**Lobsters in the Intertidal!**

**The Importance of Fine Scale Habitat in MPA Design**

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**MPAs and the Importance of Habitat**

- Marine protected areas (MPAs) are a popular tool for fisheries management, conservation, and protection.
- It is important to incorporate all critical habitat utilized within a targeted species lifecycle into the design of an MPA.
- Focusing on the Pacific spiny lobster (*Panulirus interruptus*) in a marine reserve on Catalina Island, CA, I asked the questions:
  1. What is the impact of the Wrigley MPA on spiny lobster population demographics?
  2. Is the intertidal habitat important within a spiny lobster’s life cycle?

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**Survey Results**

**MPA vs Non-MPA**

- More lobsters observed outside the MPA ($p < 0.001$)
- Larger lobsters observed outside the MPA ($p = 0.04$)
- Higher proportion of reproductive female lobsters observed outside the MPA ($p < 0.001$)

**Intertidal vs Subtidal**

- More lobsters observed in intertidal relative to subtidal
  - Bird Rock ($p = 0.05$), Fisherman Cove ($p = 0.02$)
- Intertidal mussels (lobsters’ preferred prey item) only found outside of the MPA ($p < 0.001$)

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**Concluding the Story**

- Intertidal mussels, the lobster’s preferred prey item, are an energetic input into the population and are only present outside of the MPA.
- The fine-scale intertidal habitat acts as an important foraging ground for reproductive lobsters and is potentially a driver for lobster population dynamics.
- The current MPA on Catalina Island is not representing the range of suitable habitat that is available for this species.
- This study reinforces the concept of the importance of incorporating all crucial habitat within a targeted species lifecycle when designing an MPA and highlights the importance of considering fine-scale habitat.

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