



Sustainable Arctic MBON

Meet the team

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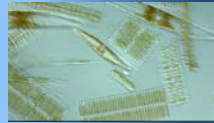
Eric Collins



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Objectives

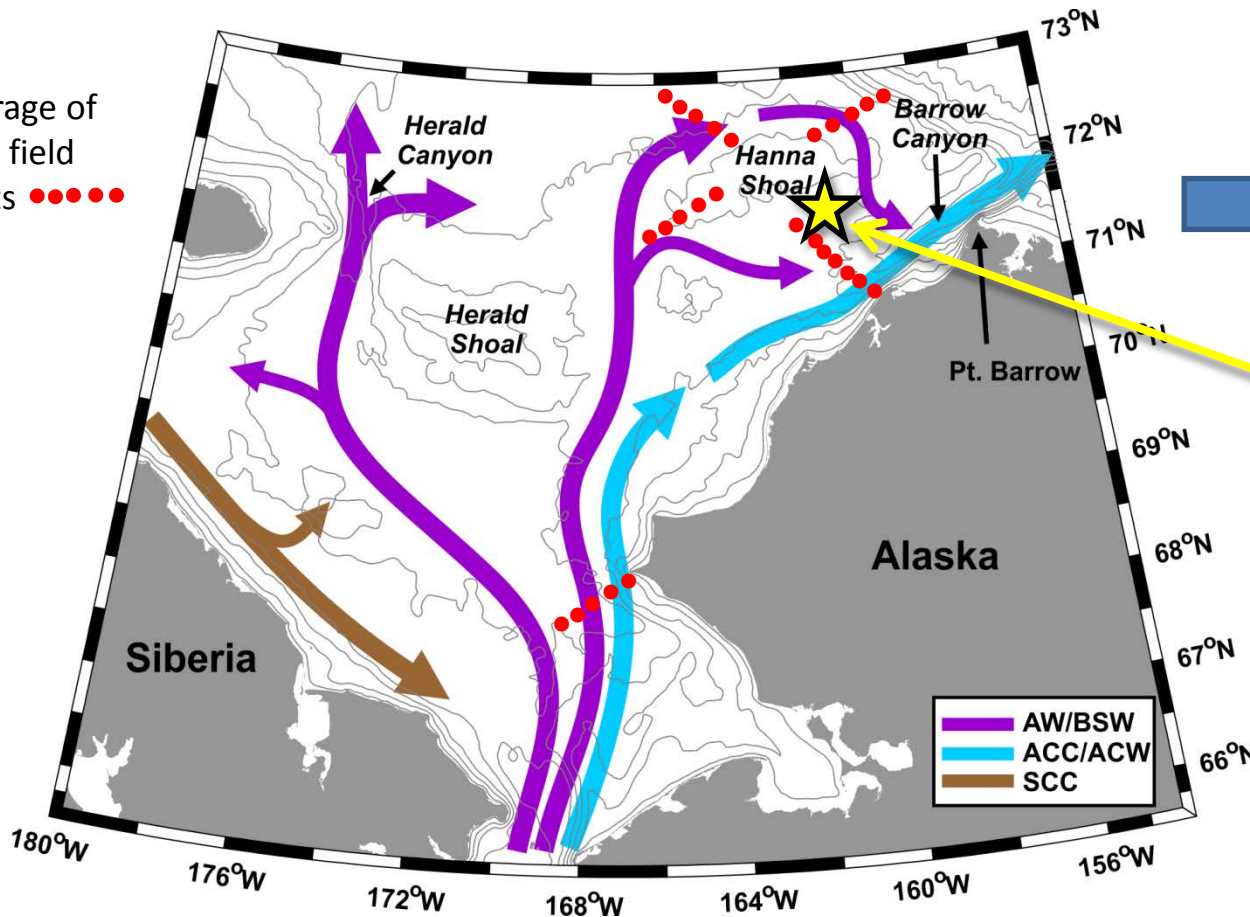
- Add EOV components to complement other, ongoing field projects
- Make use of existing platforms to enhance biodiversity observations, using advanced technologies
- Link results from organismal observations to remotely sensed seascapes
- Broad linkage of data streams through AOOS/MBON Data Portal with NCEI, Data One, OBIS, ERDDAP
- Effectively reach stakeholders
- Collaborate among MBON





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Coverage of other field efforts



Adaptive approach



Beaufort Sea extension?

Chukchi Ecosystem Observatory, CEM2-16

Latitude 71° 35.976' N Longitude 161° 31.621' W
Deployment Date/GMT 4 August, 2016 Deployment Time/GMT 04:33:14

Height (Top) 36 meters below surface
-11.97 m
Acous Locator Beacon SN 300234063212690
SUNA V2-NO3 SN 801
Acoustic Zooplankton Fish Profiler SN 55063
Seacat (P/T/S) SN 4804
(PAR 70612 /Triplet 1417)
SeapHox (P/T/S/PH/Ox) SN 1340
HydroC (pCO2) SN BAT-75129-0416-001
USST SN 1597

2.54 meters 3/8" line
2 14" Vinny floats
S-L-S

-7.615 m
Sediment Trap SN 1140315
S-L-S

1.74 meters 3/8" line
2 14" Vinny floats
S-L-S

-3.065 m
Acoustic Releases:
Dual Push-Off Release Transponders
SN#1 36439 SN#2 36439
Enable 414254 Enable 414396
Disable 414277 Disable 414325
Release 431712 Release 431731

Anchor at depth of 48 meters

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Complementing EOVs

PHYSICS	BIOGEOCHEMISTRY	BIOLOGY AND ECOSYSTEMS
★ Sea state	★ Oxygen	★ Phytoplankton biomass and diversity
★ Ocean surface stress	★ Nutrients	★ Zooplankton biomass and diversity
★ Sea ice	★ Inorganic carbon	★ Fish abundance and distribution
★ Sea surface height	Transient tracers	★ Marine turtles, birds, mammals abundance and distribution ^{n/a}
★ Sea surface temperature	★ Particulate matter	n/a Hard coral cover and composition
★ Subsurface temperature	Nitrous oxide	n/a Seagrass cover and composition
★ Surface currents	★ Stable carbon isotopes	n/a Macroalgal canopy cover and composition
★ Subsurface currents	Dissolved organic carbon	n/a Mangrove cover and composition
★ Sea surface salinity	★ Ocean colour	★ Ocean Sound
★ Subsurface salinity		★ Microbe biomass and diversity (*emerging)
★ Ocean surface heat flux		★ Benthic invertebrate abundance and distribution (*emerging)

Mooring additions (year-round):

- phytoplankton
- eDNA
- ocean sound (marine mammals)

Field effort additions:

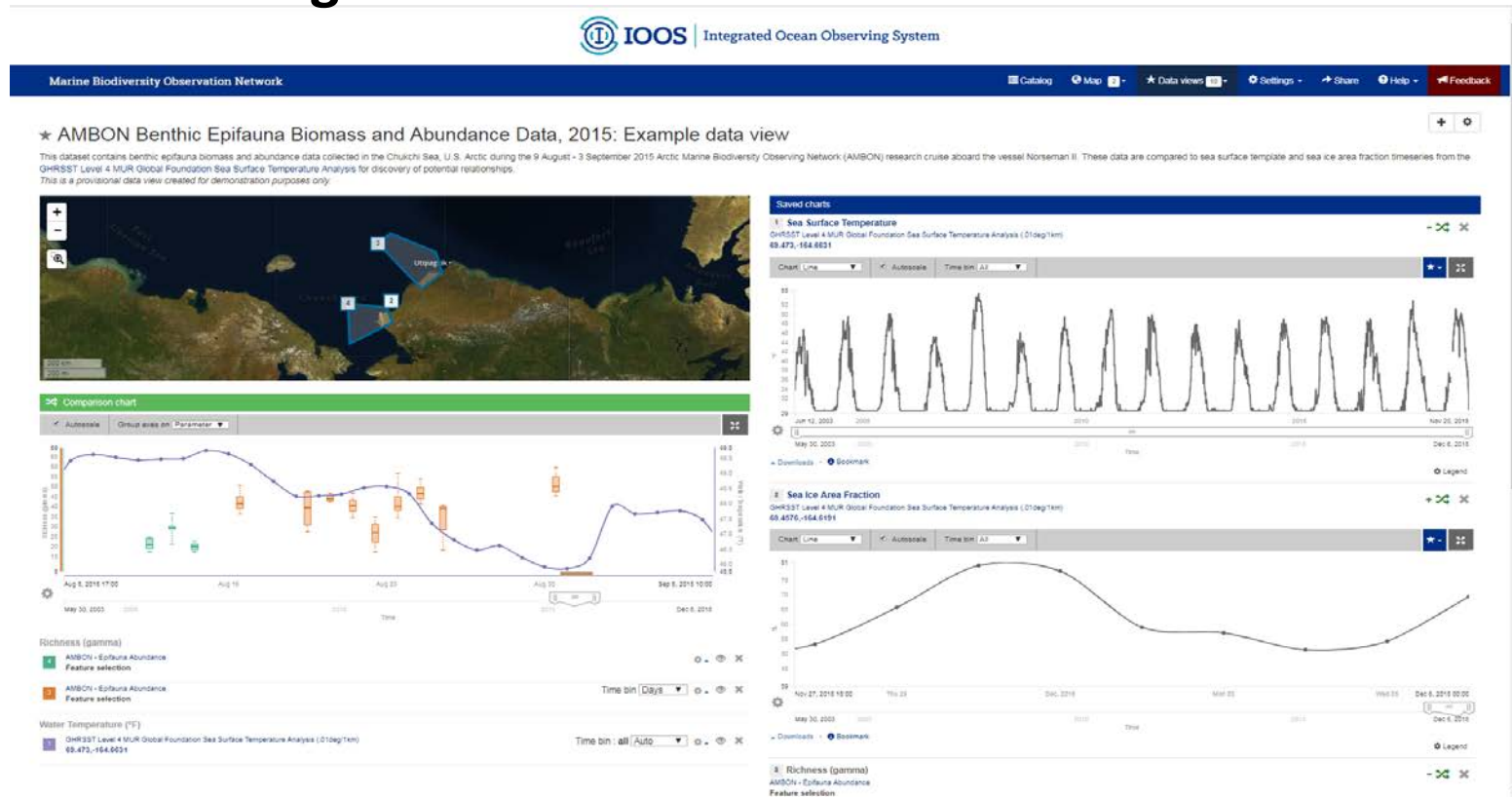
- eDNA
- seabirds
- Fish
- epibenthos

Remote sensing:

- Arctic seascapes

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Data management



- Produce archived, interoperable data
- Link to other field effort data streams through AOOS
- Visualizations

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Partnerships and Stakeholders

NOAA United States Arctic Observing Network (US AON)

- AON is the interface of research, observation, and human interests
- e.g., Native communities, industries, management agencies, scientific community
- feed high quality and sustained EOY data into AON's "value tree mapping"
- linking observations to products to societal benefits

NOAA Chukchi Sea Integrated Ecosystem Assessment (IEA)

- ecosystem-based management (EBM) approach in federally managed waters
- feeding EOY information into the IEA process
- Participation in upcoming IEA planning meeting

Circumpolar Biodiversity Monitoring Program (CBMP)

Bureau of Ocean Energy Management (BOEM) – Environmental Studies Plan

Fisheries Management Council

MBON Network