# Janaki Kilgore

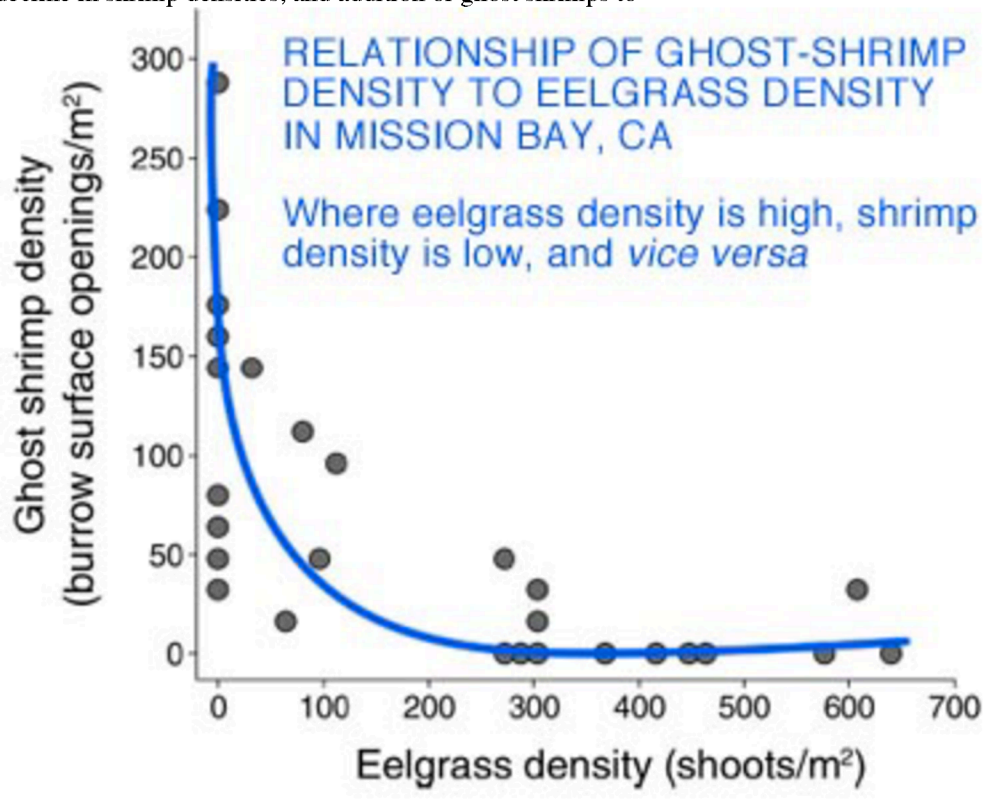
I am a resident of Whatom County and work at a restaurant that relies on locally harvested shellfish and crab as a staple of the menu. Applying the neurotoxin Imidacloprid is NOT an appropriate way to control burrowing shrimp at shellfish farms. Negative environmental impacts on worms, shellfish and crabs will be unavoidable. Effects on animals that rely on these food sources is likely to be detrimental and definitely requires more study. A better way to control the shrimp population would be to plant and foster the growth of eelgrass, native flora that inhibit the action of burrowing shrimp and stabilize the position of the shellfish.

# Ghost shrimps

**http://www.asnailsodyssey.com/LEARNABOUT/SHRIMP/shriGhos.php**

**Research study 11**

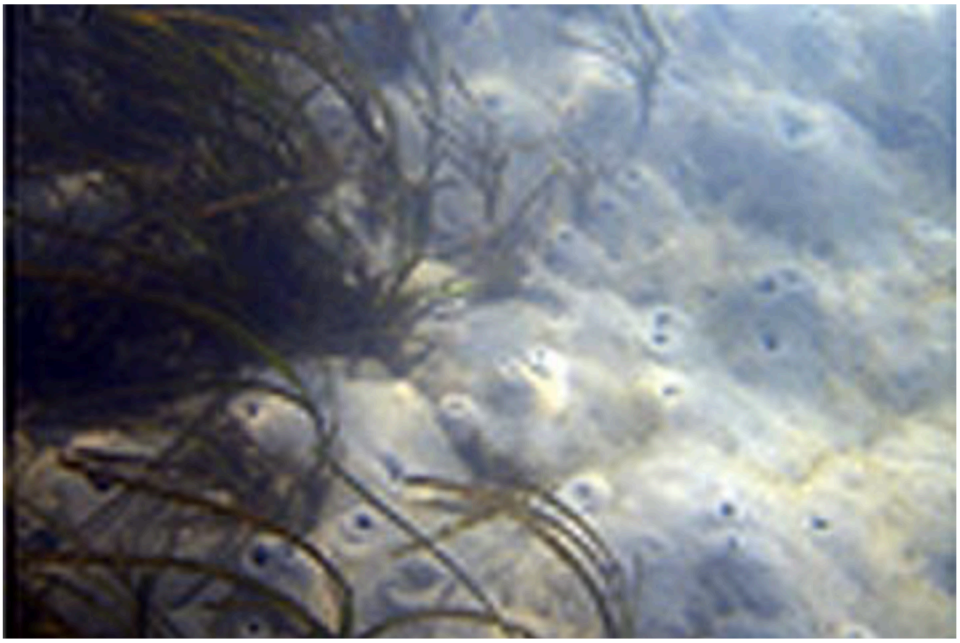
A study by researchers from San Diego State University and University of California, Davis suggest that the interaction between ghost shrimps*Neotrypaea californiensis* and eelgrass *Zostera* may not be so one-sided as the account in Research Study 8 above suggests, especially in lower intertidal areas where *Z. marina* is the potential space-competitor. Through a series of 30wk-long translocation experiments in **Tomales Bay** the authors find that addition of eelgrass to ghost shrimp-dominated areas causes rapid decline in shrimp densities, and addition of ghost shrimps to




eelgrass-dominated areas results in poor survival or displacement of the shrimps. In the first scenario the eelgrass may do so well that it expands vigorously into surrounding ghost-shrimp areas, leading to further displacement. Additionally, when structural **mimics** of eelgrass rhizomes and roots are implanted into ghost-shrimp habitats, the shrimps quickly move away, suggesting that the eelgrass may physically constrain the burrowing abilities or needs (e.g., the requirement for turn-around chambers in the burrow) of the shrimps. The researchers conclude that eelgrass habitat is generally resistant to modification by ghost shrimps. If the eelgrass is actually the competitive dominant in the system, how then do the species coexist in some areas? The authors note that when an eelgrass patch is damaged at its edges adult shrimps are able to quickly move into the area. Since such disturbances are common in shallow estuarine habitats, the authors suggest that they may be the primary faciltators of coexistence of the 2 species. Castorani *et al.*2014 Ecology 95 (8): 2277. Photograph of eelgrass and ghost-shrimp burrows (below Left) courtesy K.A. Hovel, California.

**NOTE** other observations are made at Mission Bay near San Diego

**NOTE** rhizome shapes are first carved into plywood sheets in 2 simulated densities (see photograph below), then cast in polyurethane adhesive



Boundary between a patch of eelgrass *Zostera marina* and burr of ghost shrimps*Neotrypaea californiensis*

Plastic rhizome-mimics have nyl "roots" glu them. The mimic buried in test at about 2cm

---

RETURN TO TOP