



U.S. West Coast Biological Observations Workshop NANOOS-CeNCOOS-SCCOOS ATN-MBON-OTN

**November 7-9, 2018
Hotel Paradox
Santa Cruz, California**

Workshop Objectives

- Identify and prioritize stakeholder monitoring and observational needs in the West Coast Region
- Identify the existing observing assets and capabilities in the Region
- Document stakeholder specific uses of telemetry/biodiversity data
- Identify the infrastructure and data management challenges and opportunities that exist in this Region

Steering Committee Members

- *Bill Woodward*
- *Alex Harper*
- *Henry Ruhl*
- *Jan Newton*
- *Clarissa Anderson*
- *Gabrielle Canonico*
- *Ryan Freedman*
- *Chris Lowe*
- *Dan Costa*
- *Jennifer Brown*
- *Josh London*
- *Jenny Waddell*
- *Bob Miller*
- *Elliott Hazen*
- *Megan Hepner*

Day 1 (Weds. Nov 7, 2018)

8:00 - 8:30 Check-in, light breakfast

8:30 - 8:45 Welcome, introductions, review objectives/agenda - Henry Ruhl, Director, CeNCOOS & Bill Woodward, U.S. ATN Coordinator

8:45 - 9:15 Overview of ATN, MBON and OTN Programs

- **Animal Telemetry Network** – Bill Woodward, U.S. ATN Coordinator
- **Marine Biodiversity Observation Network** – Gabrielle Canonico, U.S. IOOS
- **Ocean Tracking Network** – Fred Whoriskey, Exec. Director OTN

9:15 - 10:15 Session 1, RESEARCH SECTOR Moderator: Dan Costa

- **Barbara Block** – Hopkins Marine Station, Stanford University
- **Bob Miller** – Marine Science Institute, UC Santa Barbara
- **Barb Lagerquist** – Marine Mammal Institute, Oregon State University

Group Discussion

10:15 - 10:30 Break

10:30 - 11:30 Session 2, NATURAL RESOURCE/CONSERVATION MANAGEMENT SECTOR Moderator: Gabrielle Canonico

- **Donna Schroeder** – BOEM Pacific Region Lead, Santa Barbara Channel
- **Andrew DeVogelaere** – Research Coordinator/SIMoN Director, Monterey Bay National Marine Sanctuary
- **Steve Weisberg** – Southern California Coastal Water Research Project

Group Discussion

11:30 - 12:30 Session 3, COMMERCIAL/PRIVATE SECTOR Moderator: Henry Ruhl

- **Justin Luedy** – Port of Long Beach
- **Pete Nelson** – H.T. Harvey & Associates
- **Nancy Black** – Monterey Bay Whale Watch

Group Discussion

12:30 - 1:30 Lunch

1:30 - 2:00 Session 4, NATURAL RESOURCE/CONSERVATION MANAGEMENT SECTOR Moderator: Fred Whoriskey

- **Tenaya Norris** – The Marine Mammal Center, Sausalito
- **Tommy Moore** – Northwest Indian Fisheries Commission (remote)

Group Discussion

2:00 - 3:30 Session 5, RESEARCH SECTOR Moderator: Clarissa Anderson

- **Elliott Hazen** – Environmental Research Div./SWFSC/NMFS
- **Greg Schorr** – MARECOTEL, Seabeck, WA
- **Karin Forney** – Marine Mammal & Turtle Div./SWFSC/NMFS
- **Scott Shaffer** – San Jose State University
- **Jeremy Goldbogen** – Hopkins Marine Station, Stanford University

Group Discussion

3:30 - 3:45 Break

3:45 - 5:00 Breakout Session 1 – Moderator: Alex Harper. Breakout by sector (Commercial/Private Sector, Resource/Conservation Management Sector, Research Sector (2))

- 1: How can telemetry and biological observations better address information needs within your sector?
- 2: What types and extent of existing assets could adequately satisfy these requirements?
- 3: Synthesize and prioritize unresolved sector observation needs. Which observing gaps in assets, operations, data handling and governance are most critical and address more than one stakeholder requirement?

5:00 - 5:25 Breakout Session 1 Report Out

5:25 - 5:30 Wrap Up Day 1

6:00 - 8:00 Evening Reception – all are invited

Day 2 (Thurs. Nov 8, 2018)

7:30 - 8:15 Breakfast

8:15 - 8:30 Summary of Day 1

8:30 - 9:30 *Session 1, RESEARCH SECTOR Moderator: Mike Weise*

- **Dan Costa** – University of California, Santa Cruz
- **Francisco Chavez** – Monterey Bay Aquarium Research Institute
- **John Calambokidis** – Cascadia Research Collective

Group Discussion

9:30 - 10:45 *Session 2, Biological Data Management and Visualization Moderator: Bill Woodward*

- **ATN DAC** – Rob Bochenek, Axiom Data Science
- **NASA OIIP Satellite/In-Situ Data Visualization Tools** – Vardis Tsontos, NASA/JPL
- **“SEASCAPES”** – Maria Kavanaugh, CEOAS, Oregon State Univ.
- **MBON Portal** – Rob Bochenek, Axiom Data Science

10:45 - 11:00 Break

11:00 - 12:00 *Session 3, NATURAL RESOURCE/CONSERVATION MANAGEMENT SECTOR Moderator: Jim Price*

- **Chip Johnson** – U.S. Navy PAC Fleet Environmental Readiness Div., San Diego
- **Steven Bograd** – Environmental Research Div./SWFSC/NMFS
- **Elliott Hazen** – California Current Integrated Ecosystem Assessment

Group Discussion

12:00 - 12:45 *Session 4, COMMERCIAL/PRIVATE SECTOR Moderator: Jan Newton*

- **Noah Oppenheim** – Exec. Dir., Pacific Coast Federation of Fishermen’s Association
- **Lindsay Cruver** – CEO, Catalina Sea Ranch

Group Discussion

12:45 - 1:45 Lunch

1:45 - 2:30 Session 5, NATURAL RESOURCE/CONSERVATION MANAGEMENT SECTOR Moderator: *Jan Newton*

- **Mike Johns** – Point Blue Conservation Science
- **Cyndi Dawson** – O’Neill Sea Odyssey

Group Discussion

2:30 - 3:45 Session 6, RESEARCH SECTOR Moderator: *Jennifer Brown*

- **Ari Friedlaender** – Institute of Marine Sciences, UC Santa Cruz
- **Chris Lowe** – Shark Lab Director, Cal. State University Long Beach
- **Barry Berejikian** – Environmental & Fisheries Sciences, NWFSC/NMFS
- **Josh Adams** – Western Ecological Research Center, USGS
- **Nina Bednaršek** – Southern California Coastal Water Research Project

Group discussion

3:45 - 4:00 Break

4:00 - 5:20 Breakout Session 2 – Moderator: **Bill Woodward.** Assign four breakout groups at random. Breakout by Priority Applications:

1. Monitoring Animal Movement, Species Diversity, Distribution, and Abundance
 2. Improving Ocean Observations And Forecasts For Ecosystem Change Detection And Response
 3. Improving Fisheries And Marine Resource Management
 4. Defining Essential Or Critical Habitats And Species
- 1: How can telemetry and biological observations be used to better address the Key Sector Needs identified on day 1-2?
 - 2: What is the value a regional baseline network approach versus individual research efforts?
 - 3: What are the potential challenges to building a regional biological observations network? What actions can be taken to address those challenges?

5:20 - 5:40 Breakout Session 2 Report Out

5:40 - 5:45 Wrap Up Day 2

Day 3 (Fri. Nov 9, 2018)

8:00 - 9:00 Breakfast

9:00 - 9:30 U.S. IOOS Vision & Strategy for an Integrated Sustained Biological Observing System

Carl Gouldman – *Director, U.S. Integrated Ocean Observing System Program Office*

9:30 - 10:30 WEST COAST INTEGRATED OBSERVING SYSTEM: EXAMPLES, OPPORTUNITIES and VISIONS *Moderator: Woody Turner*

- Pete Raimondi – MARINe, UC Santa Cruz
- Ralf Goericke – CalCOFI-SIO Supervisor, IOD/Scripps Institution of Oceanography
- Joshua Brown – Western & Pacific Regional Program Coordinator at NOAA Sea Grant
- Bill Douros – National Marine Sanctuaries West Coast Region Director

Group Discussion

10:30 - 10:45 Break

10:45 - 11:30 PLENARY DISCUSSION – Vision for a U.S. West Coast Biological Observing Network

11:30 - 12:00 WRAP UP/NEXT STEPS

12:00 WORKSHOP CLOSES. Lunch provided.