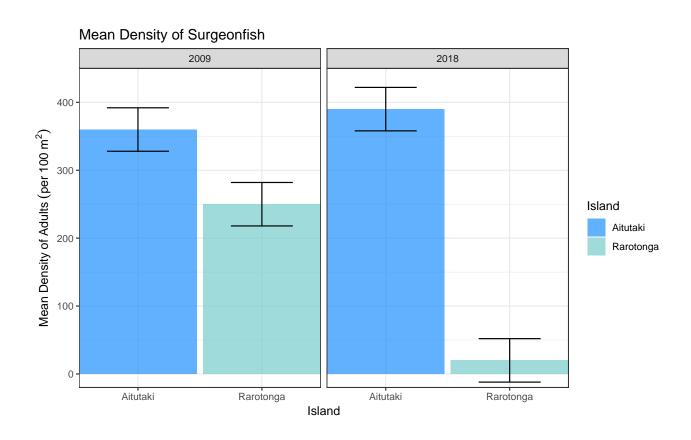
Sara Orofino Problem Set 1 January 21, 2020

Question 1

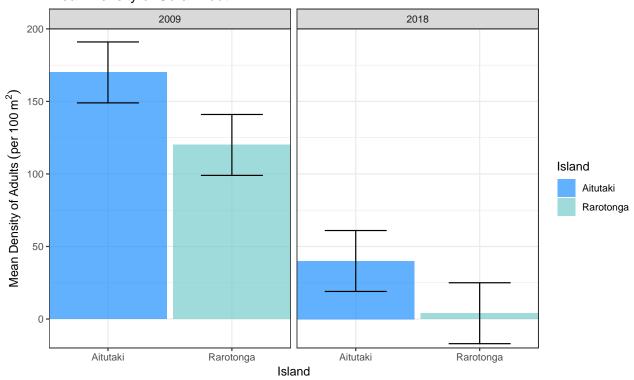
Mean Adult Density Graphs

Tasks:

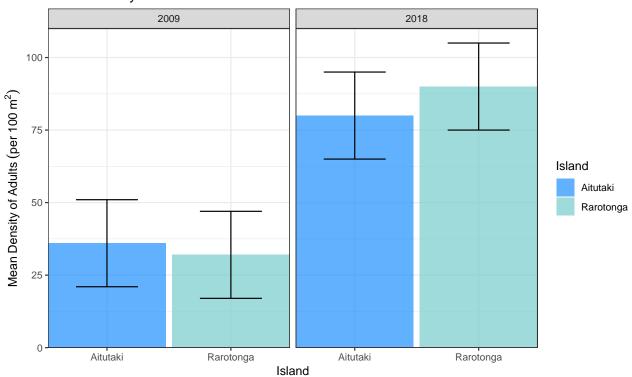
- Graph mean adult density for each species at each lagoon, separate by years



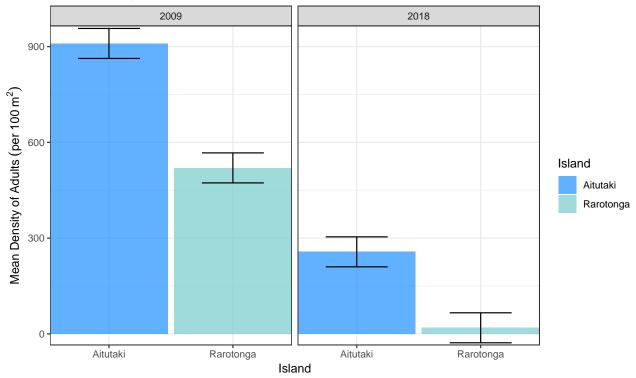
Mean Density of Coral Trout



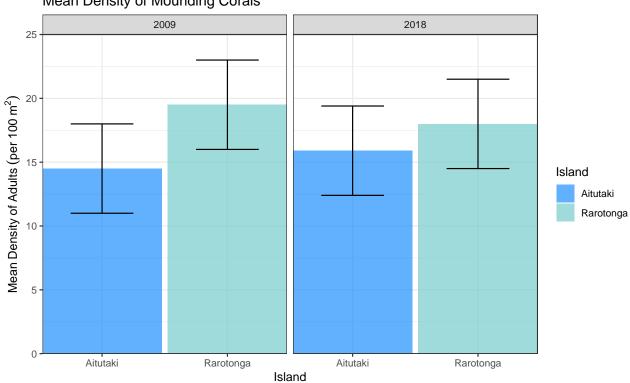
Mean Density of Yellow Damselfish



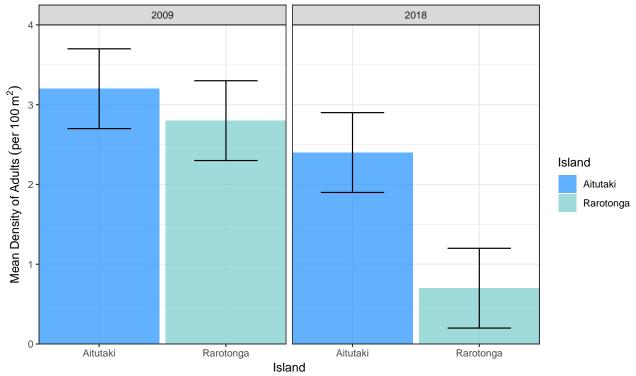
Mean Density of Spotted Damselfish



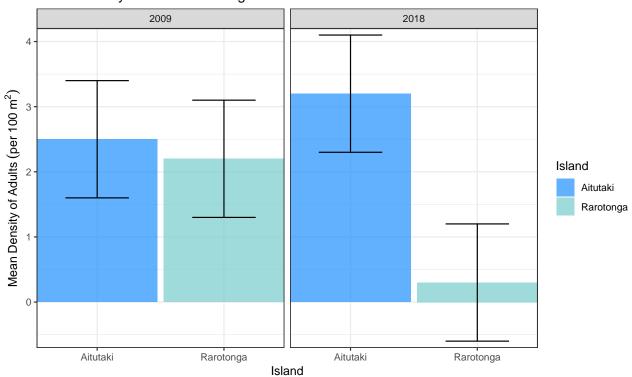
Mean Density of Mounding Corals

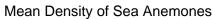


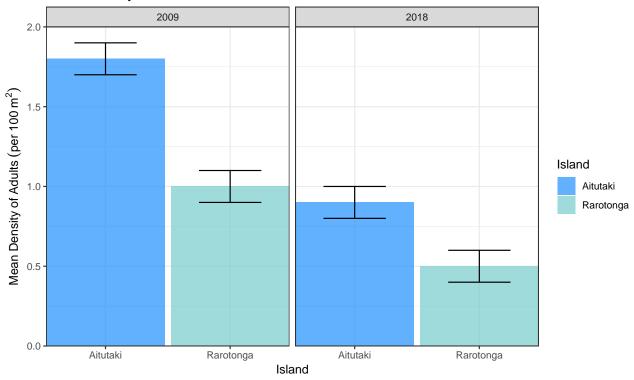
Mean Density of Coarse-branching Corals



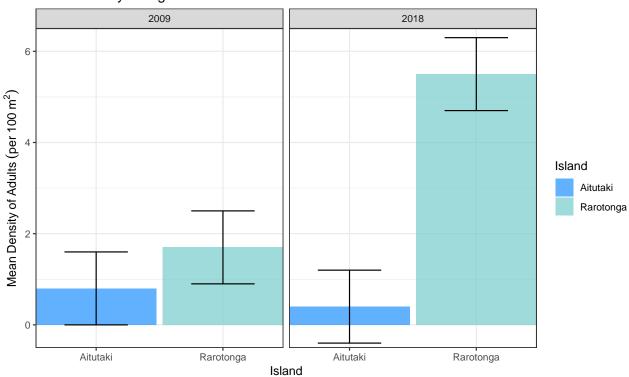
Mean Density of Fine-branching Corals







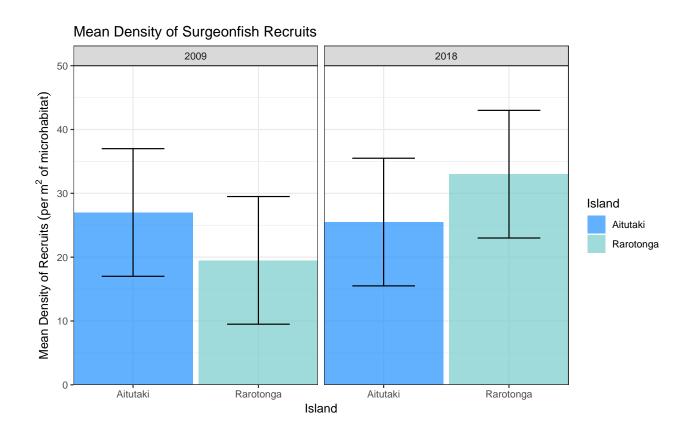
Mean Density of Algae

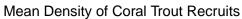


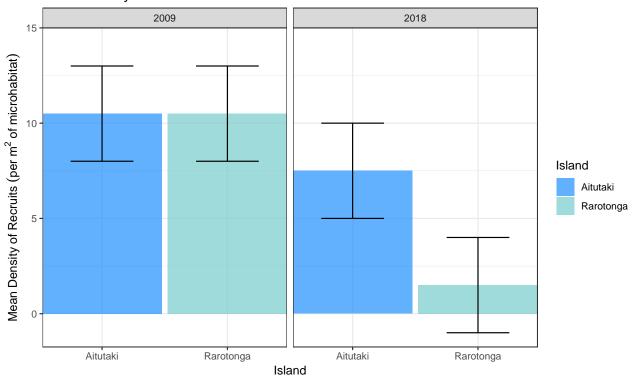
Change in Density of Recruits

Tasks:

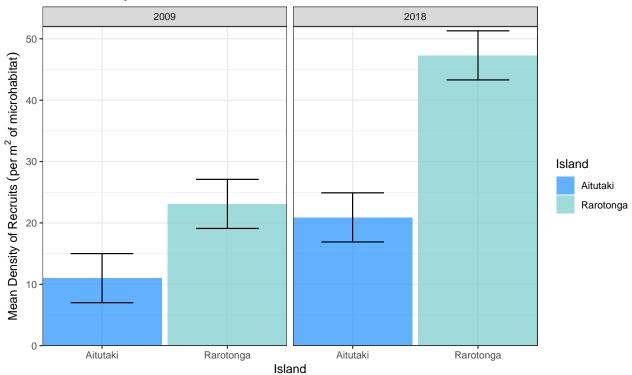
- Graph recruitment density for each species at each lagoon, separate by years

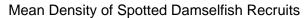


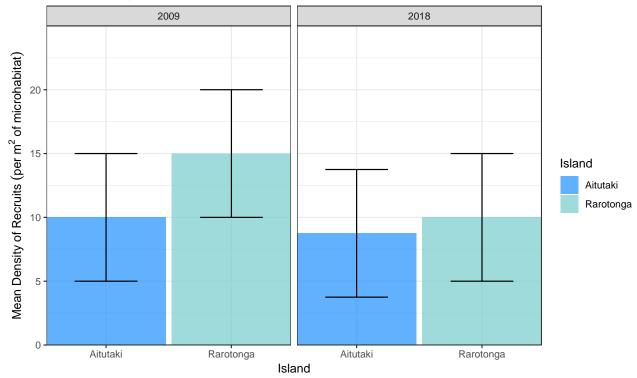




Mean Density of Yellow Damselfish Recruits







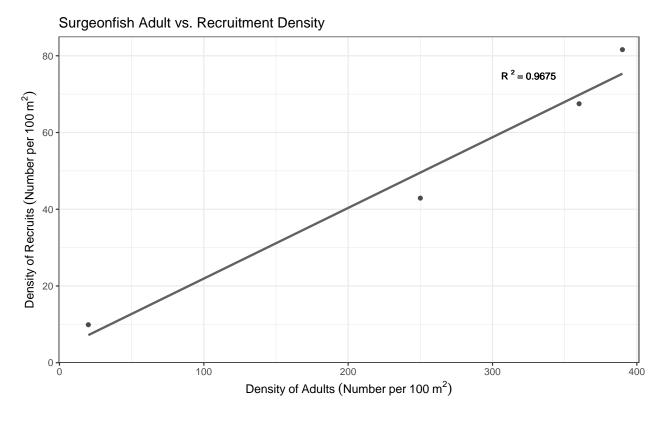
Density of Recruits by Microhabitat

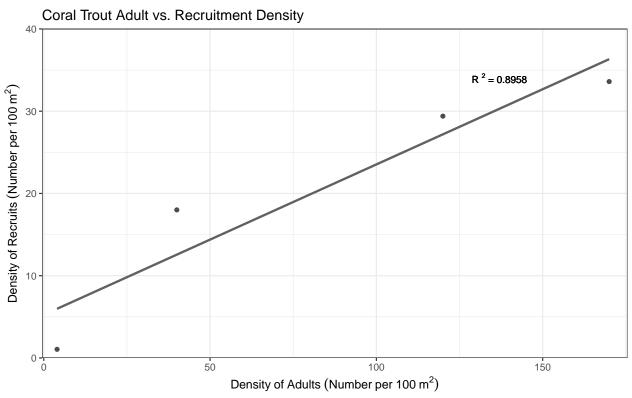
Tasks:

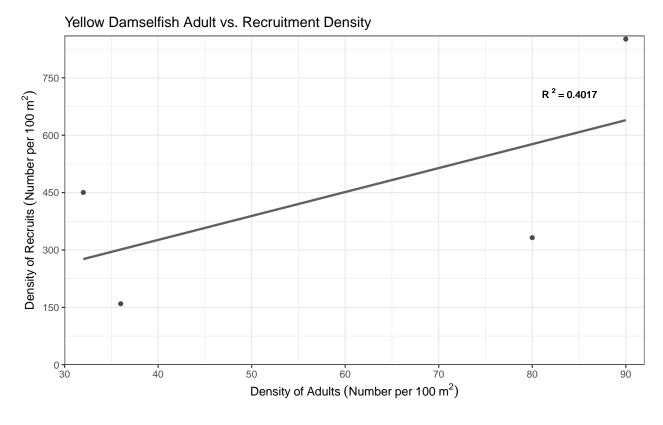
- Calculate the density of fish per 100 m2 area of reef
- Make a scatterplot of relationship between density of recruits and adults

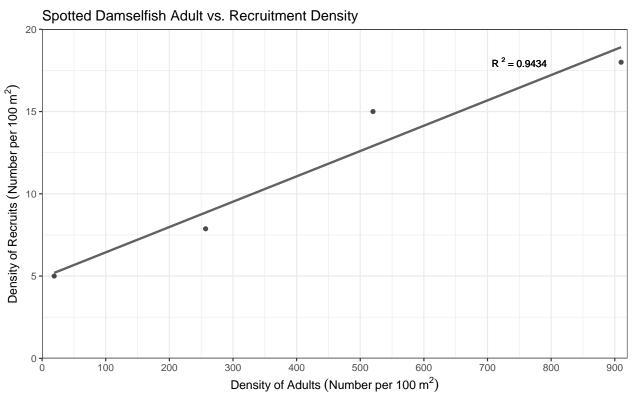
Calculate the Density

The density data gives the coverage of each microhabitat per 100 m^2 of reef. The recruitment density is per 1 m^2 of microhabitat. To get the density of recruits per 100 m^2 of reef, multiply the number of recruits by the density of the microhabitat.





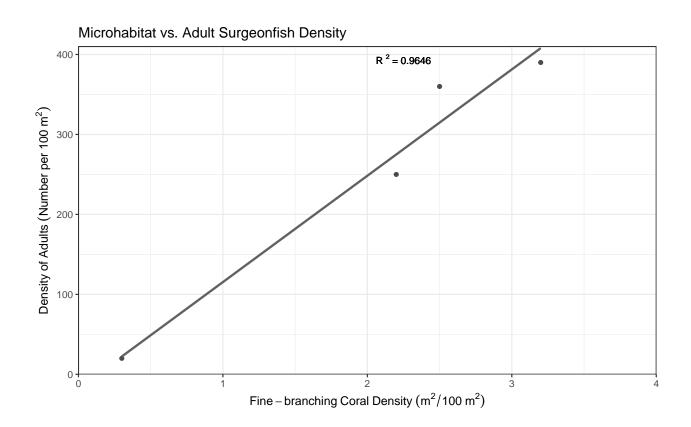


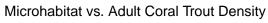


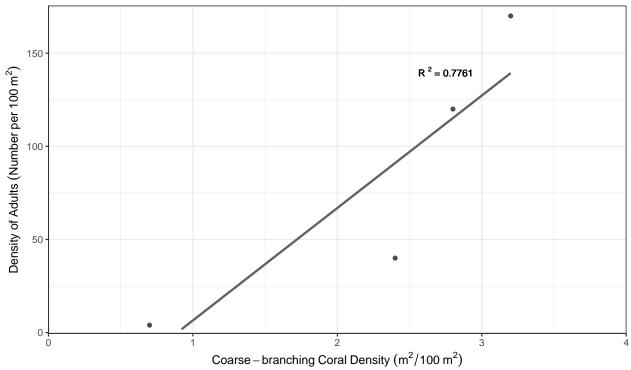
Adult Density vs. Microhabitat

Tasks:

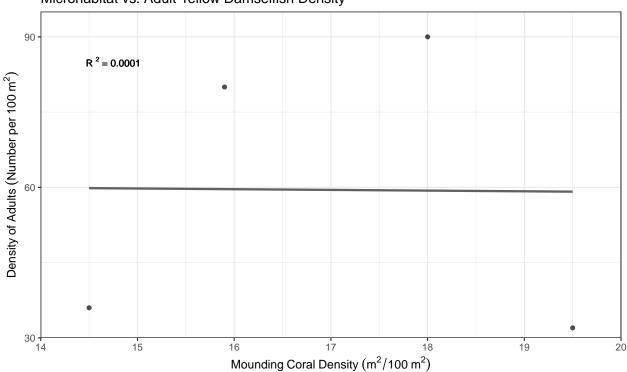
- Scatterplots of adult density vs. density of microhabitat used by young



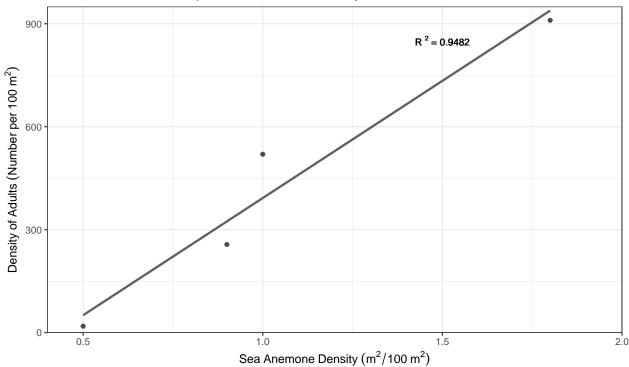




Microhabitat vs. Adult Yellow Damselfish Density





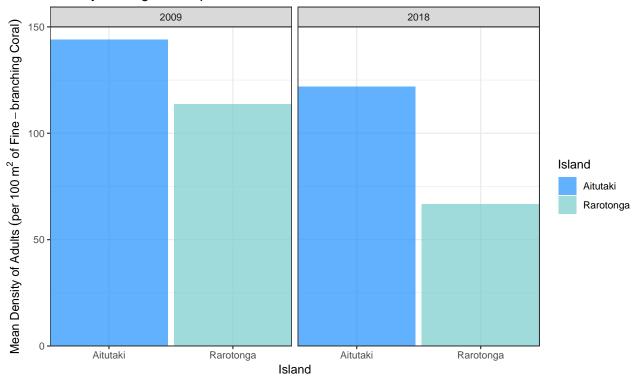


Adult Density by Juvenile Microhabitat

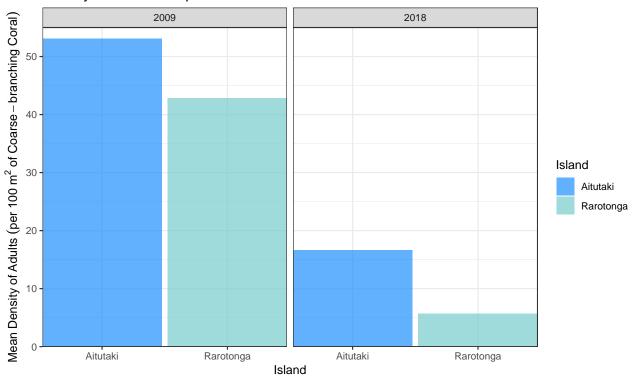
Tasks:

- Calculate the density of adults per area of bottom covered by the microhabitat used by the young (for each lagoon and year)
- Graph them (similar to questions one and two)

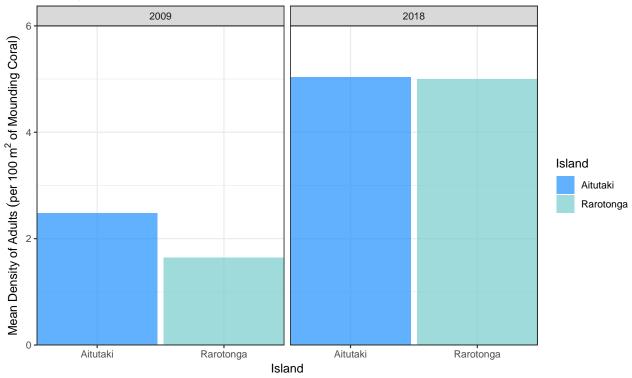
Density of Surgeonfish per Area of Juvenile Habitat



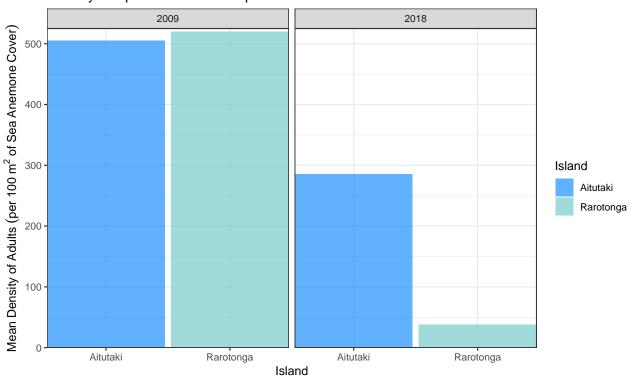
Density of Coral Trout per Area of Juvenile Habitat



Density of Yellow Damselfish per Area of Juvenile Habitat



Density of Spotted Damselfish per Area of Juvenile Habitat



Adult Density Trends

Tasks:

- Scatterplots (adult density) with trend line and r-squared value
- Surgeon vs. Coral Trout
- Surgeon vs. Yellow Damselfish
- Surgeon vs. Spotted Damselfish
- Coral Trout vs. Yellow Damselfish
- Coral Trout vs. Spotted Damselfish
- Yellow Damselfish vs. Spotted Damselfish

