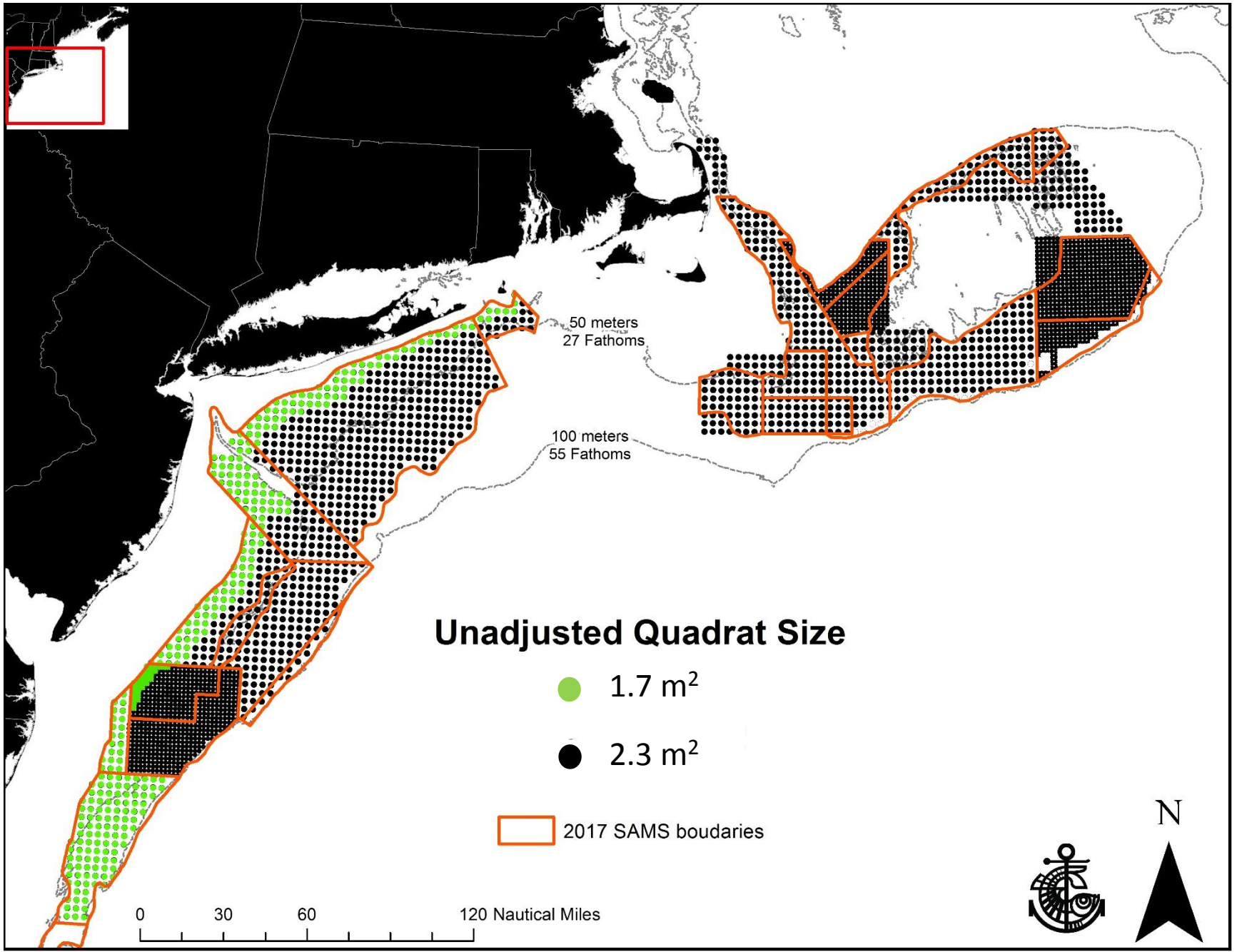
2017 SMAST Drop Camera Survey

Scallop PDT Meeting

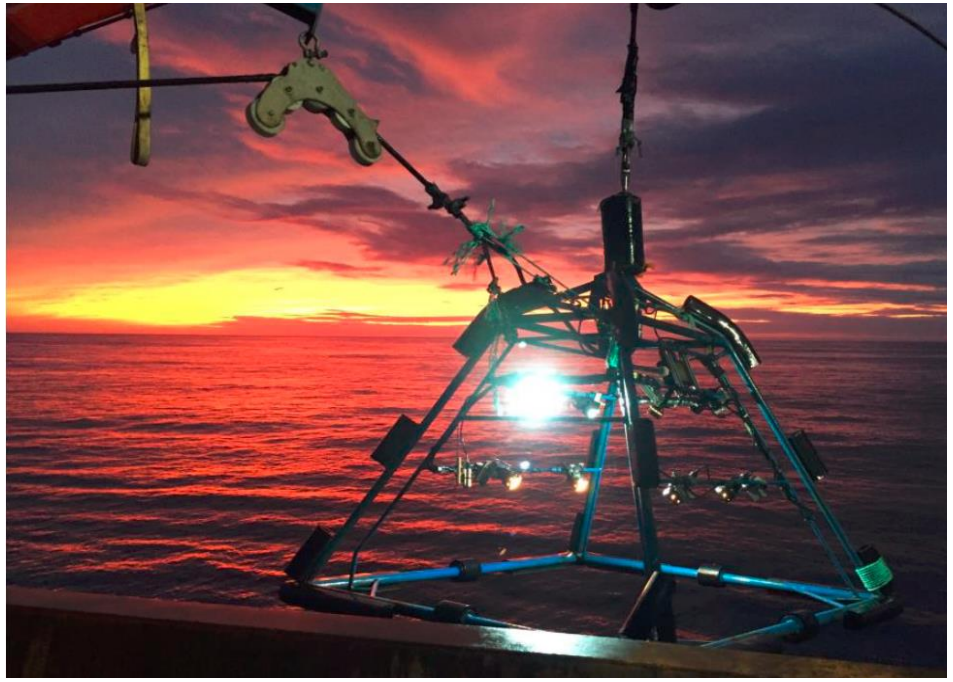
July 18, 2017

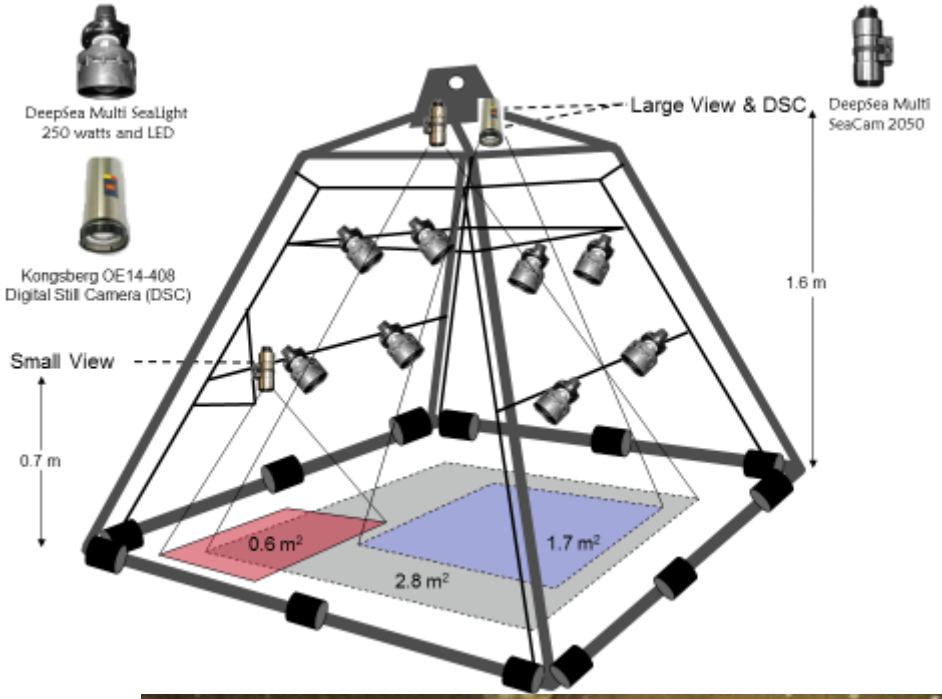
University of Massachusetts Dartmouth
School for Marine Science and Technology

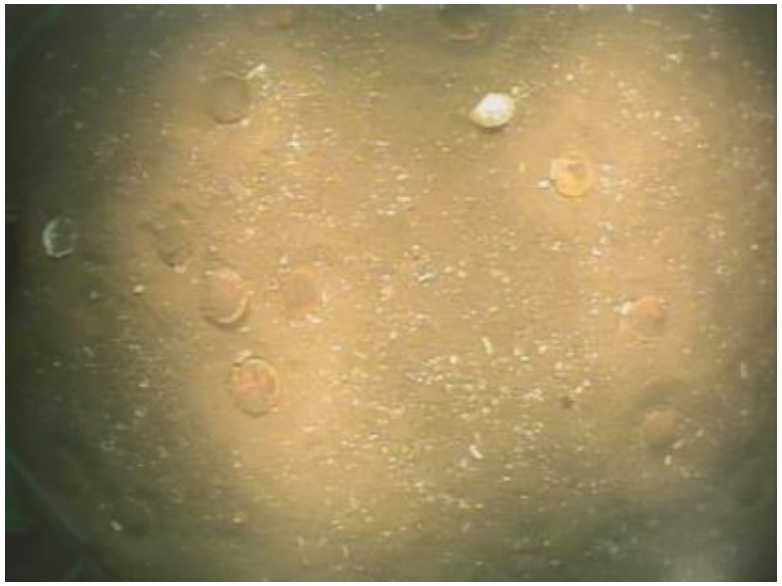
2017 Survey by Quadrat Size



Drop Camera Pyramid – Kongsberg Digital Still





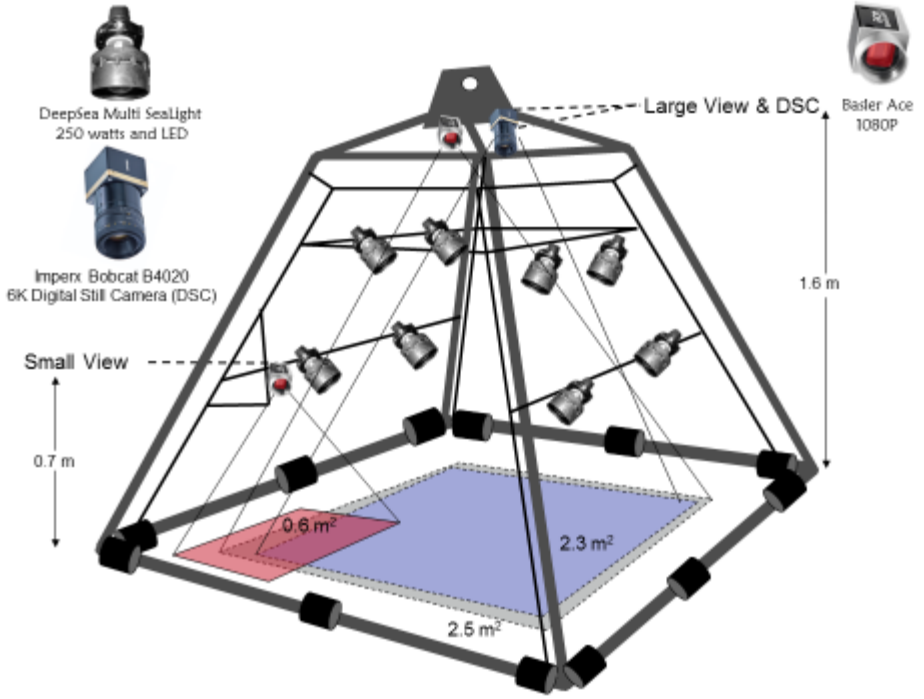


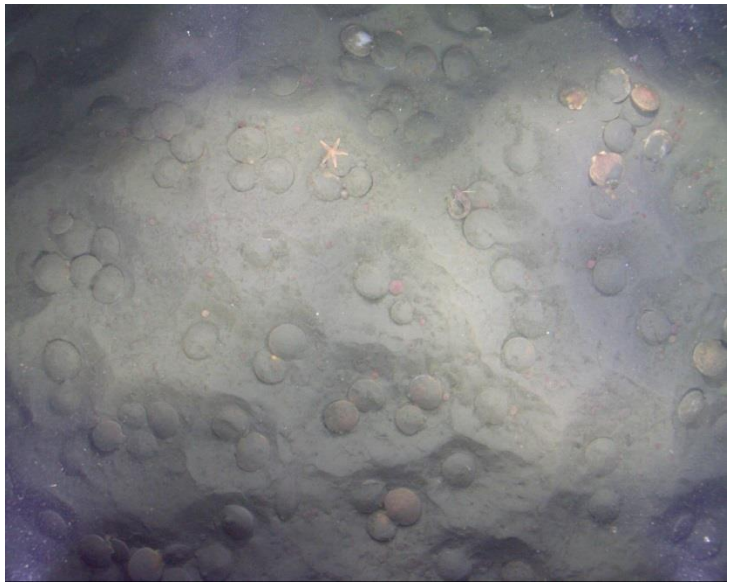
Large View (2.8 m²)

Small View (0.6 m²)

Digital Still Camera (1.7 m²)

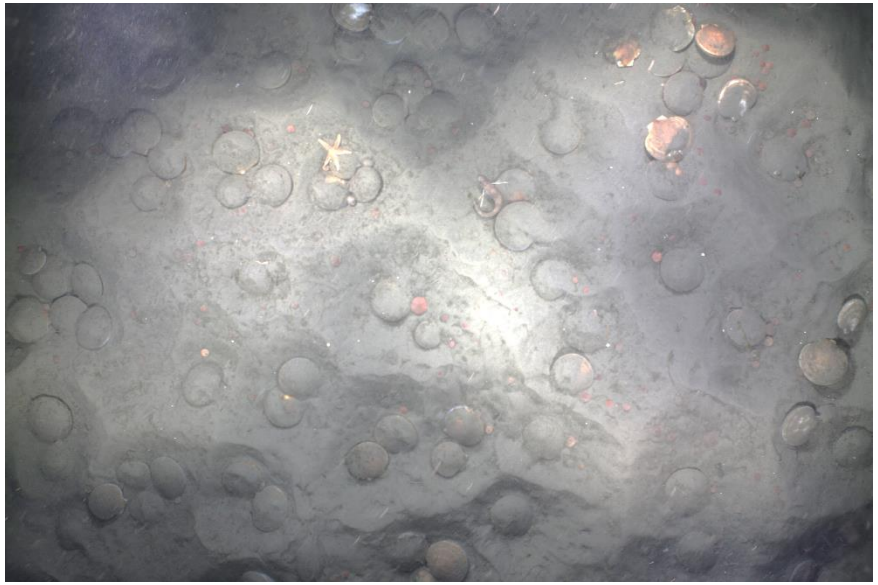
Drop Camera Pyramid – Imperx Digital Still





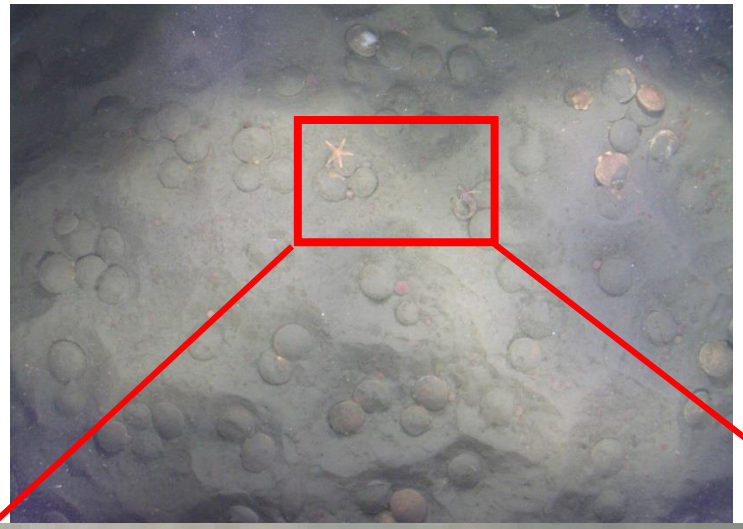
Large View (2.5 m²)

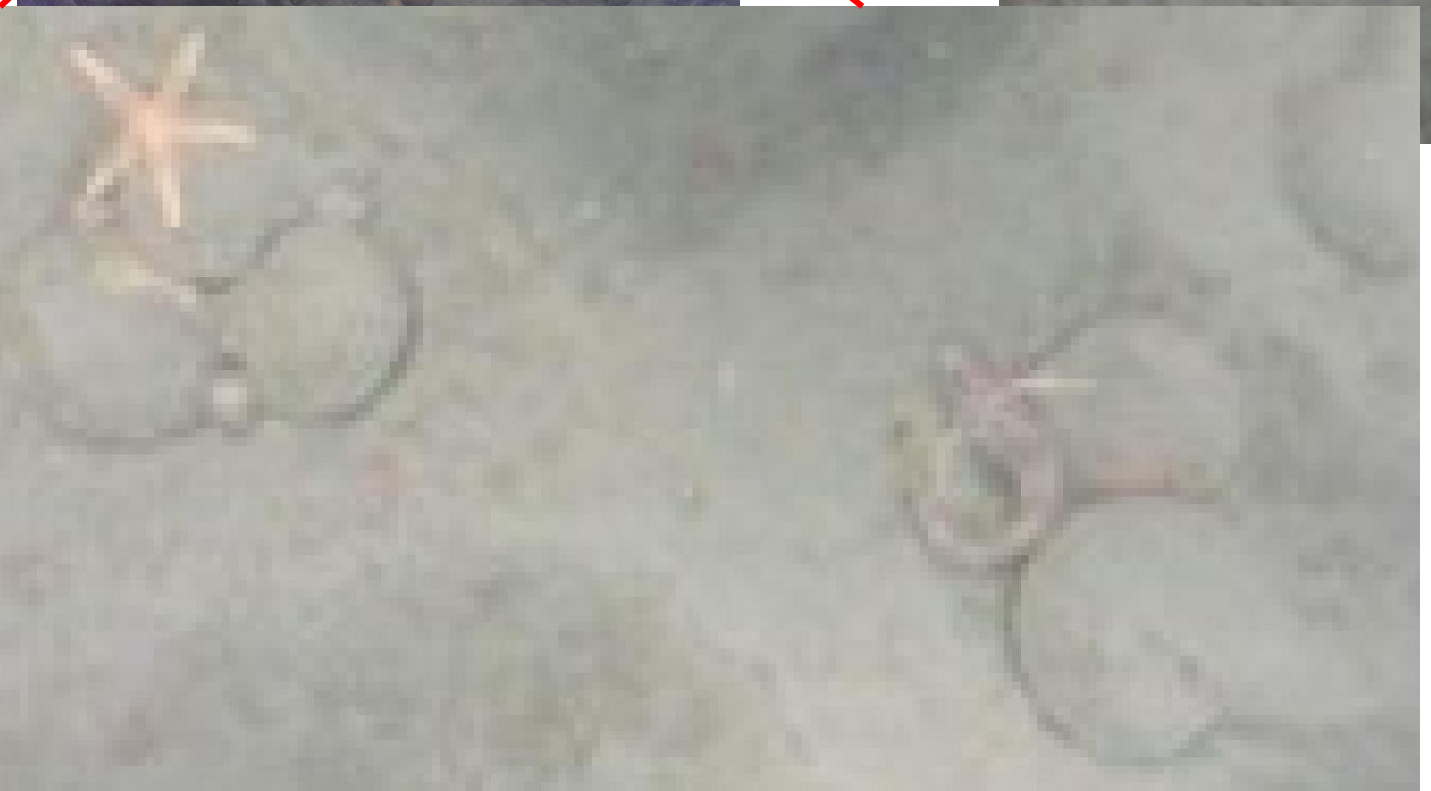
Small View (0.6 m²)

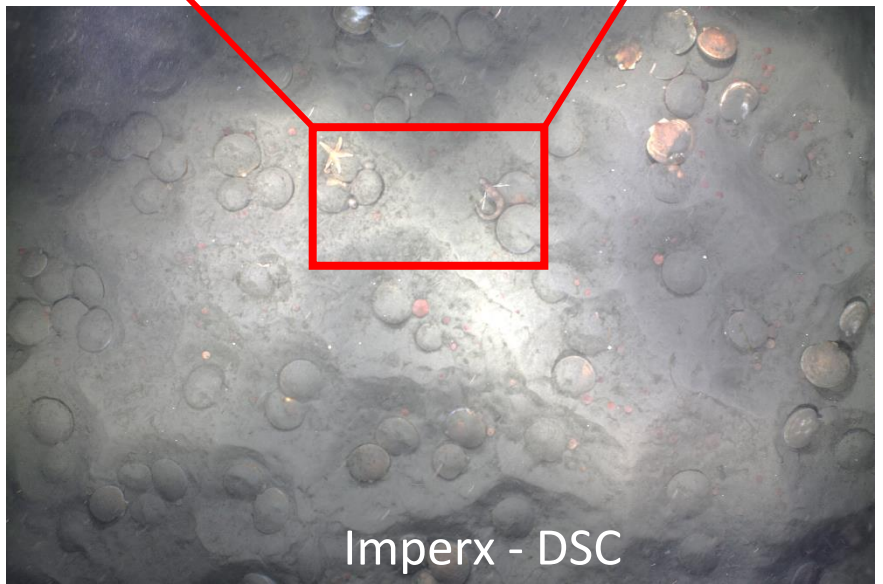


Digital Still Camera (2.3 m²)

Basler – Large View

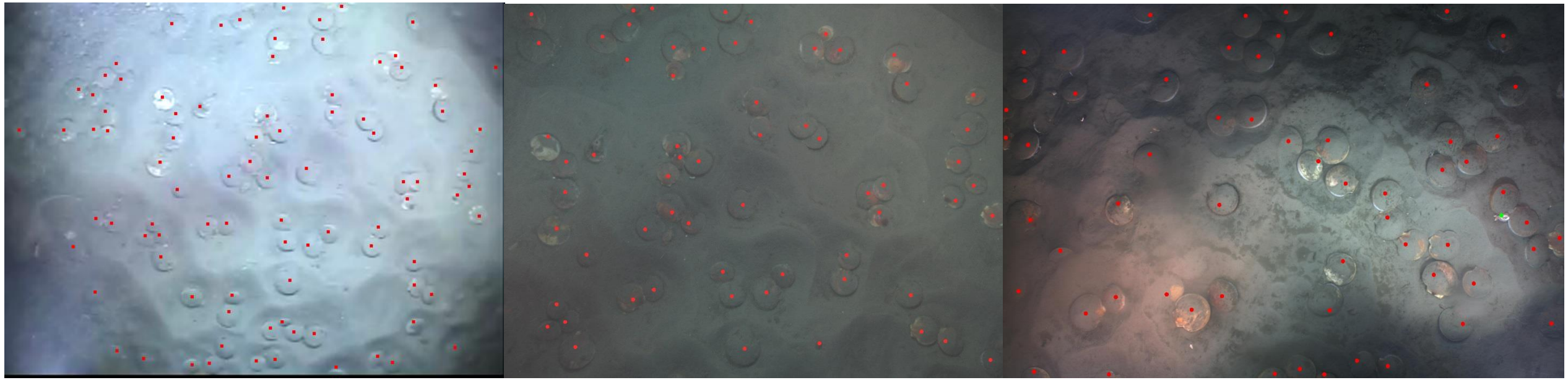






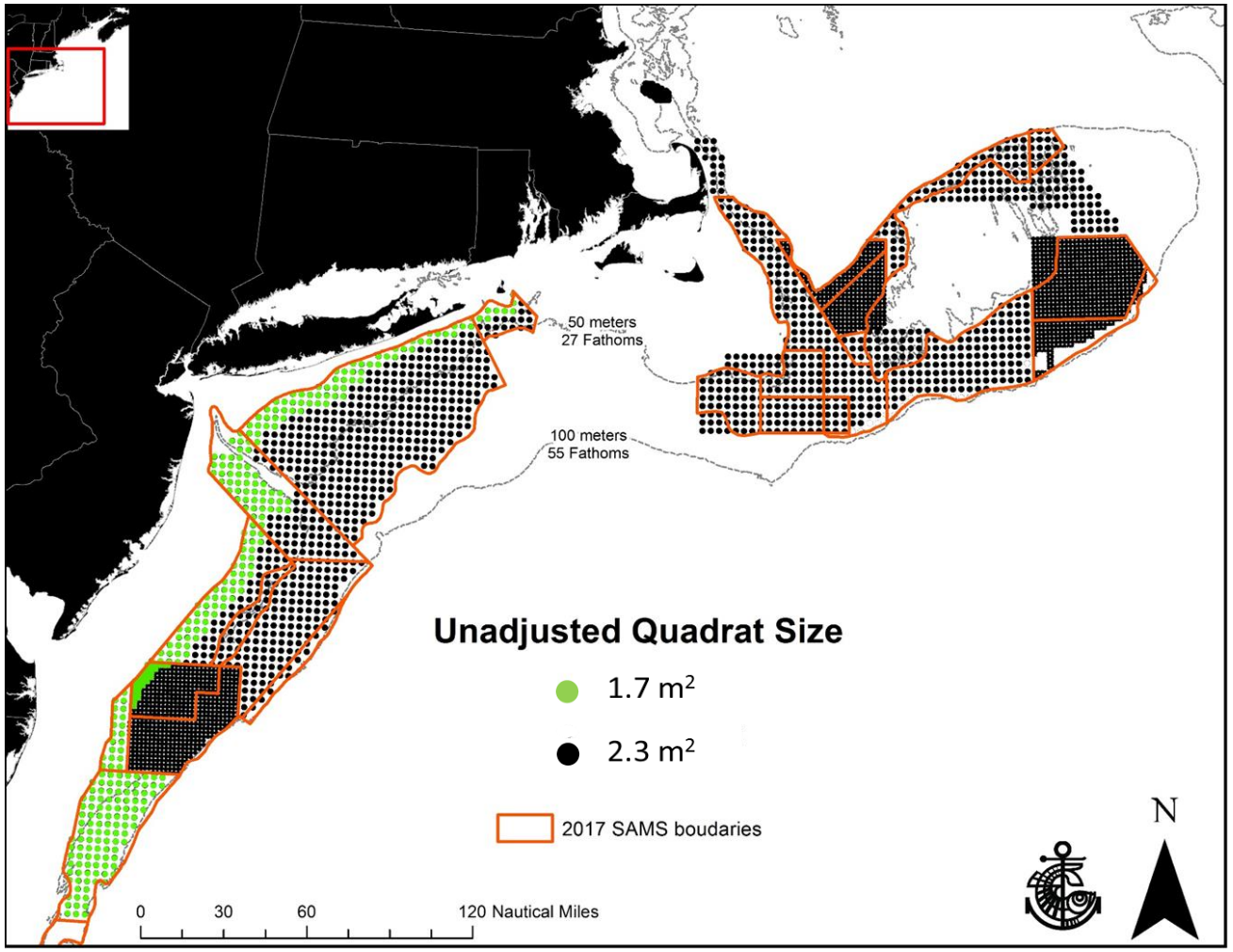
Camera Comparisons

Camera	Verticle Pixels	Horizontal Pixels	mm per Pixel	View Area (m^2)
DeepSea Large	480	640	3.04	2.8
Kongsberg DSC	2736	3648	0.41	1.7
Imperx DSC	4400	6600	0.29	2.3



Considerations for 2017 Results

- Survey with varying quadrat sizes
  - Estimates density based
  - Smaller quadrat size in Mid-Atlantic
  - Density vs. Count maps m^2



- Digital still images for all stations (as in 2016)
  - Improved detection – Large camera 95% of scallops > = 79 mm shell height (Marino et al. 2007)
  - "Flat" image – Large camera measurement bias away from image center (Stokesbury et al. 2004, Jacobson et al. 2010)

Questions/Discussion

Acknowledgments

.Electromechanica, Inc.
Donators to the SMAST Scallop Foundation

Citations

Jacobson, L.D., K D. E. Stokesbury, M. A. Allard, A. Chute, B. P. Harris, D. Hart, T. Jaffarian, M. C. Marino II, J. I. Nogueria and P. Rago. Measurement errors in body size of sea scallops (*Placopecten magellanicus*) and their effect on stock assessment models. *Fish. Bull*. **108**: 233-247 (2010).

Marino II, M.C., C. O'Keefe, L. D. Jacobson. Selectivity and efficiency of large camera video data from the SMAST video survey during 2003-2006. Appendix B7 of the 45th SAW Assessment Report (2007)

Stokesbury, K. D. E., B. P. Harris, M. C. Marino II, and J. I. Nogueira. Estimation of sea scallop abundance using a video survey in off-shore USA waters. *J. Shellfish Res.* **23**: 33-44 (2004).