Strong Warming in NE Pacific

- The strong positive SSTA in the NE Pacific [140°W-100°W, 10°N-30°N] emerged in early 2014, and the warming enhanced and migrated to the depth since then.

- The development of positive SSTA in the region was associated with the switch to positive PDO phase.

- The near surface warming was the strongest since 1980.
2015 E. Pacific Hurricane Counts

(http://weather.unisys.com/hurricane)

- E. Pacific Counts by Nov 5:
  24 Named Storms > average of 15
  15 Hurricanes > average of 8
  10 Major Hurricanes > average of 4
Ocean circulation — wind-driven gyre circulation
What do you think of when we say ocean weather?

Marine weather ≠ Ocean weather
If the wind drops and the ocean is “calm”, does the ocean still move?
Ocean weather

Marine weather

= 

Atmospheric weather
The role of the oceans in the climate system

Where is global warming going?

Ocean 93.4%

Atmosphere 2.3%

Continents 2.1%

Glaciers & ice caps 0.9%

Arctic sea ice 0.8%

Greenland Ice Sheet 0.2%

Antarctic Ice Sheet 0.2%
The role of the oceans in the climate system

Nuccitelli et al., 2012
Where is the extra CO2 going?
Why Study Climate

Global Mean Sea Level from Altimetry (LEGOS/CLS)
Why Study Climate

December Global Surface Mean Temp Anomalies
NCEI/NESSDIS/NOAA

Analysis is based upon Smith et al. (2008) methodology.

Land and Ocean

Ocean

Land

°C
Global average temperature anomaly (1880-2016)
Ice mass loss from Greenland and Antarctica measured by space techniques since 1990

Shepherd et al., 2012 IPCC AR5
Marine Meteorology & Oceanography Programme

In situ and space Observations

Operational Ocean Forecasting System (GDPFS for Ocean)
(e.g., Waves, Storm Surges, Sea Ice, SST, ocean circ., etc.)

Ocean Climate
(e.g., Waves, Storm Surges, Sea Ice, SST, etc.)

IMO and IHO
(e.g., MSI/GMDSS, MPERS, SAR, DRR, etc.)

Services

Users

IOC (IOC/WMO/UNEP GOOS)

ICS
Intertanko
Intercargo
Oil and Gas Industry
Fisheries
Etc.
JCOMM Strategic Priorities

- Weather and Ocean Forecasting
- Disaster Risk Reduction (DRR)
- Global Framework for Climate Services
- WMO Information system implementation
- Capacity Building
Objectives of OCG

- Describe aims and scope of the JCOMM Observations Coordination Group (OCG)
- Review foci of JCOMM OCG Work plan (2015-2020), highlighting examples of OCG activities
- Describe some resources of interest to the ocean community
- Identify opportunities for others to follow/help OCG
Observations Programme area  T.O.R.

- Review and advise on effectiveness, coordination, and operation of observing systems, advise on possible observing solutions, including consideration and trade-offs of new technologies to meet emerging new requirements.

- Standards (develop and follow): observing, instrumentation, traceability, data.

- WMO interface: support development of WMO Integrated Observing System (WIGOS), support of CBS, requirements collection.

- Identify capacity development requirements.

- Emphasis areas: Best practices and standards (across the JCOMM ocean observing enterprise).

REQUIREMENTS: (GCOS, GOOS, Commission for Basic Systems, etc)
Observing System Operations

Monitor performance, data and metadata flow, telecommunications challenges, logistics, identify threats/risks, links to WMO/WIGOS, etc
Proposed governance changes

- Chair plus vice chairs or Task Leads:
  - WIGOS/WIS
  - Standards and Best Practices
  - Data and Information
  - New Technologies
OCG Work Plan 2015-2020

- Requirements
- Observing system operations, development, standards, and best practices (links to WMO activities)
- Tracking and Improving performance
- Integration/interoperability
- Observation data, information, and products
All six global in situ implementation programs are linked internationally through WMO-IOC JCOMM coordination (POGO, GO-SHIP coordination).
www.jcommops.org
LiDARs, Moored Buoys, drifters etc
Vandalism
Why become part of JCOMM OCG?

- Coordination with other networks
- Maximize real-time reporting and delivery
- Encourage development/use of standards
- Develop WMO linkages (e.g. to overcome international obstacles, national requirements)
- Develop/exploit ties to JCOMM “data management” and “services” activities
WHY Observations
Sea Swell & Abnormal waves
Types of warnings – Abnormal Swell
Wind ands Tropical Cyclone warnings
Visibility and Tsunami Warnings
Storm Surges
WHY Observations
What we are requesting

- Reliable
- Sustainable
- Affordability
- Cost effective
- Real time
- Global coverage
Thank you