PacMARS-SOAR Open Workshop
Captain Cook Hotel, Anchorage, Alaska
January 20, 2013

Workshop Objectives

1. To provide an update of the PacMARS (Pacific Arctic Marine Regional Synthesis) and SOAR (Synthesis of Arctic Research) activities

2. Identify additional data sets for synthesis activities, and

3. Solicit input on key themes for future research initiatives in the Pacific Arctic region

The PacMARS Principal Investigator Team.

Institution	PI	Expertise
University of Maryland Center for Environmental Science (UMCES)	Jacqueline Grebmeier and Lee Cooper	Benthic ecology, interdisciplinary project management, biogeochemistry, biological & chemical oceanography
Florida Institute of Technology (FIT)	John Trefry	Trace metals, contaminants, chemical oceanography
University of Alaska Fairbanks (UAF)	Bodil Bluhm, Steve Okkonen, Gay Sheffield, Sveta Yamin-Pasternak	Benthic ecology, biodiversity, physical oceanography, marine mammals, marine advisory program, cultural anthropology
National Center for Atmospheric Research (NCAR)	James Moore	Data management, GIS data services
University of Rhode Island (URI)	Robert Campbell	Zooplankton ecology, molecular approaches, biological oceanography
University of Texas at Austin (UT)	Kenneth Dunton	Food webs, stable isotopes, benthic ecology
Woods Hole Oceanographic Institution (WHOI)	Carin Ashjian	Zooplankton ecology and lifecycles, biological oceanography

PacMARS Advisors: Eddy Carmack (IOS/Canada) and Robert Ulanowicz (CBL/USA)

PacMARS Goal

To facilitate new synergies in understanding of the marine ecosystem in the greater Bering Strait region, including the northern Bering, Chukchi and Beaufort seas

PacMARS research team and collaborators are:

1) identifying and synthesizing existing data sets that are critical for evaluating the current state of knowledge in the Pacific Arctic region marine ecosystem, including human dimensions, and

1) working to define the high-priority, overarching scientific themes and research needs for the next 5-10 years of marine ecosystem studies in the Pacific Arctic region.

http://pacmars.cbl.umces.edu

PacMARS Six Research Themes

Theme 1: Ice cover – primary production relationships, currents, winds, bathymetry

Theme 2: Phenology of biological production cycles in relation to physical environment

Theme 3: Benthic-pelagic coupling in relation to physical-chemical environment

Theme 4: Current state of lower trophic prey-base and higher trophic feeding hot spots

Theme 5: Subsistence lifestyles in times of climate change

Theme 6: Chemical contaminants in sediment and biota

Overview of PacMARS Effort

- Provide recommendations for new research needs
- Fast timeline (interim report by June 2013)
- Coordinated with the SOAR program
- Process includes workshops and public meetings in Anchorage, Savoonga, Gambell, Barrow, Kotzebue and Nome, AK
- Initial organizational and data workshops (Annapolis, MD and Boulder, CO)
- Anticipate coordinated research focus in the Chukchi Sea starting in 2014, followed by study efforts in the Beaufort Sea

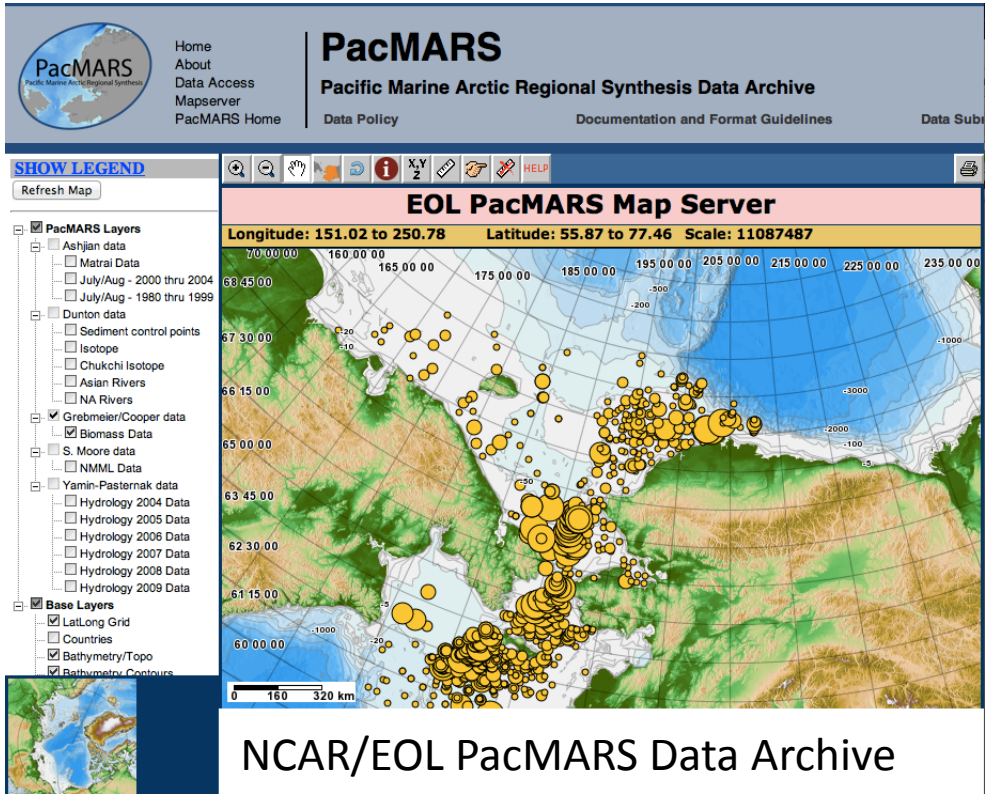
PacMARS Data Portal and Archive

EARTH OBSERVING LABORATORY

Development Deployment Data Services Discovery

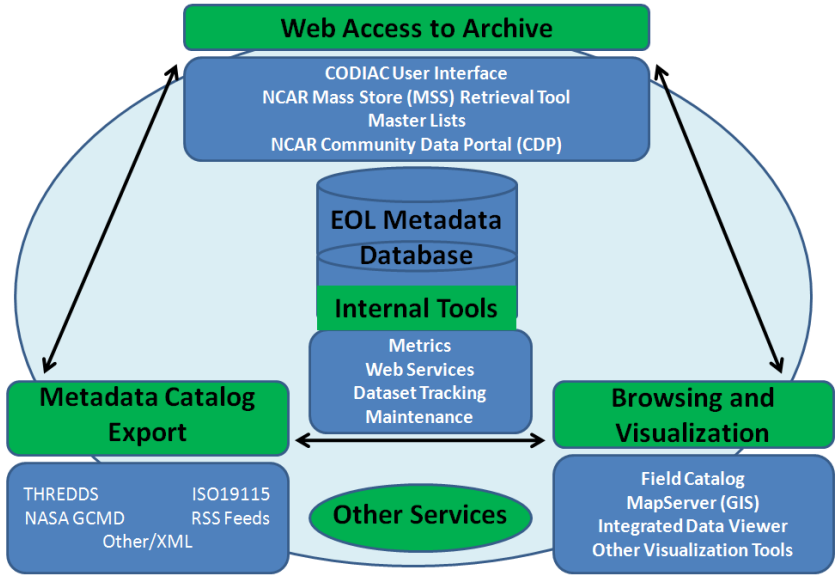
AOOS

Alaska Ocean Observing System



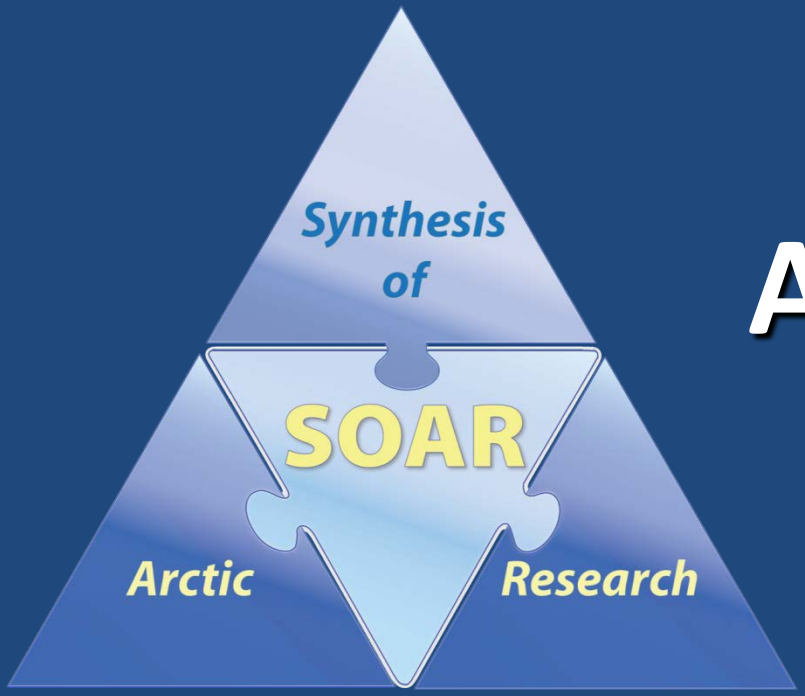
NCAR/EOL PacMARS Data Archive

EOL Metadata Database And Cyberinfrastructure (EMDAC)



- Data Management web site
- Metadata entry forms
- Data upload process
- Mapserver overview
- Data Policy and use issues
- Future activities

http://pacmars.eol.ucar.edu/



Synthesis of Arctic Research (SOAR)

Sue Moore, NOAA/NMFS

Phyllis Stabeno, NOAA/OAR

Lisa Guy, NOAA/UW-JISAO

Heather Crowley, BOEM/Alaska Region

BOEM

Bureau of Ocean Energy Management

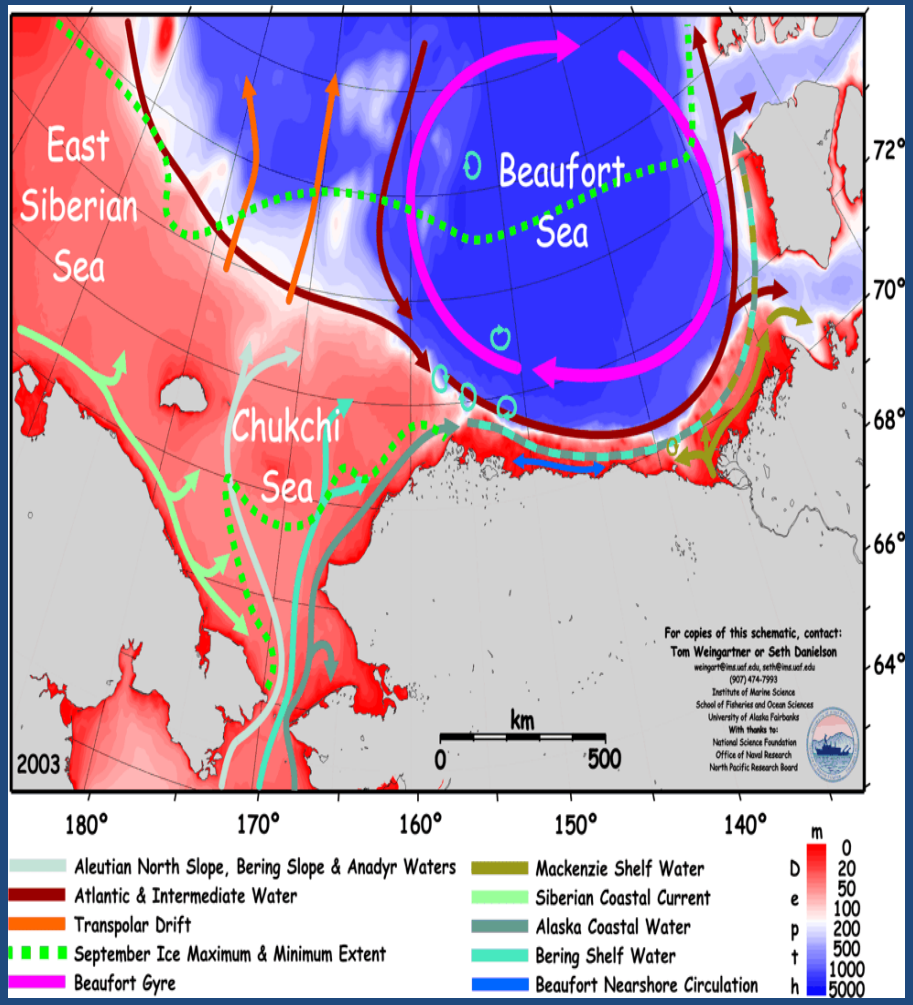
SOAR OVERVIEW

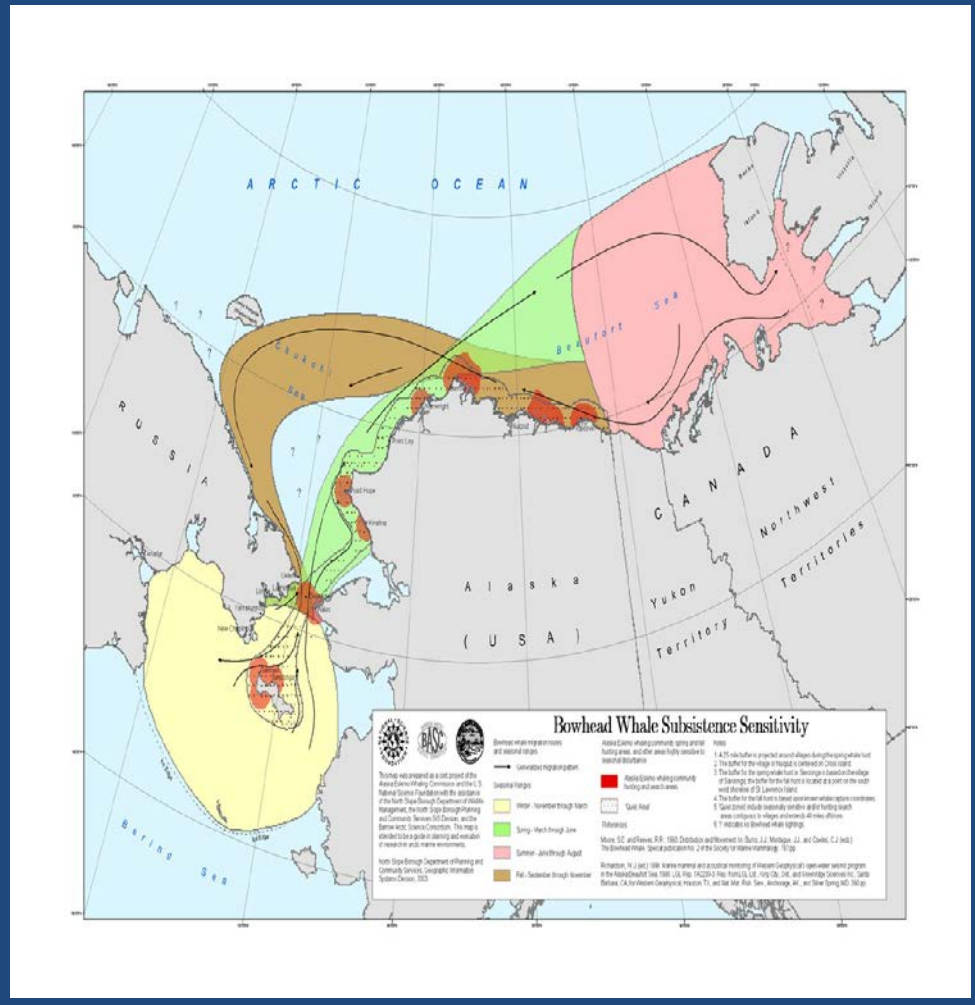
- **WHAT:** *inter-disciplinary synthesis of marine science data and observations for the Pacific Arctic Region (PAR)*
- **WHERE:** *focus is US waters of the PAR, but integration of information from Canadian and Russian studies is encouraged*
- **WHY:** *lots of marine research in PAR, but little integration and synthesis*
- **WHEN:** *5-year project (2011-2016), in 2 Phases (Phase 1 = 2011-13)*
- **WHO:** *guidance - 11 member Science Steering Committee + PIs*
  ***BOEM-funded Project** – Heather Crowley (COR)*
  Project Coordinator - Lisa Guy
  Project Management - NOAA/PMEL; NOAA/Fisheries S&T
  Integration and Synthesis - multiple laboratories

http://www.arctic.noaa.gov/soar/

Pacific Arctic Region (PAR)

N. Bering, Chukchi, Beaufort Seas

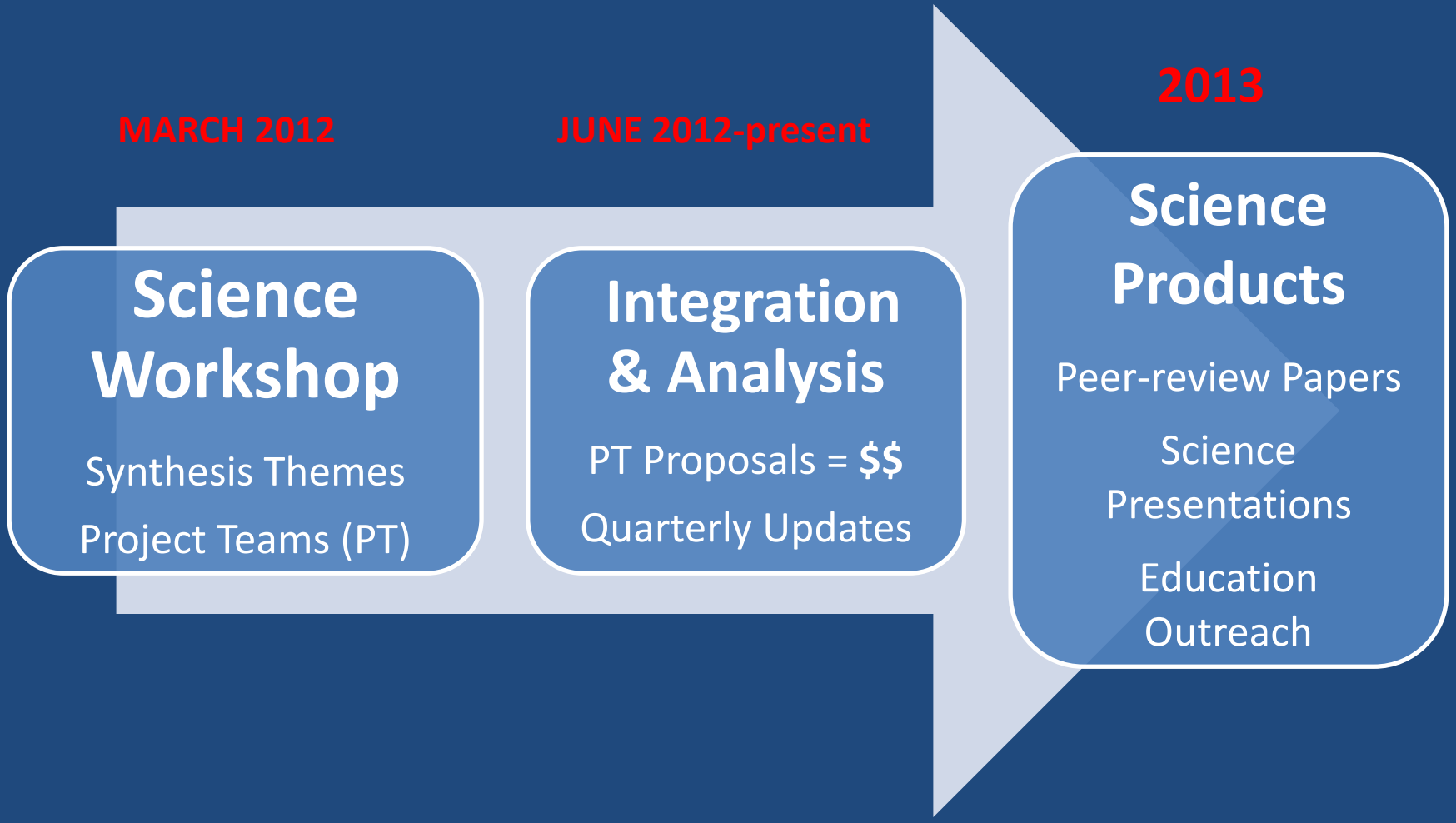




SYNTHESIS of Science: from Physics & Chemistry to Biology & Local Communities

2012-13: Key Milestones

January 2012: SOAR Town Hall @ AMSS



SOAR - Journal Outline

1. Faster-than-modeled sea ice loss, effects on primary production & anthropogenic impacts (6 papers)
2. Impacts of 'New State' of the Pacific Arctic on marine mammal & seabird prey (5 papers)
3. Marine mammal and seabird adaptation to 'New State' of the Pacific Arctic (6 papers)

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- 20 projects proposed for synthesis @ Workshop
- 14 projects are moving forward in SOAR, Phase I

See PacMARS-SOAR Synergies Table for Lead Author & Topics of anticipated manuscripts

SOAR = Opportunity

- Opportunity to **THINK** about what can be learned about the marine ecosystem by ***synthesis*** of data & observations across disciplines
- **$**upport for **ANALYSIS & PUBLICATION**
- Opportunity in Phase II for follow-up on **QUESTIONS** that arise during Phase I

This Workshop

- Opportunity to improve **UNDERSTANDING** of the marine ecosystem in support of future science, community support and resource management

PacMARS-SOAR OPEN SCIENCE MEETING AGENDA

0830-0845	Introduction PacMARS (Grebmeier) & SOAR (Moore)
0845-1015	PacMARS Theme Overview (20 min presentations) • Physics, Hydrography & Contaminants (Themes 1, 2 & 6; Cooper, Okonnen, Trefry) • Lower Trophics, Biodiversity & Phenology of Biological Production (Themes 2, 3 & 4; Bluhm, Ashjian, Campbell, Dunton, Grebmeier) • Subsistence (Theme 5; Yamin-Pasternak and Sheffield) • Questions
1015-1030	Break
1030-1200	SOAR Project 'Case Studies' (15 min presentations) • Physics/Hotspot (Pickart/Grebmeier) • Lower Trophics/Upper Trophic Prey (Ashjian) • Upper Trophics/Hotspots (Ferguson/Kuletz) • Acoustic Ecology (Clark) • Questions and Discussion
1200-1330	Lunch
1330-1500	Breakout Sessions-4 tables 'captained' by one person each from PacMARS & SOAR to focus on Future Directions for research; option to shift participants @ 20min intervals • Physics, Hydrography & Contaminants (Cooper and Crowley) • Lower Trophics, Biodiversity, and Phenology (Bluhm and Ashjian) • Subsistence (Yamin-Pasternak and Guy) • Upper Trophics and Acoustic Ecology (Grebmeier and Ferguson/Clark)
1500-1515	Break
1515-1600	Summary of Breakout Sessions (breakout leads PacMARS and SOAR)
1600-1700	Overview of Identified Future Directions and Open Discussion (Grebmeier & Moore)
1700	Close workshop