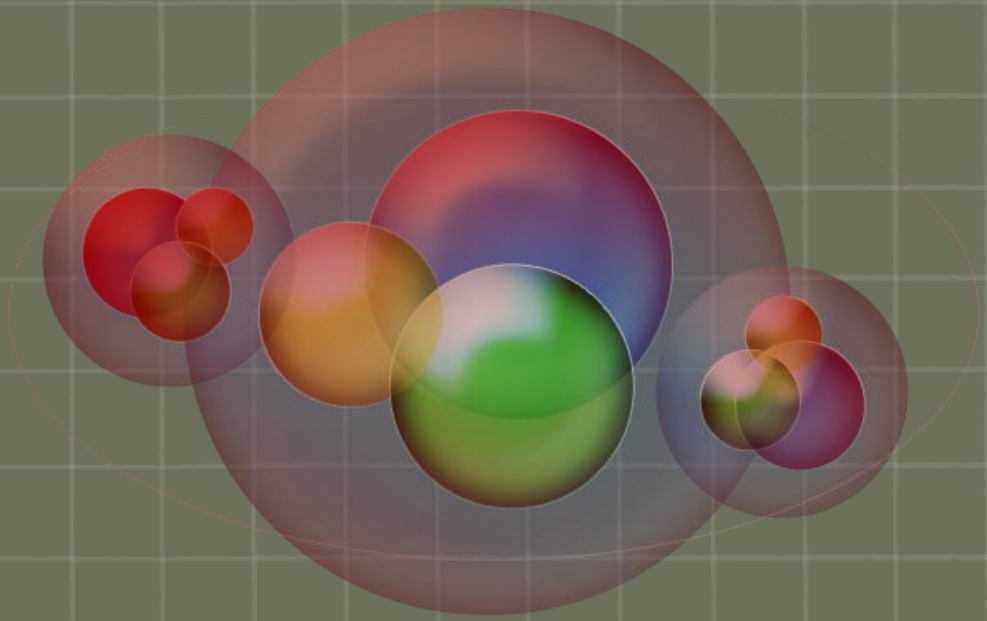
Identifying Drifter Deployment Values



Presented by:

Shaun Dolk

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Miami, Florida

Objectives & Direction

- Review Global Drifter Program Operational Requirements
  - View Historic Deployment Guide Tools
- Outline Key Factors Affecting Drifter Values/Lifetimes
- Establish Drifter Deployment Map Components
- Display Drifter Deployment Values and Project Future Deployment Necessities

GDP Operational Requirements

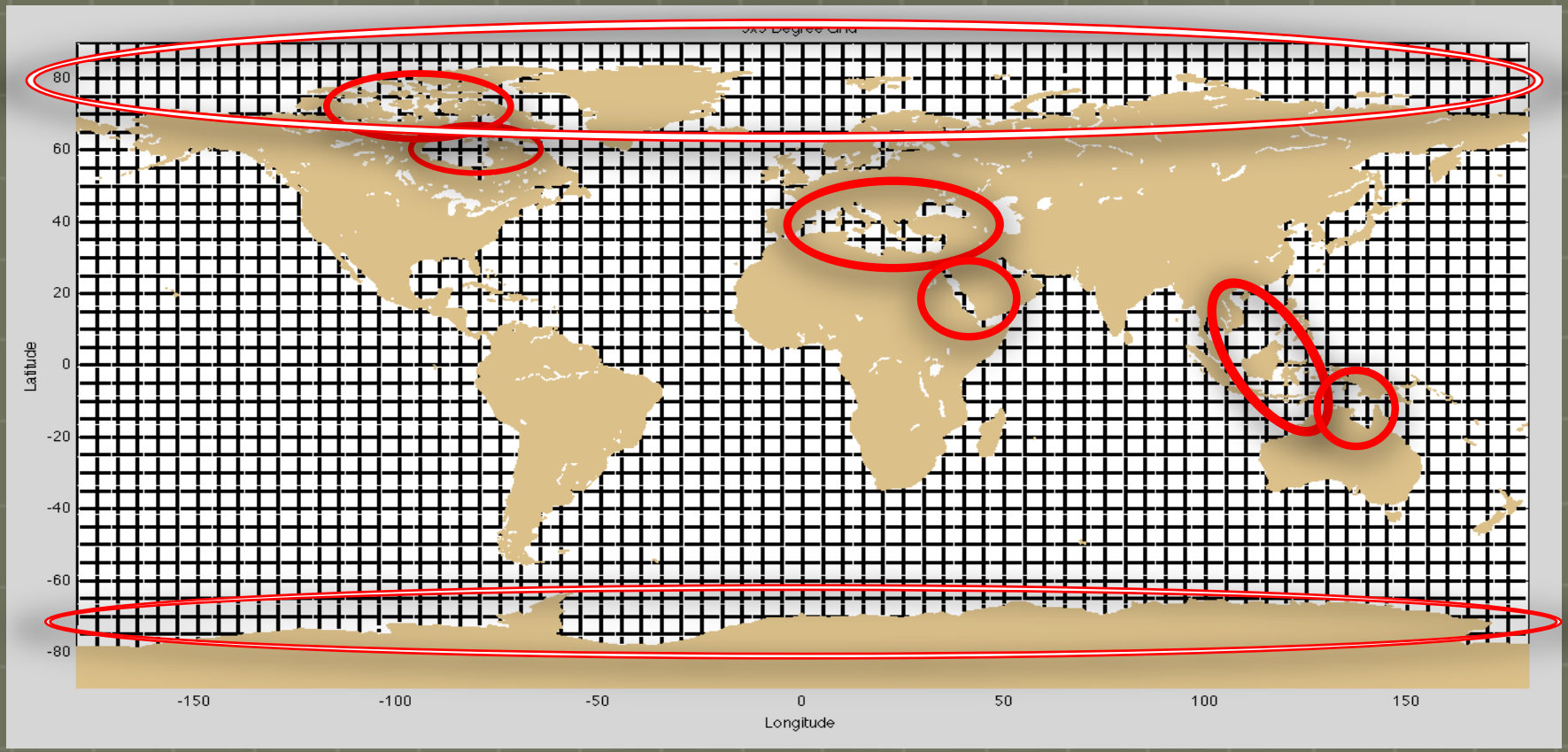
The GDP is the principle component of the Global Surface Drifting Buoy Array, a branch of NOAA's Global Ocean Observing System (GOOS) and a scientific project of the Data Buoy Cooperation Panel (DBCP).

Its objectives are to:

1. **Maintain a global 5x5 degree array of 1250 satellite-tracked surface drifting buoys to meet the need for an accurate and globally dense set of in-situ observations of mixed layer currents, sea surface temperature, atmospheric pressure, winds and salinity, and**

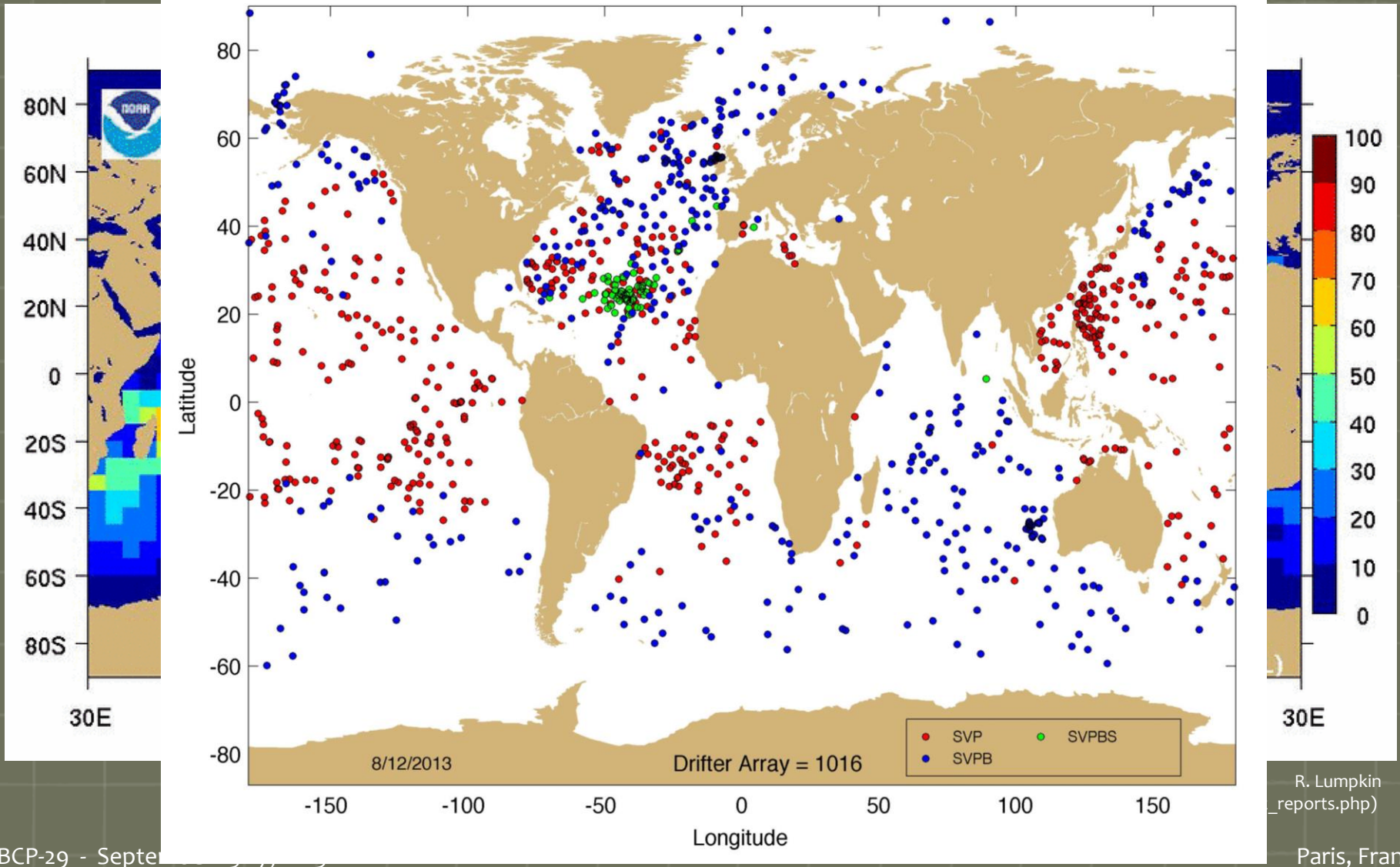
2. **Provide** a data processing system for scientific use of these data. These data support short-term (seasonal to interannual) climate predictions as well as climate research and monitoring.

Maintaining a Global Drifter Array



- 5x5° Grid Across Globe
  - 1 Drifter in Every 5x5° Bin
    - Exclude Shallow waters (<60 feet)
    - Exclude Closed Basins
  - ~1250 Bins in Open Ocean

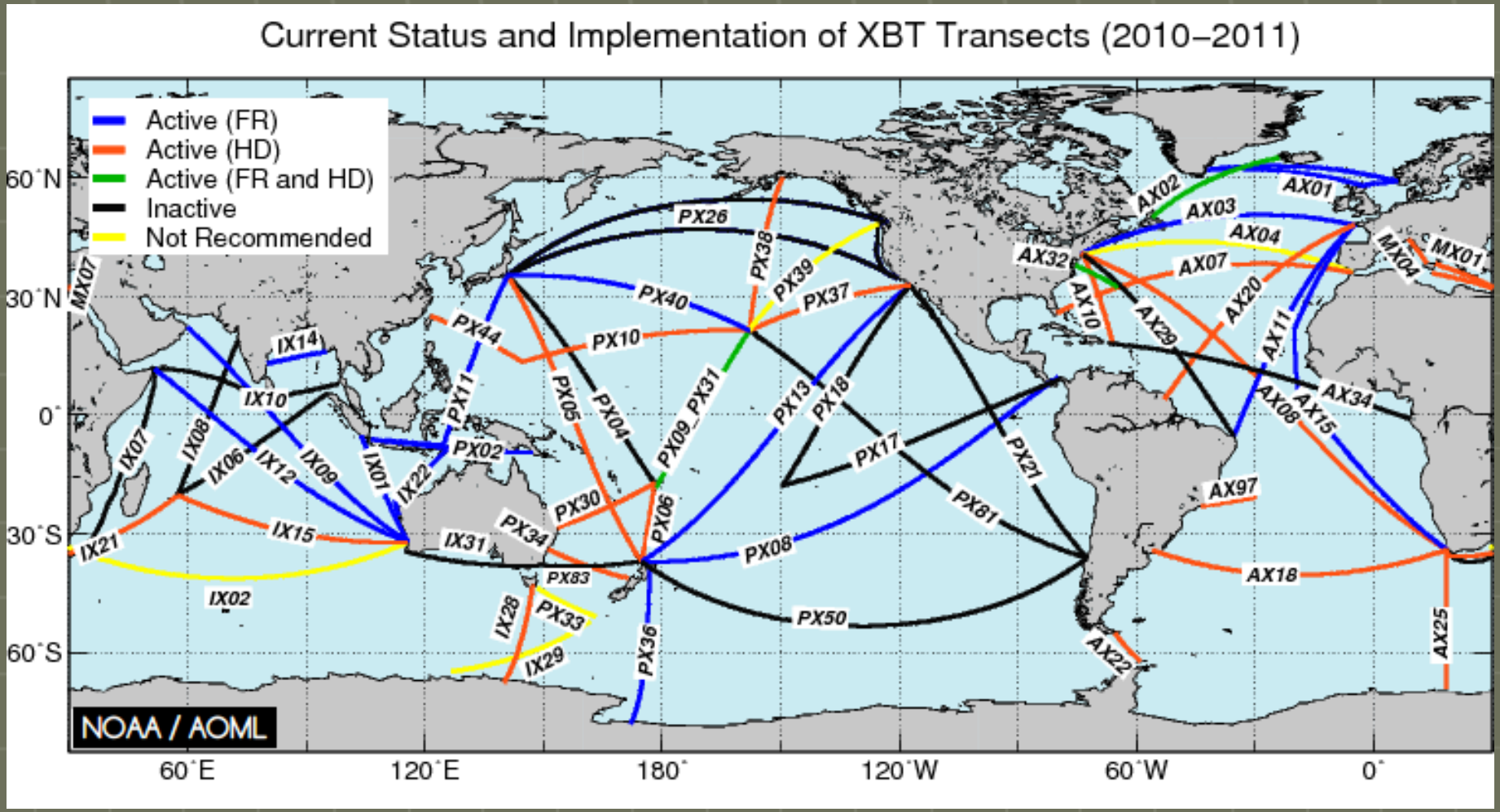
Historic Deployment Guide Tools



R. Lumpkin
_reports.php)

Historic Deployment Guide Tools

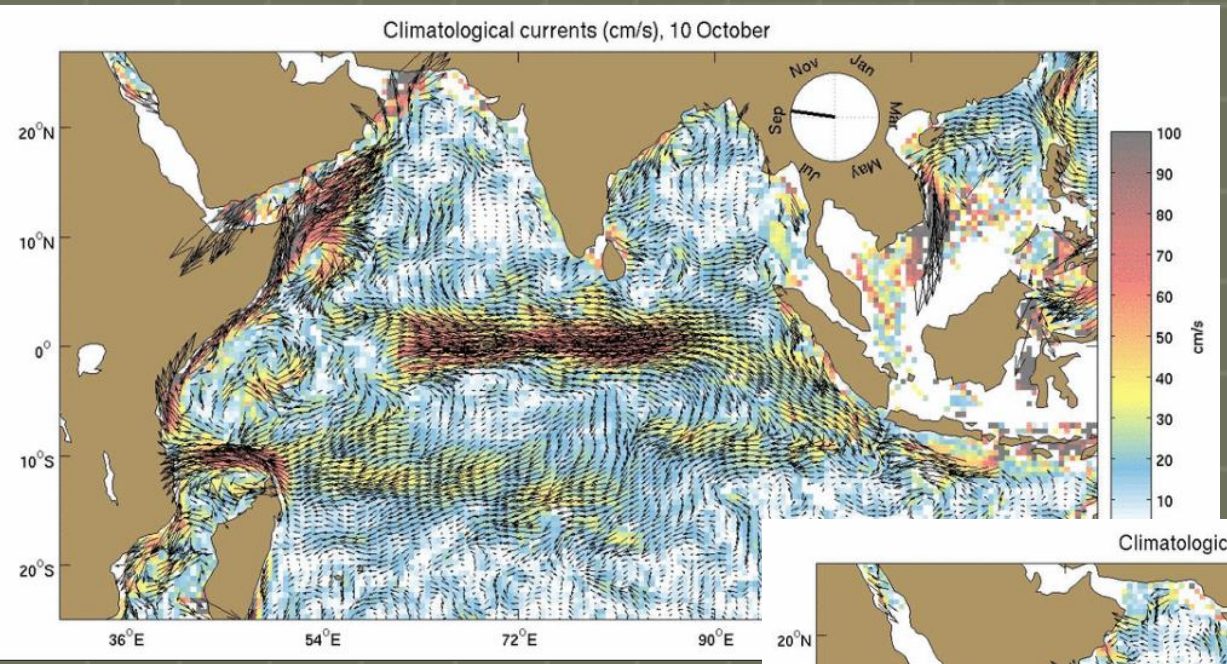
Valuable Ocean Transects



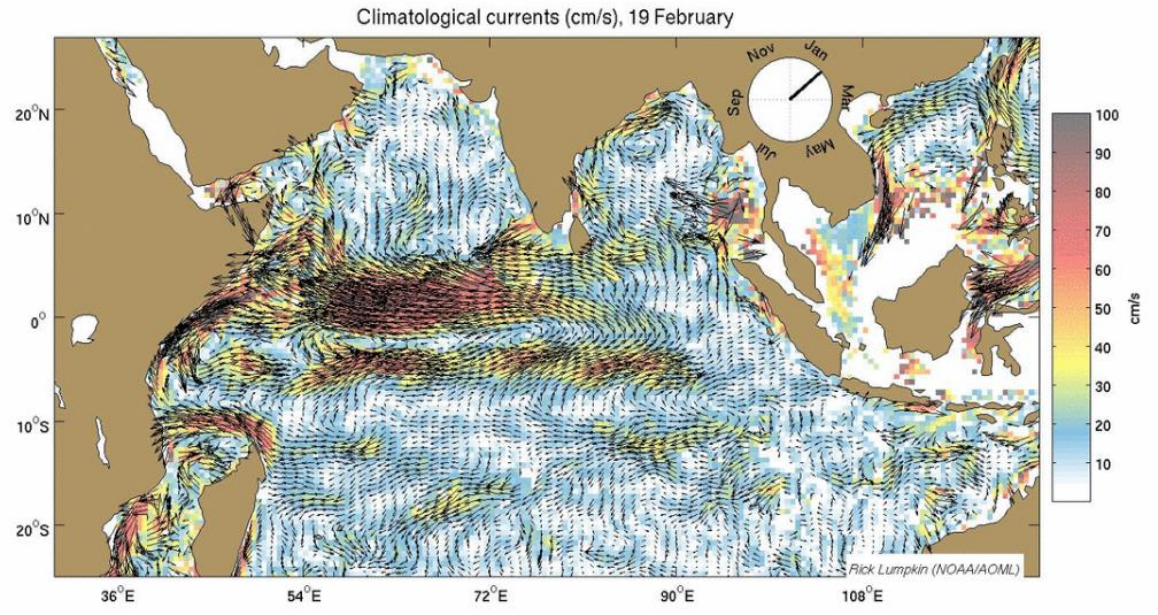
SOOP Network
(http://www.aoml.noaa.gov/phod/goos/xbt_network/)

Historic Deployment Guide Tools

Climatological Current Annimations



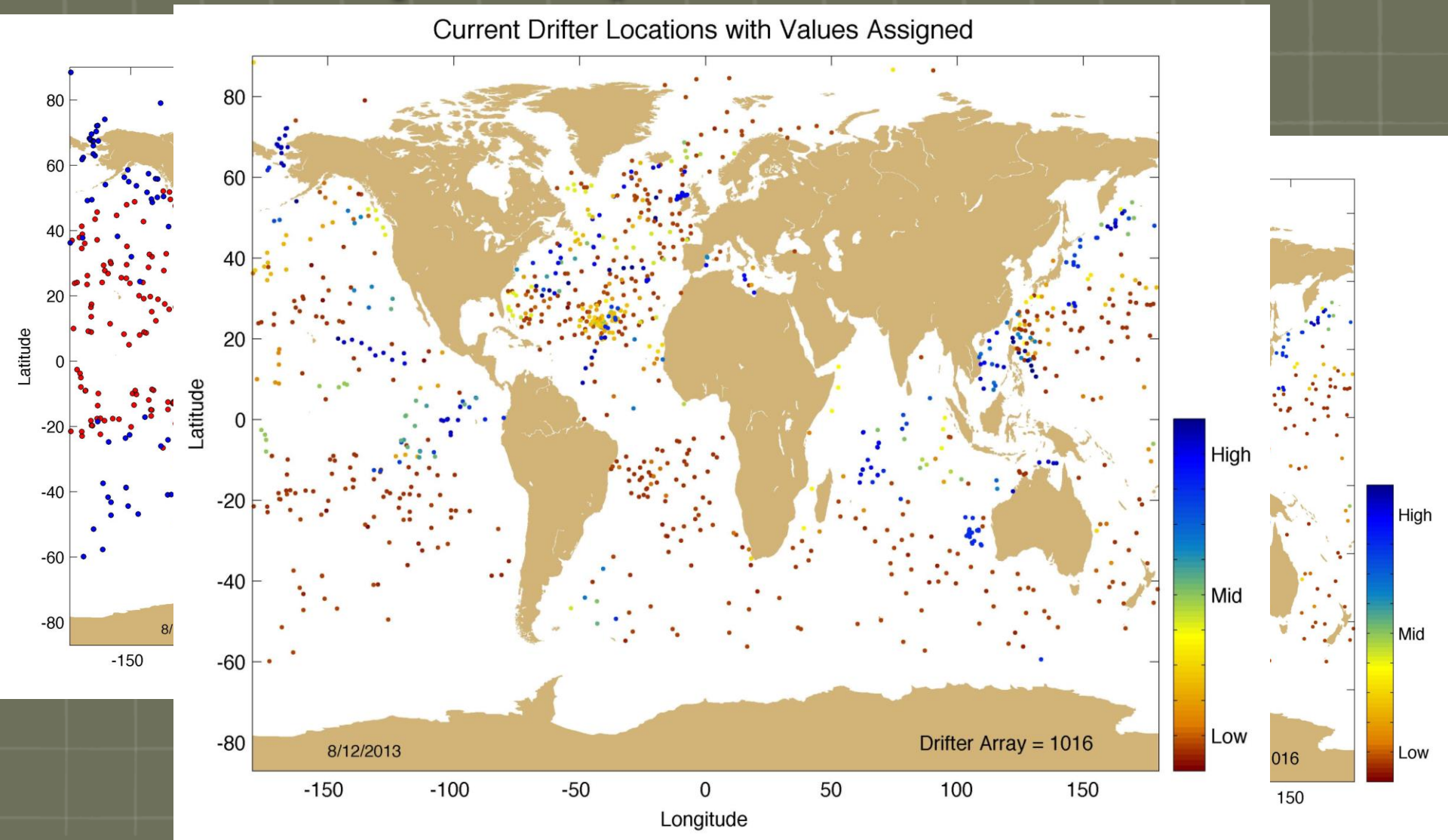
R. Lumpkin
(http://www.aoml.noaa.gov/phod/dac/dac_animations.php)



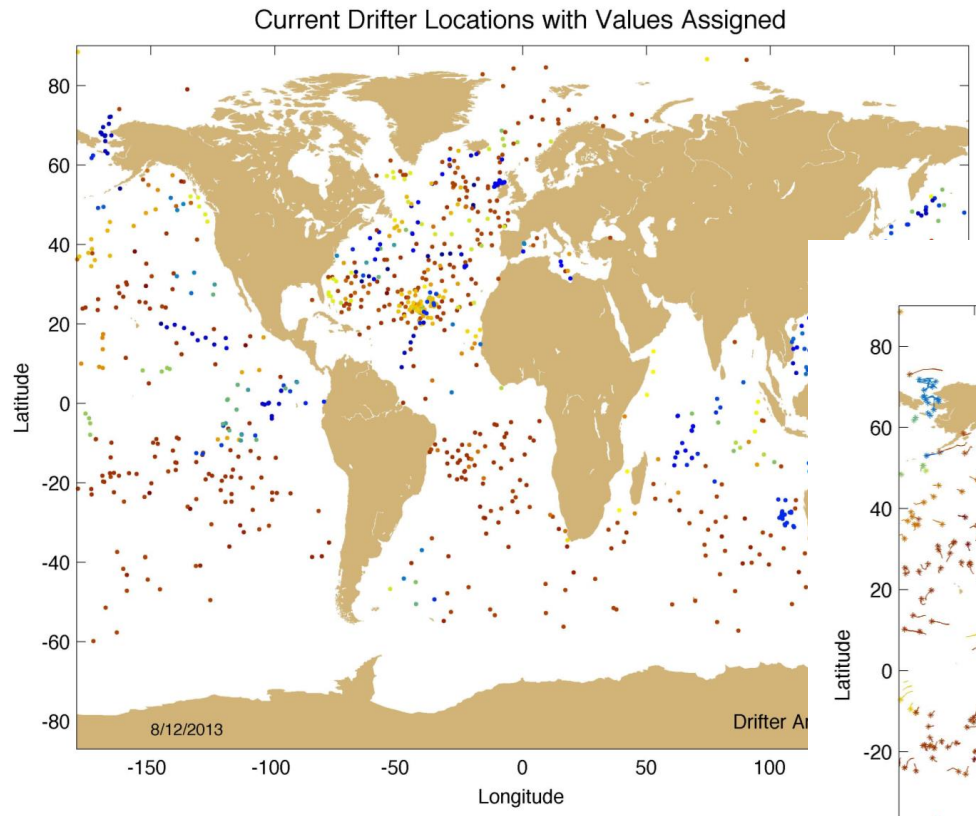
Key Factors Affecting Drifter Values/Lifetimes

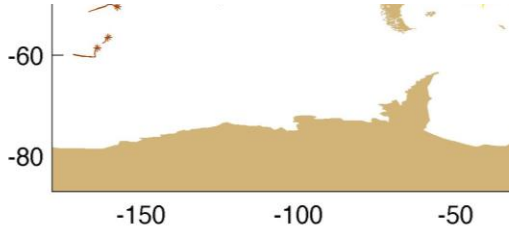
- Drifter Lifetime (age factor / af)
  - Expected Lifetime = 450 days
  - Actual Lifetime = 237 day half-life
- Drogue Lifetime (df)
  - Expected Lifetime = 350 days
  - Actual Lifetime = 145 day half-life
- Number of Operational Sensors (ns)
  - SST (sst factor / sf)
  - Drogue (drogue factor / df)
  - Barometer (barometer factor / bf)
- Deployment Location/Proximity to Nearby Drifters

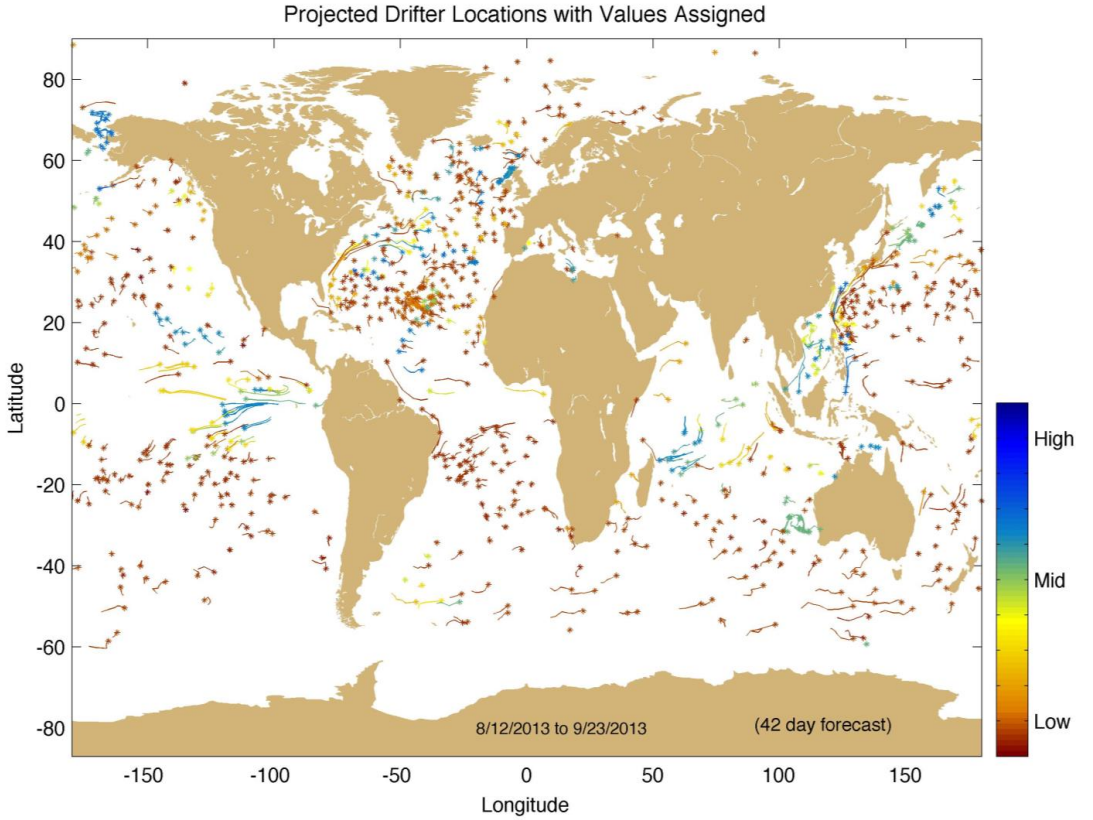
Drifter Deployment Map Components – Part One



Drifter Deployment Map Components – Part Two

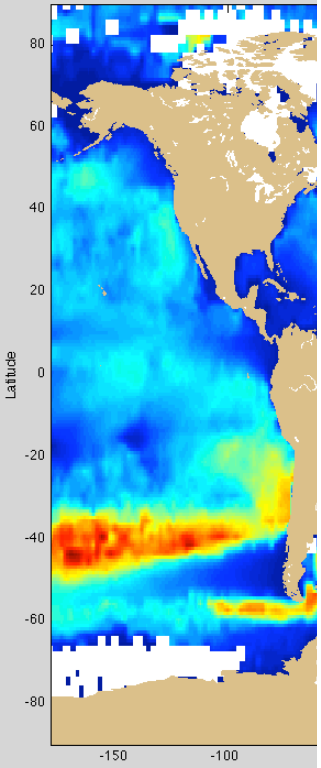


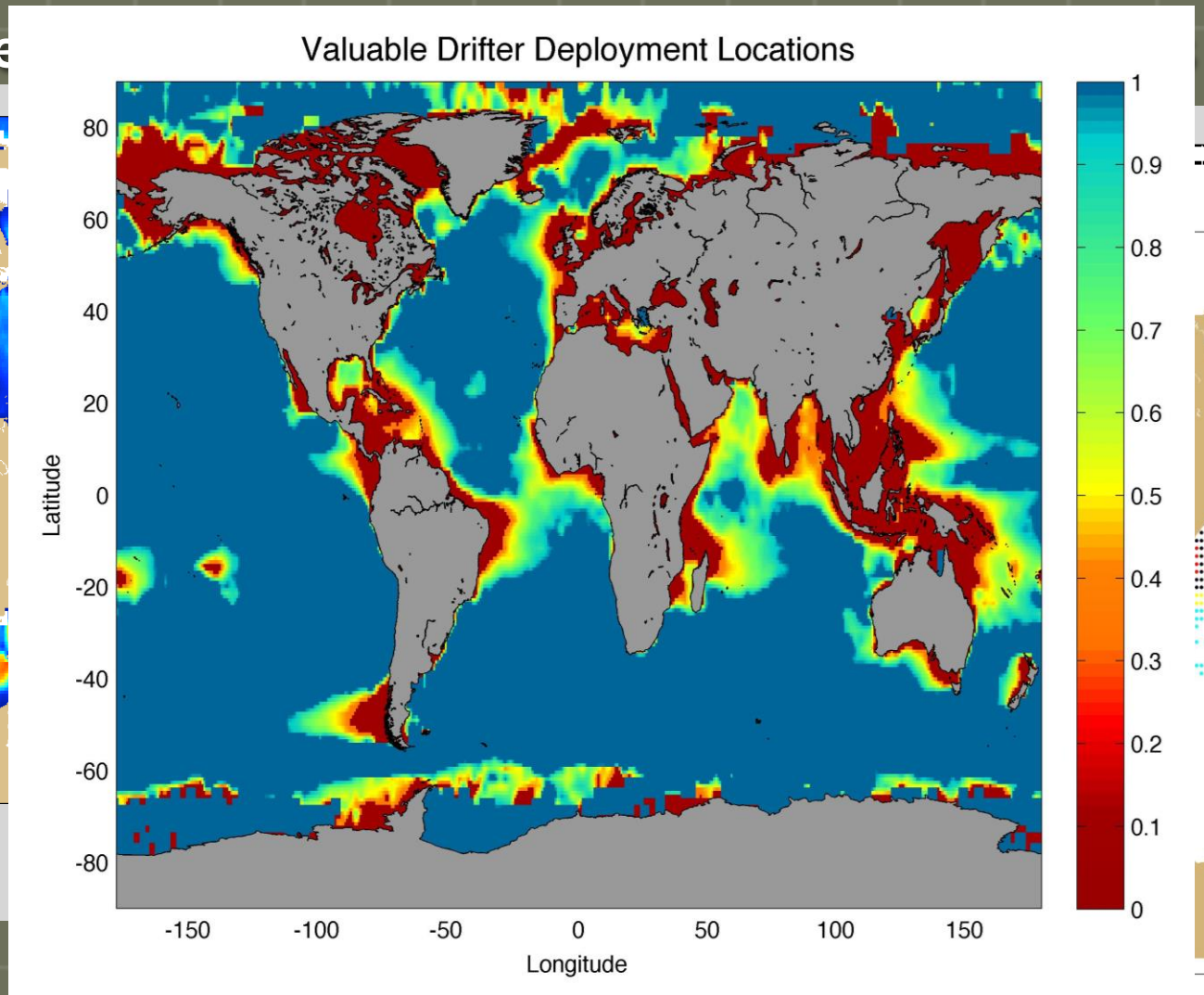


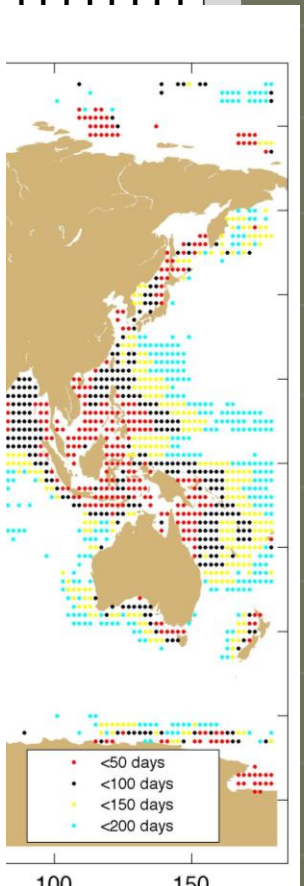


Drifter Deployment Map Components – Part Three

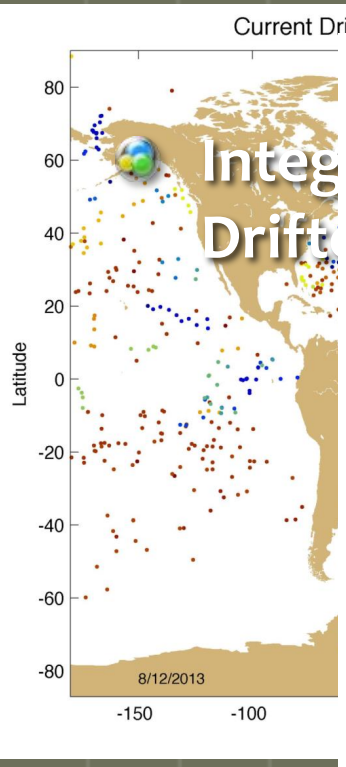
- Dete

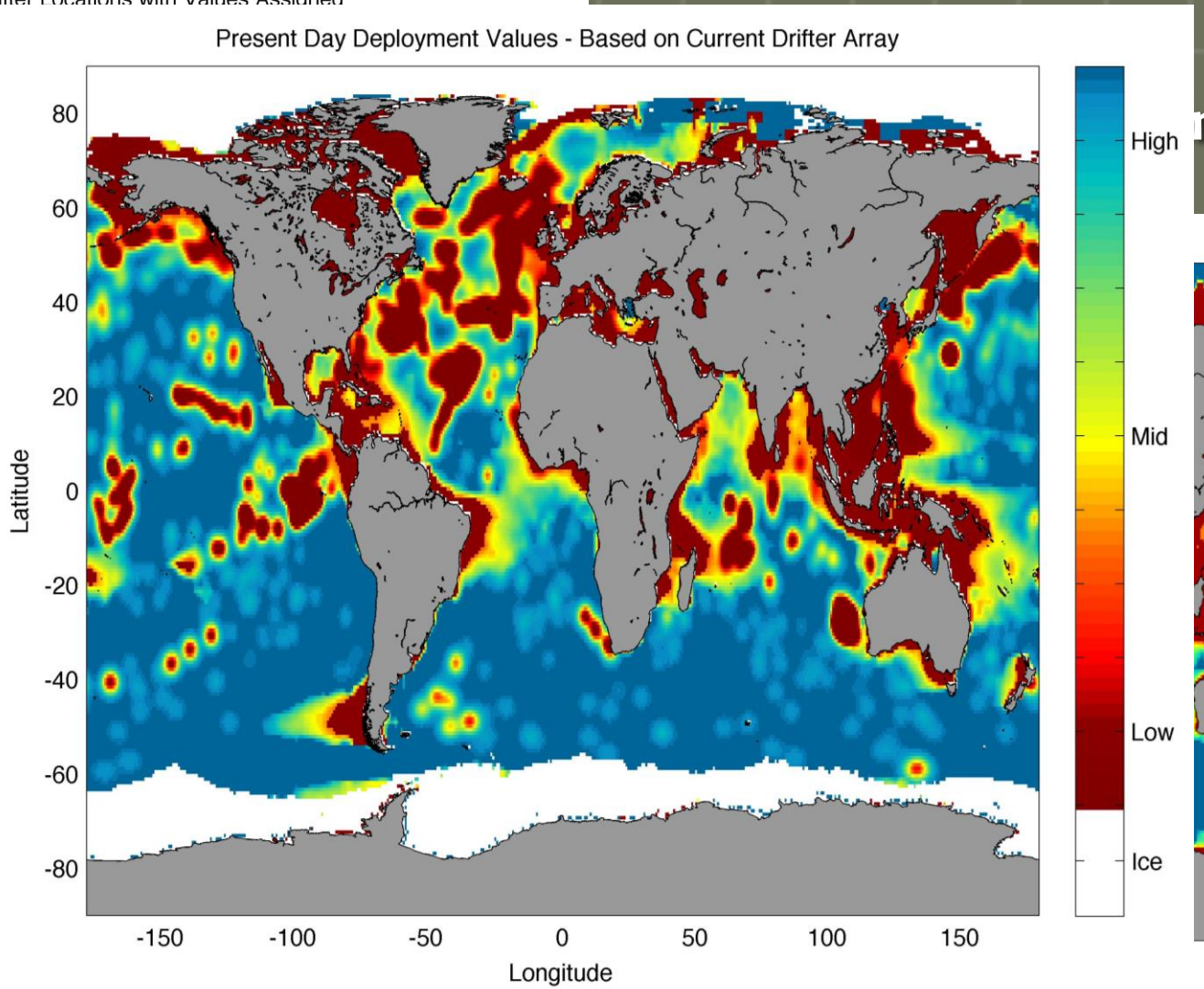


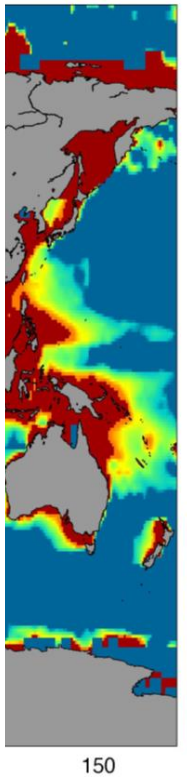




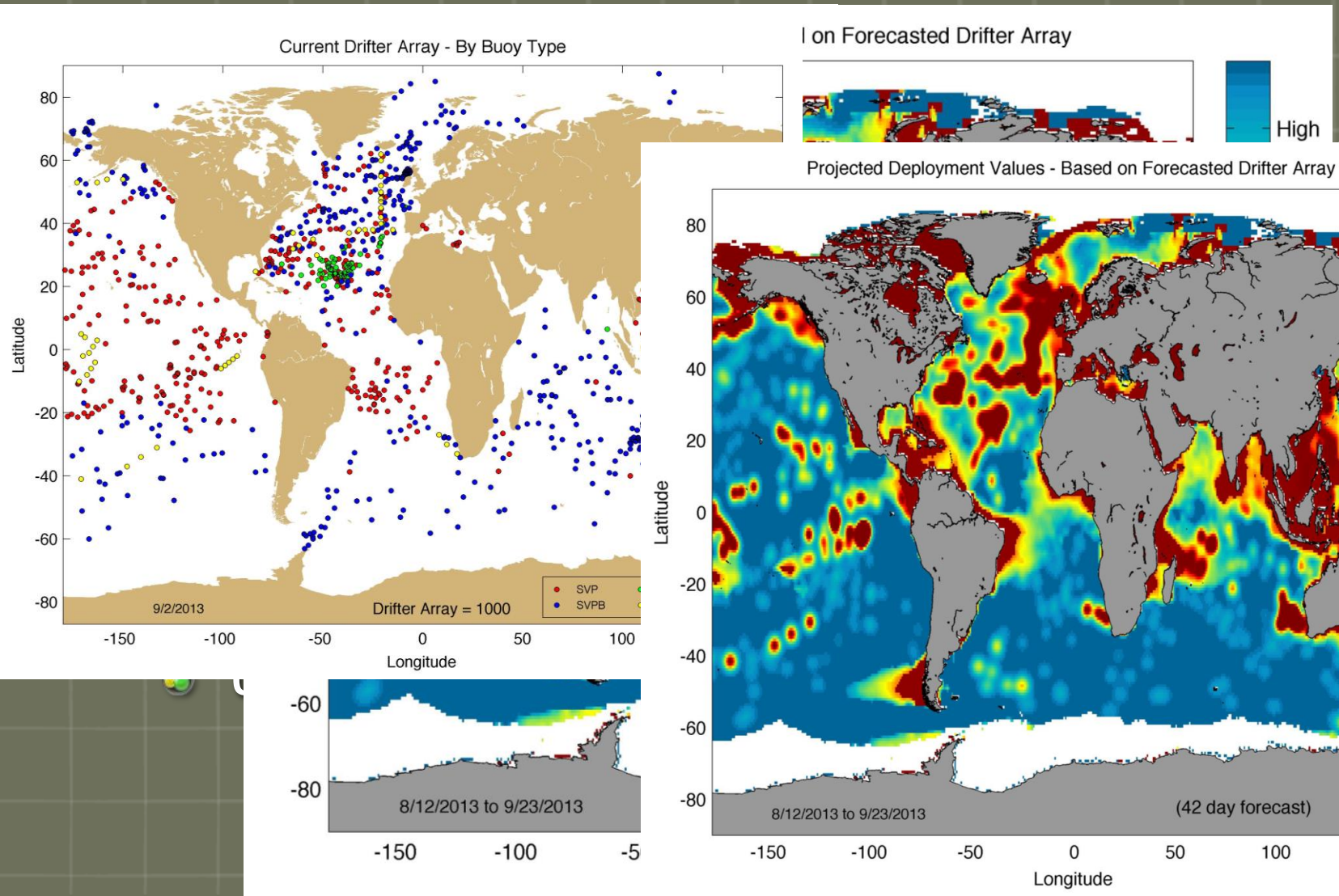
Current Drifter Deployment Values





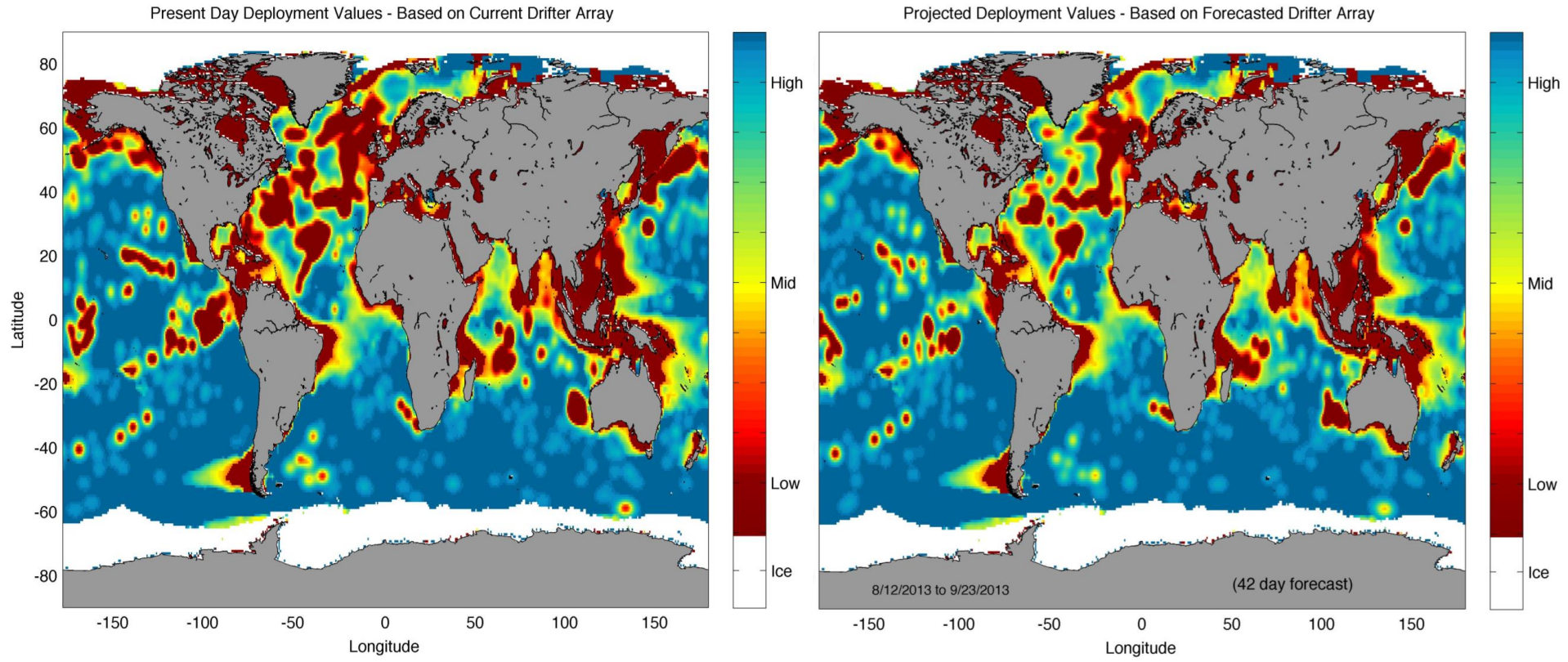


Projected Drifter Deployment Values



Drifter Deployment Value Maps

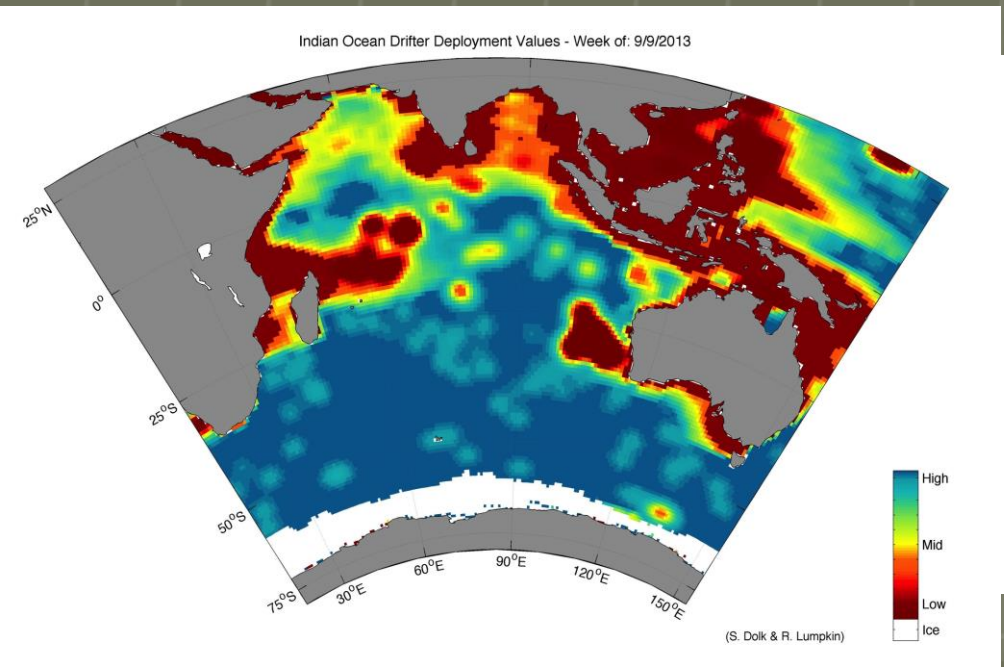
Current Drifter Array → 42 Days → Projected Drifter Array



Value Map Applications – Part One

- Select a Desired Ocean Basin
  - Determine How Many Weeks Until Deployment
    - Ideal for Classified Missions -- Where Cruise Tracks are Unavailable

```
>> IndianOcean
How many weeks forward would you like to forecast (ex., 0,1,...,6)?   4
```




```
>> NorthPacific
How many weeks forward would you like to forecast (ex., 0,1,...,6)?   2
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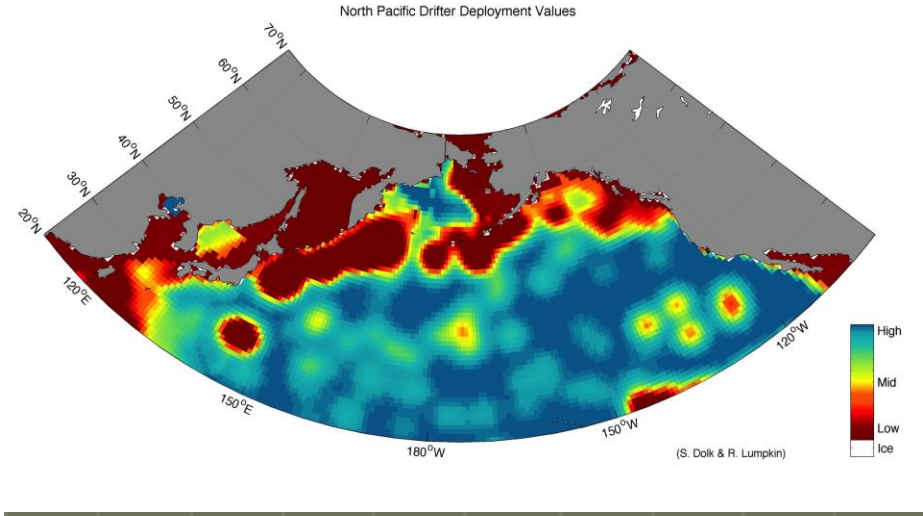
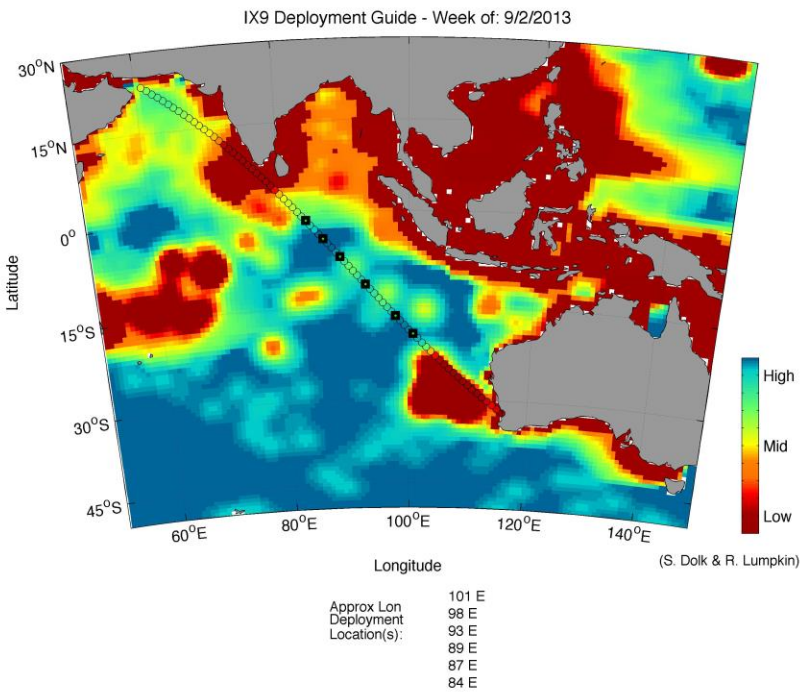
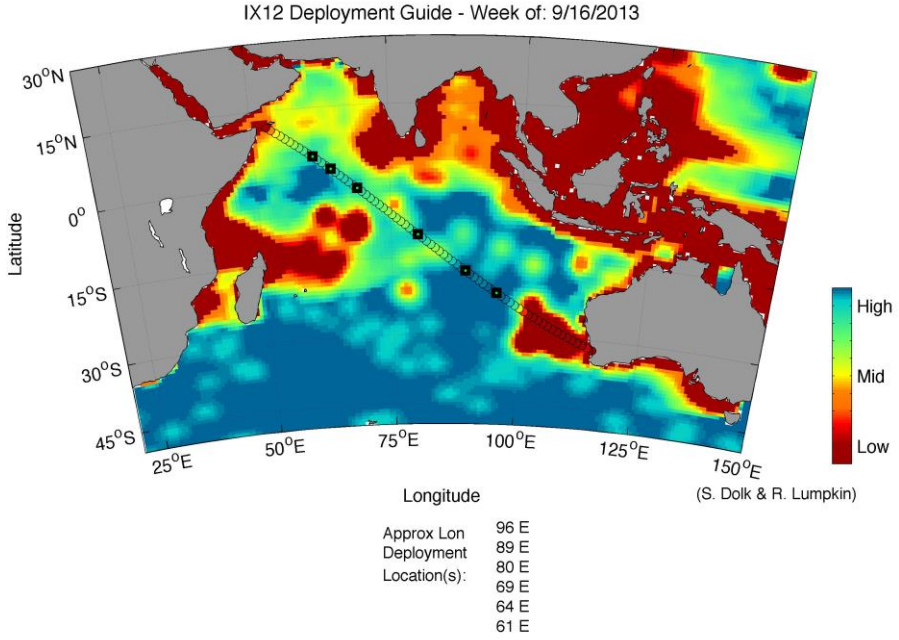
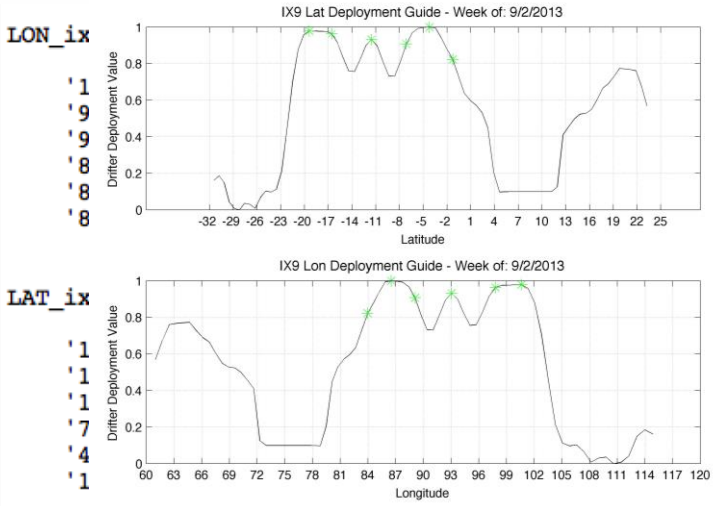
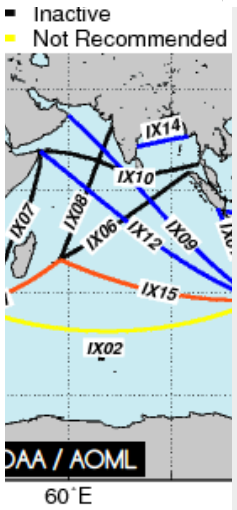


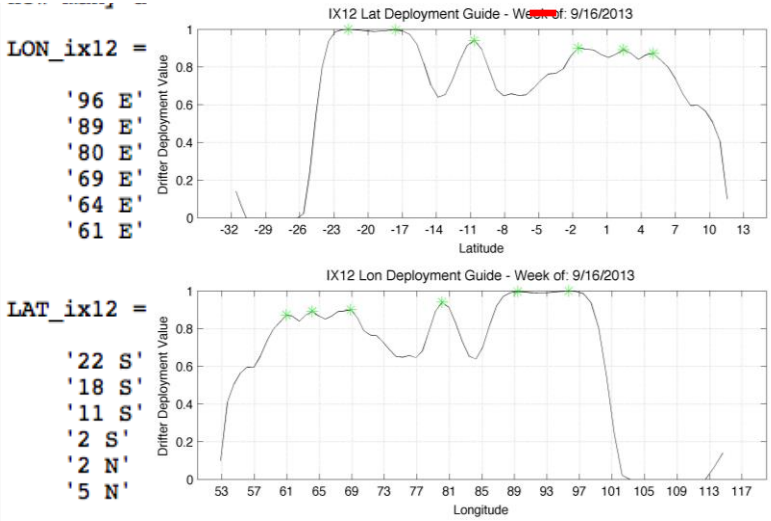
Value Map Applications – Part Two



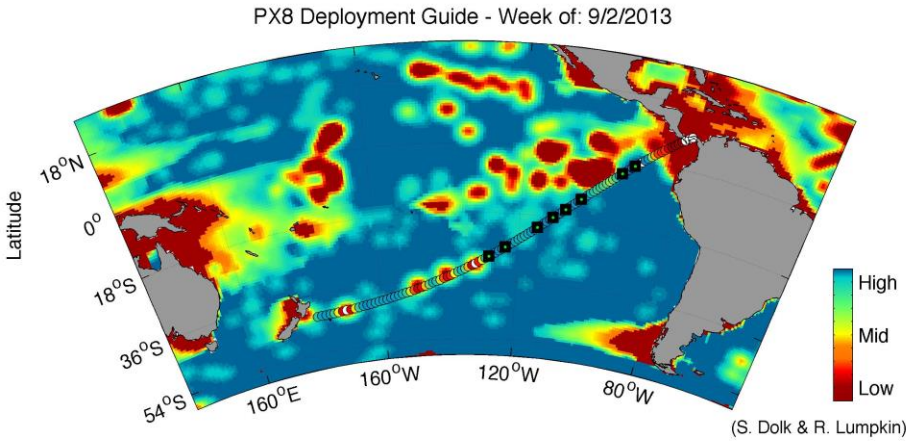








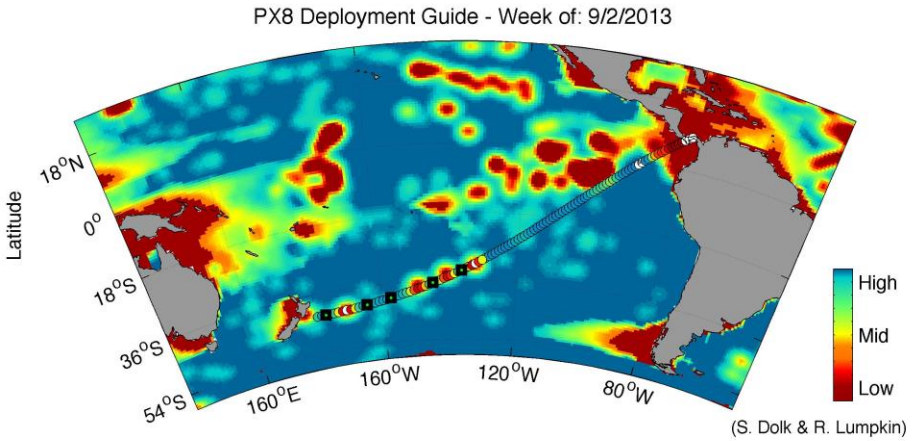
Value Map Applications – Part Two (cont.)



Longitude

Approx Lon Deployment Location(s):

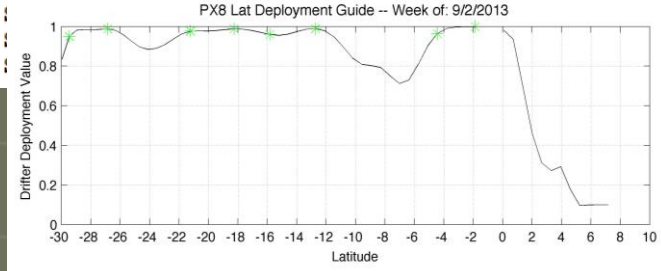
92 W
95 W
104 W
108 W
111 W
115 W
124 W
128 W

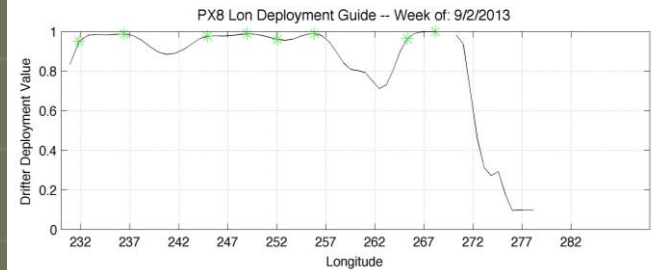


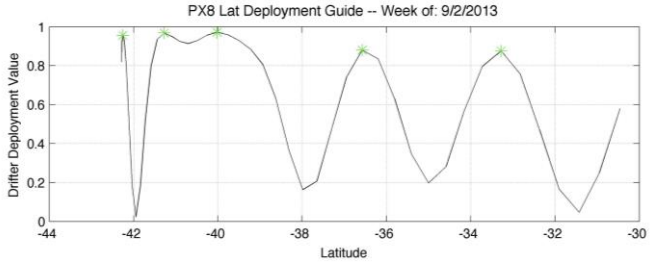
Longitude

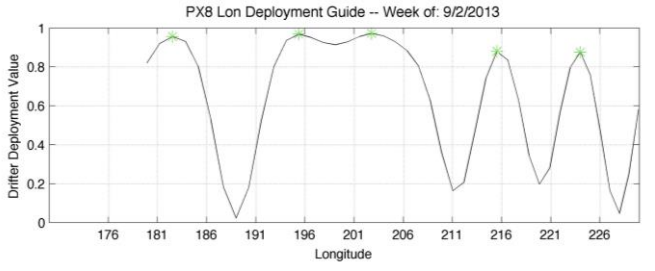
Approx Lon Deployment Location(s):

136 W
144 W
157 W
165 W
177 W

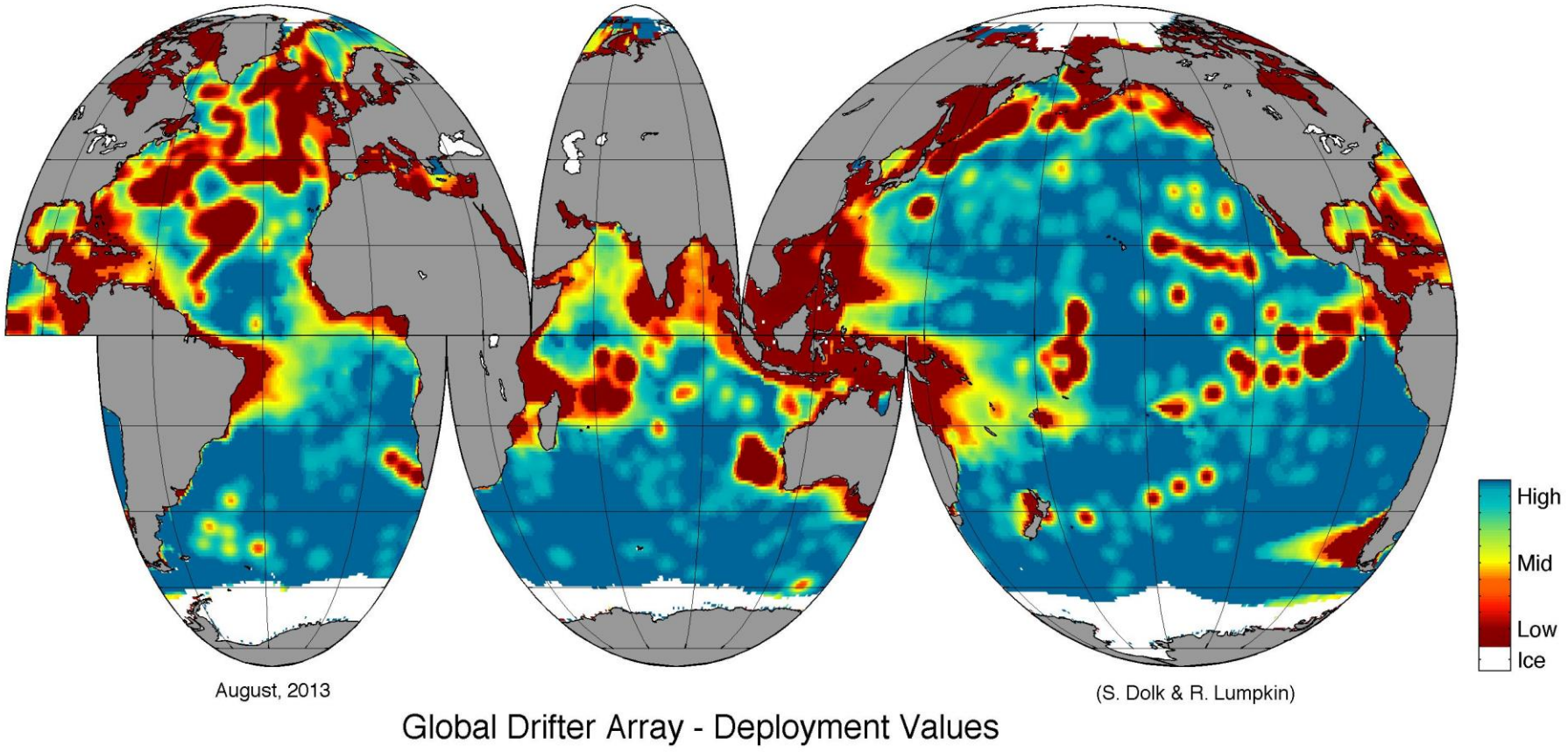




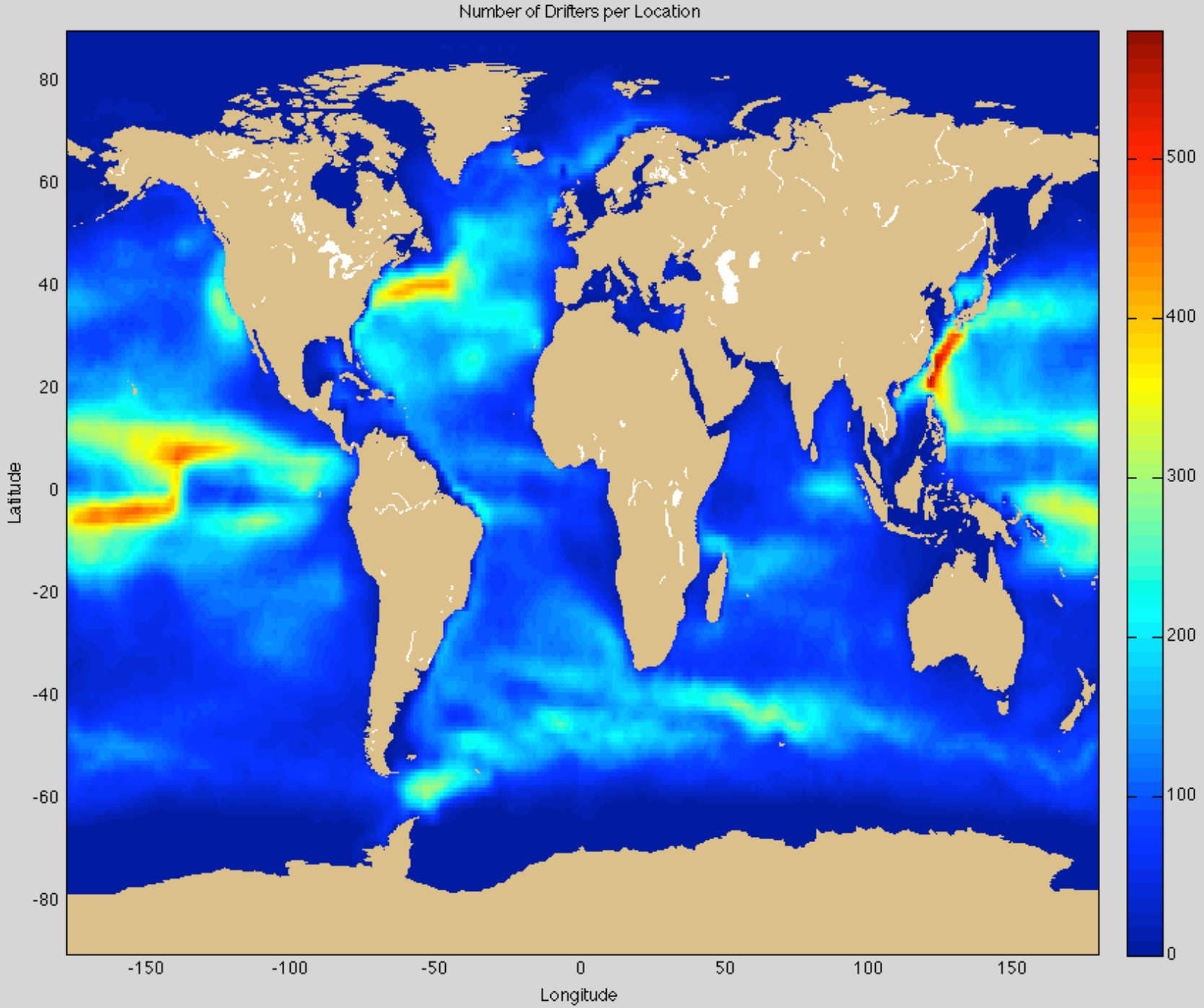




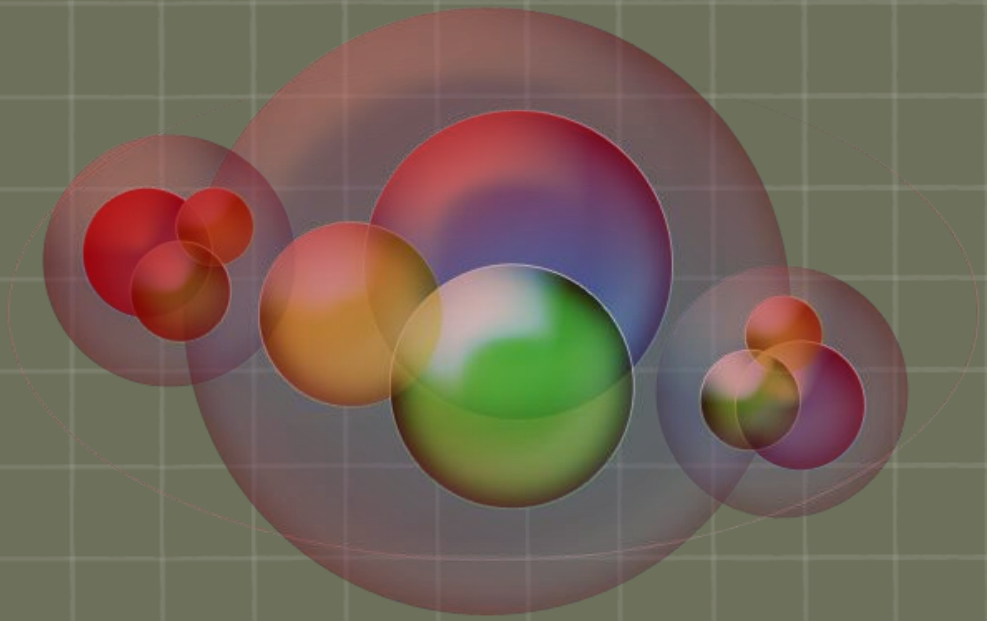
Thank You



(http://www.aoml.noaa.gov/phod/dac/doc_valuemaps.php)


Number of Drifters per Location
Latitude
80
60
40
20
0
-20
-40
-60
-80
-150
-100
-50
0
50
100
150
Longitude
500
400
300
200
100
0

Identifying Drifter Deployment Values



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