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Marine Life Protection Act Initiative

Designing Experimental MPAs to Inform Adaptive Management in the North Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team
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Adaptive Management

- **All MPAs in statewide network can inform adaptive management through variation in:**
  - size
  - habitat spacing
  - habitat configurations and combinations of habitats within MPAs
  - allowed uses and combinations of allowed uses
- **In some cases experimental MPAs may be designed to address specific adaptive management questions that may not be otherwise answered by the network**

Experimental MPAs

- **Experimental MPAs should be designed to answer specific question:**
  - Example: "What is the effect of urchin harvest on the nearshore rocky reef community?"
- **The question will inform MPA design:**
  - **Size of manipulation areas** should scale to movement distances of manipulated and response species
  - **Habitat in manipulated and control areas** should be comparable and suitable for experiment
  - **Allowed uses** within MPA should not confound the experiment

Experimental MPA Design Options

Design Option 1: A complex of MPAs that achieves the experimental manipulation through MPA regulations

- MPA regulations ensure that experiment will "happen" but no guarantee of resources for monitoring
- Manipulation areas are open to recreational or commercial harvest (take of manipulated species is allowed) so it may be difficult to control level of take in these areas
- Levels of protection are assigned based on allowed take, so some MPAs in complex may not contribute to MPA network as evaluated by science advisory team
- Design requires replication of the MPA complex or a before-after-control-impact (BACI) design

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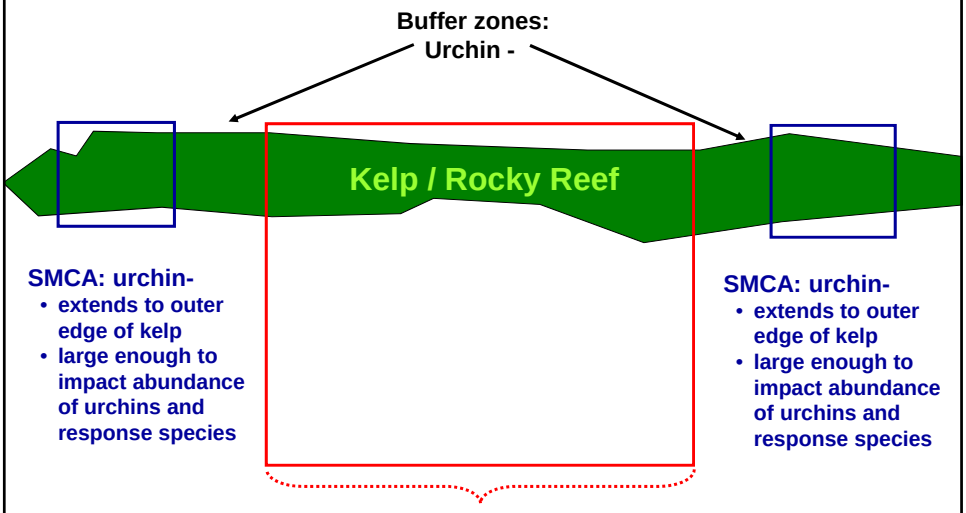
Scientific Design Option 1: Urchins



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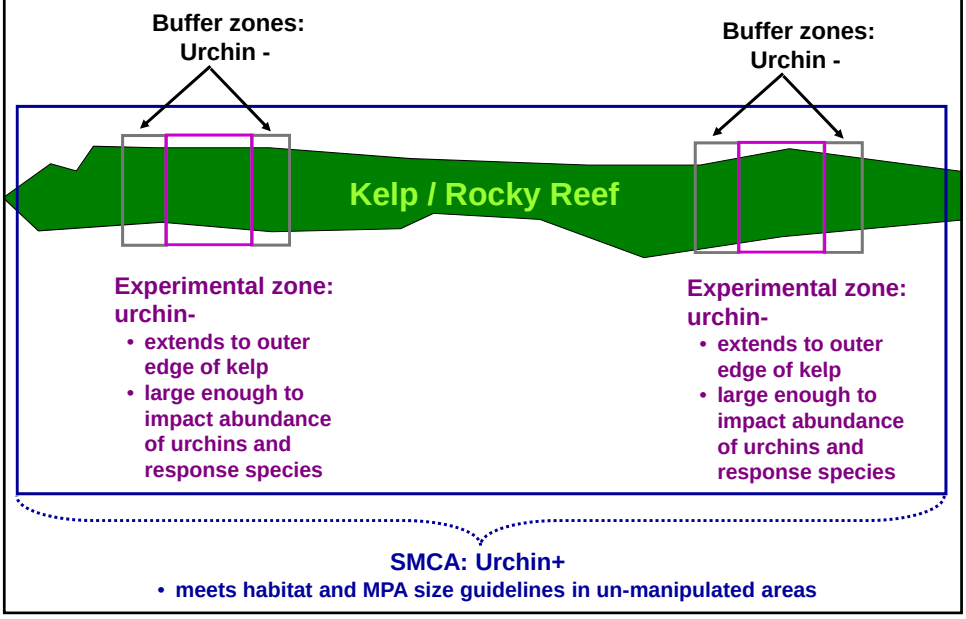
Experimental MPA Design Options

Design Option 2: A single MPA designed to accommodate experimental areas within

- MPA must contain enough suitable habitat to allow experimental manipulations without compromising achievement of MLPA goals or functioning of MPA network
- Experimental areas are not written into regulations, but subject to the scientific collecting permit process
- No guarantee that experiment will "happen" or that resources will be available for monitoring
- Manipulation areas do not allow recreational or commercial harvest so level of take can be controlled
- Scientific collection is allowed in ALL MPAs and does not impact levels of protection, but organisms collected may not be sold per California Department of Fish and Game guidance

Scientific Design Option 2: Urchins



Experimental zone: urchin-

- extends to outer edge of kelp
- large enough to impact abundance of urchins and response species

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SMCA: Urchin+

- meets habitat and MPA size guidelines in un-manipulated areas