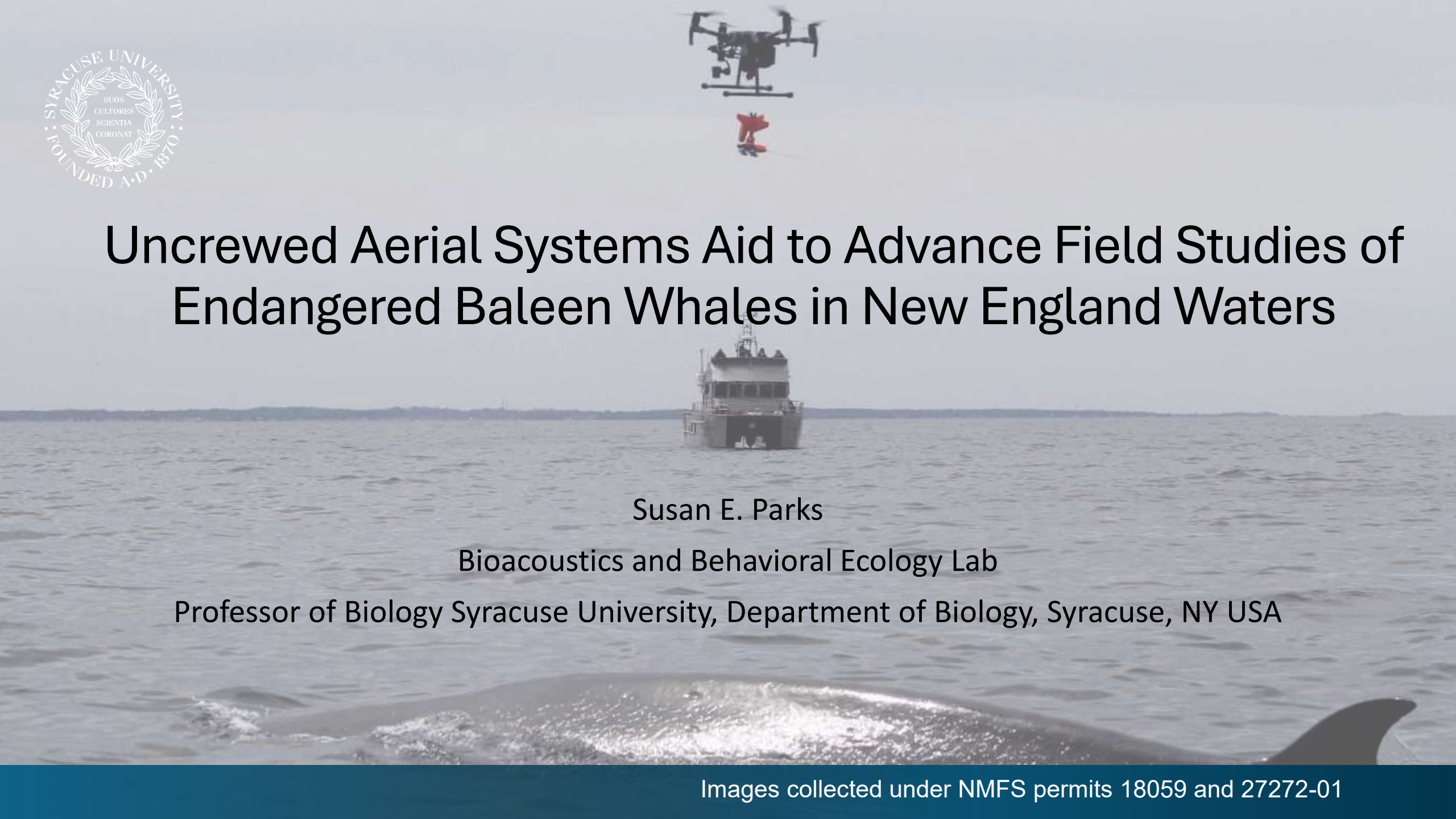


Uncrewed Aerial Systems Aid to Advance Field Studies of Endangered Baleen Whales in New England Waters

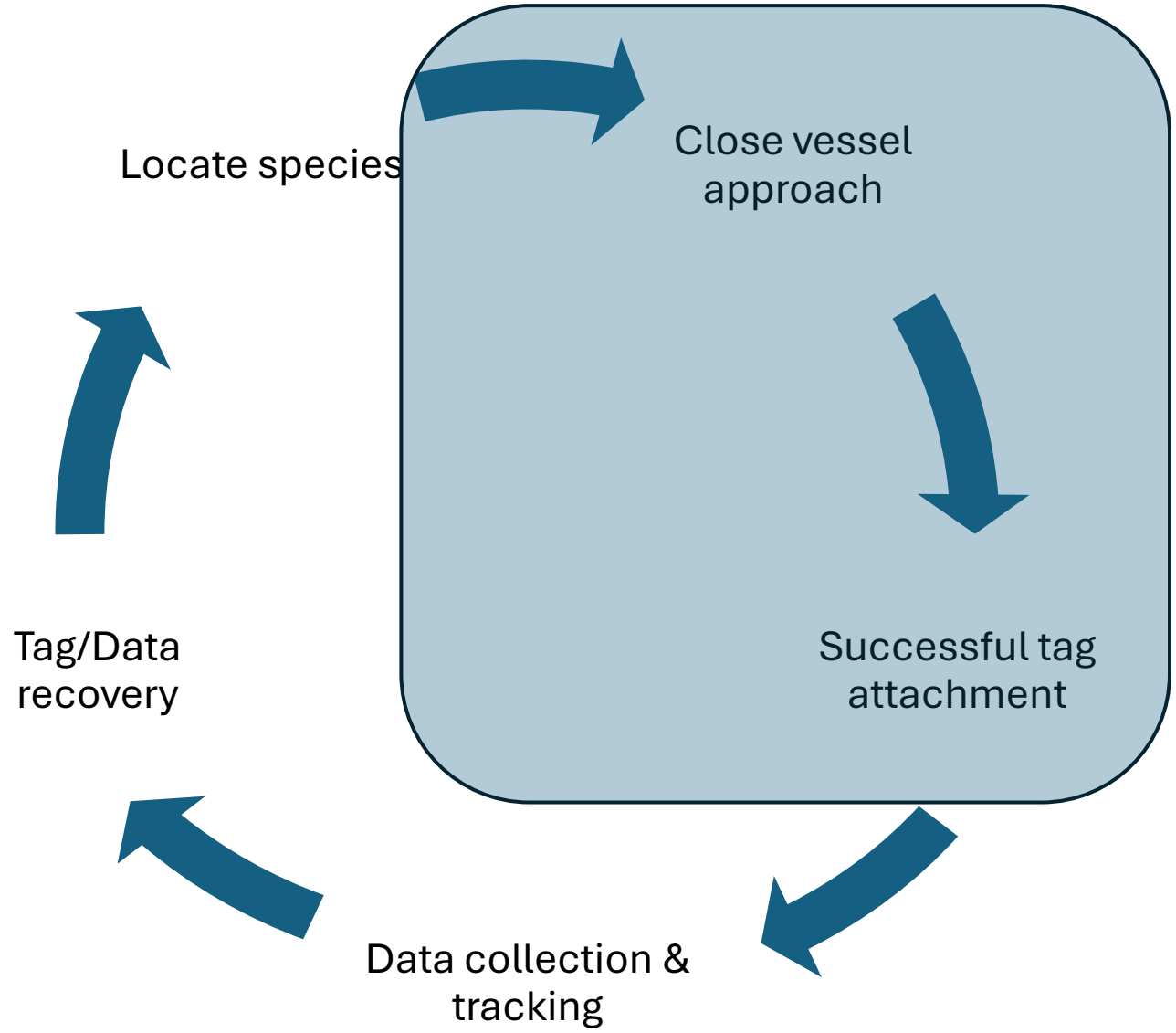
Susan E. Parks

Bioacoustics and Behavioral Ecology Lab

Professor of Biology Syracuse University, Department of Biology, Syracuse, NY USA

Images collected under NMFS permits 18059 and 27272-01

Whale tag data collection process and challenges



Successful vessel approaches are the main limitation to data collection

Approach and successful tag attachment can be challenging

Images collected under NMFS permits 18059 by SBNMS

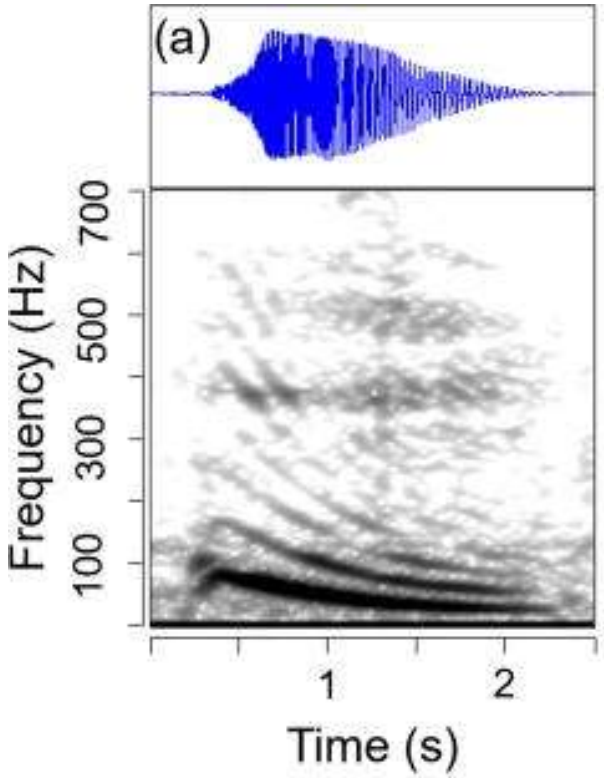
UAS Tagging of sei whales Stellwagen Bank

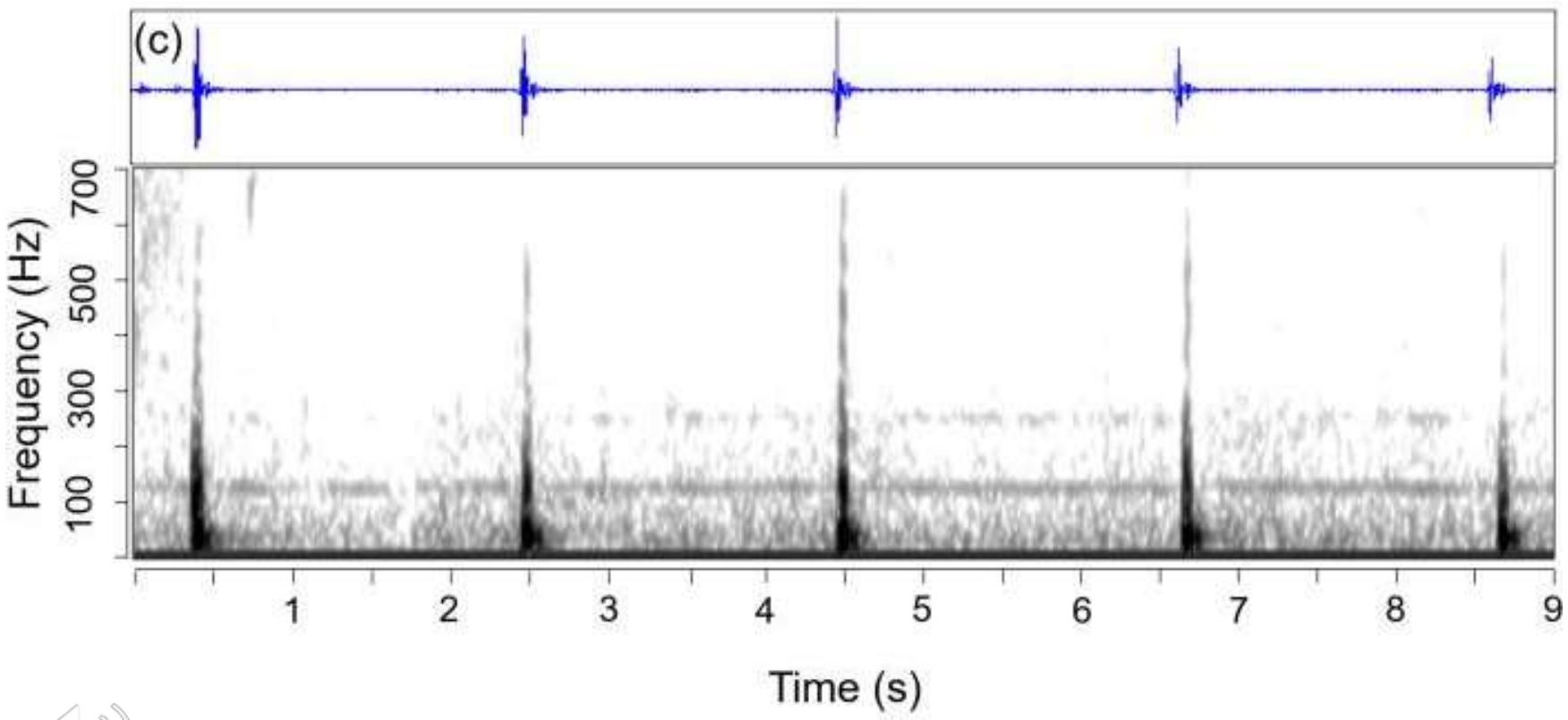
- First acoustic tags deployed on sei whales in the North Atlantic in 2022/2023
- 21 tags deployed (4 by pole and 17 by UAS), > 267 h of data

C. Zadra, Images collected under NMFS permits 18059, 23644 and 27272-

C. Zadra, Images collected under NMFS permits 18059, 23644 and 27272-0

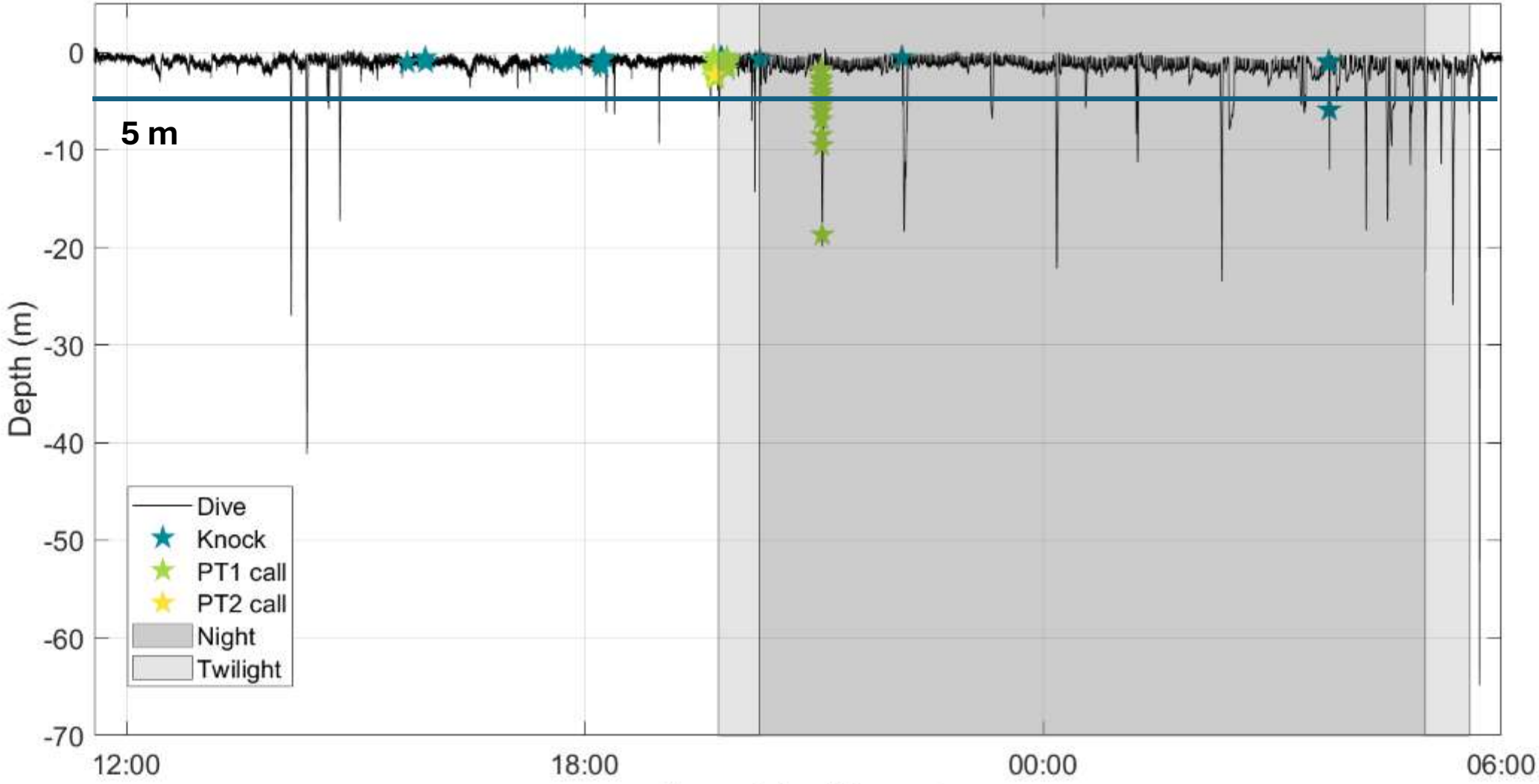
Tags revealed new low amplitude call-types from sei whales





Cusano, D.A., Wiley, D., Zeh, J.M., Kerr, I., Pensarosa, A., Zadra, C., Shorter, K.A. and Parks, S.E., 2023. Acoustic recording tags provide insight into the springtime acoustic behavior of sei whales in Massachusetts Bay. *The Journal of the Acoustical Society of America*, *154*(6), pp.3543-3555.

Sei whales showed very shallow dive behavior indicating high risk for vessel collisions

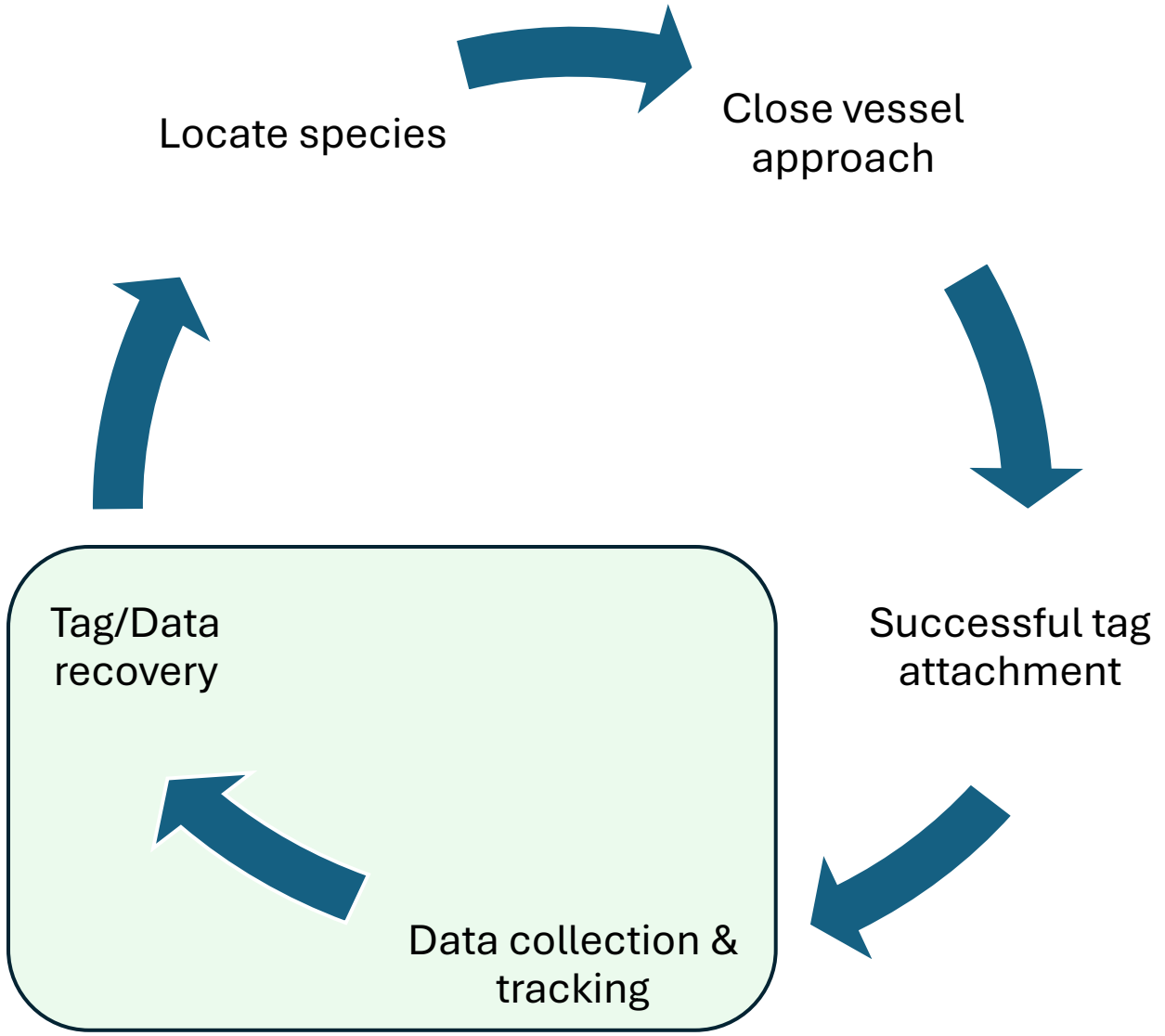


Cusano, D.A., Wiley, D., Zeh, J.M., Kerr, I., Pensarosa, A., Zadra, C., Shorter, K.A. and Parks, S.E., 2023. Acoustic recording tags provide insight into the springtime acoustic behavior of sei whales in Massachusetts Bay. *The Journal of the Acoustical Society of America*, *154*(6), pp.3543-3555.

Advantages and Challenges of using UAS for data collection

C. Zadra, Images collected under NMFS permit 27272-01

Uncrewed Aerial Systems Offer The Opportunity To Increase Efficiency of Data Collection



Tag availability and recovery become a limiting factor

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  - Ocean Alliance
  - Office of Naval Research
  - NOAA National Marine Fisheries Service
  - Department of Energy

Permits

- All data collected under permits from the National Marine Fisheries Service
- IACUC approval from Syracuse University

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