Microhabitat characteristics used by newly settled fishes in nearshore hardbottom habitats

Common fish species known to settle on nearshore hardbottom habitats

- Snappers
- Grunts
- Damselfishes
- Wrasses
- Sweepers
- Porgies
- Angelfishes
- Blennies

Grunts (Family Haemulidae)

- Numerically dominant on nearshore hardbottom habitats
- Eleven species recorded from nearshore hardbottom habitats
- Important components of local food webs
- Some are federally managed

Newly settled and early juvenile grunts

Questions

- Do newly settled fishes use microhabitats that differ from randomly selected sites?

- If so what characteristics are important?

- Do newly settled fishes differ in their microhabitat use on nearshore artificial and natural hard bottom areas?

- How does microhabitat use relate to habitat quality?

Approach

- Compare biotic and abiotic substrate and structural characteristics on sites occupied by newly settled fishes with substrate characteristics on randomly selected sites

- Sample microhabitats (and random sites) on both natural hardbottom and artificial reefs using quantitative photography and direct measurements

- Analyze results with univariate and multivariate statistics

Microhabitat characteristics

Detached Plants

Turf Algae

Macroalgae

Coralline Algae

Sponges

Hydrozoans

Bryozoans

Tunicates

Worm Rock

Sand

Rubble

Shells

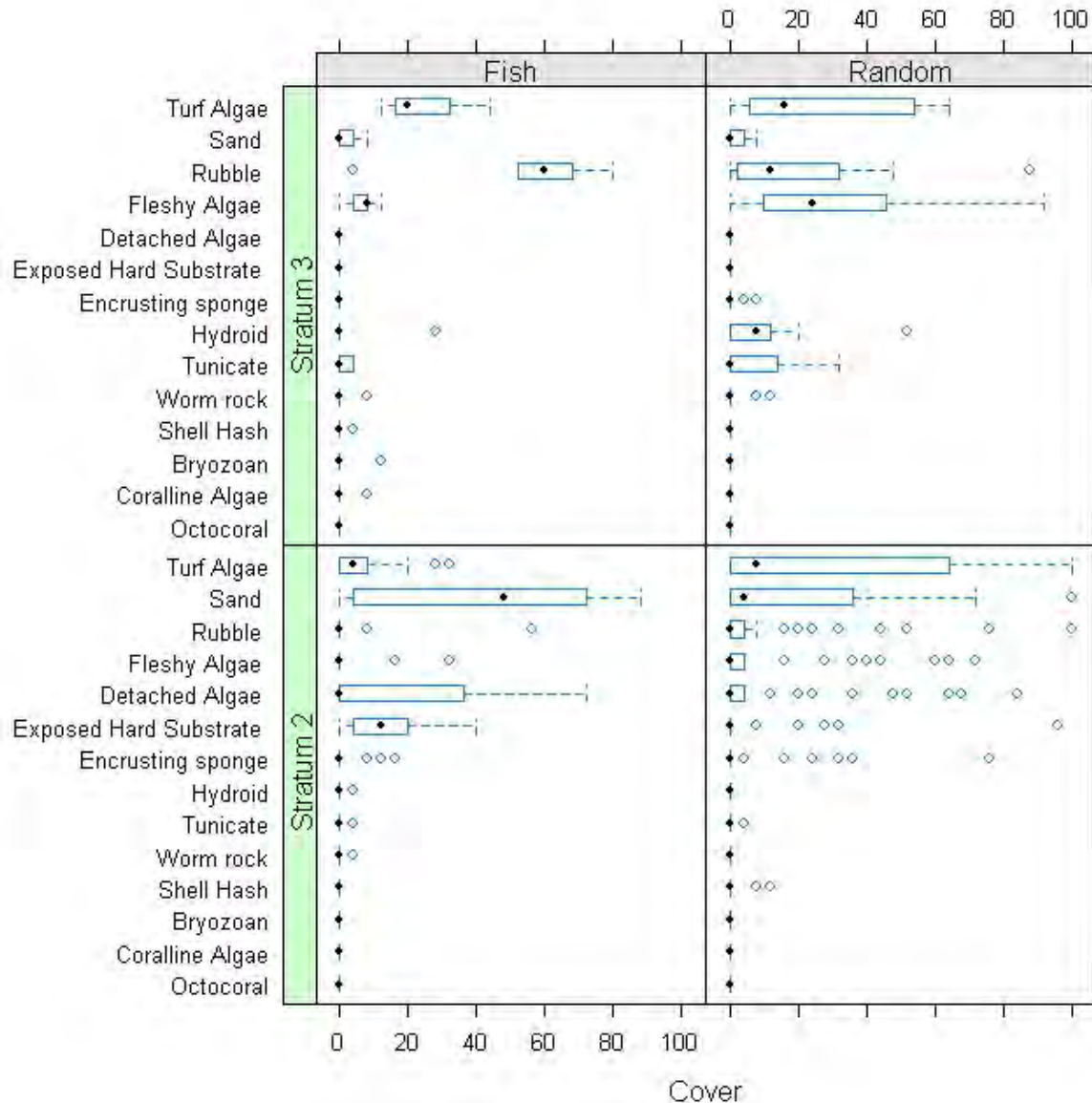Sand/Hardbottom

Emergent Hardbottom
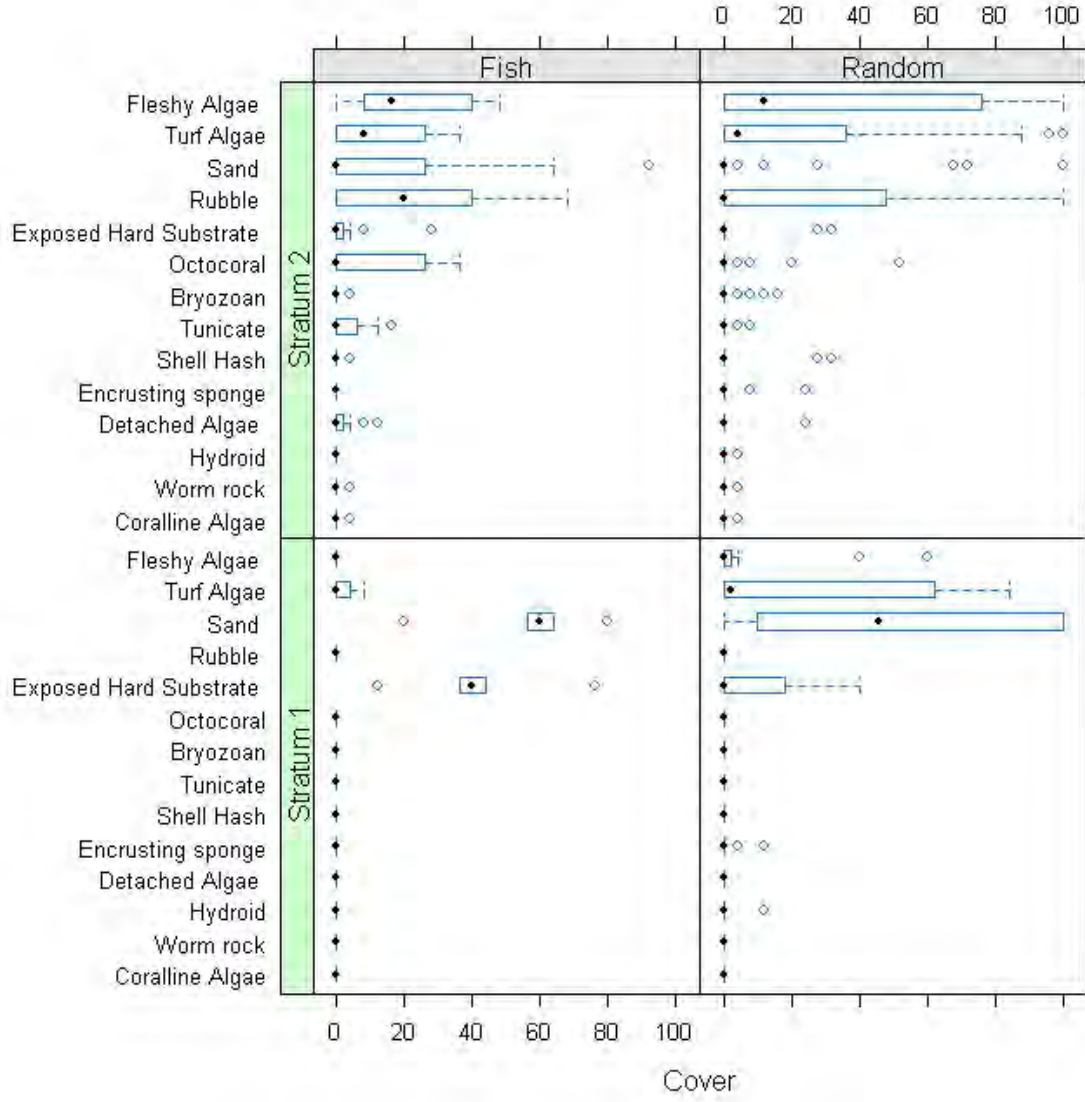
Worm Rock

Relief

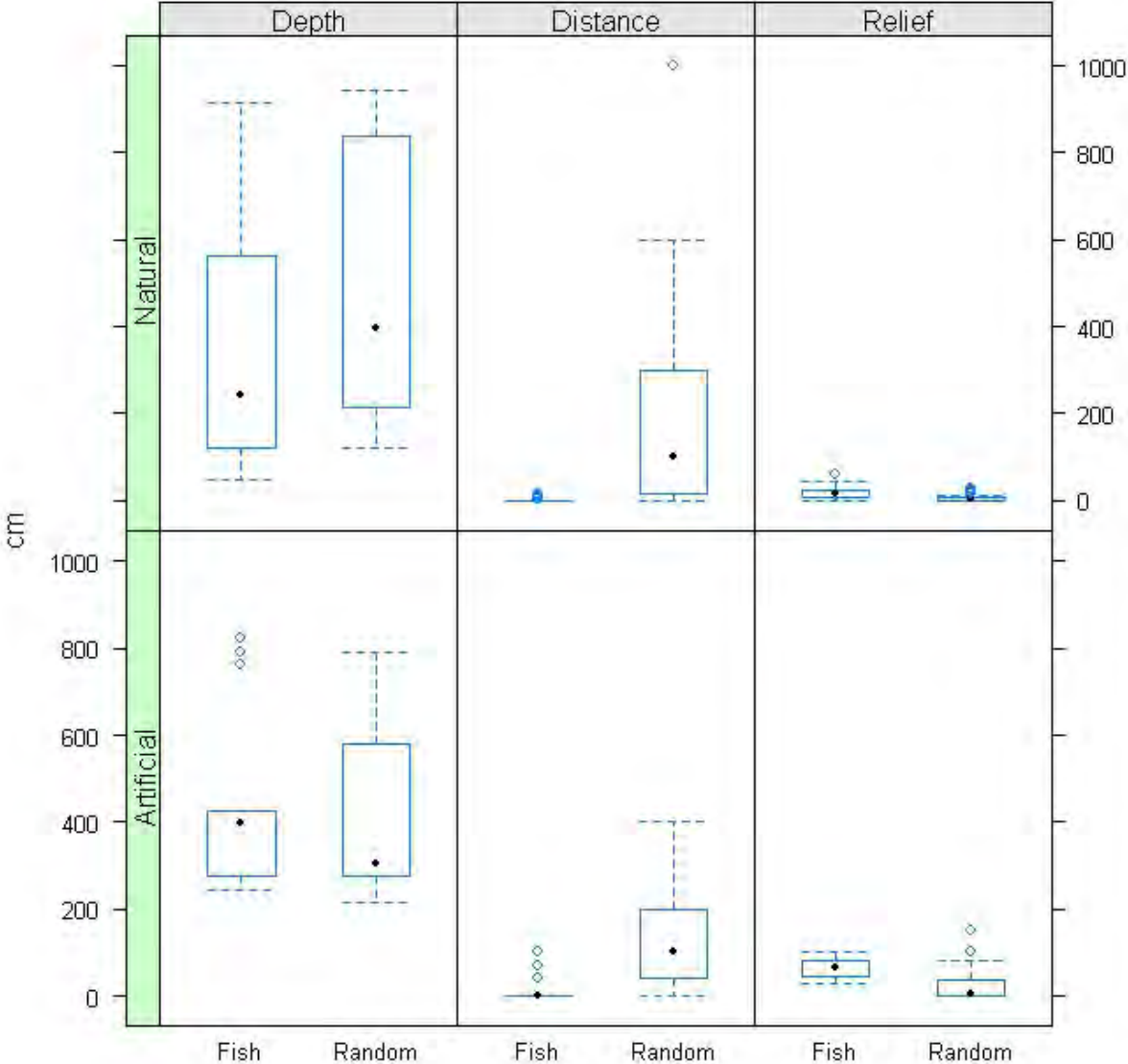Distance from reef edge

Water depth

Natural hardbottom

Artificial reefs

Comparison of measured variables

Preliminary results

- Newly settled fishes are using microhabitats with characteristics that differed from randomly selected sites
- There appears to be overlap in microhabitat use among taxa examined
- Biotic characteristics are less important than abiotic and structural attributes
- Sand-rock interface was important to the NS fishes examined
- Newly settled grunts are most abundant and frequently occurring
- Other species that settle as single individuals may be attracted to groups of NS grunts