



# TPOS 2020

## Monthly Status Report

January 2016

### Monthly Status Report (MSR)

Release Date:

February 16, 2016

#### Summary:

A great deal of activity and discussion this month was focused on the generation of content for the 2016 Interim Report Rough Draft. Every chapter of the nine-chapter outline has received author content; with the exception of the Summary and Conclusions section. (For more information please see page 9 of this report: “Cross-project Dependencies and Opportunities.”)

The project was also highly focused on community scientific and technology input, as well as exploring ways to potentially facilitate engagement through the transition process. Both the Biogeochemistry and Eastern Pacific Task Teams posted and announced online community surveys. The SC Co-Chair Neville Smith and International Coordinator Katy Hill conducted a series of meetings with stakeholders in the WIGOS, GCOS, JCOMM, and the WCRP JPO. Discussions were focused on identifying key upcoming meetings and papers that will facilitate TPOS 2020 partnerships and participation.

#### Highlights:

##### Backbone Task Team:

- Initial collation of Interim Report Rough Draft R material submitted by the authoring team.

##### Biogeochemistry Task Team:

- Creation of an online questionnaire to be circulated to the community for response and comment.

##### Eastern Pacific Task Team:

- Creation of an online questionnaire to be circulated to the community for response and comment.

##### Modelling and Data Assimilation Task Team:

- Conducted highly engaging and energetic inaugural meeting.

The Monthly Status Reports can be found at: [www.tpos2020.org/monthly-status-report](http://www.tpos2020.org/monthly-status-report)

#### Additional Information:

Please visit the website at: [www.tpos2020.org](http://www.tpos2020.org)  
Send comments and questions to: [info@tpos2020.org](mailto:info@tpos2020.org)  
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## Monthly Status Report (MSR)

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**Background:** The TPOS 2020 Project will evaluate, and where necessary advocate change in all elements that contribute to the Tropical Pacific Observing System (TPOS), based on a current understanding and technical capability. The project aims for enhanced effectiveness for all TPOS stakeholders, and informed by the development and on-going requirements of the operational prediction models that are primary users of TPOS data. TPOS 2020 embraces the integration of diverse sampling technologies, with a deliberate focus on robustness and sustainability, and will deliver a legacy of improved governance, coordination and supporting arrangements.

The Project will work within the Framework for Ocean Observing developed by the Global Ocean Observing System (GOOS) and use GOOS as a reporting mechanism to other relevant intergovernmental coordination mechanisms. A sustainable TPOS will be the principle outcome and legacy for GOOS. As such, TPOS 2020 will operate primarily as an independent Project and work through its sponsors to ensure all dependencies and links are appropriately managed. Four primary elements are included in the governance of the Project:

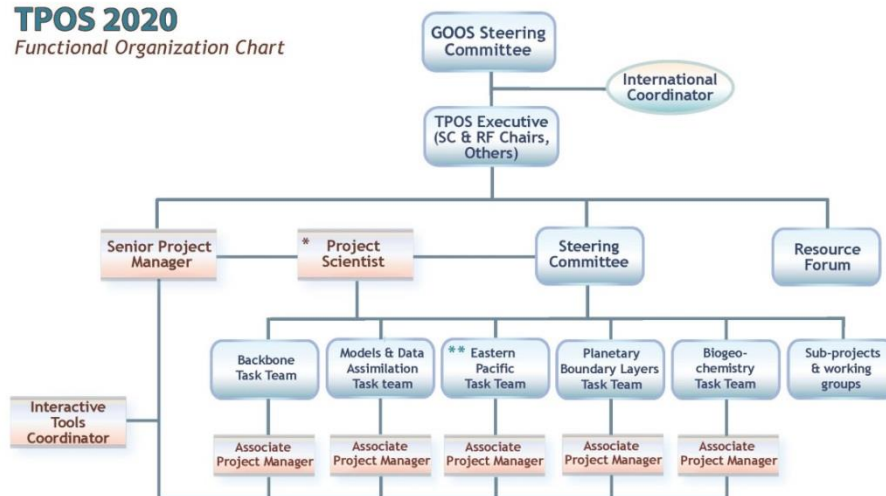
- A TPOS 2020 Steering Committee responsible for oversight, coordination, and guidance to the Task Teams, Sub-projects and Working Groups.
- A Resources Forum drawn from sponsors and responsible for coordinating resources.
- An Executive populated from the leadership of the above and responsible for reporting.
- A Distributed Project Office focused on coordination activities, supported and resourced by the sponsors.

It is through its partnerships and governance structure that TPOS 2020 will design a modern, sustained tropical Pacific observing system that meets both science and societal needs.

The project prospectus can be located online at: [www.tpos2020.org/prospectus](http://www.tpos2020.org/prospectus)

### TPOS 2020

Functional Organization Chart



\* This role is currently being explored and developed  
 \*\* This Task Team and its role are still under consideration

## KEY ACCOMPLISHMENTS AND NEAR-TERM PROJECT MILESTONES

### Steering Committee

- Co-Chairs: Dr. Neville Smith, Retired / Dr. William “Billy” Kessler, NOAA PMEL

#### Current Month Activities:

- Assisted in the review of the Interim Report Rough Draft outline
- Neville Smith and Katy Hill conducted a series of meetings in Geneva to discuss TPOS. Meetings included a session with Co-Chair of JCOMM, John Stander, Michel Rixen and Mike Sparrow from the WCRP Joint Project Office, and with a number of people from the WMO Observations Program (Wenjian Zhang – Director Observation and Information Systems, Etienne Charpentier, and Lars Peter Riishojgaard) and GCOS (Carolyn Richter).
  - The meetings were arranged, in part, to explore avenues by which to secure greater engagement with Met Agencies. The meetings were designed to assist colleagues in their efforts to increase their involvement with TPOS 2020 through more explicit endorsement of the Project/Observing System from the WMO.
  - Generally the responses were positive and constructive. Several suggestions for involvement were given along with encouragement to begin the engagement process earlier rather than later; potentially as part of the early transition activities to be conducted this year.
- Weidong Yu was highly active gathering input and participation in the upcoming China-Japan-Korea workshop sponsored by SOA and hosted by FIO in Qingdao on Feb. 29 -March 1, 2016. Several TPOS 2020 SC Members will be in attendance, and member institutions represented. TPOS and TPOS-related related discussions will be a part of sessions focused on Ocean and Climate Change.

#### Upcoming Activities:

- Work with Task Team Co-Chairs to finalize content of the Interim Report Rough Draft
- Work with BB TT Co-Chairs to finalize drafting and review cycle for the Interim Report
- Work with the DPO to establish and Engagement Action Panel and timeline
- Work with the TTs to plan for upcoming meetings and cross-project needs

#### Last Month's Activities:

- Assisted in the drafting and socialization of the Interim Report, Rough Draft and Outline
- Worked with the Western Pacific Task Team on member formation

#### Published/Posted Materials:

- November 2015: TPOS 2020 SC-2 Report
- October 2015: CLIVAR Exchanges Article: *TPOS 2020 Project: The Role of Research and Innovation* [http://www.clivar.org/sites/default/files/documents/Exchanges\\_OceanObs\\_No67\\_0.pdf](http://www.clivar.org/sites/default/files/documents/Exchanges_OceanObs_No67_0.pdf)
- June 2015: The Mercator-Ocean Scientific Newsletter: “TPOS2020: TROPICAL PACIFIC OBSERVING SYSTEM FOR 2020” By S. Cravatte, A. Ganachaud, B. Dewitte, F. Hernandez, Newsletter #52 (<http://goo.gl/rKbv6>)
- Mar. 2015: Published article in WMO Bulletin: “Progress in Observing and Predicting ENSO”, (Vol 64 (1) – 2015)
- Feb. 2015: US CLIVAR Variations: “ENSO observing system: Past, present, and future”
- Dec. 2014: TPOS 2020 Project Prospectus
- Dec. 2014 TPOS 2020 SC-1 Report
- Mar. 2014: Terms of Reference for TTs

Project Function:

The SC will provide scientific and technical oversight for the planning, system design, and implementation of the TPOS. This group will assess the evolving set of requirements through dialogue with relevant users and stakeholders, and coordinate a set of (pilot) projects designed to test and evaluate options. The SC will assess potential technology options for delivering a more effective and efficient TPOS including relevant scientific/expert panels and bodies. Together with the Resources Forum, the SC will manage communication and reporting.

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> [amccurdy@oceanleadership.org](mailto:amccurdy@oceanleadership.org)

**Resources Forum**

- Chair: Craig McLean, NOAA Oceanic and Atmospheric Research

Current Month Activities:

- No updates this month.

Upcoming Activities:

- 2015 and 2016 Milestones and opportunities for meetings reviewed by members.

Last Month's Activities:

- No reported activities this month.

Published/Posted Materials:

- July 2015: TRF-1 Report (available on the TPOS 2020 website)
- Mar. 2014: Terms of Reference (available on the TPOS 2020 website)

Project Function:

The TPOS 2020 TRF will facilitate and coordinate the provision of resources by member institutions required to advance TPOS 2020 activities based on recommendations from, and in consultation with, the TPOS SC. It will promote and encourage contributions from institutions, Official Development Assistance agencies, participating and non-participating countries, and expand membership of the TRF as necessary; including the exploration of bilateral and multi-lateral partnerships. The TRF will coordinate resources that may be applied to the TPOS, including necessary observing research, technology development/testing, modelling, scientific analysis, infrastructure (e.g., ship resources and/or deployment of observing assets), along with Project Management and travel support.

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> [amccurdy@oceanleadership.org](mailto:amccurdy@oceanleadership.org)

**Executive**

This Month's Activities:

- No reported outcomes this month

Upcoming Activities:

- No activities planned.

Published/Posted Materials:

- There are no published materials at this time.

Project Function:

Under development by the SC Co-chairs and TRF Chair

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> [amccurdy@oceanleadership.org](mailto:amccurdy@oceanleadership.org)

**Backbone Task Team**

- Co-Chairs: Susan Wijffels, CSIRO / Sophie Cravatte (SC Member), Centre IRD de Noumea

This Month's Activities:

- Generated the original Rough Draft of the Interim Report for author review and comment
- The final record of the November 2015 planning telecon was finalized and placed in the Intranet

Upcoming Activities:

- A meeting between BB TT members and the TT Co-Chairs has been scheduled for the 4<sup>th</sup> of February 2016 to discuss the progress of the TPOS Interim Report.

Last Month's Activities:

- Circulated the Rough Draft Outline of the Interim Report for review and comment.
- Conducted a teleconference of interested Project members to discuss early BB recommendations and rationale.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

Through an integrated approach the Backbone TPOS will achieve its objectives through a combination of in situ and remote sensing approaches, augmented as appropriate with advice from models and data assimilation. Sampling for the Backbone has as its goal to:

- (a) Observe and quantify the state of the ocean, on time scales from weekly to interannual/decadal;
- (b) Provide data in support of, and to validate and improve, forecasting systems;
- (c) Support calibration and validation of satellite measurements;
- (d) Advance understanding of the climate system in the tropical Pacific, including through the provision of observing system infrastructure for process studies; and
- (e) Maintenance and, as appropriate, extension of the tropical Pacific climate record.

Point of Contact:

Associate Project Manager, Ana Lara-Lopez-> [Ana.Lara@utas.edu.au](mailto:Ana.Lara@utas.edu.au)

**Planetary Boundary Layer Task Team**

- Co-Chairs: Meghan Cronin, NOAA PMEL / Tom Farrar (SC Member), WHOI

This Month's Activities:

- Co-Chair Tom Farrar made TPOS 2020 contributions to Wentz report on satellite winds.

Upcoming Activities:

- The Steering Committee also agreed that a small group should investigate the potential value of a follow-up survey.
- Provide a paragraph describing philosophy of grid-like vs. regime based PBL observations, and propose a strawman of how these should be implemented in the sustained in situ array.

- Provide Process Study 2-4 page prospectus-like documents that lay out scope and rationale within the context of TPOS, its goals and possible participation. Topics will include YMC, diurnal-multiscale variability, equatorial Pacific upwelling and mixing, and Double ITCZ.

Last Month's Activities:

- Co Provided input to US NRC Decadal Survey on Earth Sciences (dealing with satellite needs for TPOS).

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

The observational needs regarding improved monitoring and modelling of ocean surface and near-surface processes are likely to have two components: sustained detailed observations and process studies. It is the role of this Task Team to identify which requirements are best met via a sustained observing effort (> 5 years-11), and which can be addressed with specific short-term process campaigns.

Point of Contact:

Deputy Project Manager, Lucia Upchurch-> [lucia.upchurch@noaa.gov](mailto:lucia.upchurch@noaa.gov)

## **Modelling and Data Assimilation Task Team**

This Month's Activities:

- Inaugural teleconference held on 07 Jan 2016; it was a fruitful and energetic discussion.
- Near-term Actions are being finalized for review and tracking.

Upcoming Activities:

- Final membership and ToR will be posted to the website.
- Near and mid-term Actions agreed to and scheduled
- Generate content for inclusion in the Interim Report, 2016

Last Month's Activities:

- Inaugural teleconference scheduled for the first week in January.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Purpose in Project:

A significant fraction of the observational effort will need to be directed towards improved understanding of processes and mechanisms, which in turn should be coordinated with a program of improved model parameterizations and reduced systematic error; an additional benefit is that such data/model studies also contribute to improved design and reduced inefficiencies of the observing system.

Point of Contact:

Associate Project Manager, Lucia Upchurch, interim-> [lucia.upchurch@noaa.gov](mailto:lucia.upchurch@noaa.gov)

## **Biogeochemistry Task Team**

- Co-Chairs: Adrienne Sutton, NOAA PMEL / Pete Strutton (SC Member), Univ. of Tasmania

This Month's Activities:

- The questionnaire focused on BGC variables and needed technology evolution/development was posted online

- The TT has received 17 responses to their online questionnaire to date
- Initial responses have been collated and are under review by TT members.

Upcoming Activities:

- Continued communication on how the draft Backbone observing system is evolving and how this will be reflected in the Interim Report, 2016
- Analysis of model output to determine the important time and space scales to resolve.
- Analysis of model data to determine the best longitudes to focus process studies on source waters to the equatorial undercurrent (165°E, 110°W).

Last Month's Activities:

- Created a detailed questionnaire designed to engage a larger discussion of how best to accommodate BGC in TPOS2020, prioritize a list of BGC variables, and identify needed new technologies.
- Generated a draft circulation list consisting of a wide range of internationally coordinated groups and activities including GOOS programs and panels, GODAE task teams, and expert members of the biogeochemistry community.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

The role of the Biogeochemistry Task Team (BGCTT) is to evaluate and recommend the most promising foci, and to provide advice on possible solutions. The Biogeochemistry Task Team will begin with carbon biogeochemistry as its core scientific concern. Here will be the consideration of the term biogeochemistry to include primary productivity (noting that the Backbone Observing System likely includes ocean color satellites) but not higher trophic levels (zooplankton to fish).

Point of Contact:

Associate Project Manager, Ana Lara-Lopez-> [Ana.Lara@utas.edu.au](mailto:Ana.Lara@utas.edu.au)

**Eastern Boundary Task Team**

- Co-Chairs: Yolande Serra, University of Washington / Ken Takahashi (SC Member), Instituto Geofísico del Perú

This Month's Activities:

- The EP-TT released an online questionnaire to gather input for process study and/or a field program for observations that would aid in correcting the errors associated with the double ITCZ

Upcoming Activities:

- Based on the survey results, engage atmospheric scientists, modellers and specialists in convection, among others in a dialog focused on a possible Eastern Pacific ITCZ/warm pool/cold tongue/stratus system strawman study.
- Take the Eastern Pacific equatorial-coastal waveguide & upwelling system ideas to the next stage in the form of a Pilot Project that might be used to test technology options and to provide further insights on the eastern Pacific elements of the Backbone and other contributions to TPOS.

Last Month's Activities:

- Conducted a teleconference on December, 22.
- Additional member, Kris Karnauskas as added as a member.

Published/Posted Materials:

- Jul. 2015: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes).

Project Function:

Task Team to focus on the eastern Tropical Pacific boundary region; giving priority to engaging regional experts and institutions. In addition to defining needed observations, goals of the TT could include: (a) Capacity building for improved sustained observing capability; and (b) Facilitation of the development of a regional research project, which may contribute guidance toward a sustained observing system.

Point of Contact:

Associate Project Manager, interim -> Lucia Upchurch, [lucia.upchurch@noaa.gov](mailto:lucia.upchurch@noaa.gov)

**Western Pacific Task Team**

This Month's Activities:

- Began early consideration of activities that may be desirable in preparation for the China-Japan-ROK Summit in late February, early March.

Upcoming Activities:

- Inaugural meeting will be held in conjunction with the Ocean Sciences 2016 meeting in late February.
- Understand the opportunities that may have come from the high-level SOA-NOAA meeting in December 2015.
- The upcoming China-Japan-RoK high-level officials' summit will provide opportunities to engage, and support investigating TPOS activities.
- Agree to suggested activities at the SC-2 and a timeline:
  - The issue of coordination of ship time (short- and long-term) is a priority. The WPSG Report highlighted the opportunities for better coordination and cooperation and that NPOCE, SPICE, YMC and the WESTPAC-led Cooperative Studies of the Kuroshio (CSK) feasibility study might provide a foundation upon which a more substantial collective effort might be built.
  - The WP TT noted that (a) a forthcoming high-level SOA-NOAA meeting (late 2015) and (b) a delayed China-Japan-RoK high-level officials' workshop (possibly Q1 2016 in Qingdao, China) do provide opportunities to engage, and supported investigating both these opportunities.
  - The Solomon Islands research and SPICE could be important contribution to a process study.

Last Month's Activities:

- Scheduled inaugural meeting will be held in conjunction with the Ocean Sciences 2016 meeting in late February.
- Began early consideration of activities that may be desirable in preparation for the China-Japan-ROK Summit in late February, early March.

Published/Posted Materials:

- No publications to date

Project Function:

This group will take advice on a project to be conducted in the Western Pacific. Once underway they will advise on mechanism for the project's development and oversight.

Point of Contact:

TBD-> [info@tpos2020.org](mailto:info@tpos2020.org)



## **Distributed Project Office**

### This Month's Activities:

- Consultative Draft of the TPOS 2020 Slide Set is under review
- Supported the initial drafting and posting of the 2016 Interim Report Rough Draft
- Development website created, design changes proposed have the goal of making content more accessible
- Engagement Plan, Engagement Action Plan, prepared for initial distribution and review by proposed Engagement Advisory Panel

### Upcoming Activities:

- Extend invitations to Engagement Action Panel members
- Formation of revised Intranet designed to create a more logical, secure, and data friendly platform for collaboration
- Ongoing review and input into the development website
- Creation of the Interim Report drafting and review process document
- Creation of Project Year Two Annual Work Plan and associate Integrated Master Schedule

### Last Month's Activities:

- Initial review of desired changes to the TPOS 2020 Slide Set and Prospectus as a result of SC-2 outcomes
- Creation and distribution of Action Tables for tracking by appropriate TT and groups
- Creation of a 'development' website toward the goal of making content more accessible
- Finalization of the Engagement Plan, Engagement Action Plan, and January-June 2016 timeline

### Published/Posted Materials:

- Released: Project Management Plan V1
- Consultative Draft: Project Execution Plan V1

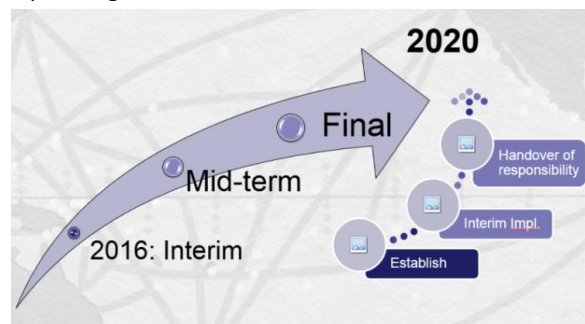
### Project Function:

The DPO will develop communications, and coordination tools that will facilitate integrated decision making, and provide access to relevant deployment and observing asset decision making tools. The DPO will support the suite of tools and activities required to track the commitments to all aspects of TPOS 2020 and to facilitate integrated decision making across networks, groups, agencies, and nations; during the project and throughout the lifecycle of the observing system beyond TPOS 2020.

## **CROSS-PROJECT DEPENDENCIES AND OPPORTUNITIES**

The draft timeline for 2016 Interim Report activities are provided below. This highly collaborative endeavor will be led by the Backbone TT with contributions from all project groups along with external authors and reviewers:

1. Selection of Coordinating Lead Authors was completed in January 2016
2. Preparation of 1<sup>st</sup> draft Interim Report outline was completed in December 2016
3. Formalize the Review Process:
  - First Review (by experts; March 2016).
  - Preparation of revised/2<sup>nd</sup> draft
  - Second Review (by stakeholders and experts; June-July 2016).
4. Preparation of final draft Report, October 2016
5. Acceptance of Report at the 3rd Session of the TPOS 2020 Steering Committee



## PROJECT SCHEDULE

**No Update:** During the SC-2 the Co-Chairs outlined a staged process, with an initial “Interim Report” published in 2016; a Mid-term Report published in 2018, and a Final Report with the closure of the Project in. The Interim Report would contain initial recommendations for the design of the Backbone (the outline was described at this meeting), but also a synopsis of initial results and plans for the various initiatives sponsored by TPOS 2020.

The Co-Chairs noted that nothing is “final” until 2020 but that interim reports or updates should progressively guide stakeholders on recommended changes, with indications on the degree of confidence (certainty). Within this context of phased reports, the Backbone Task Team can be regarded as the focus of consolidation and prioritization, with the other Teams leading innovation and change.

## SPONSOR CONTRIBUTIONS

**No Update:** In addition to the in-kind self-support agreed to during the January TPOS Workshop, the following explicit sponsorships have been recorded thus far:

- October 2015: SC-2, CSIRO as host, IMOS and IMAS providing event support
- October 2015: SC-2 and Backbone TT participant travel assistance provided by NOAA, NASA, and IOC
- August 2015: PACE-NET PLUS is supporting expert speaker and participant travel, and local costs at the Backbone Task Team face to face meeting at IRD in Noumea, New Caledonia.
- August 2015: NOAA COD and NASA providing travel support for Backbone Task Team member travel and DPO support of the face to face meeting in New Caledonia.
- April 2015: Launched DPO Node negotiations with the First Institute of Oceanography (FIO) of China, for possible initiation in late 2015
- Mar. 2015: Integrated Marine Observing System (IMOS), DPO Node (Associate Project Manager and SC-2 Support)
- Dec. 2014: NOAA Climate Office, DPO Support (0.5 FTE DPO Project Manager)
- October 2014: KIOST, SC-1 Hosting
- October 2014: GOOS support for SC-1; GCOS for WMO and IOC briefings
- Aug. 2014: NOAA PMEL – Project Management Support (0.2FTE DPO Deputy Project Manager)
- Aug. 2014: NASA - Interim Project Management Support (0.30 FTE in 2014)
- Jul. 2013: OOPC Project Management and Coordination (Secretariat)