

### **Effects of ship noise on the valve gape of the blue mussel, *Mytilus edulis***

Artificial noise is present in the ocean and has been steadily increasing in both quantity and intensity through anthropogenic origins. Anthropogenic noise, such as sound from ships, can cause stress in the marine organisms especially those that are sessile (molluscs, echinoderms) since they cannot escape the noise readily. *Mytilus edulis*, commonly known as the blue mussel, and other marine bivalves are not well studied when it comes to how ship noise affects their behaviors and physiology. Consequently, *M. edulis* from the MMA docks and Pemaquid Mussel Farms were exposed to three sound treatments (ambient, +18 dB, +36 dB) and valve gape (mm) was recorded during the treatments to see how the mussels responded to the ship noise. The wild mussels (MMA docks) showed no significant difference between the three sound treatments (ambient, +18 dB, +36 dB). When exposed to the three sound treatments, the valve gape of the aquaculture mussels were similar in magnitude. When comparing locations, the mussels from Pemaquid Mussel Farms had a larger valve gape for the ambient and +36 dB treatments. These results suggest that *M. edulis* may have varied responses to anthropogenic noise such as increasing the valve gape, feeding more, or having immediate closure of the valves when exposed to the ship noise and subsequently reopening.

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