

Interest in hardshell clam stock enhancement is double current participation among surveyed municipalities

Estimating Municipal Demand for Quahog (*Mercenaria mercenaria*) Seed to Support Stock Enhancement in The Gulf of Maine

Background

Climate-driven change in the Gulf of Maine has **reduced** soft-shell clam (*Mya arenaria*) **populations** and **increased interest** in northern quahogs (*Mercenaria mercenaria*), a species more resilient to warming and predation.

Historically concentrated in southern waters, quahogs represent an **emerging and understudied shellfish opportunity in Maine**.

Quahog stock enhancement is **most effective** using larger seed ($\approx 8-15$ mm), yet this size is **not readily available** for purchase in Maine. While **aquaculture farmers** have expressed **interest** in **nursery-based production**, farmers require clear **evidence of municipal demand** before investing in larger seed production.

Methods

Developed a **stated-preference survey** sent to municipalities to estimate **willingness to pay (WTP)**, preferred stock enhancement **strategy**, realistic budget constraints, and capacity limitations.

Respondents were provided with **decision-relevant context**, including summaries of project nursery trials (FLUPSY and lantern nets).

WTP price bins were informed by a **survey** to farmers gauging their **willingness to grow** quahog seed to 15 mm.

Distributed to **all Maine municipal shellfish committees**, yielding **16 usable responses** (25% response rate) from a 17-question (-10 minute) survey.

Discussion

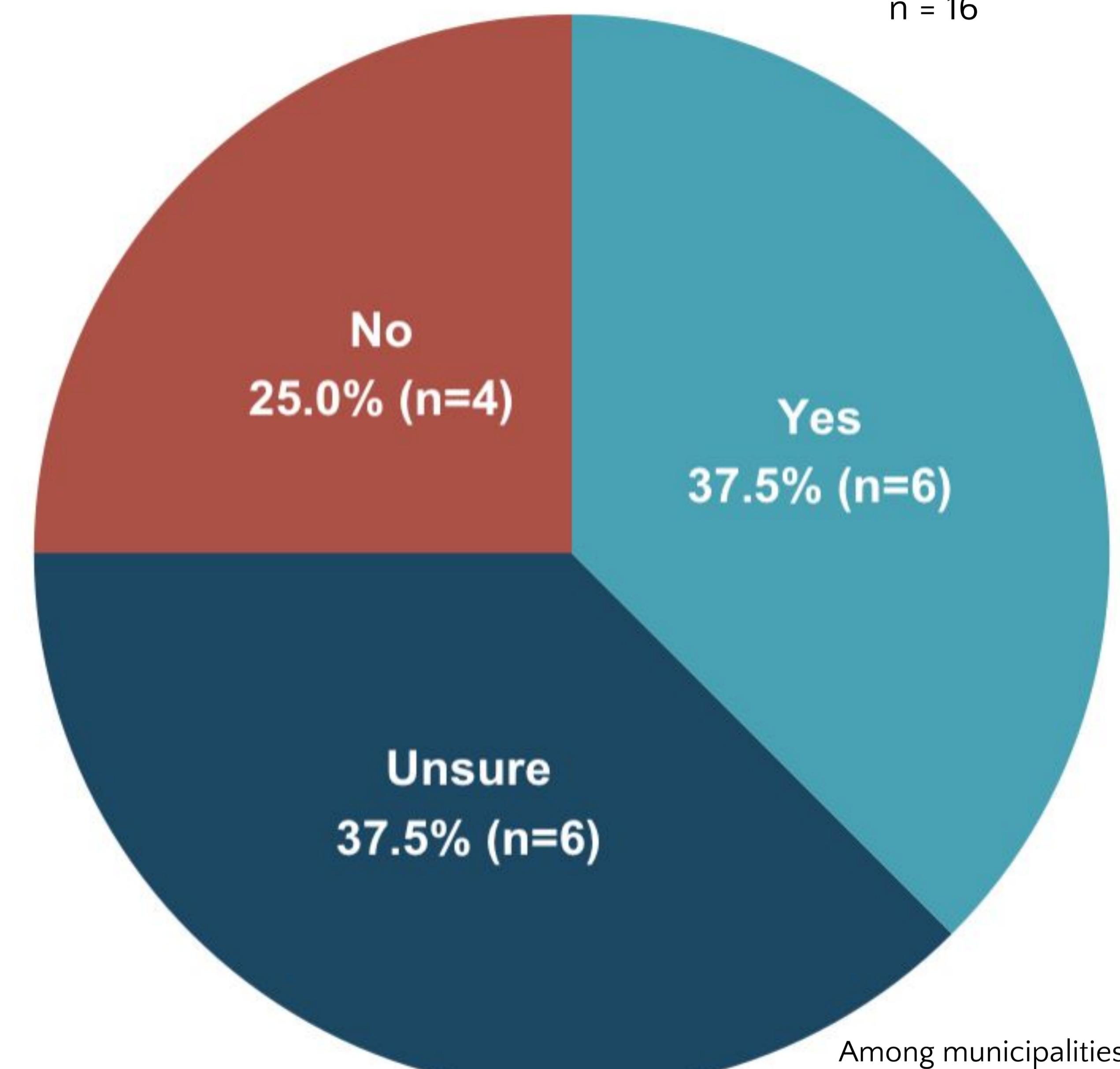
Municipal stock enhancement is **constrained** by low human capacity and **limited guidance** on **site selection** for consistent quahog growth and survival.

Preferred stock enhancement **strategies vary widely**.

Overlap between municipal WTP and farmer willingness to grow 15 mm quahog seed suggests potential for **expansion of a new aquaculture market in Maine** that could benefit stock enhancement efforts.

Would your municipality allocate budget for quahog stock enhancement within the next 5 years?

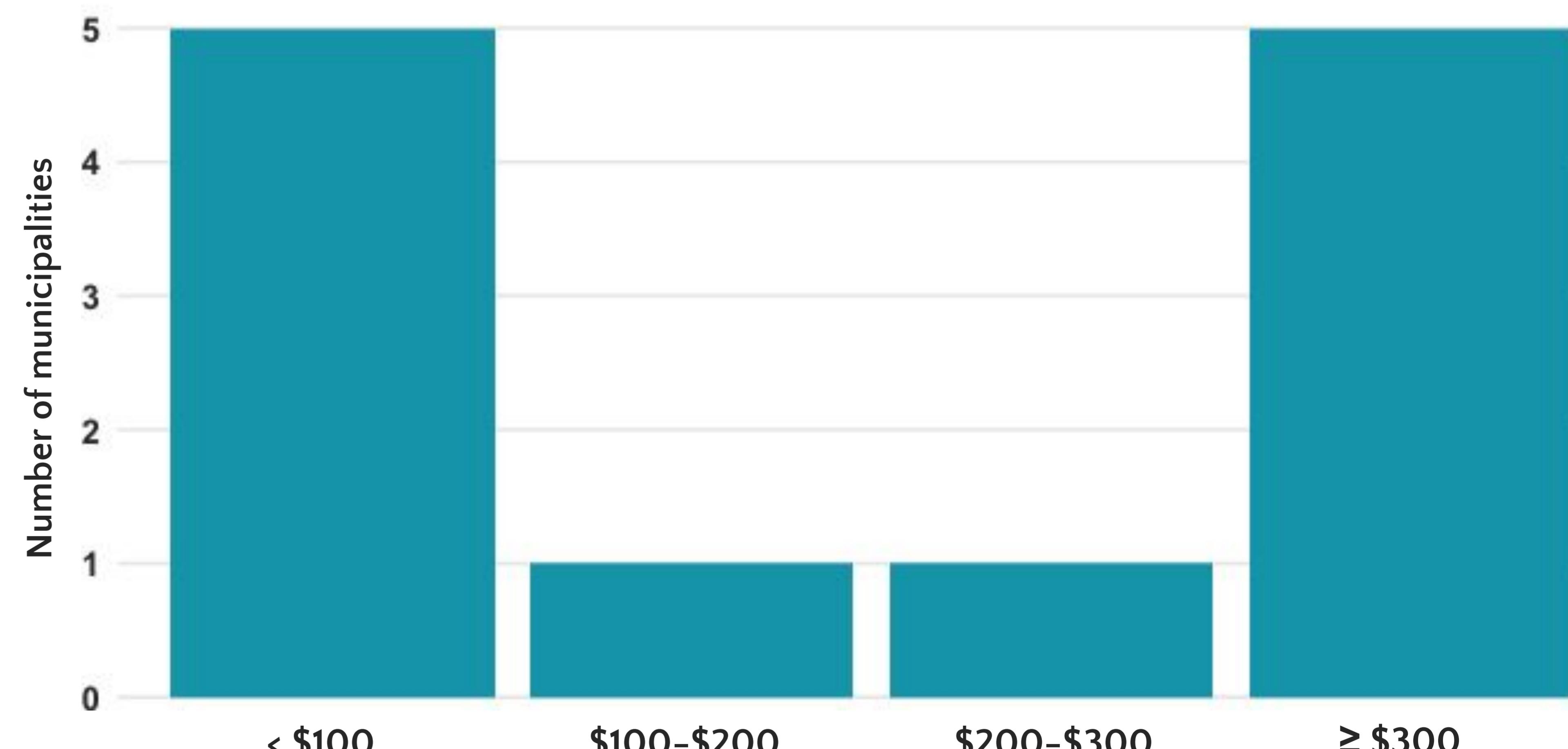
n = 16



Among municipalities indicating "Yes," only three have conducted quahog stock enhancement in the past five years.

Municipal willingness to pay for large quahog seed varies widely

Willingness to purchase 1,000 15 mm seed at realistic price points (e.g., \$300 per 1,000 seeds)

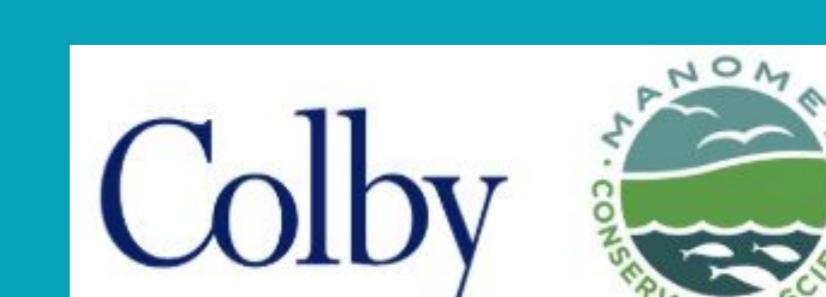


Wide variation in WTP reflects **differences in nursery capacity**, with some municipalities interested in quahog stock enhancement **operating their own nursery systems**.



Diego Trevino¹, Kanae Tokunaga², Caitlin Cleaver¹, Ben Cotton²,
Marissa McMahan³, Jessie Batchelder³, Emily Farr³

Colby College¹, Gulf of Maine Research Institute², Manomet
Conservation Sciences³



Presenter Contact info:
dxtrev26@colby.edu