**Interactive effects of size and intraspecific density on growth and survival of cultured juvenile Arctic surfclam *Mactromeris polynyma* in two eastern Maine intertidal flats**

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We have been investigating the efficacy of culturing Arctic surfclams, *Mactromeris polynyma*, in eastern Maine to diversify shellfish species for harvesters, shellfish buyers, and the public as direct and indirect effects of warming waters have pushed stocks of wild, commercial bivalve species such as soft-shell clams, sea scallops, and blue mussels to historic low levels. A fishery for Arctic surfclams in offshore waters of Atlantic Canada is worth >$100 million annually; however, no Gulf of Maine fishery exists although surfclams are found there. A 415-day trial was initiated at two low intertidal sites in eastern Maine: Gouldsboro and Beals from mid-June 2022 to August 2023. Surfclams (small: 9.6 ± 0.4 mm SL; large: 12.4 ± 0.4 mm) at three densities unique to clam size were added to two sizes of protected experimental units (EU:2 $ft^2$; 4 $ft^2$) in a completely factorial design at both locations (N = 60). Samples from January 2023 (~220 days) revealed live surfclams in only 45% (Gouldsboro) vs. 100% (Beals) of EU, due primarily to differences in crab densities between locations (crabs were removed from boxes in January). Surfclam growth varied with initial size at both sites, but larger clams of both sizes were recovered at Beals where maximum seawater temperature was 15.6ºC vs. 18.5ºC at Gouldsboro. August 2023 samples revealed < 5% survival in Gouldsboro vs. 38% in Beals.