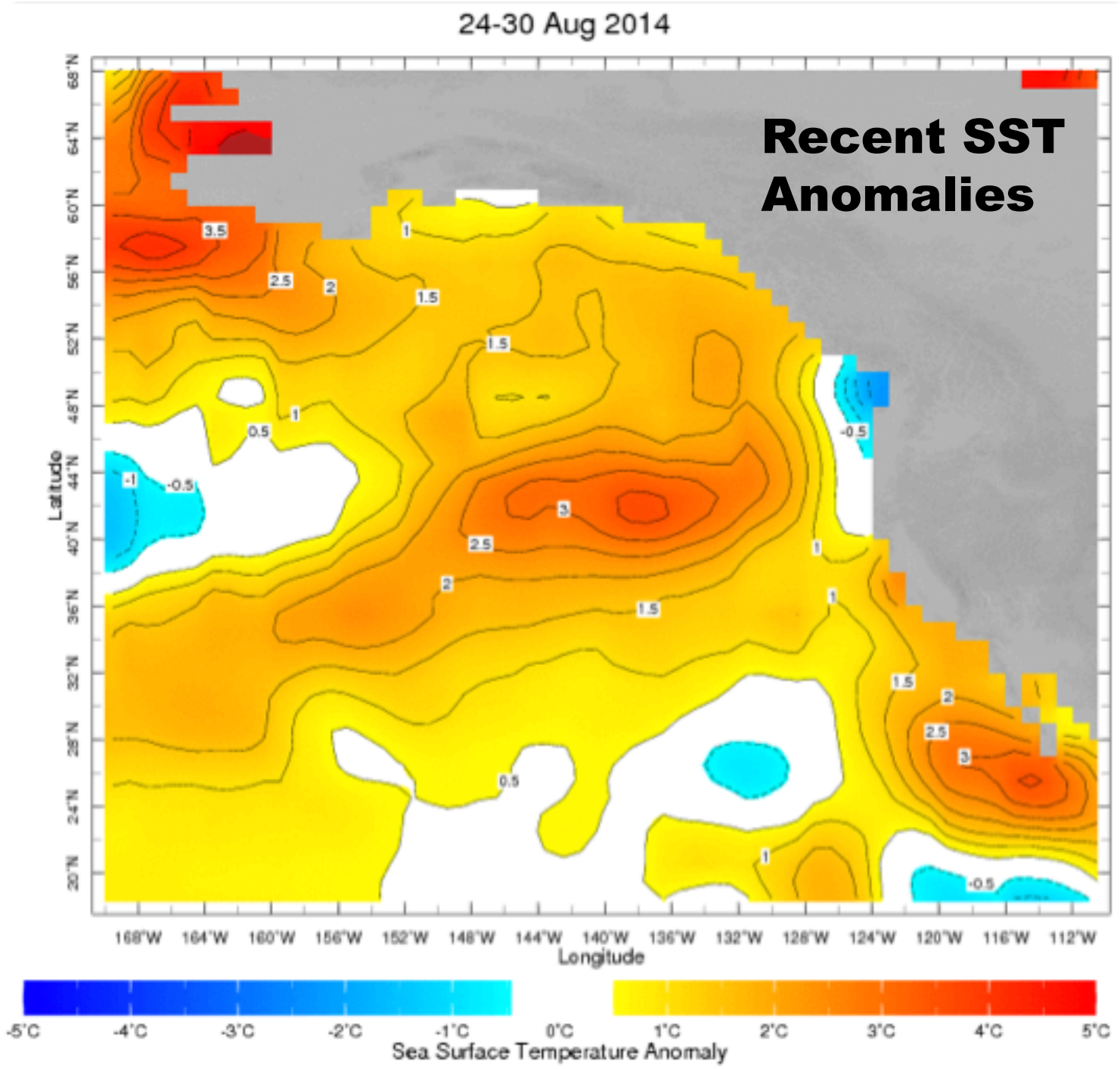



24-30 Aug 2014
Recent SST Anomalies
Latitude
68°N
64°N
60°N
56°N
52°N
48°N
44°N
40°N
36°N
32°N
28°N
24°N
20°N
168°W
164°W
160°W
156°W
152°W
148°W
144°W
140°W
136°W
132°W
128°W
124°W
120°W
116°W
112°W
Longitude
-5°C
-4°C
-3°C
-2°C
-1°C
0°C
1°C
2°C
3°C
4°C
5°C
Sea Surface Temperature Anomaly


Mean Offshore SST and Inland BL Thermal Properties (JAS)
Offshore SST
Moist Static Energy West of Cascades (J/kg)
18
17.5
17
16.5
16
15.5
15
14.5
14
13.5
13
320
319
318
317
316
315
314
313
312
311
310
1948
1958
1968
1978
1988
1998
2008
*

2014


Moist Static Energy West of Cascades vs. Offshore SST (JAS)
320
319
318
317
316
315
314
313
Moist Static Energy (J/kg)
13
13.5
14
14.5
15
15.5
16
SST (C)


24-30 Aug 2014
Recent SST Anomalies
Latitude
68°N
64°N
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56°N
52°N
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44°N
40°N
36°N
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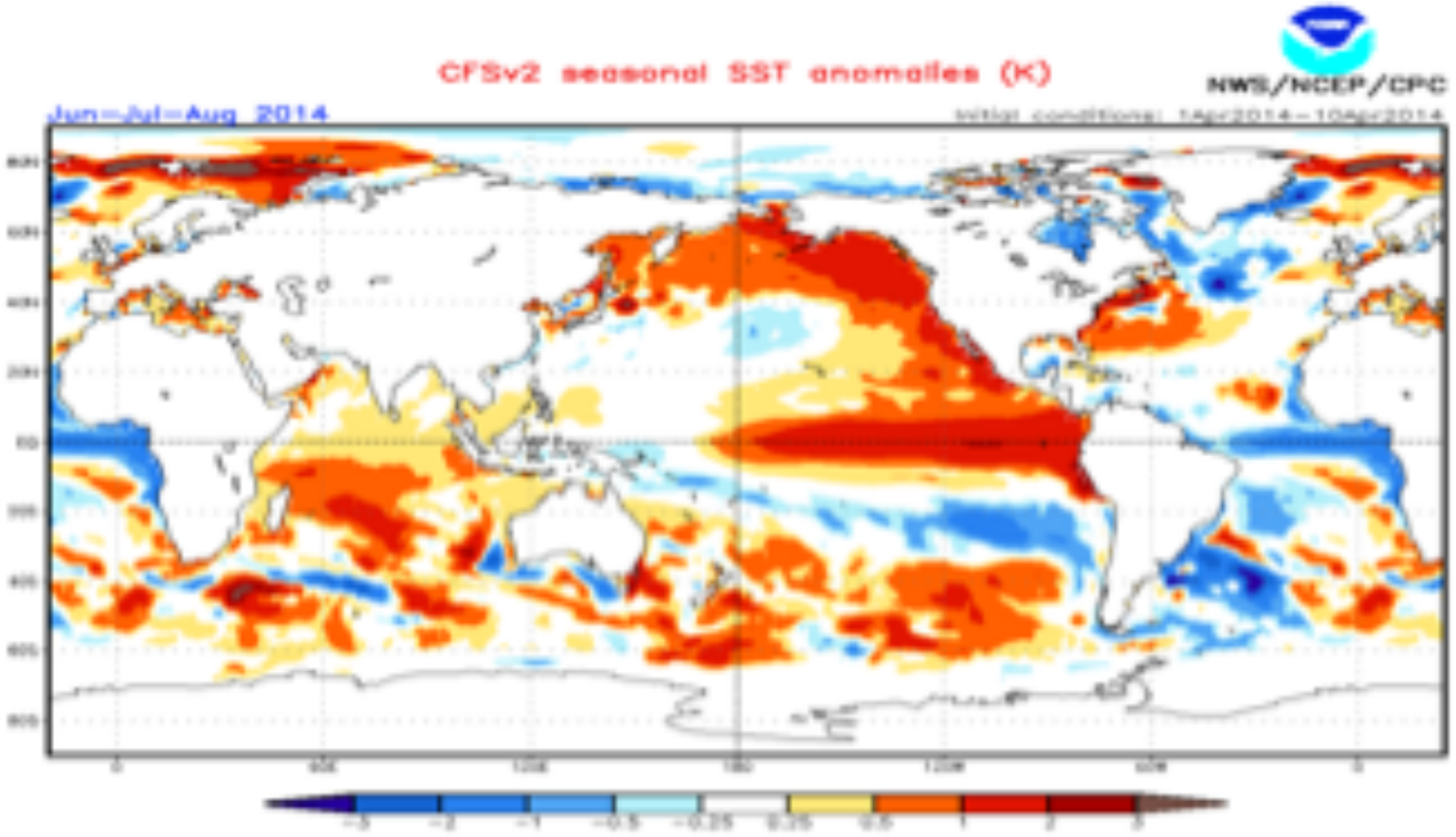
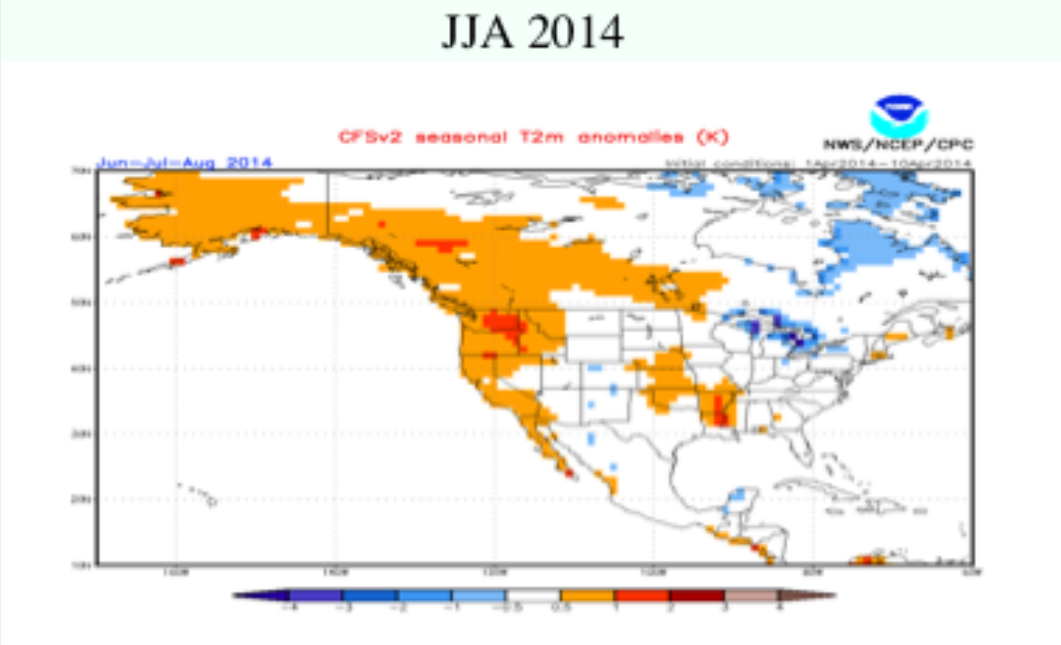
24°N
20°N
168°W
164°W
160°W
156°W
152°W
148°W
144°W
140°W
136°W
132°W
128°W
124°W
120°W
116°W
112°W
Longitude
-5°C
-4°C
-3°C
-2°C
-1°C
0°C
1°C
2°C
3°C
4°C
5°C
Sea Surface Temperature Anomaly

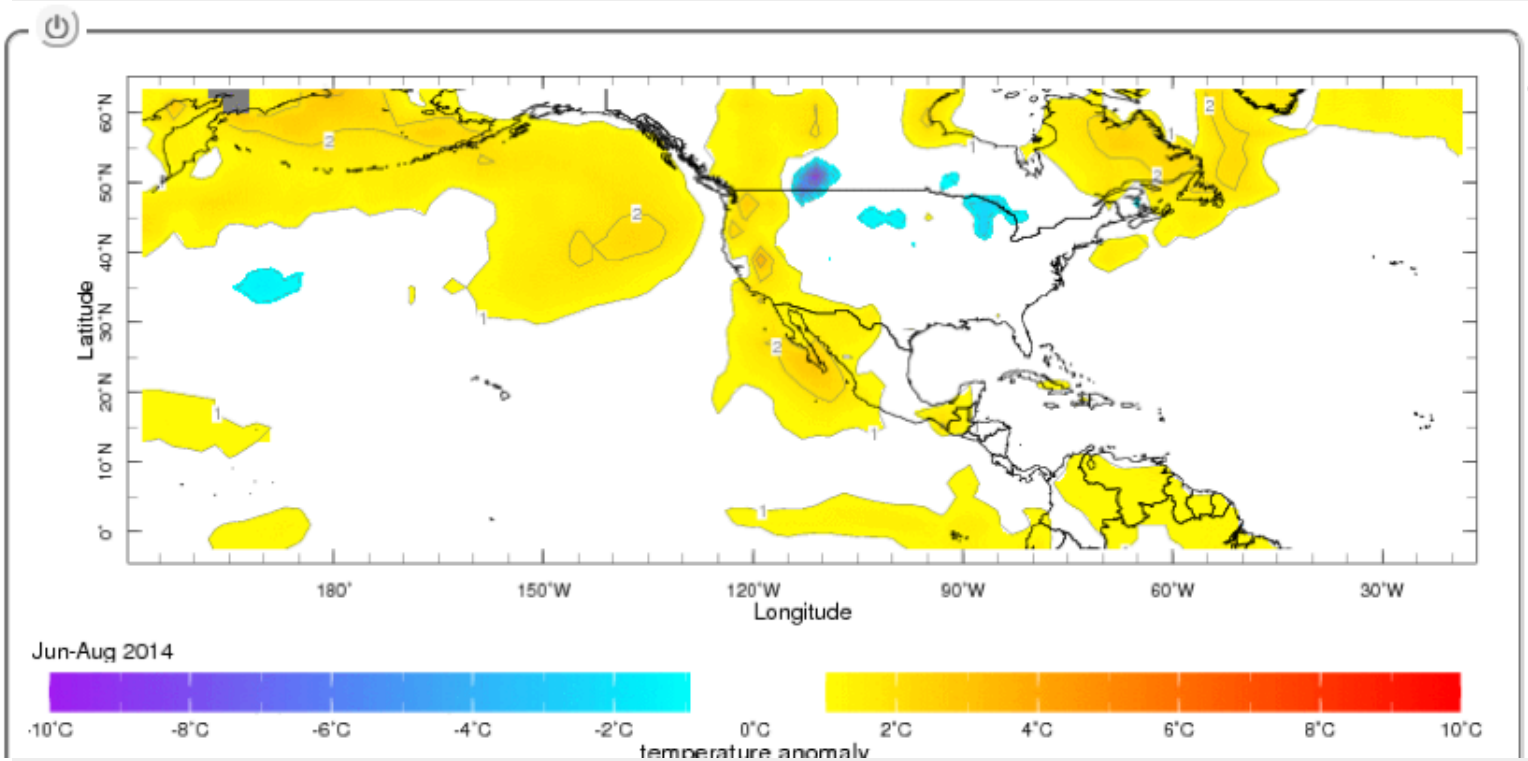
CFS Prediction of SST Anomalies from April 2014

JJA 2014

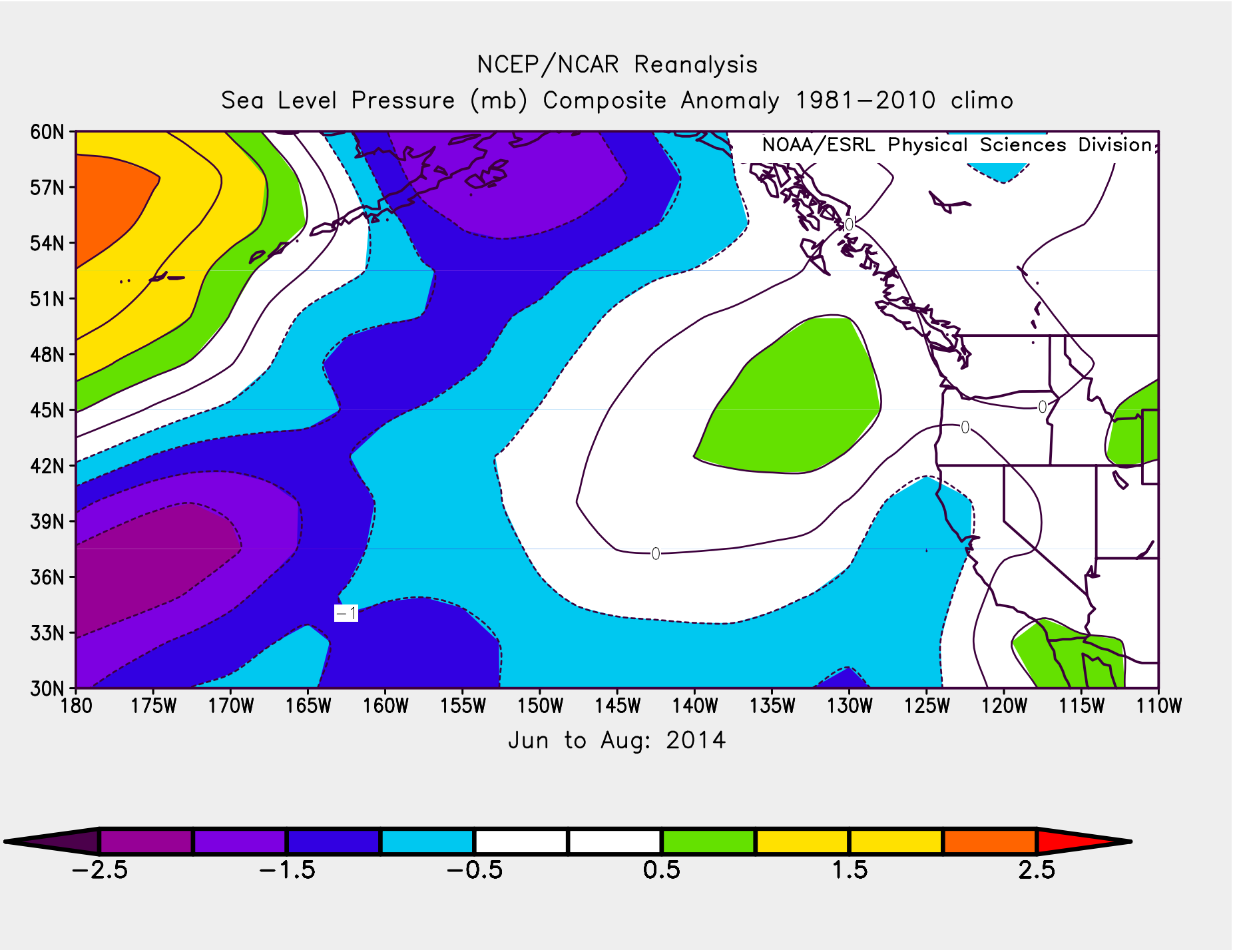




CFS Prediction Surface T_{air} Anomalies from April 2014



Observed T_{air}


NCEP/NCAR Reanalysis
Sea Level Pressure (mb) Composite Anomaly 1981–2010 climo
NOAA/ESRL Physical Sciences Division
60N
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51N
48N
45N
42N
39N
36N
33N
30N
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
130W
125W
120W
115W
110W
0
0
0
0
−1
Jun to Aug: 2014
−2.5
−1.5
−0.5
0.5
1.5
2.5

Final Remarks

- A strong and persistent ridge of high pressure over the NE Pacific from October 2013 into February 2014 resulted in suppressed cooling of the upper ocean

- Based on the record back to the late 1940s, the SST offshore corresponds with low-level thermodynamic properties west of the Cascades during summer

- NCEP's CFS model predictions from late winter 2014 for regional SST and T_{air} resemble the observed patterns in summer 2014