

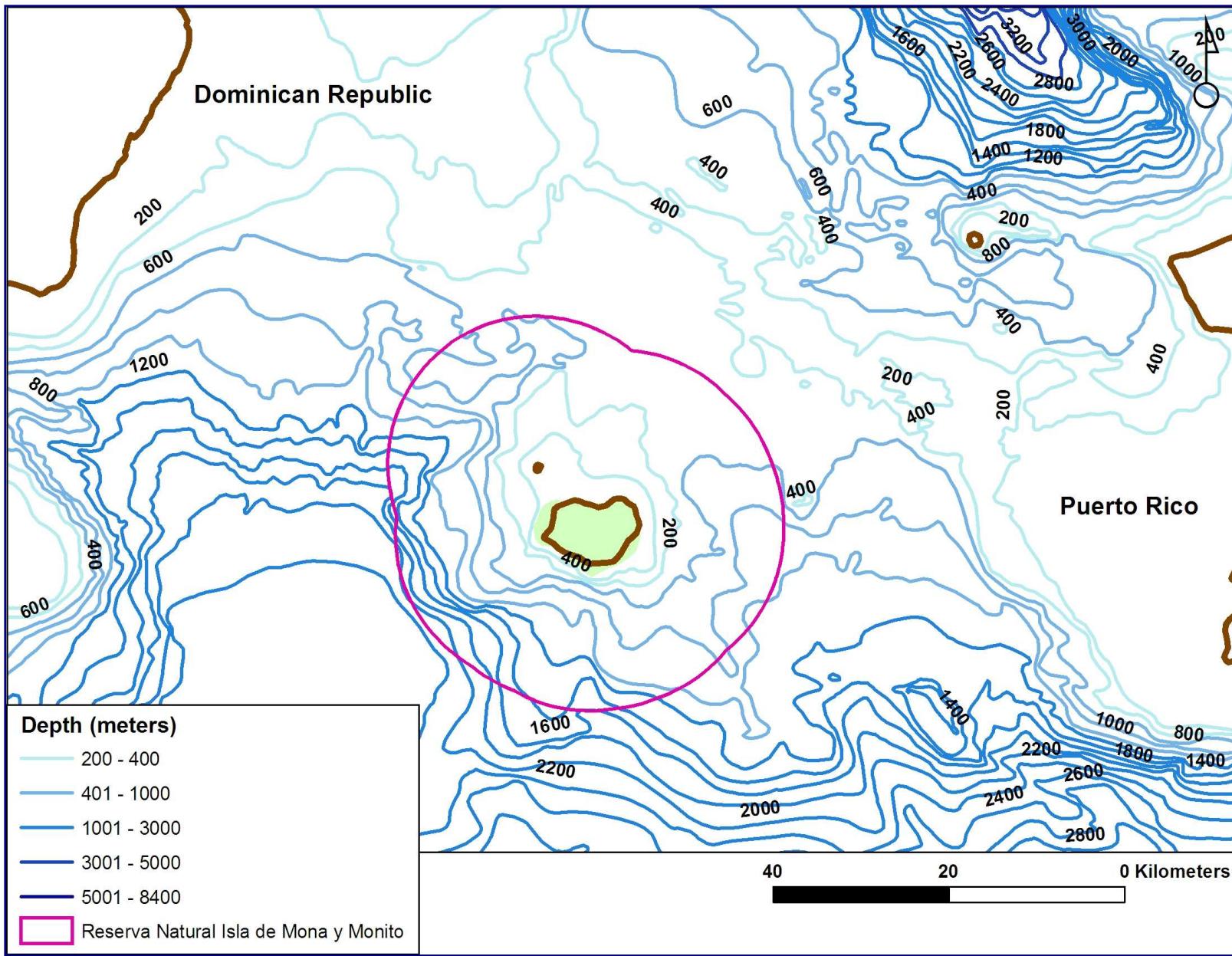
Distribution of schooling snappers and grunts

FISH ASSEMBLAGE CHARACTERIZATION AND HABITAT
CONNECTIVITY FOR MPA DESIGN CRITERIA

Michelle T. Scharer, Dept. of Marine Science, University of Puerto Rico



H. Ruiz



Mona Island Reef Fish Community

- Total number of species (159)
- Grunts (9) & Snappers (7)
- Ontogenetic migrations reported for many grunts and snappers
- Juveniles restricted to nursery habitats (shallow water habitats)



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- Schooling species

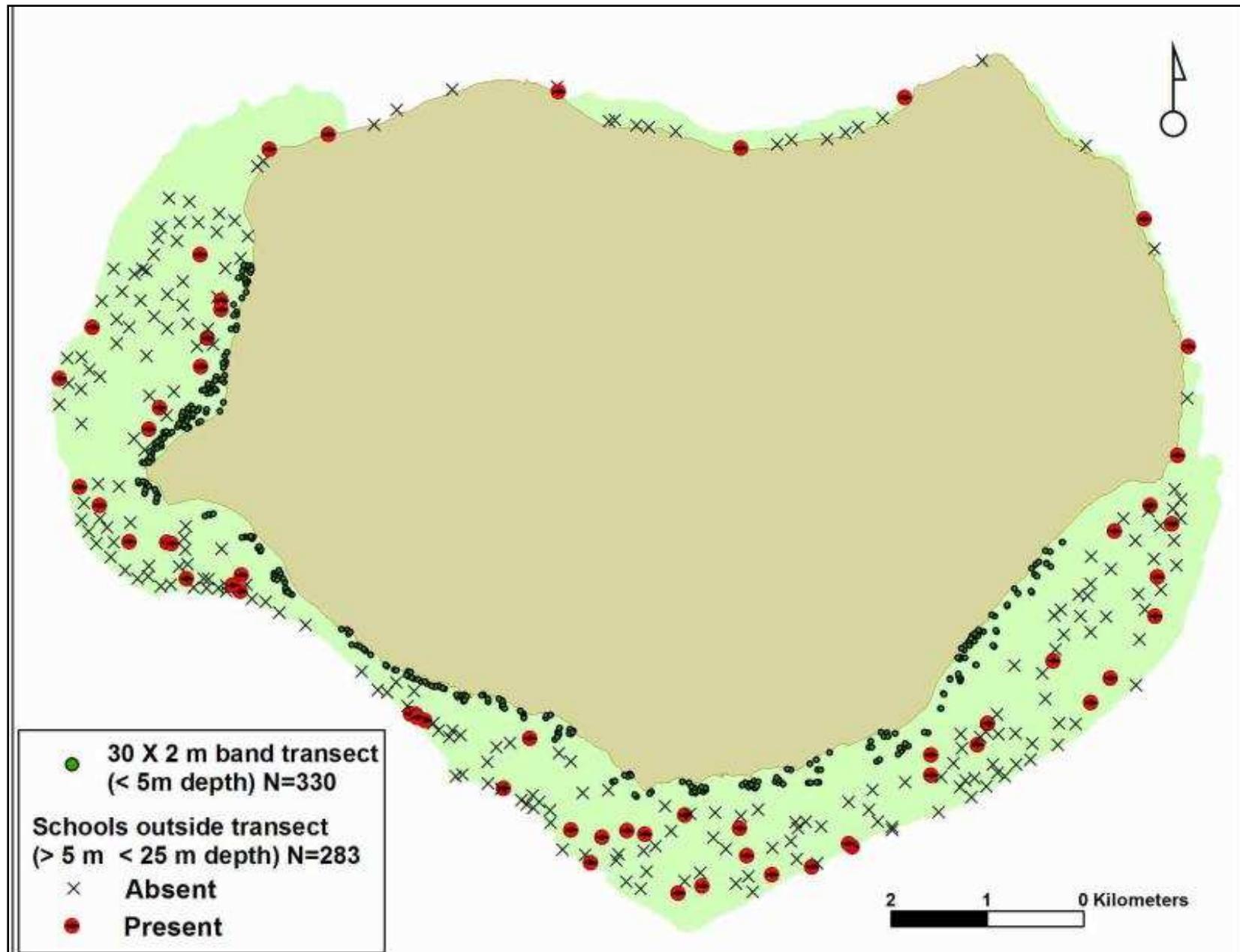
- Poorly represented in surveys
- Abundances underestimated

Causes poorly understood

- Risk aversion
- Diel patterns
- Socializing
- Reproduction



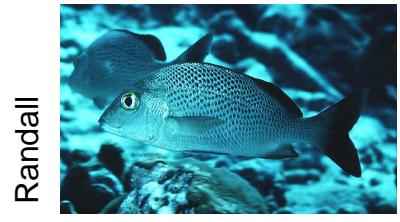
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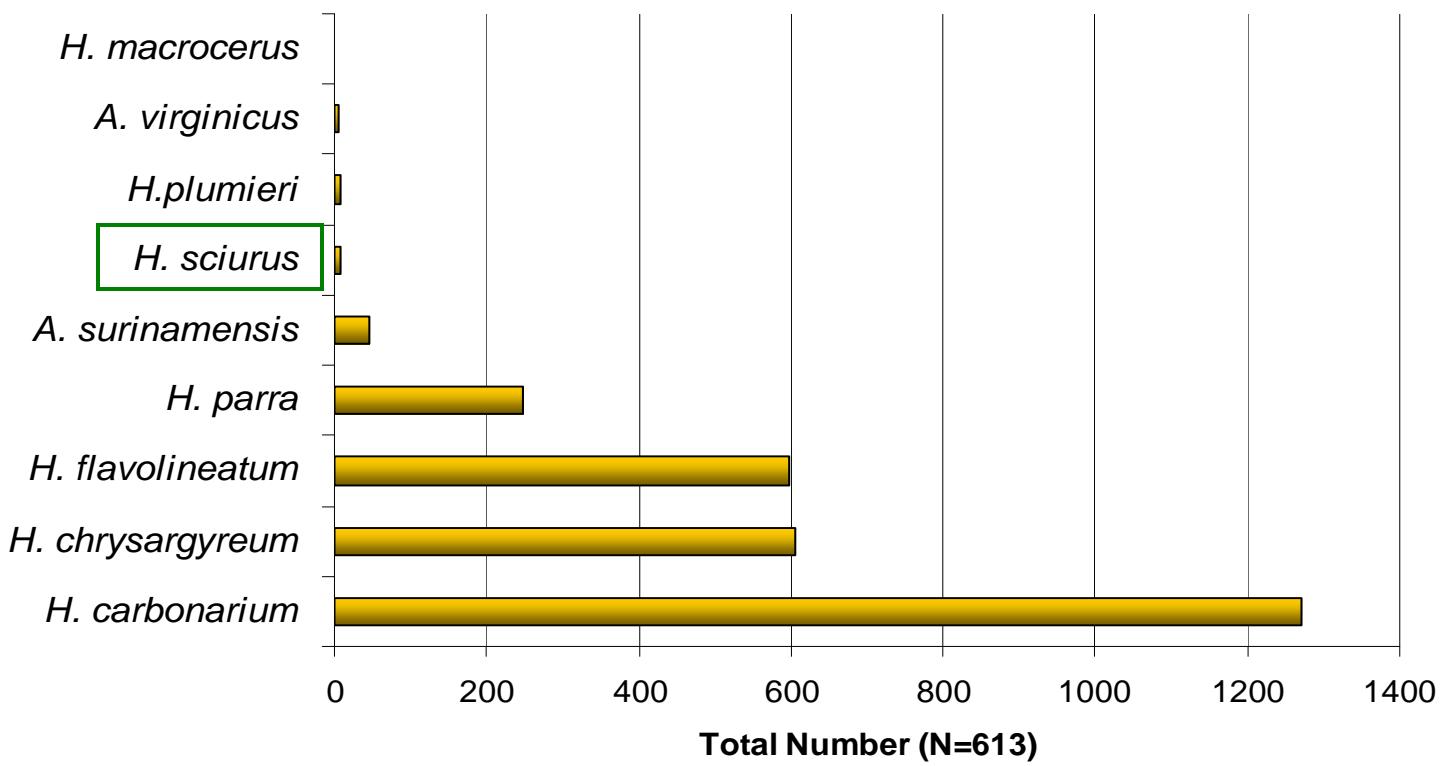


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Randall

Family Haemulidae (Grunts) throughout
Mona Island Natural Reserve (7% of all fish)





Lutjanus griseus



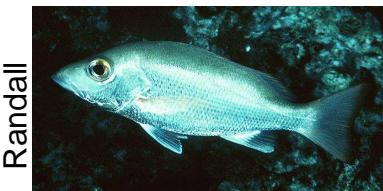
Lutjanus analis



Ocyurus chrysurus

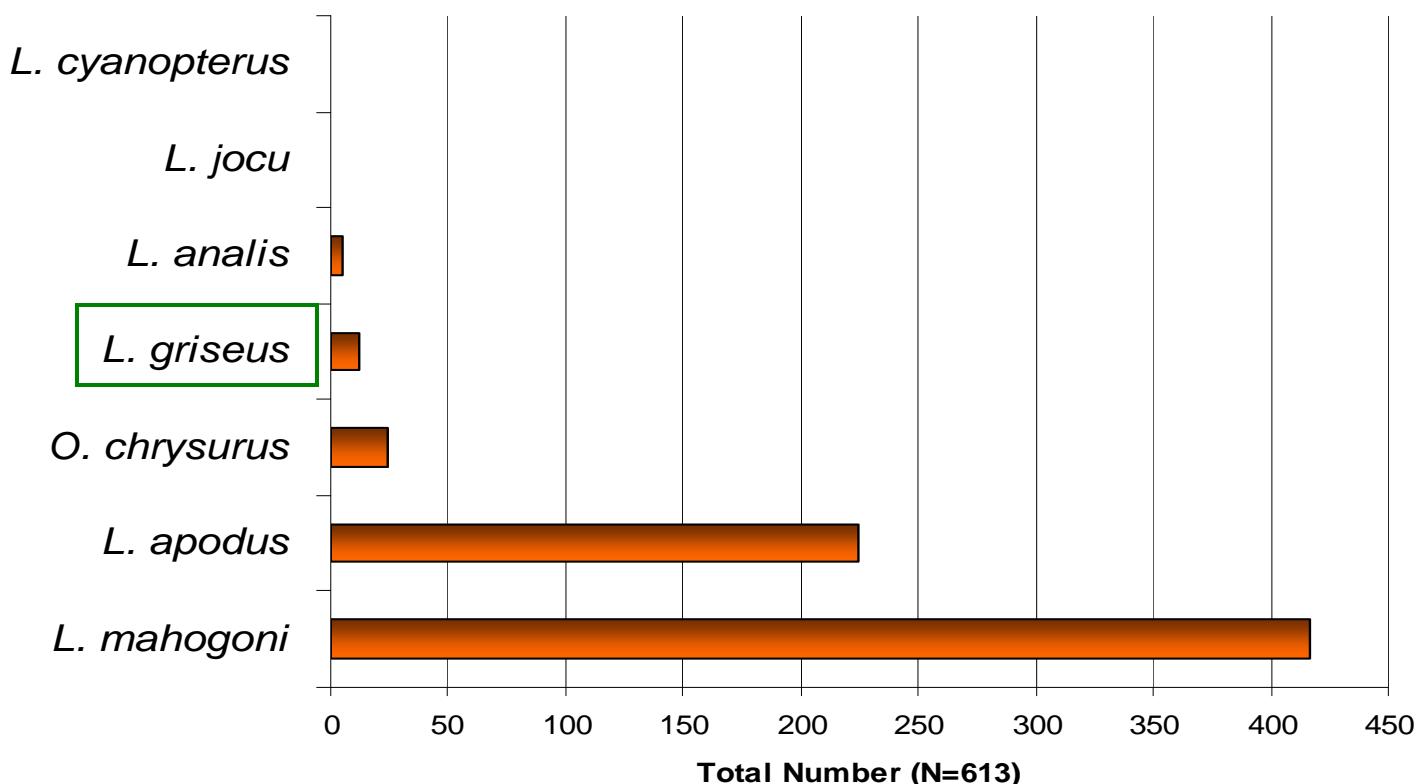


Lutjanus apodus

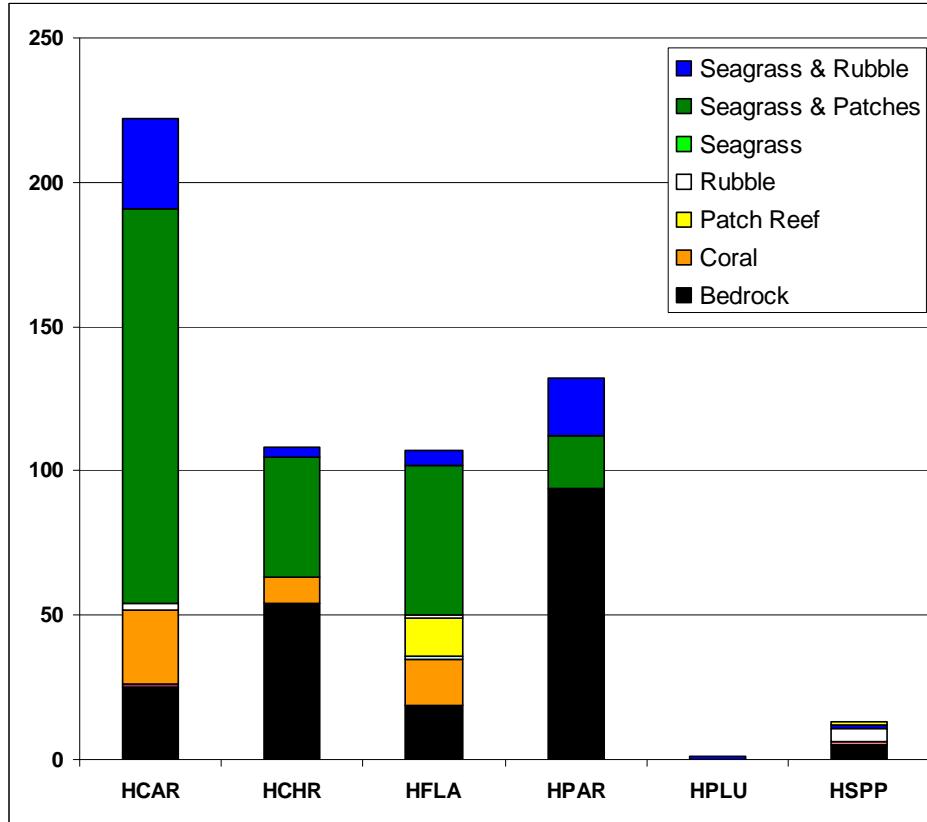


Lutjanus mahogoni

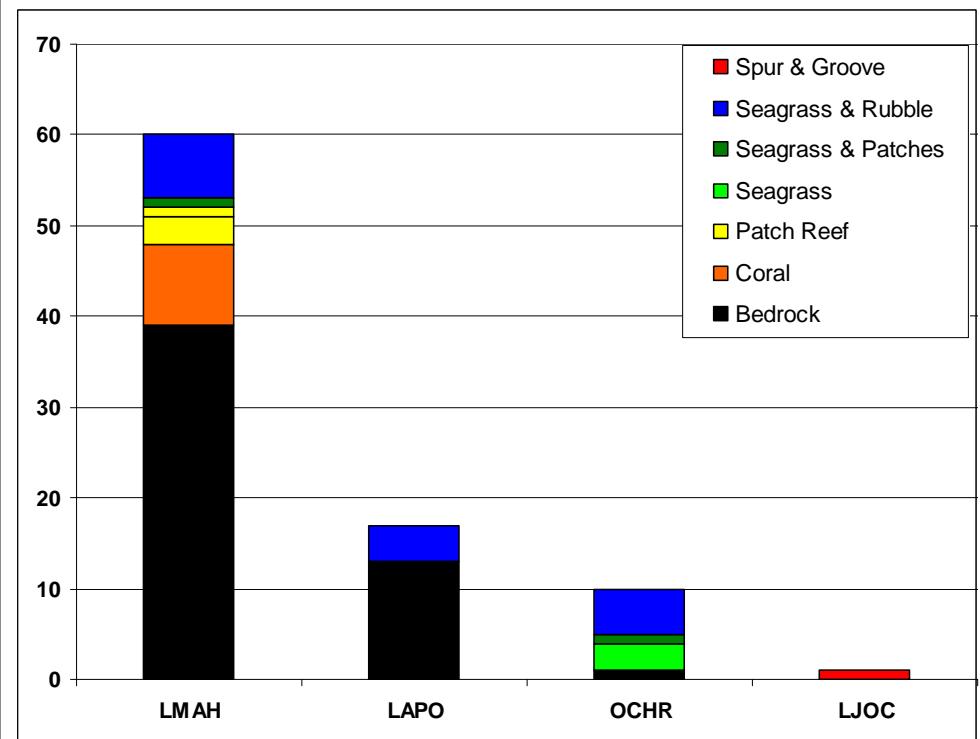
Family Lutjanidae (Snappers) throughout
Mona Island Natural Reserve (2% of all fish)



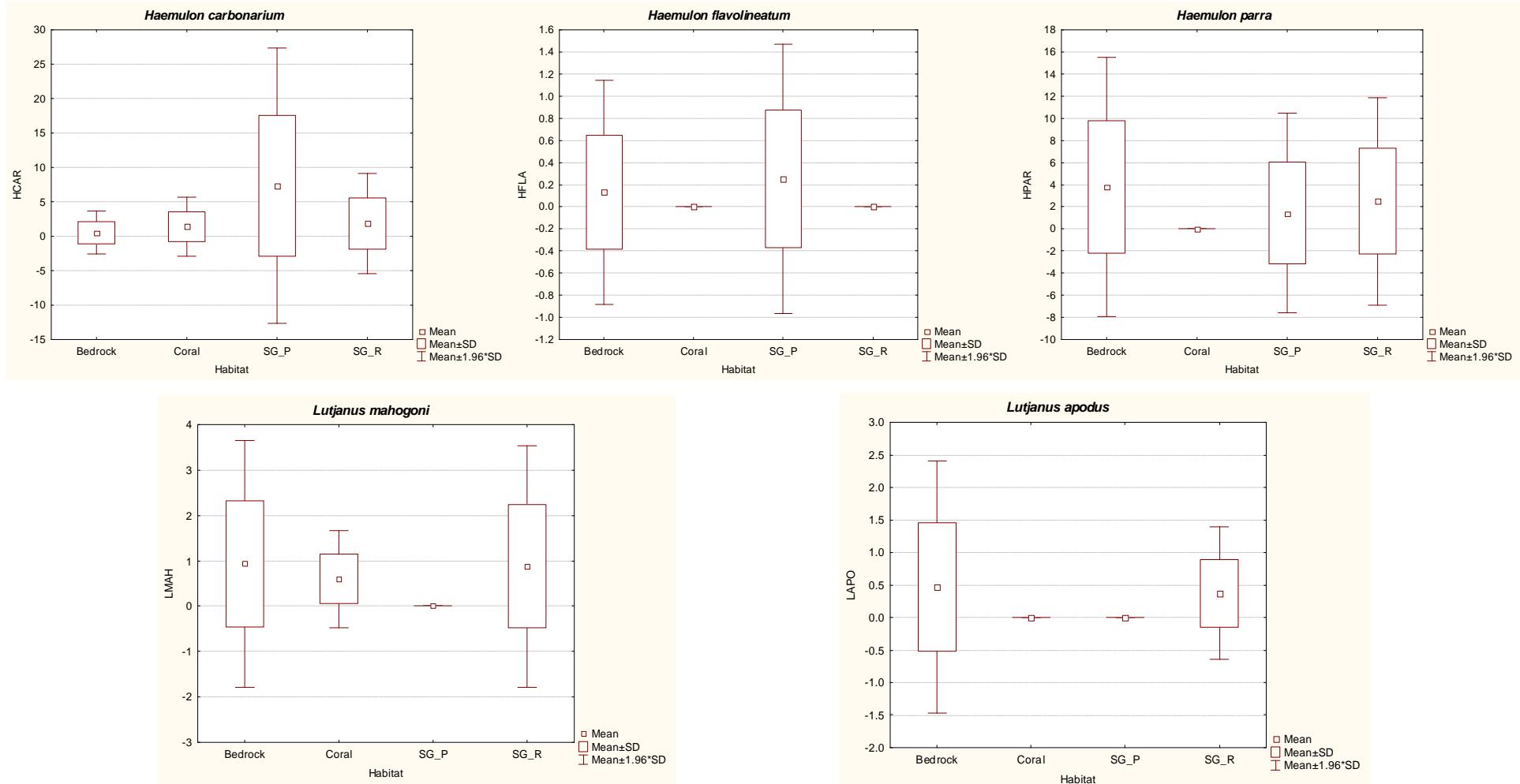
Haemulidae FL < 100 mm

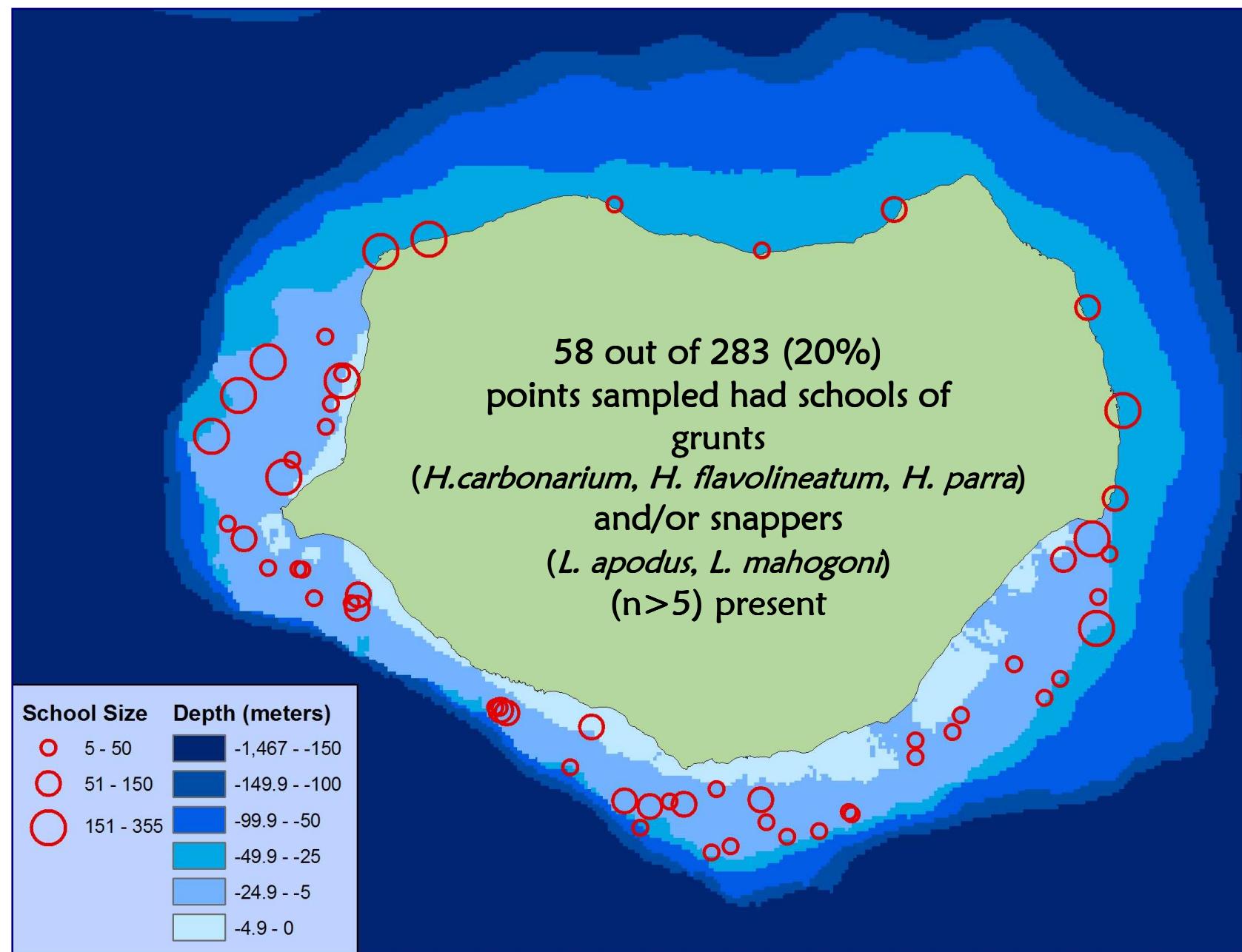


Lutjanidae FL < 100 mm

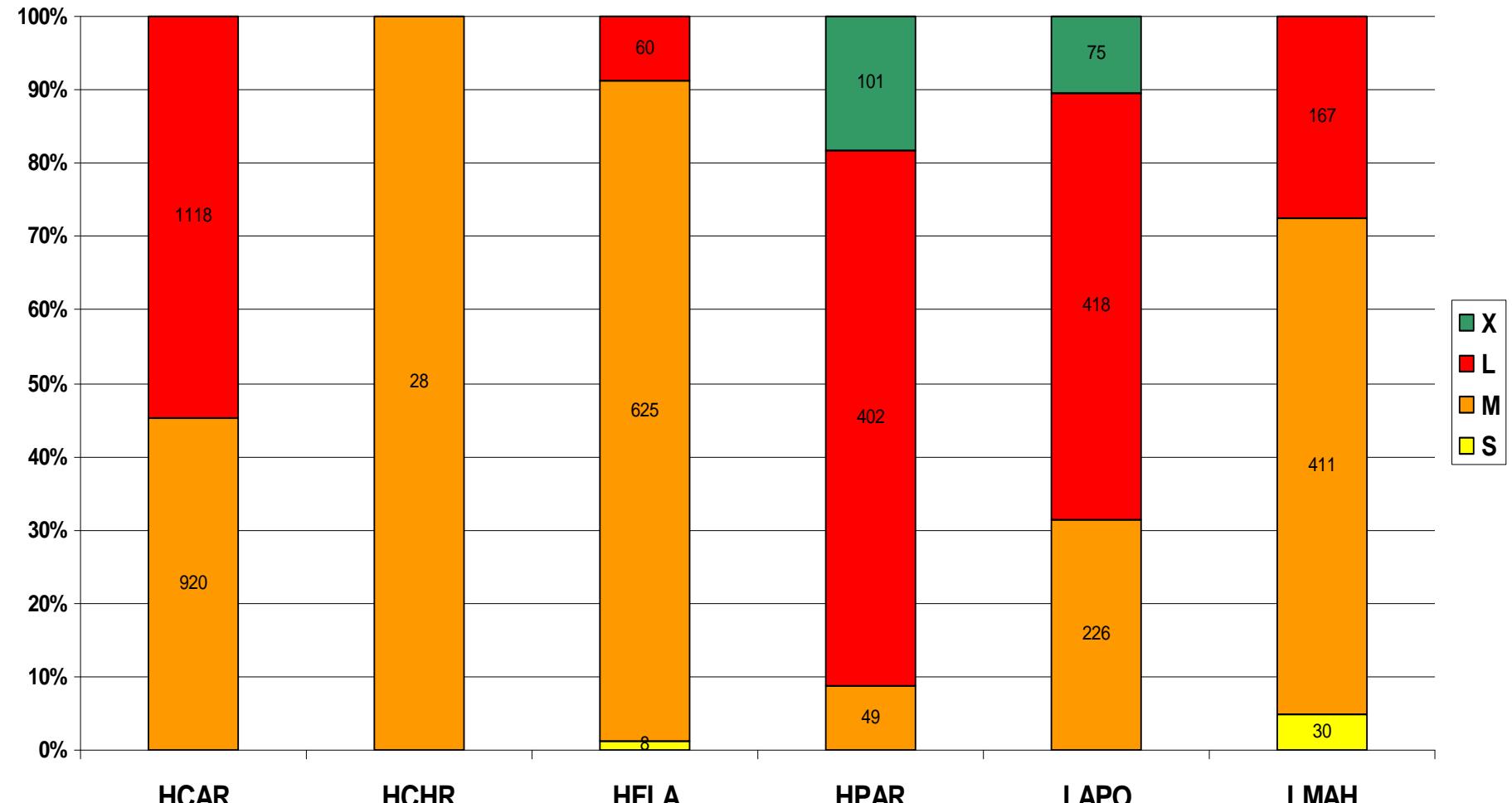


Habitat types for juveniles (FL <50 mm)

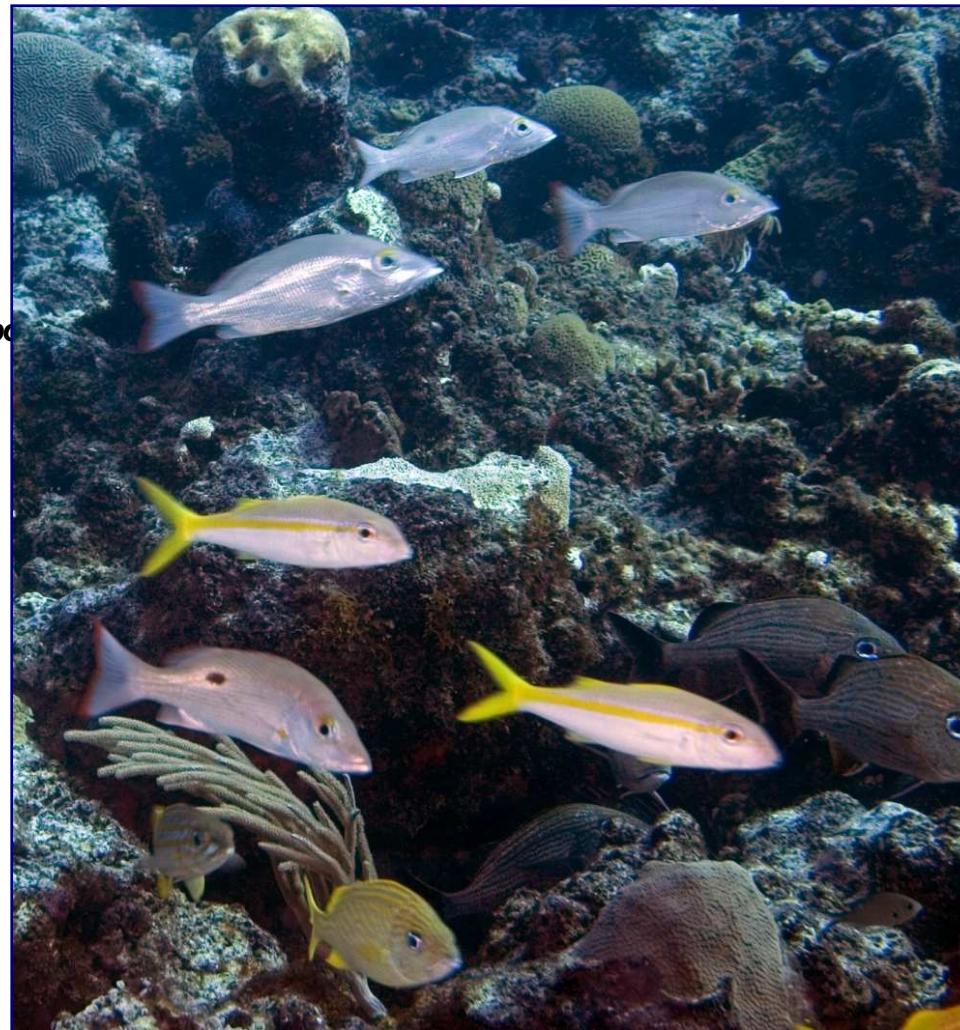


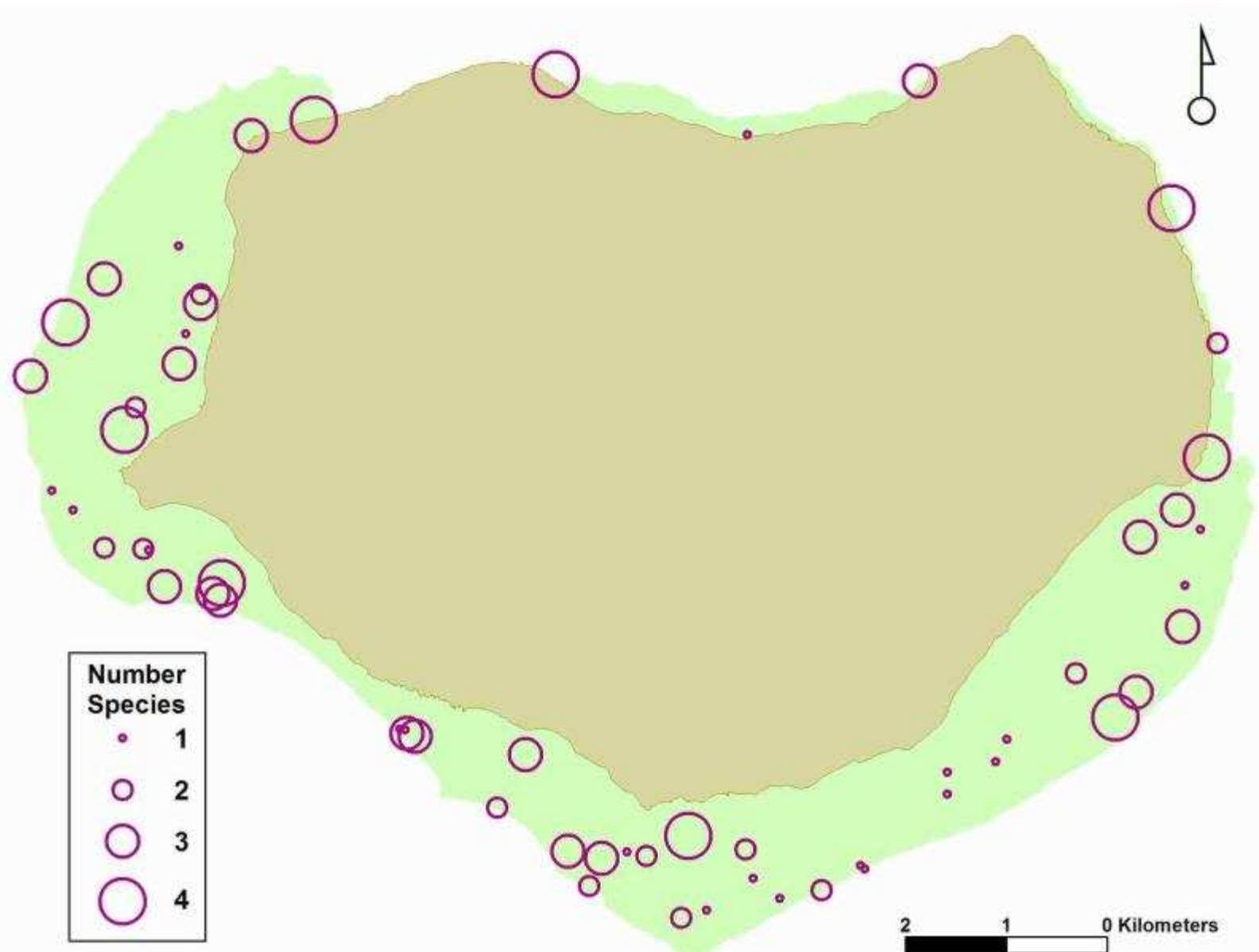


Size (FL) distribution of grunts and snappers found in schools



Species diversity in schools of grunts and snappers

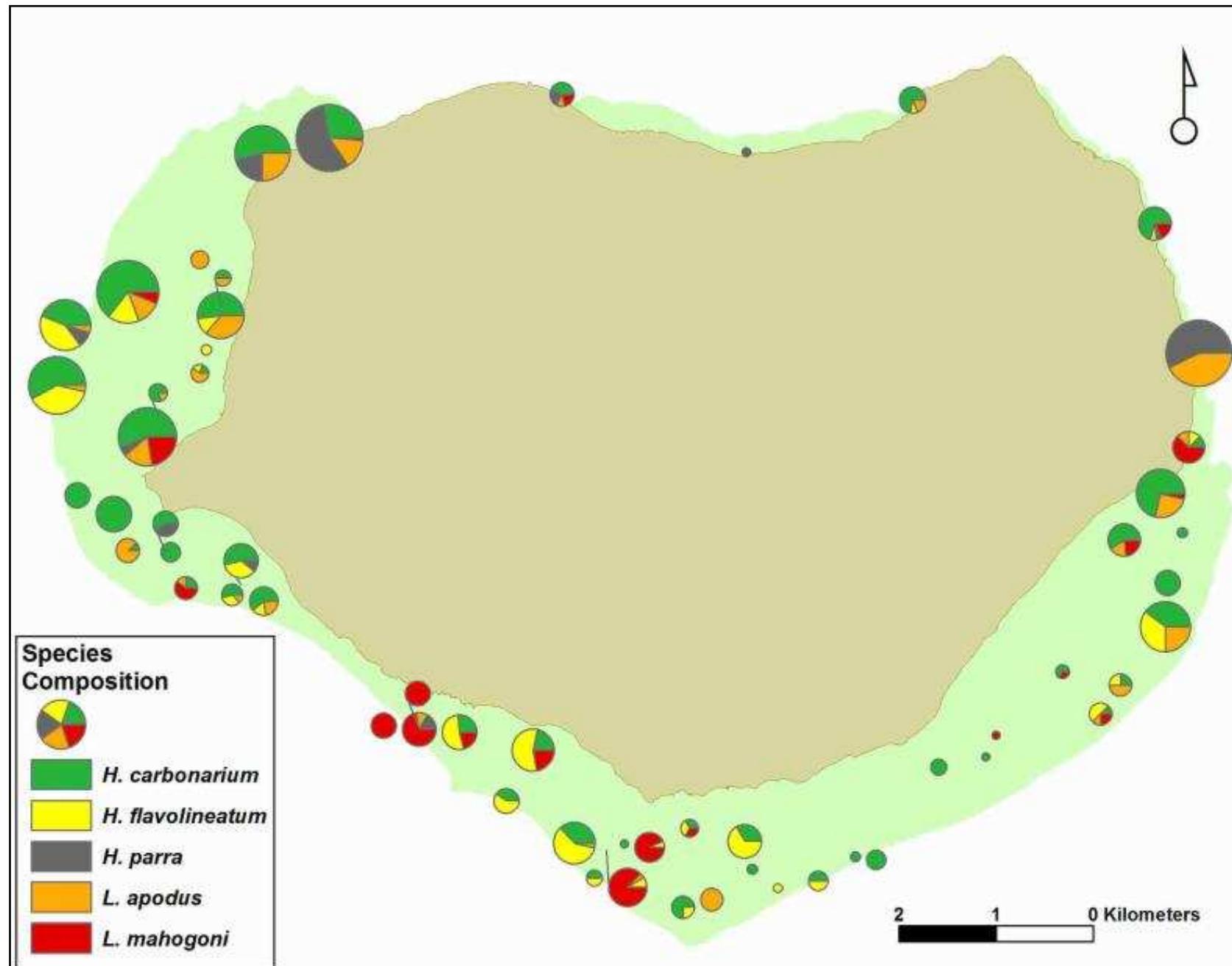




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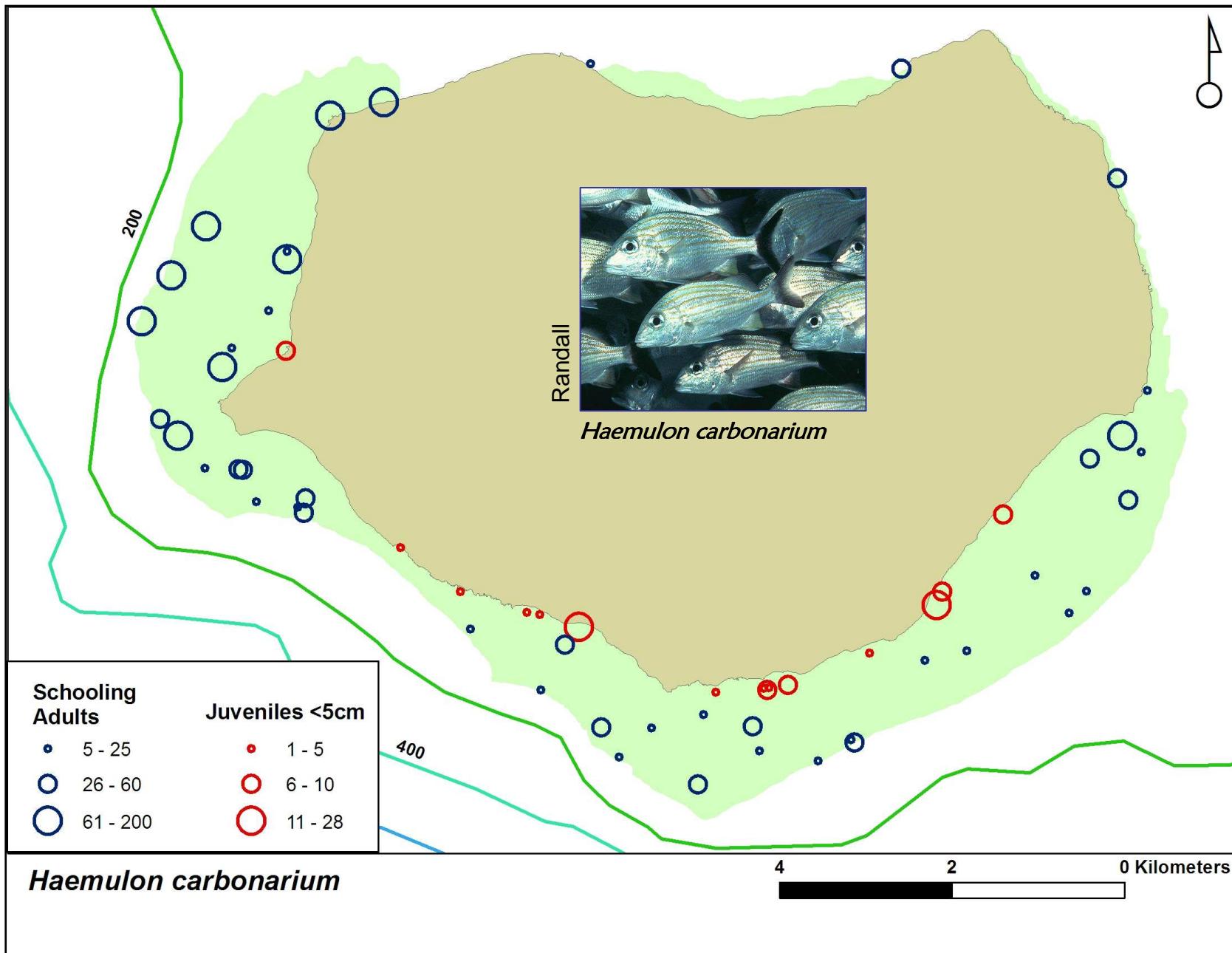
12



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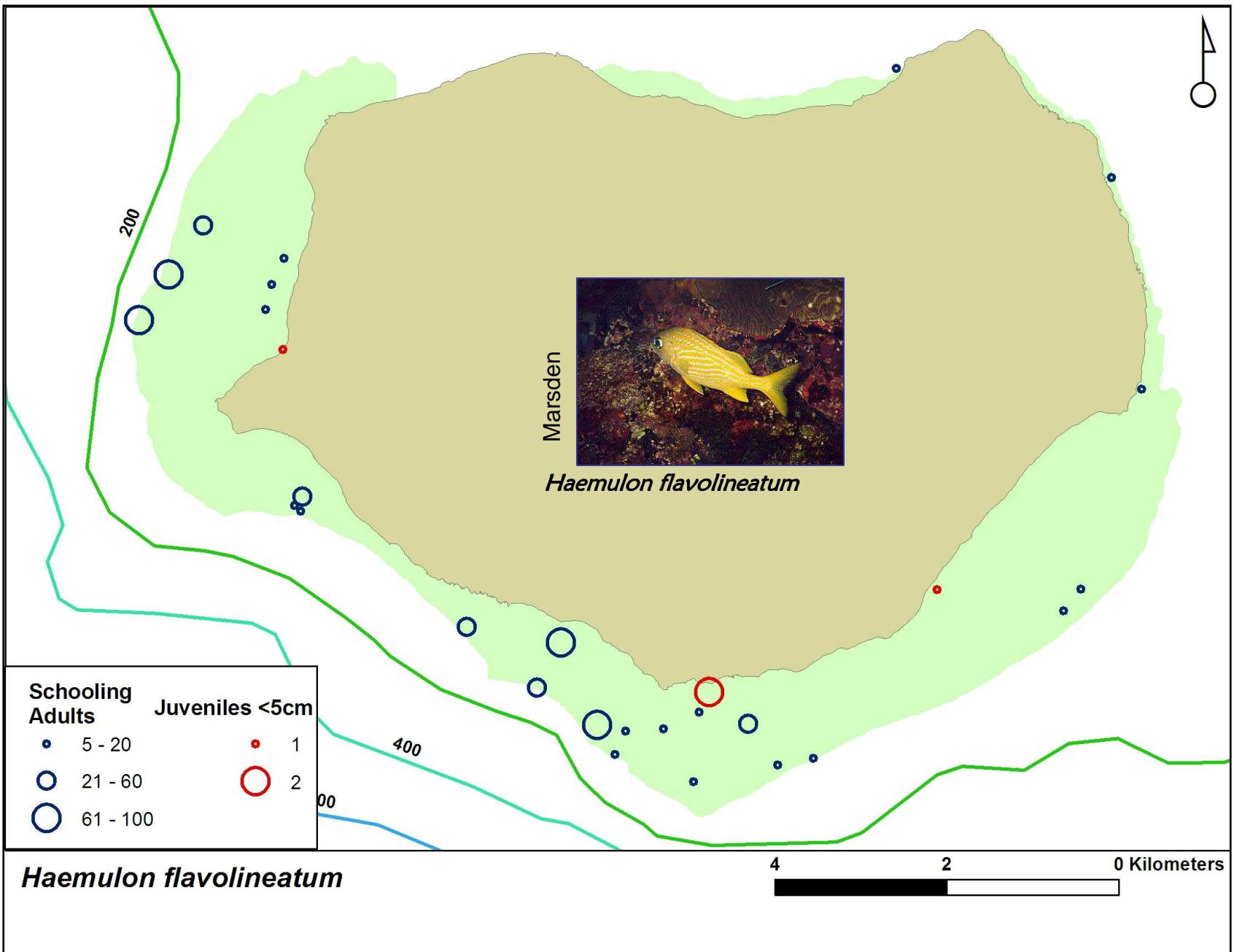
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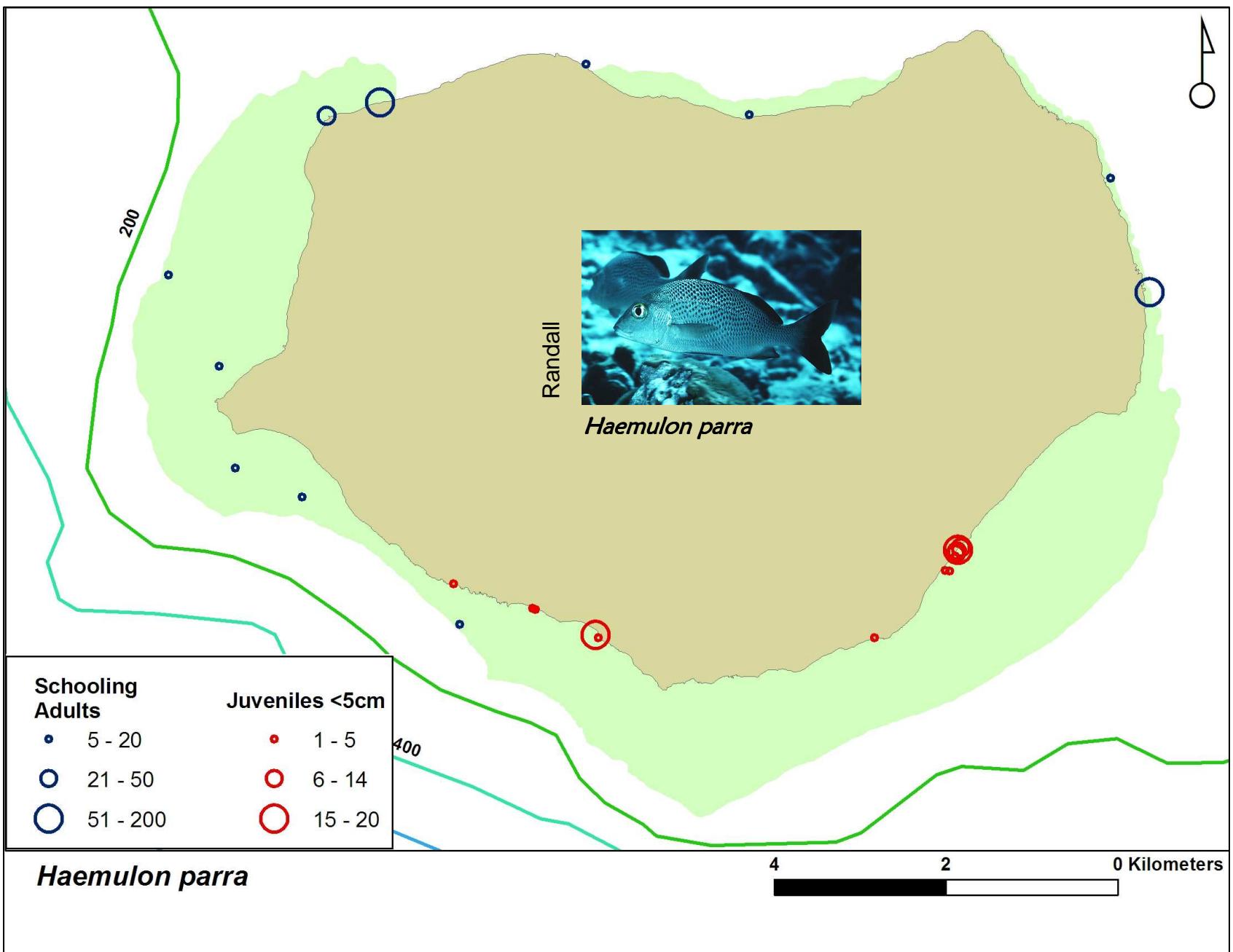
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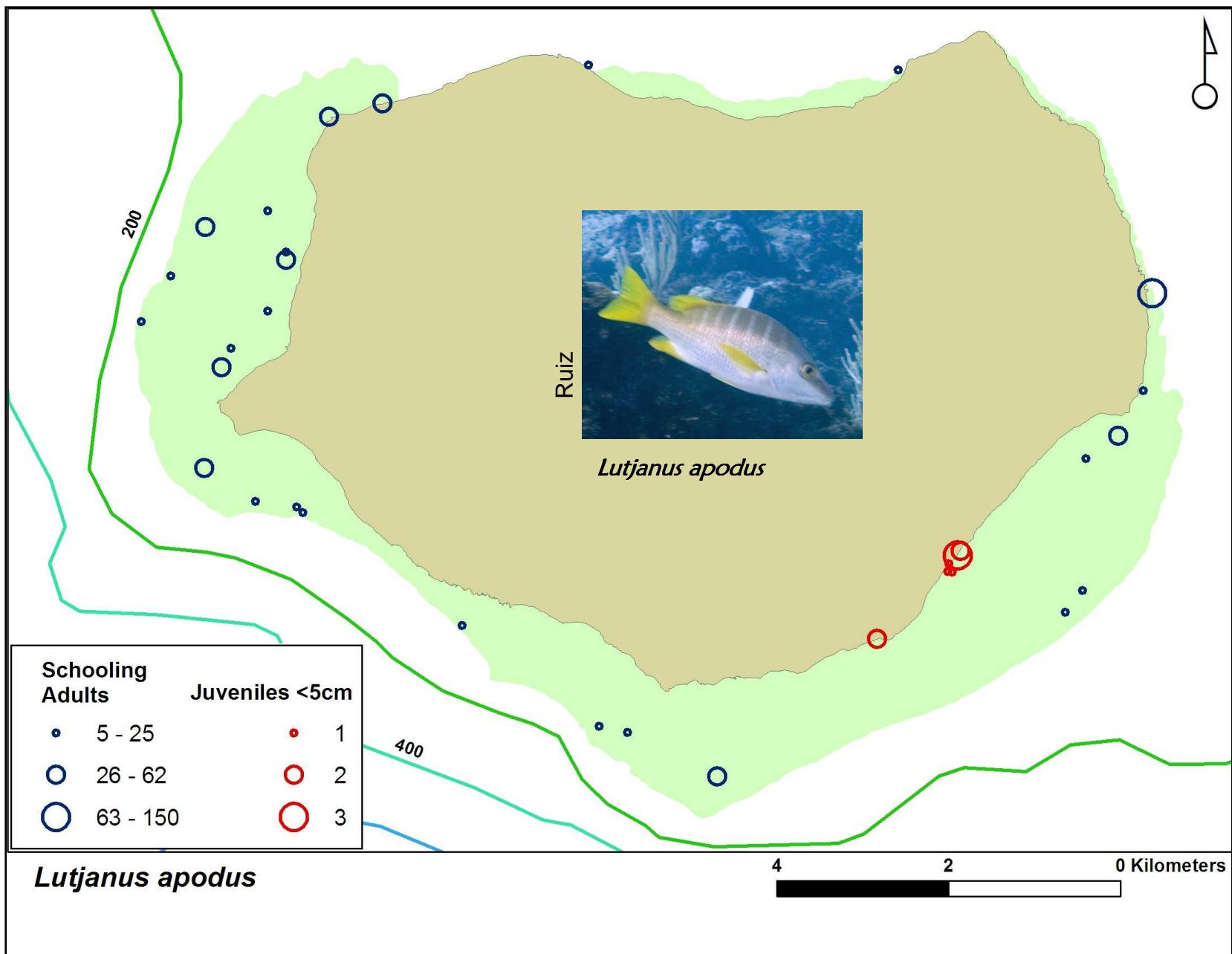
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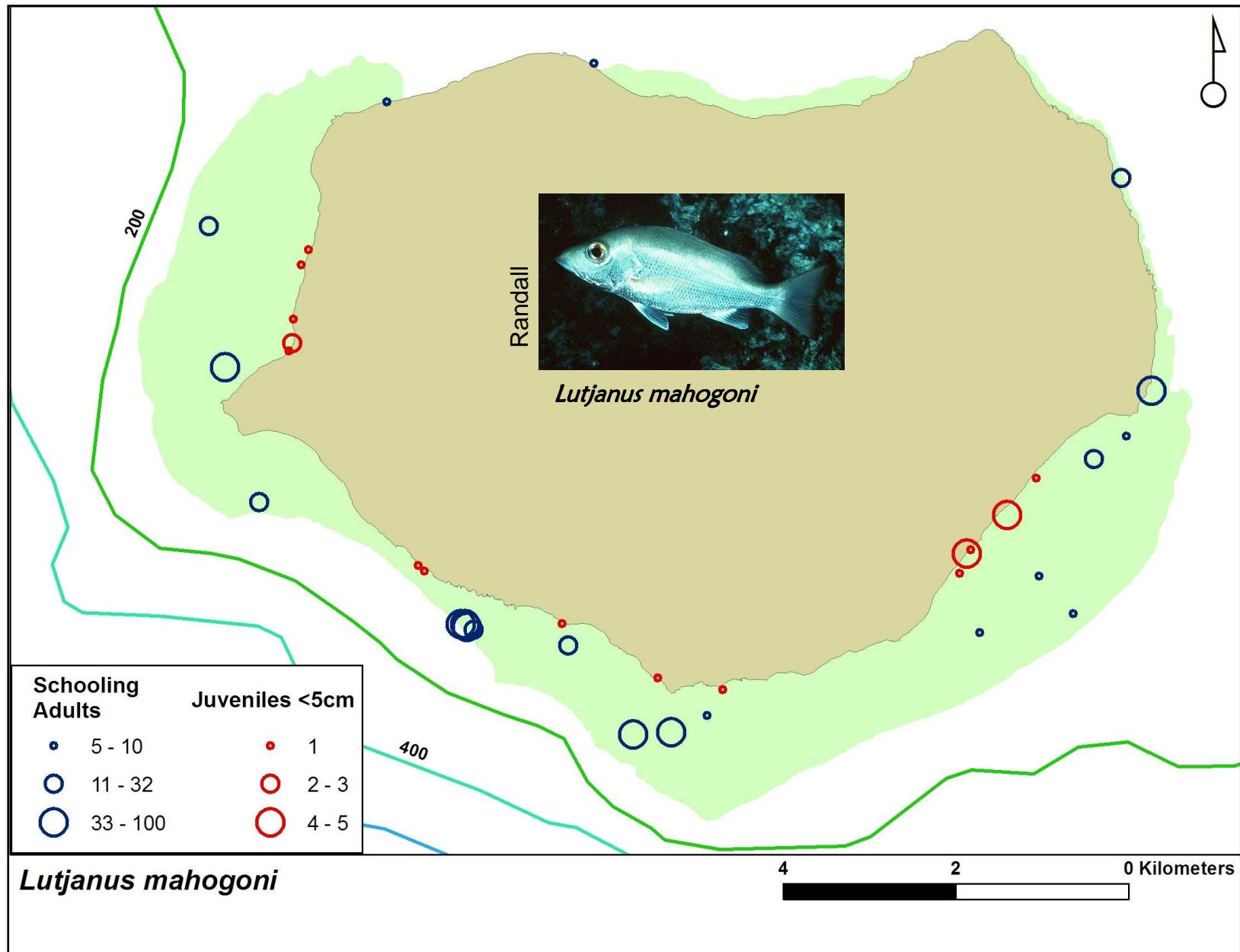
16



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Habitat Variables

- Area of available habitat
- Habitat patch size (perimeter/area ratio)
- Distance from shore (shallow water habitats)
- Area of adjacent habitat (foraging habitats)
- Habitat types favored by schools of grunts and snappers
 - Linear Reef
 - Patch Reef
 - Col. Bedrock
 - Spur & Groove



Presence of schools by habitat types

