

# NSF Polar Vessels Operations, plans and future design/construction activities

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# USAP Research Vessel Activities

- *RVIB Nathaniel B. Palmer*
  - **2017 Highlights**
    - 261 days at sea (154 USAP, 117 OCE)
    - Ports of Call: Punta Arenas, Chile; McMurdo, Antarctica; Lyttleton, New Zealand; Auckland, New Zealand; Sydney, Australia; Papeete, Tahiti; Valparaiso, Chile
    - Significant Operations: Haz waste delivered from Palmer Station; GO-SHIP cruise from Australia to Chile; new 36-position rosette



# USAP Research Vessel Activities

- *ARSV Laurence M. Gould*
  - **2017 Highlights**
    - 258 days at sea (242 USAP, 10 OPP/OCE, 6 NOAA)
    - Ports of Call: Punta Arenas, Chile; Palmer Station, Antarctica
    - Significant Operations: LTER operations continued; RHIBs Rigil & Hadar delivered to Palmer Station; completed dry dock; new Fleet Broad Band system installed



# USAP Research Vessel Activities



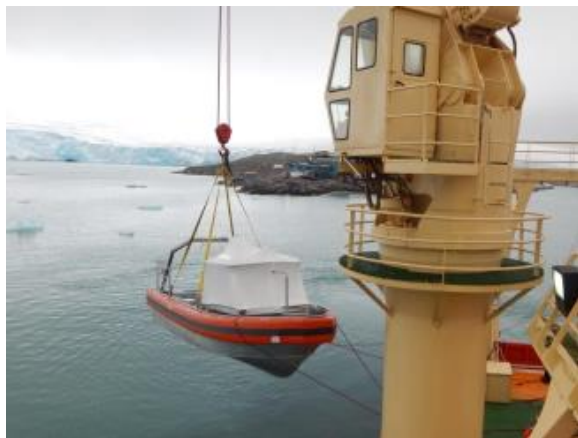
*UAS photo of Avian Island taken by researchers on LMG17-01*



*UAS photo of NBP taken by researchers on NBP17-01*



*Recovering Fishing pots through pancake ice in Dallman Bay*



*Placing RIGIL into Water from LMG*



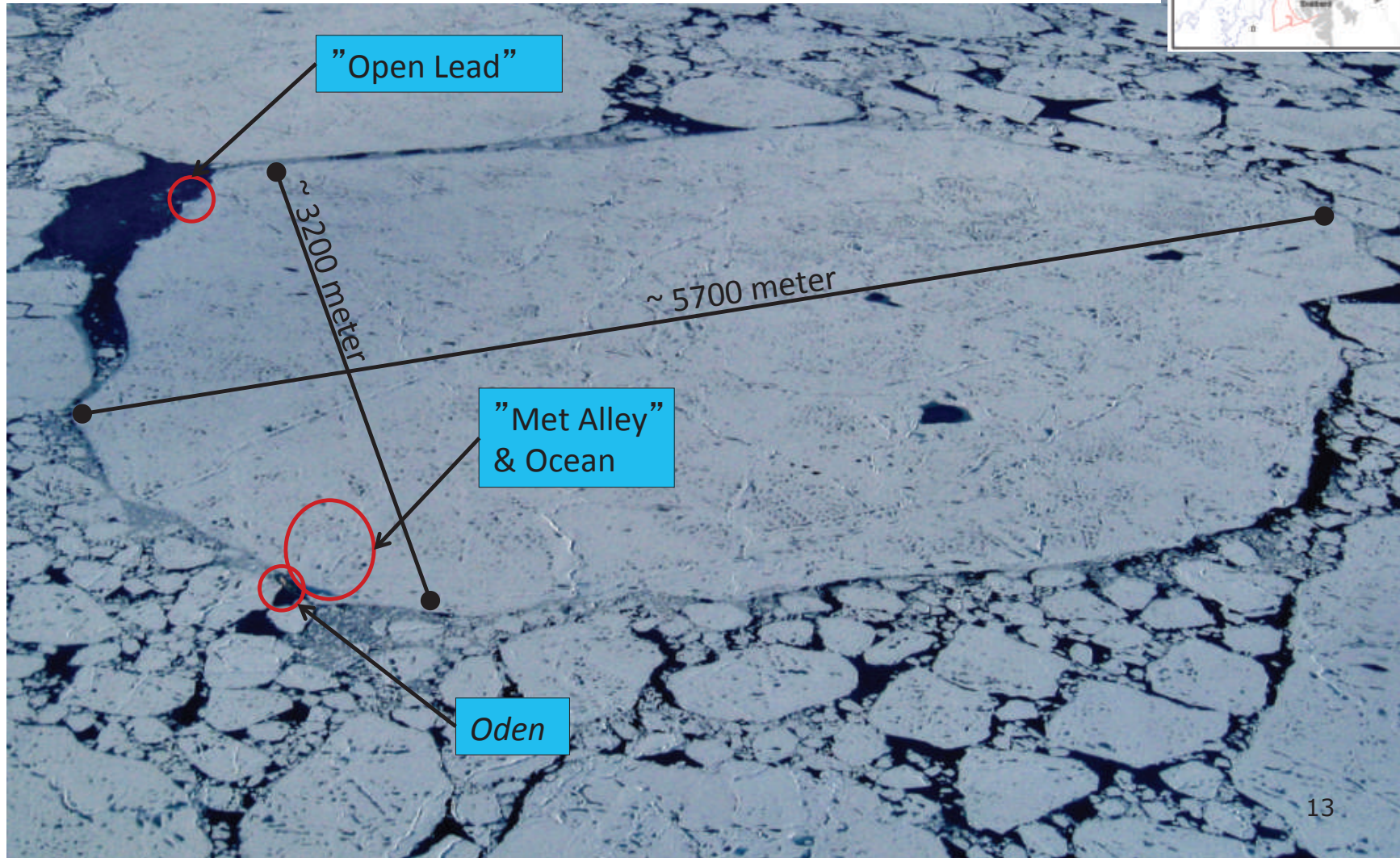
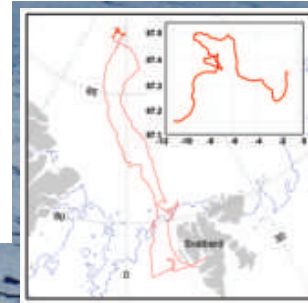
*Researchers on the NBP sampling sea ice in the dark along side the NBP*



*RHIB HADAR delivered to Palmer Station*



# 2018 ODEN Expedition



Central observatory:  
*RV Polarstern*



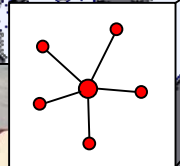
Operations with  
research aircraft  
and helicopters



→ Extend vertical and  
geographical  
coverage

Drift: autumn 2019 to  
autumn 2020

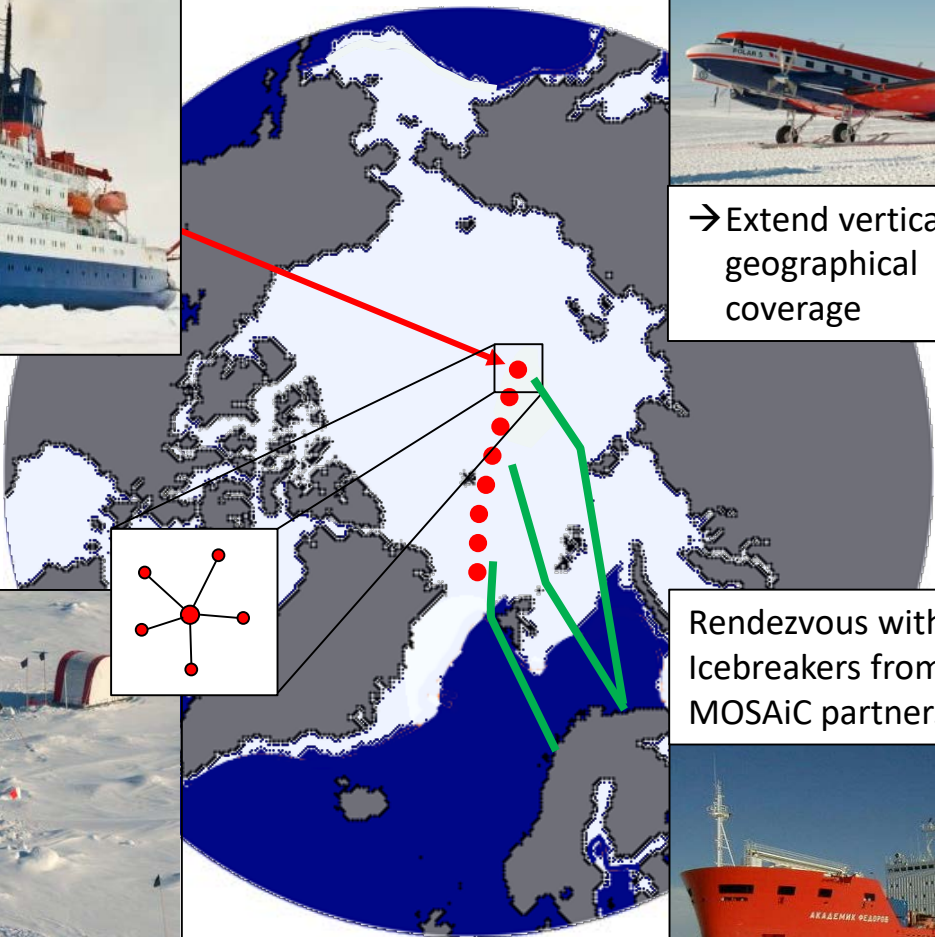
Distributed network  
of satellite stations



Rendezvous with  
Icebreakers from  
MOSAIC partners



→  
Broader geographic  
coverage & supply



# U.S. Coast Guard

- Operation Deep Freeze
  - Continued support of annual McMurdo Station channel break-in
    - 67 nautical miles of 6.5-foot ice/snow
- New CG Polar Icebreakers (PIB)
  - Vessel gap concerns
    - POLAR STAR lifespan 2020 – 2023
    - First PIB delivery: 2023
  - 2017 GAO Study
    - CG-proposed “Limited Service Life Extension” \$75M cost estimate/funding schedule
    - Risk Analyses
  - 2017 National Academies Study – PIB Cost Assessment
    - Recommend four heavy PIB’s, all “science ready”
    - Fourth possibly “fully science capable”; timing with HEALY replacement?



# Future Vessel Plans

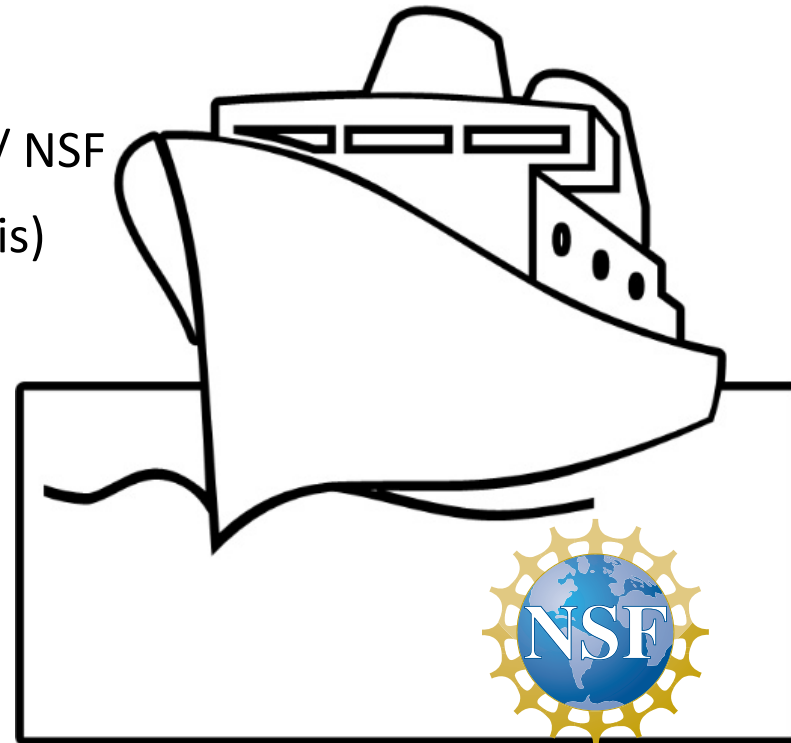
- Global interest in developing ice-capable research vessels
  - Norway, *Kronprins Haakon*, delivery in 2018
  - China, *Xuelong 2*, delivery in 2019
  - United Kingdom, RRS *Sir David Attenborough*, delivery in 2019/20
  - Australia, RSV *Nuyina*, delivery in 2022?
  - Germany, Sweden, others...





# USAP Future Vessel Plans

- Specifications derived from 2012 UNOLS PRV Science Mission Requirements (SMRs)
- Project Manager – Chris Chuhran, ASC
- Schedule
  - 2017: Leidos/Antarctic Support Contract refining requirements w/ NSF
  - 2018 Spring: Technical reports (Charter Options, GFE, Cost Analysis)
- Opportunities for Community Input
  - UNOLS FIC
  - Future USAP.gov website
  - Polar Advisory Committee, subcommittee?
  - AICC? Others?



Questions?

