

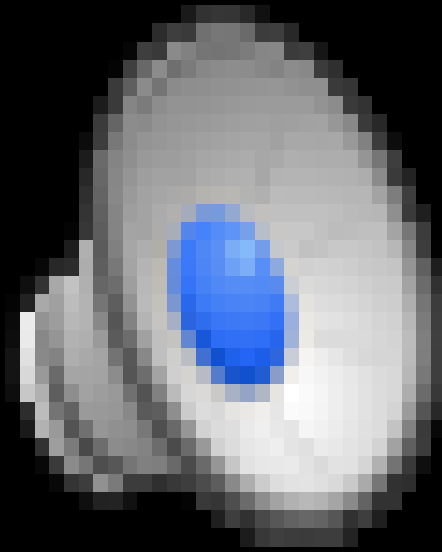
# Swarm formation and cohesion by the marine crustacean *Mysidium gracile*

Nancy M Butler, Kutztown University

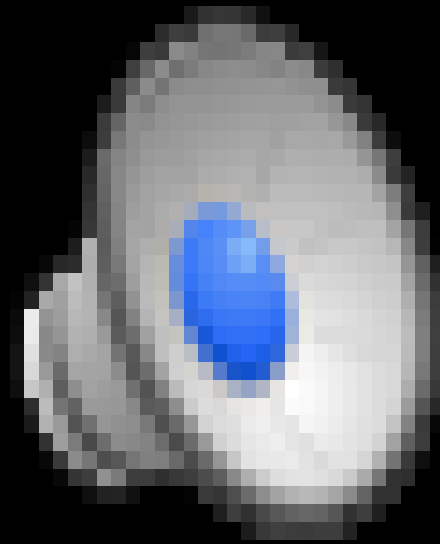




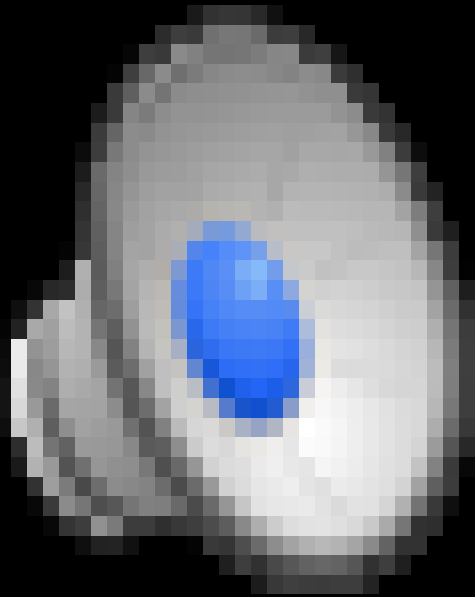
# Placing Cameras



# General Behavior of Damselfly with a Territory



# Aggressive Behavior of Damselfly with a Territory

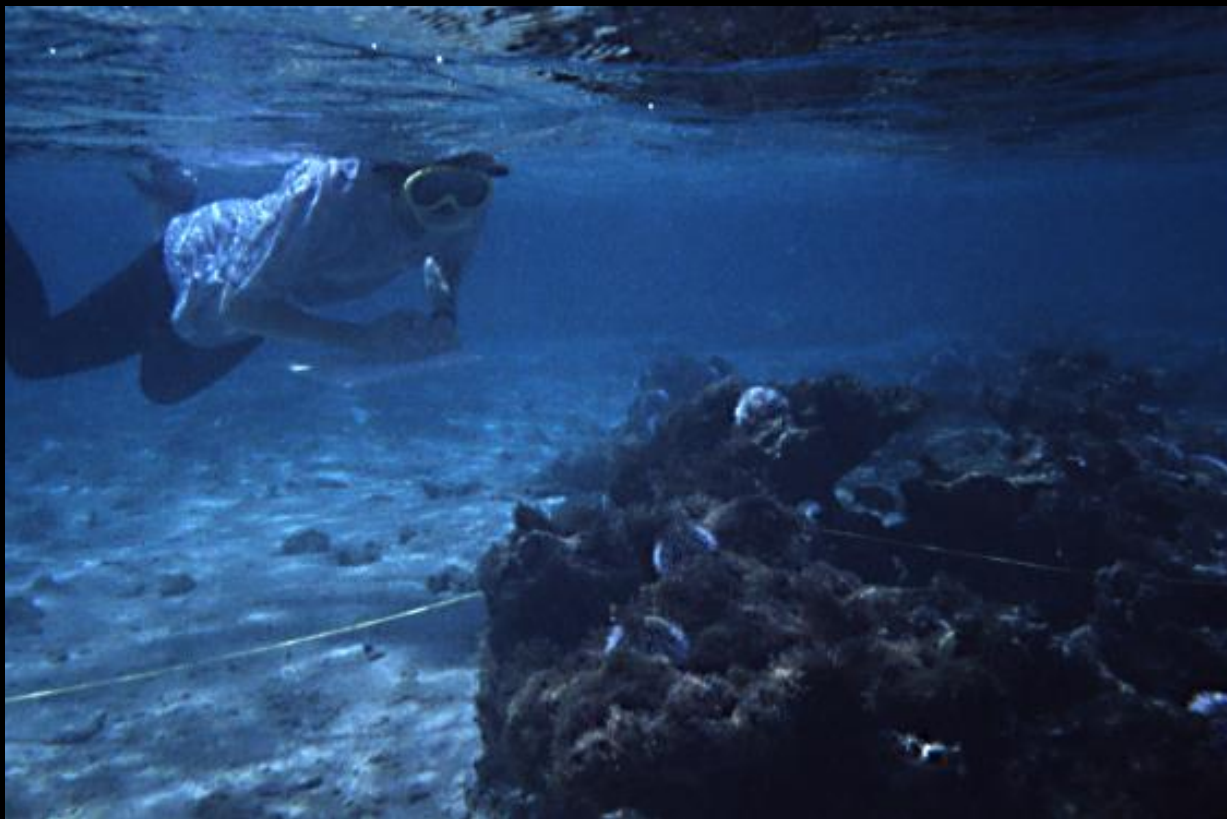


# Behavior of Damselfish With Territories

Aggressive Behavior In Territory	Aggressive Behavior Outside Territory	Pick at Algae/Sea weed	Attack Mysids	Other
1.4%	2.2%	87.7%	0.4%	8.3%



# Persistence of Established Territories and Swarms Within a Territory



Fish Removed From 6 Territories

4 had “new” fish within 24 hours – swarm remained

2 did not get a “new” fish – swarm disappeared

# Persistence of Mysids Within a Territory



Mysids added to Suitable “Territory Habitat”

- No Fish and No Swarm
- Fish and No Swarm
- Fish and Swarm



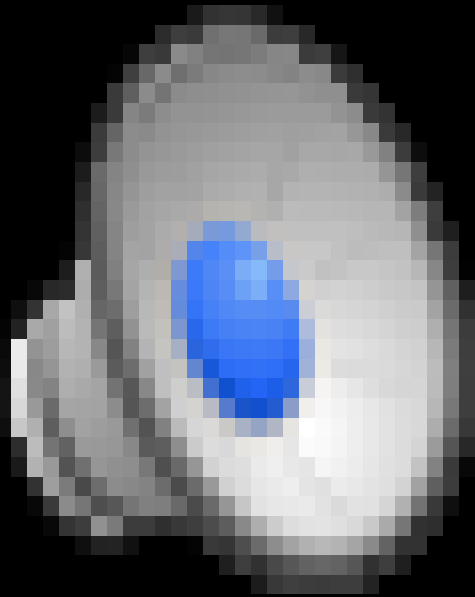
# How Do Mysids Form Swarms Without getting eaten?



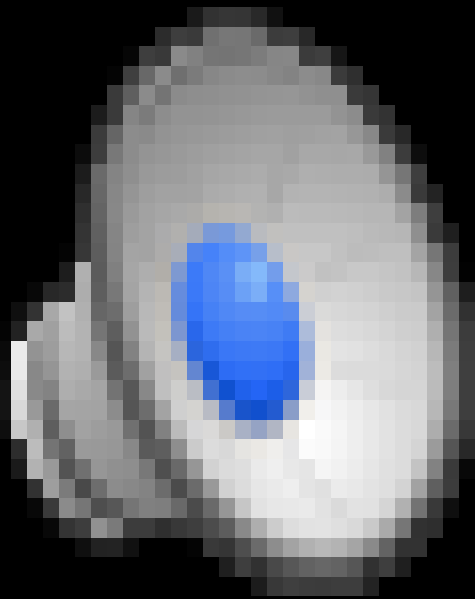
Swarms Disperse at Twilight and Reform at Dawn



# How Do Swarms Stay Together? Swarm Cohesion



# Swarm Cohesion in In-Situ Currents



# Swarm Cohesion in Lab Generated Currents

