

## Summary of North Pacific working group:

### Two experiments:

1. Effect of lateral eddy flux on carbon flux in the subpolar gyre.

2. Quantifying the role of biology in the drawdown of  $\text{CO}_2$  at the subtropical-subpolar boundary in the North Pacific.

Effect of lateral eddy flux on carbon flux in the subpolar gyre:

Eddies are predictable and coherent O(2 years).

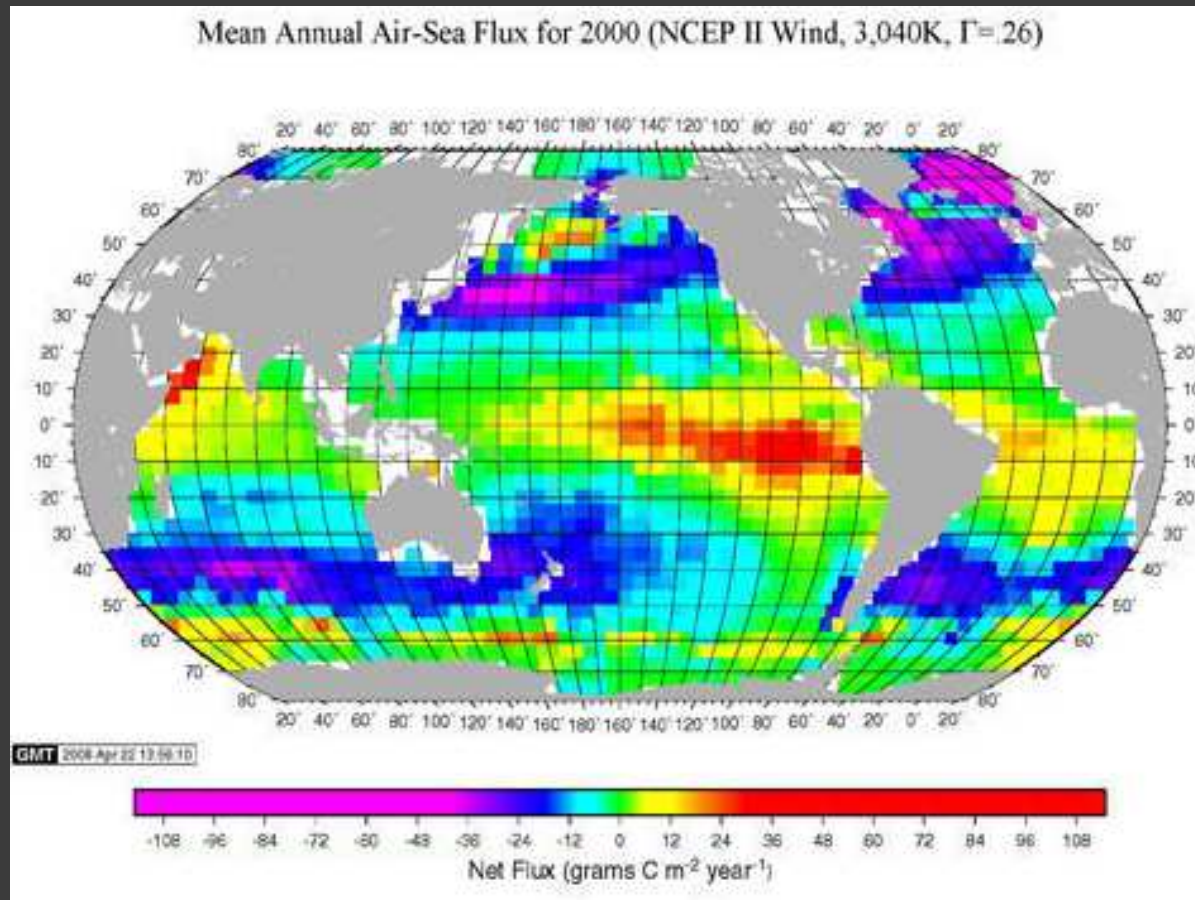
Insert macro and micronutrients to the NP sub-polar gyre.

Infrastructure:

Seed eddies if O(3) profiling floats and sample horizontal and vertical context with 2 gliders

Sample of O<sub>2</sub>, N<sub>2</sub>, Particles, physics.

## 2. WHAT IS THE BIOLOGICAL CONTRIBUTION TO THE INTENSE $p\text{CO}_2$ DRAW-DOWN AT THE PACIFIC SUBARCTIC-SUBTROPICAL BOUNDARY?

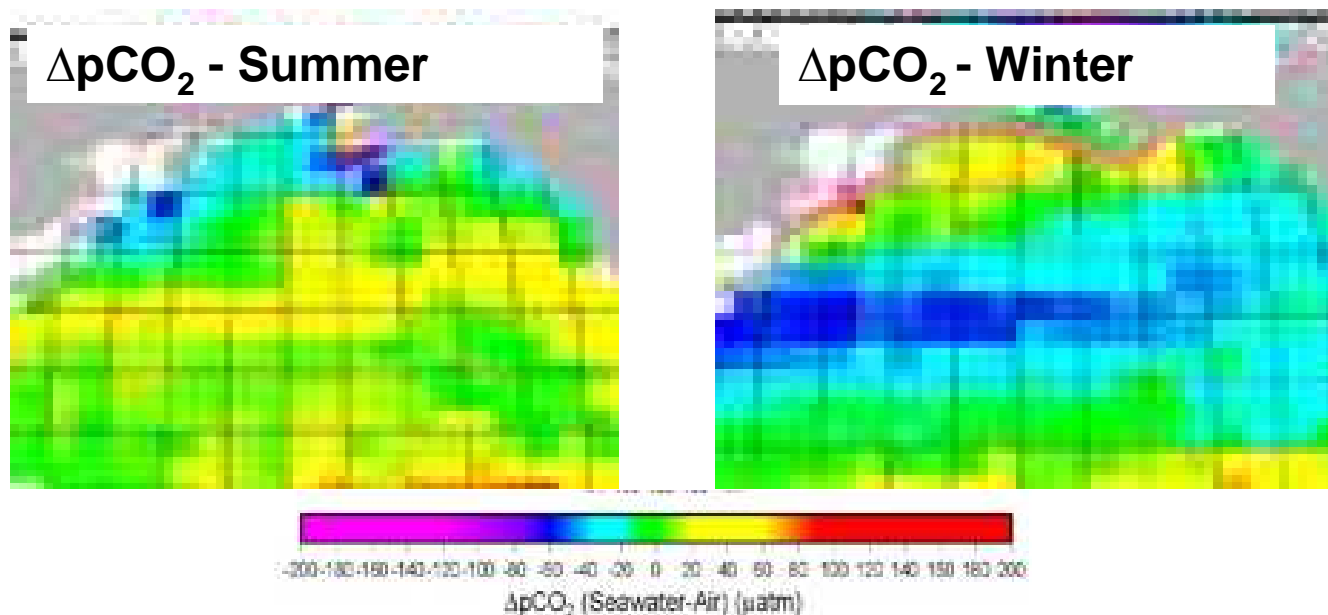
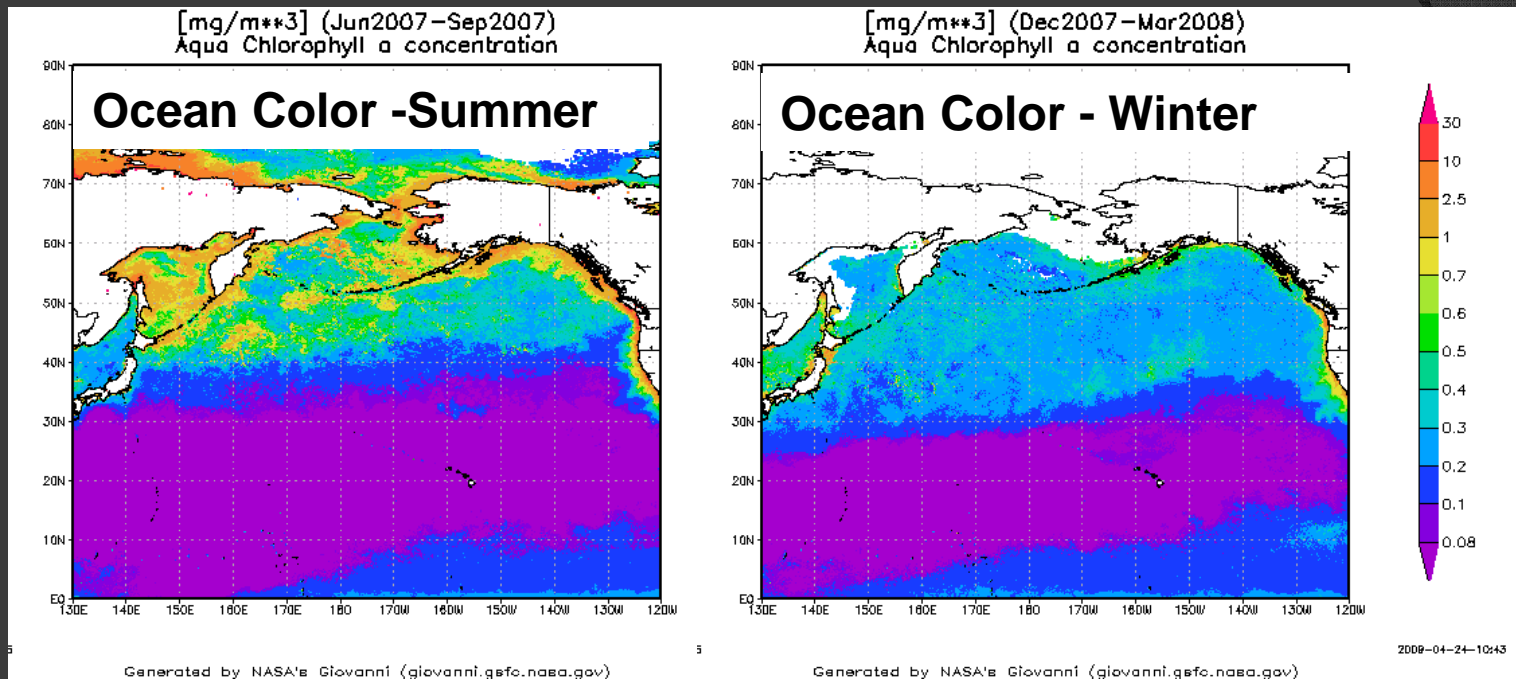


Mean Annual Air-Sea  
Flux for 2000

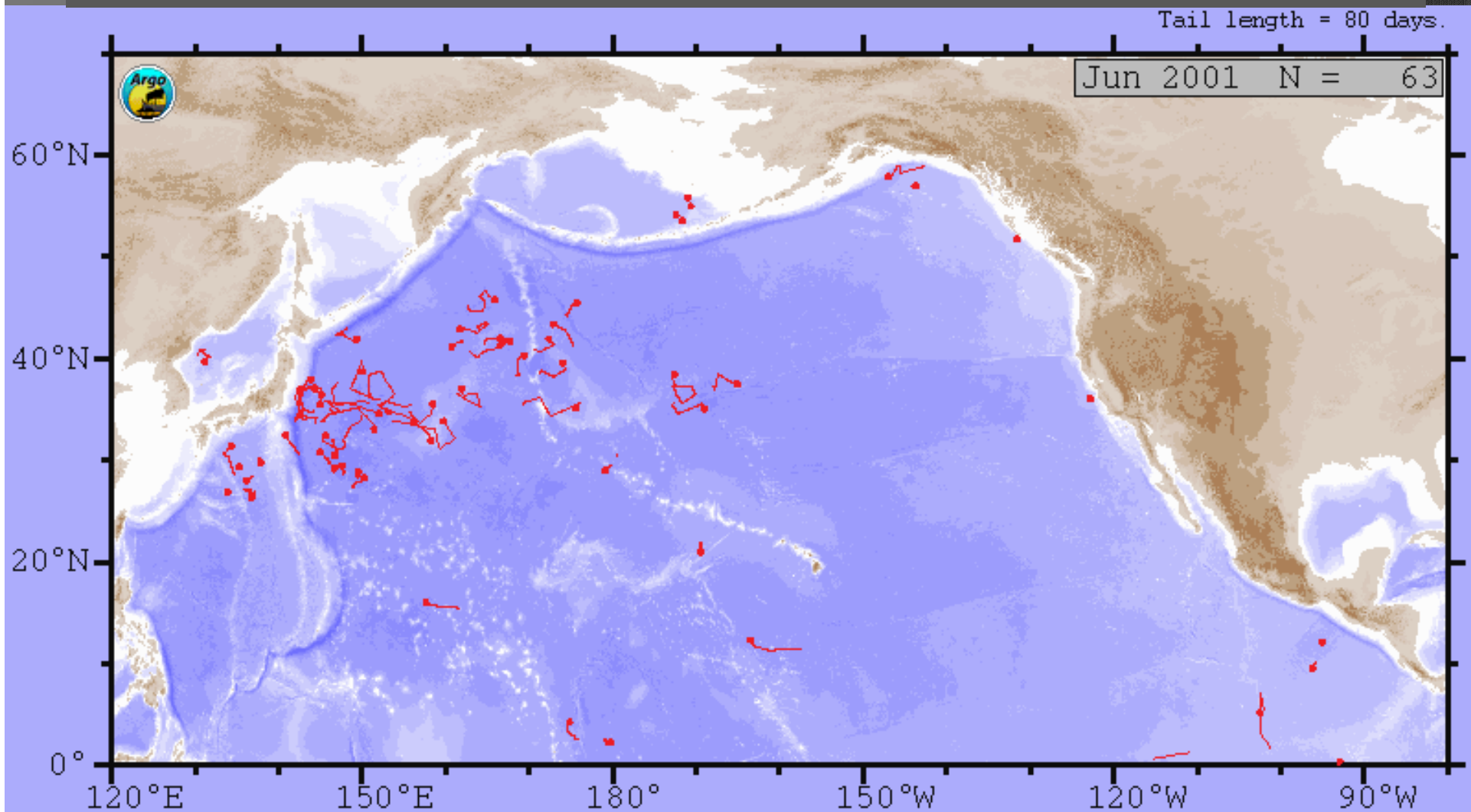
Taro Takahashi data base,  
[www.ldeo.columbia.edu](http://www.ldeo.columbia.edu)

A proposed pilot project to study upper ocean oxygen production OCB  
Float-Glider Workshop April 2009 Steve Emerson and friends

# SEASONALITY IS VERY IMPORTANT



# IF WE PUT ARGO FLOATS INTO THE OCEAN IN THE WESTERN PACIFIC AT THE GYRE BOUNDARY WHERE DO THEY GO ?



Freeland ARGO Site: [www.pac.dfo-mpo.gc.ca/sci/osap/projects/argo/argo\\_e.htm](http://www.pac.dfo-mpo.gc.ca/sci/osap/projects/argo/argo_e.htm)



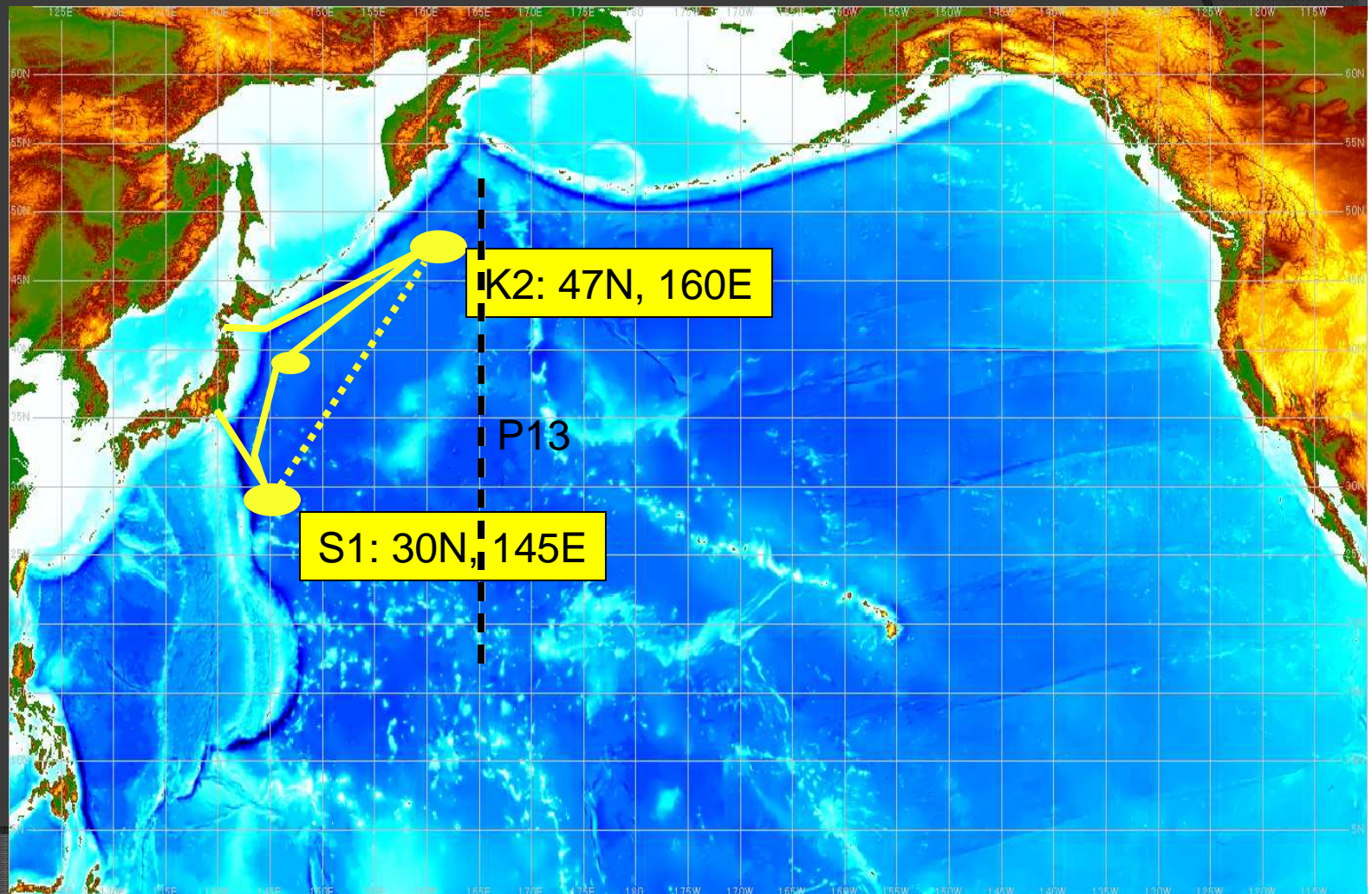
# COLLABORATIONS: THE JAPANESE PACIFIC CARBON PROGRAM

Toshiro Saino (Personal communication)

Two Time Series Stations: K2 and S1

Mirai Cruises Between them:

Feb, Nov 2010; Feb, Apr, July 2011



## Infrastructure:

20 floats: CTD, O<sub>2</sub>, ISUS/SUVA, FLNTU+CDOM (!?). Released in batches of 5 along a N-S section.

4 gliders – cross the Kuroshio (3 degrees, one crossing every two weeks). CTD, O<sub>2</sub> & FLNTU.

Calibration/cross-calibration is crucial.

Released using ships of opportunity.

Already funded efforts:

Ken and Steve: experiment with 6 floats in PAPA region. Boss (+Westberry): 1 float in PAPA (O2+FLNTU).