

problem_set1

Sara Orofino

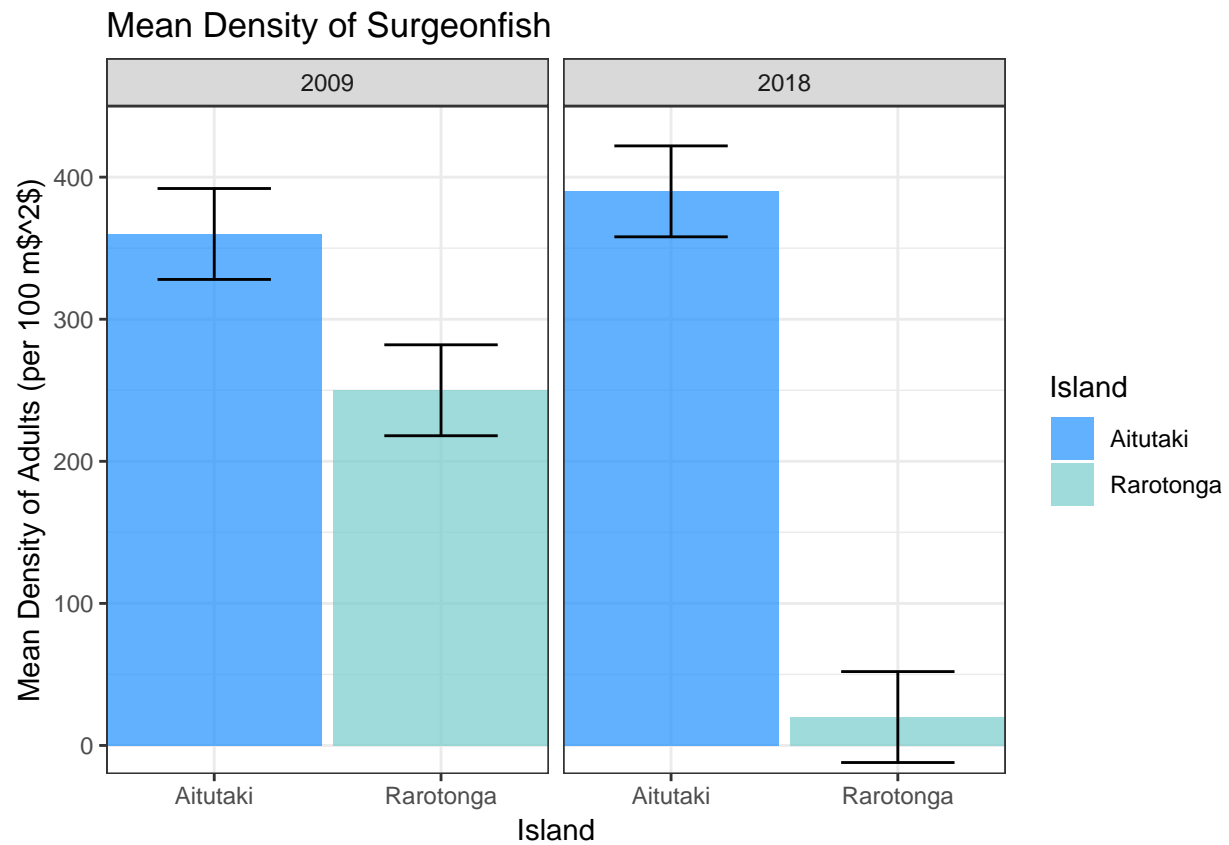
1/12/2020

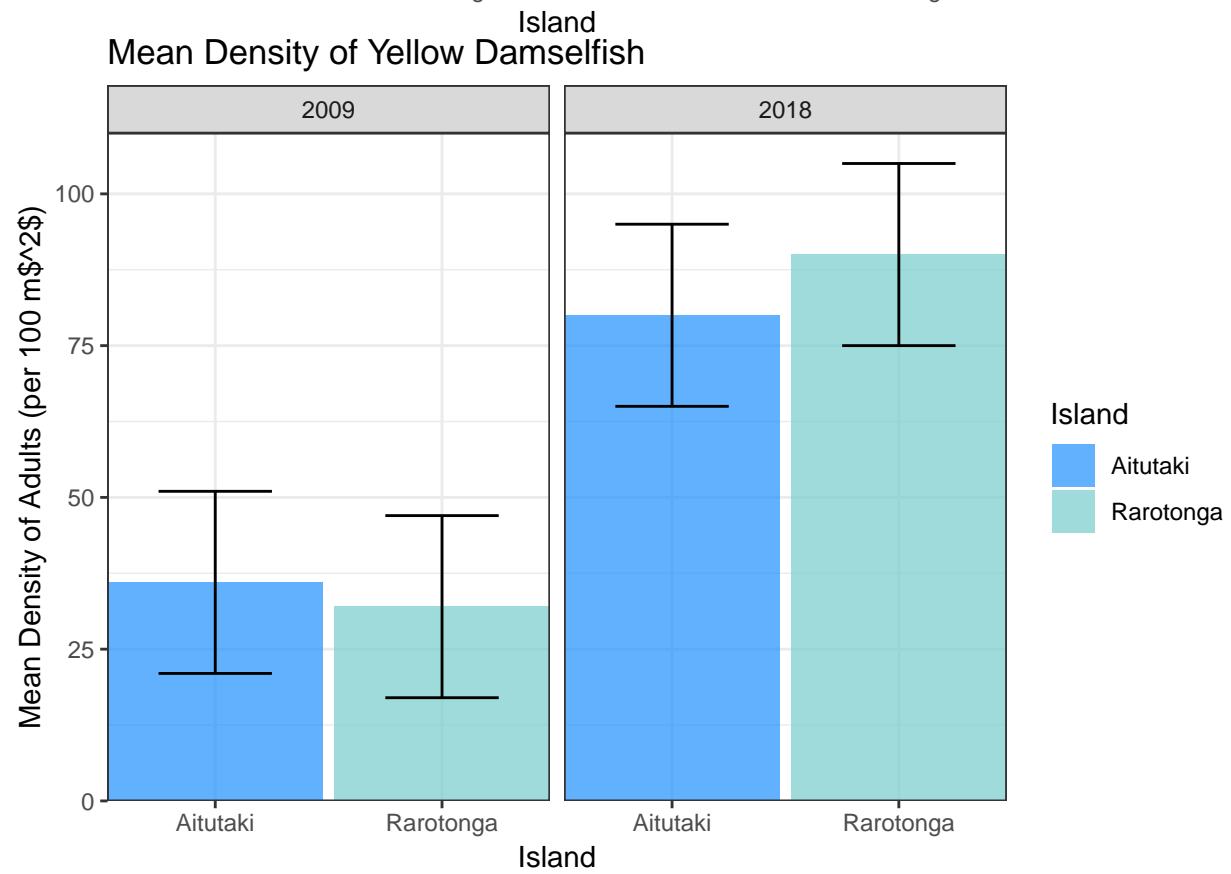
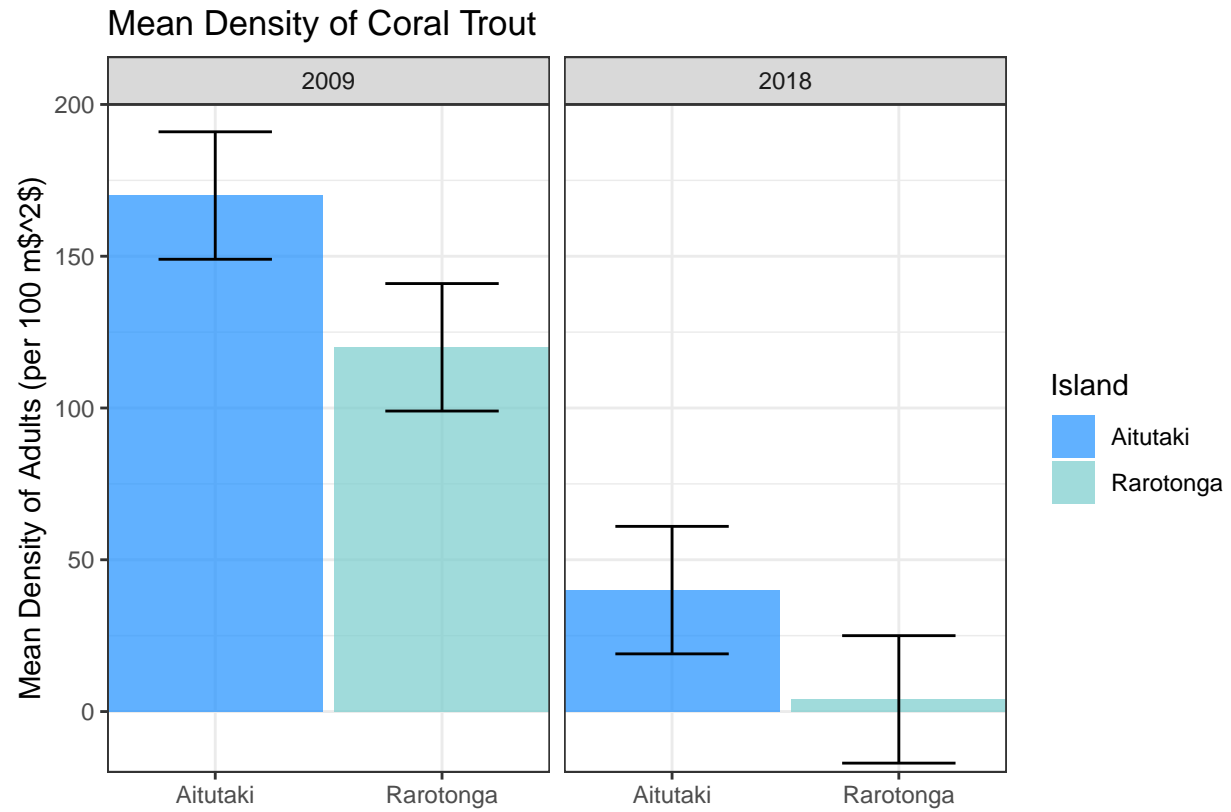
Question 1

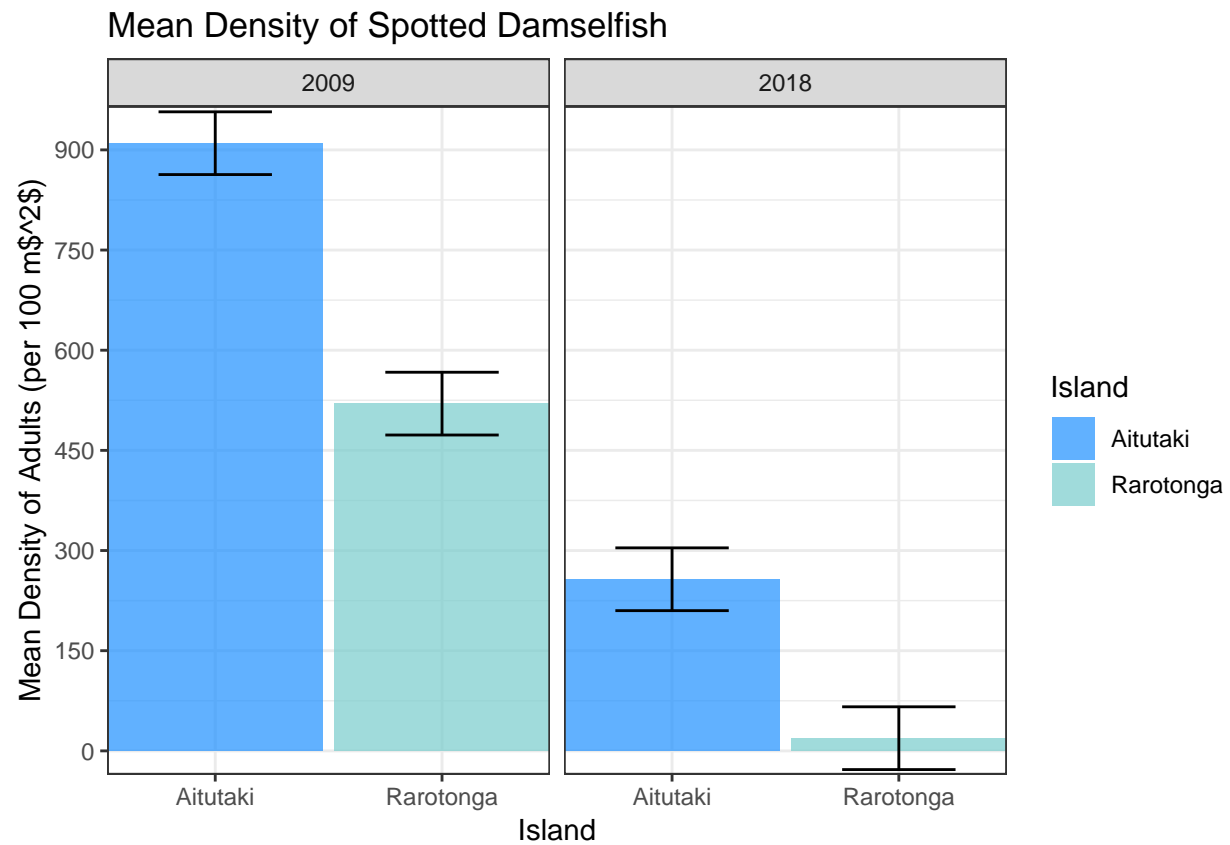
Compare and contrast changes in mean density

Tasks:

- Make a column graph of mean density for each organism (y-axis) on both Rarotonga and Aitutaki in 2009 and 2018





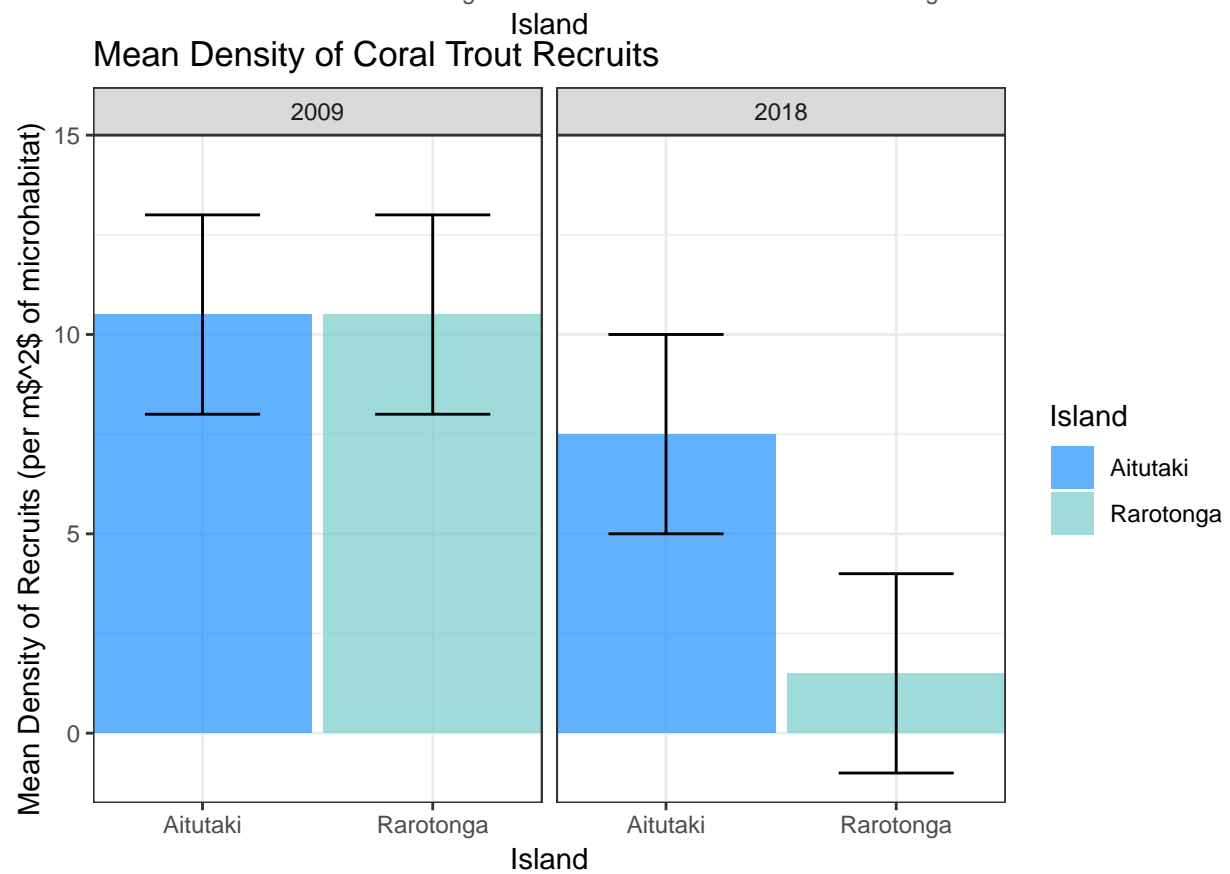
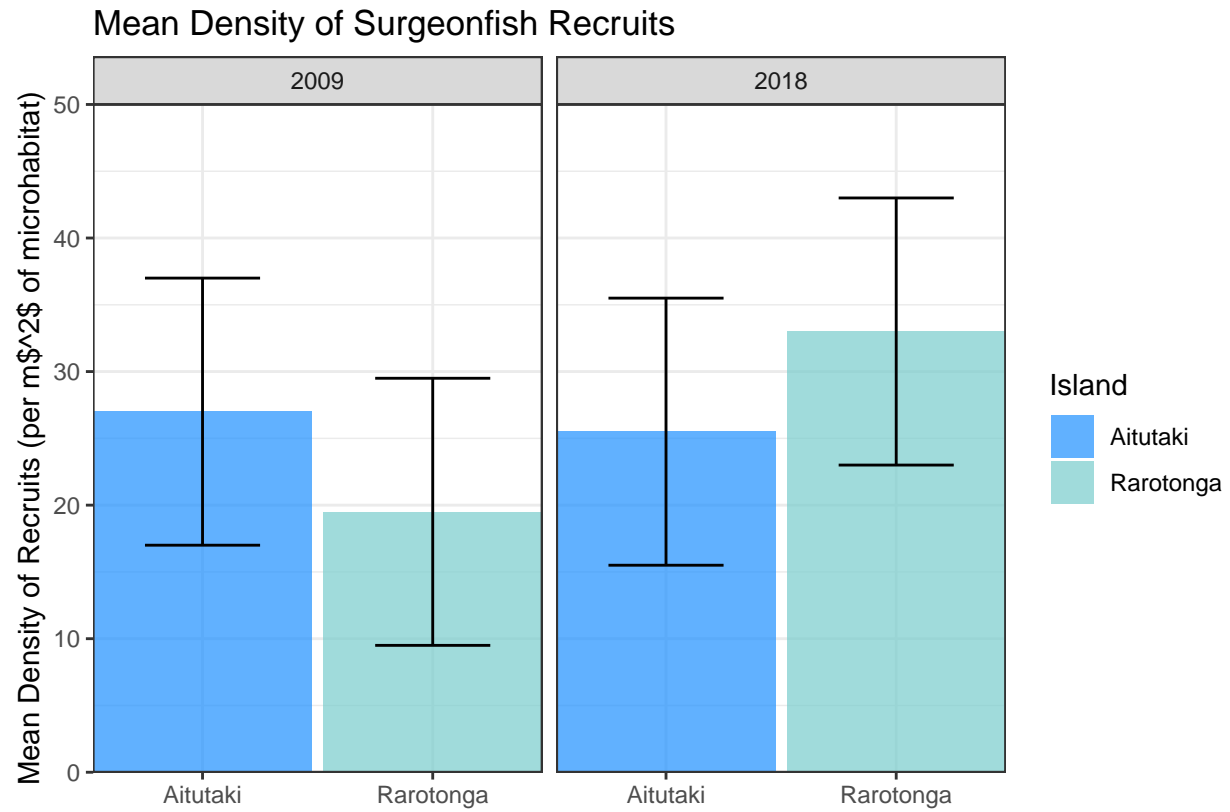


Question 2

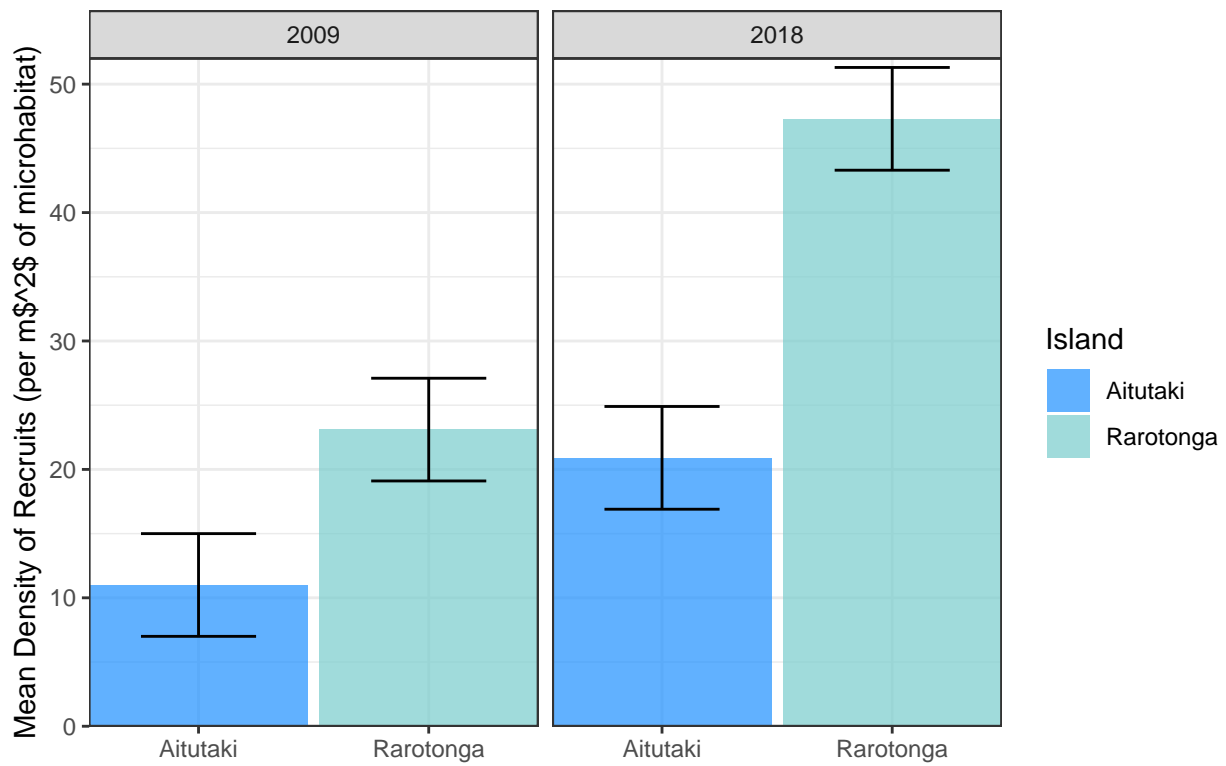
Compare and contrast changes in density of recruits

Tasks:

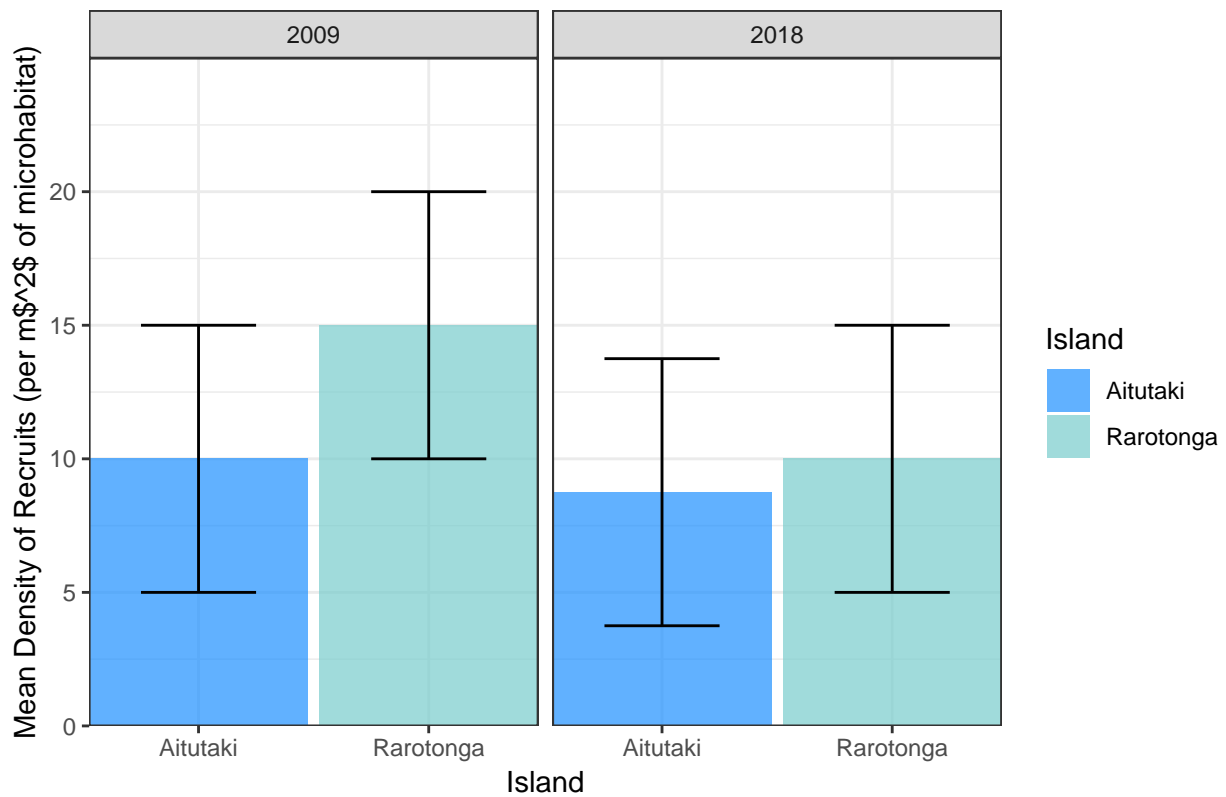
- Make a column graph of density of recruits for each organism on both Rarotonga and Aitutaki in 2009 and 2018



Mean Density of Yellow Damselfish Recruits



Mean Density of Spotted Damselfish Recruits



Question 3

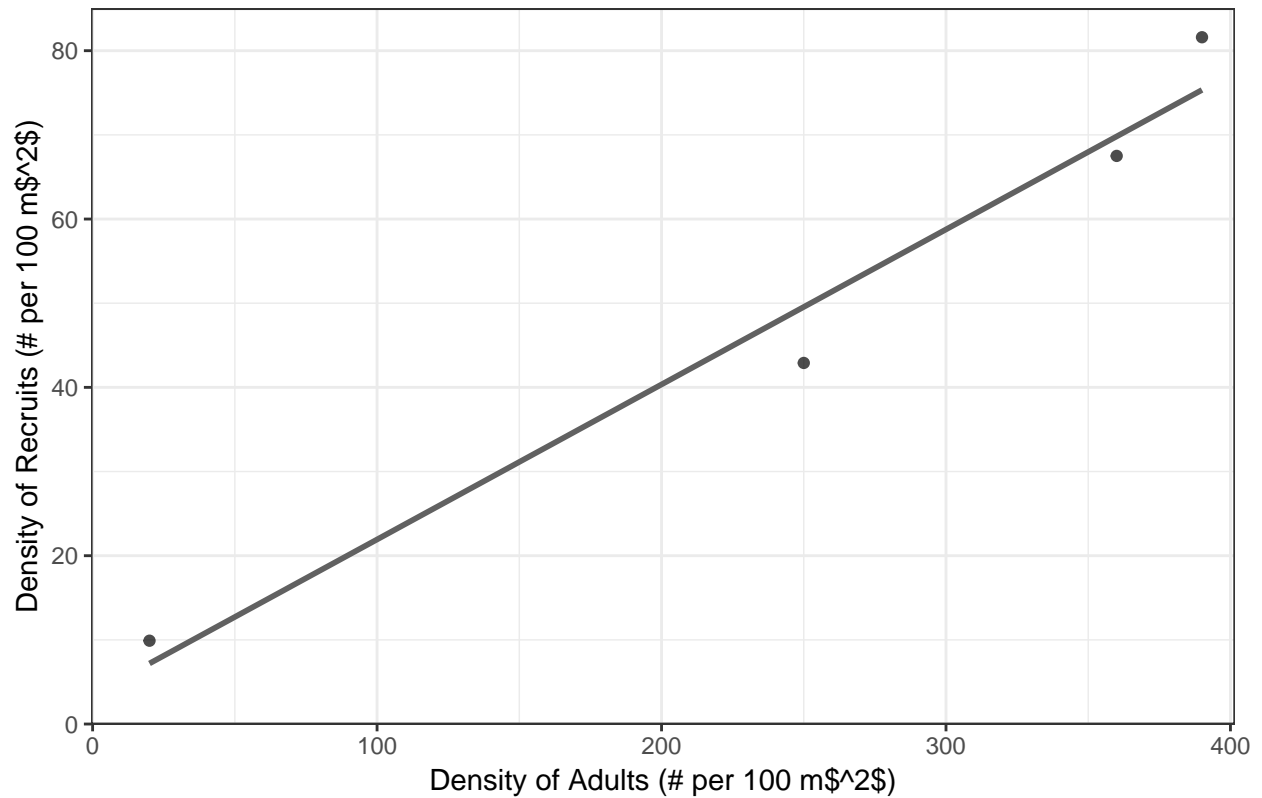
Tasks:

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

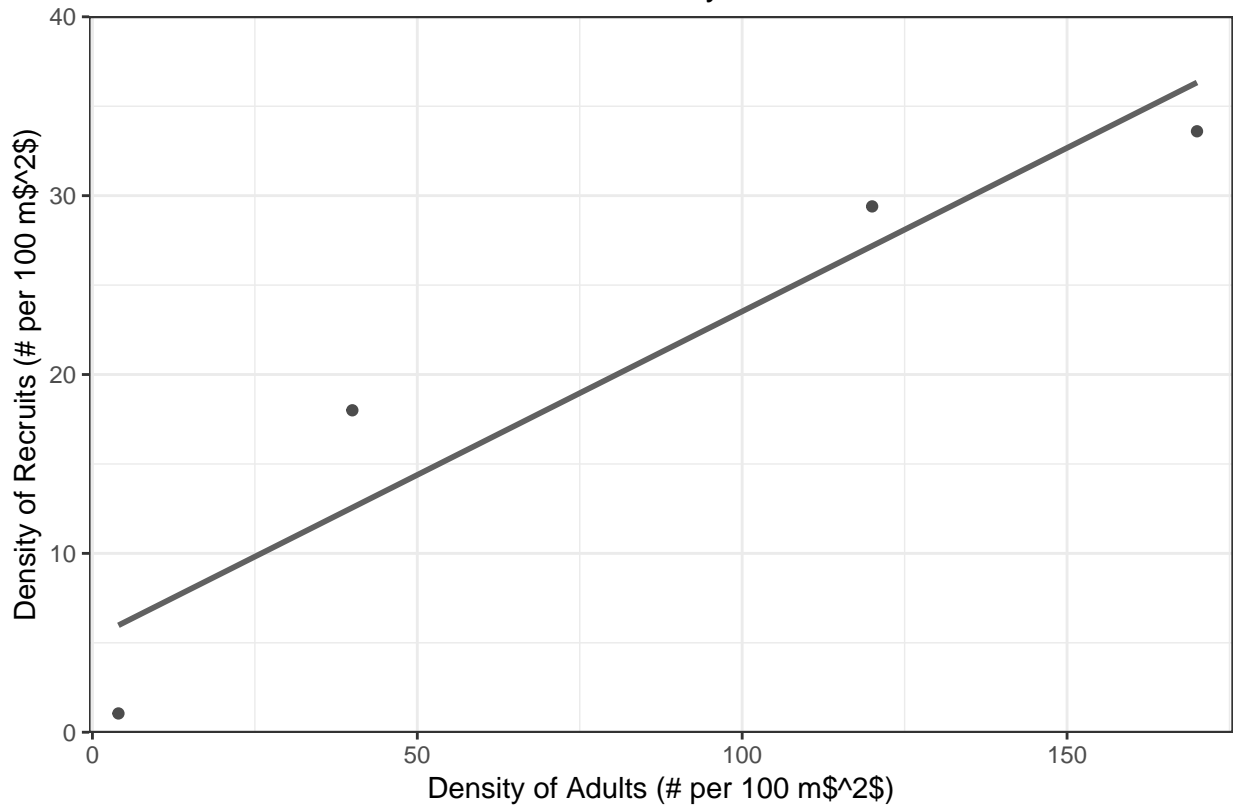
Density

The density data gives the coverage of each microhabitat per 100 m² of reef. The recruitment density is per 1 m² of microhabitat. To get the density of recruits per 100 m² of reef, multiply the number of recruits by the density data number for the microhabitat.

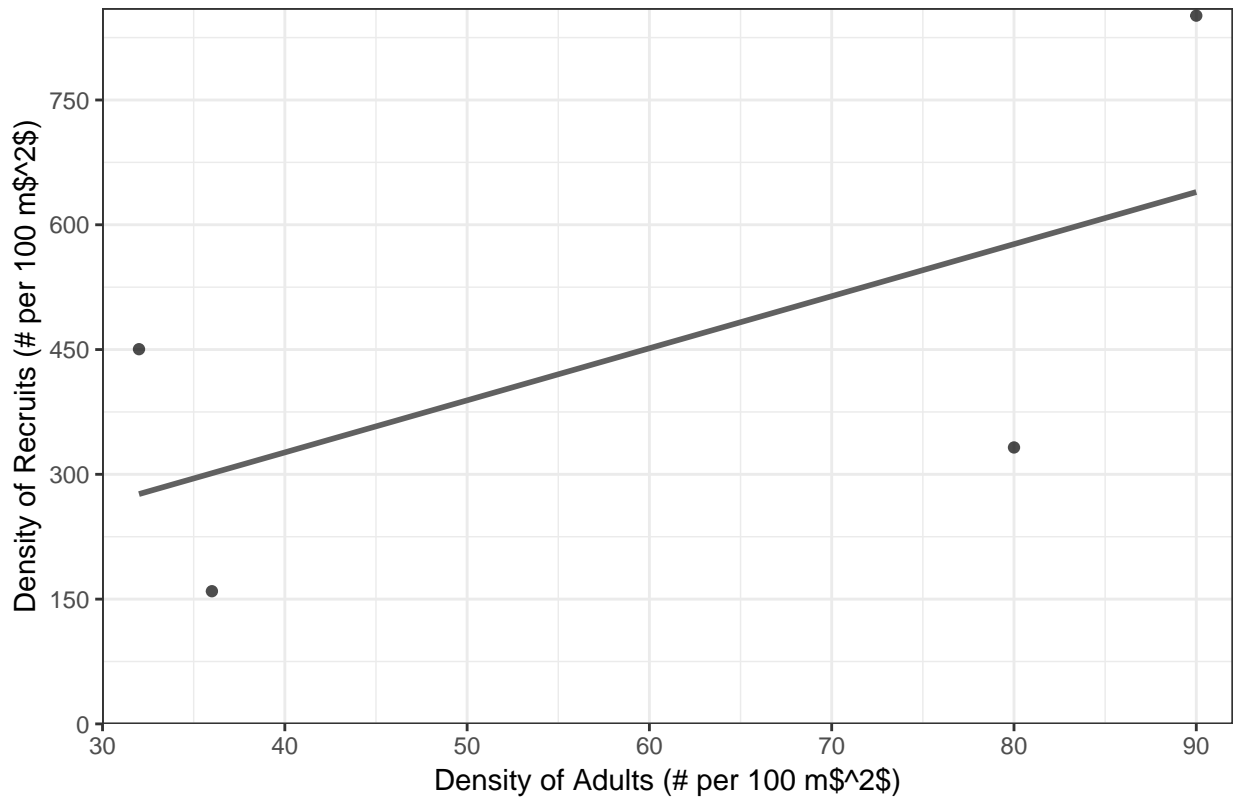
Surgeonfish Adult vs. Recruitment Density

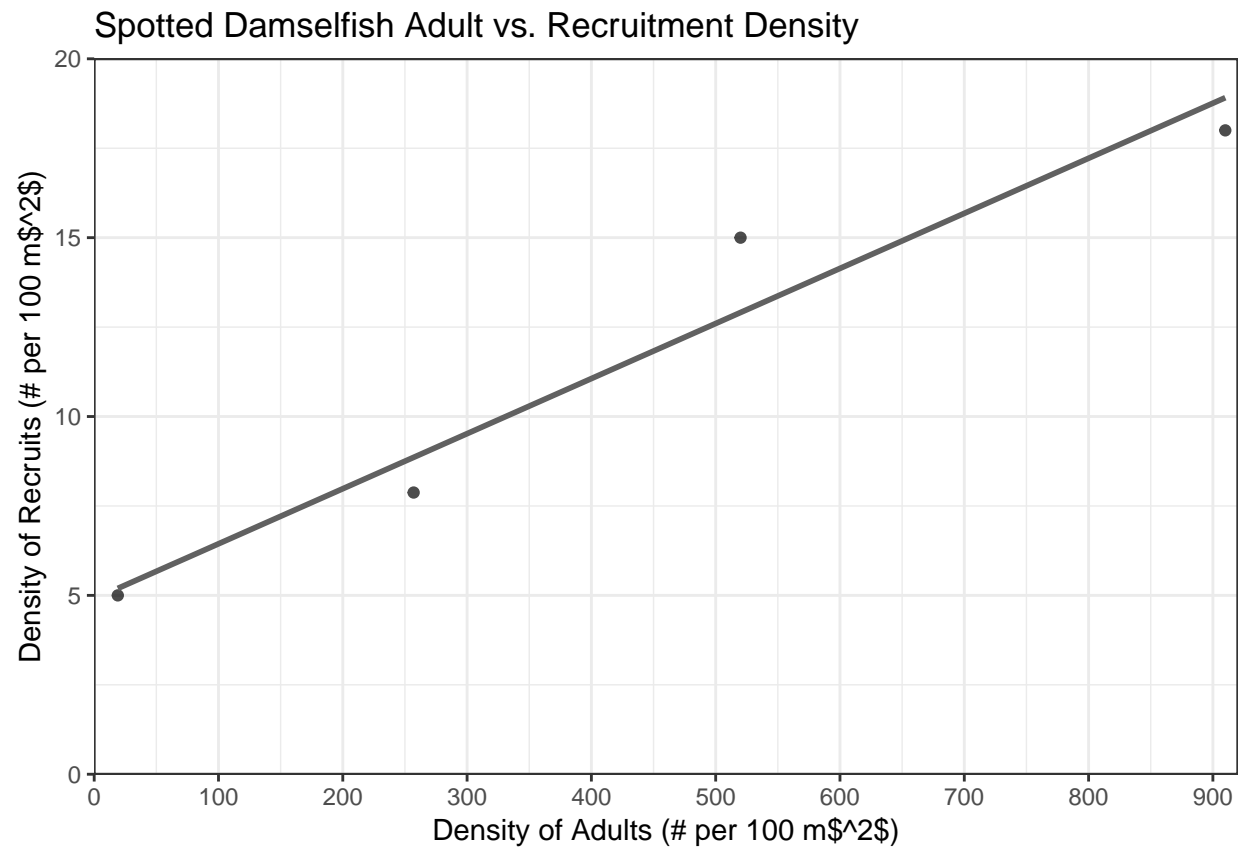


Coral Trout Adult vs. Recruitment Density



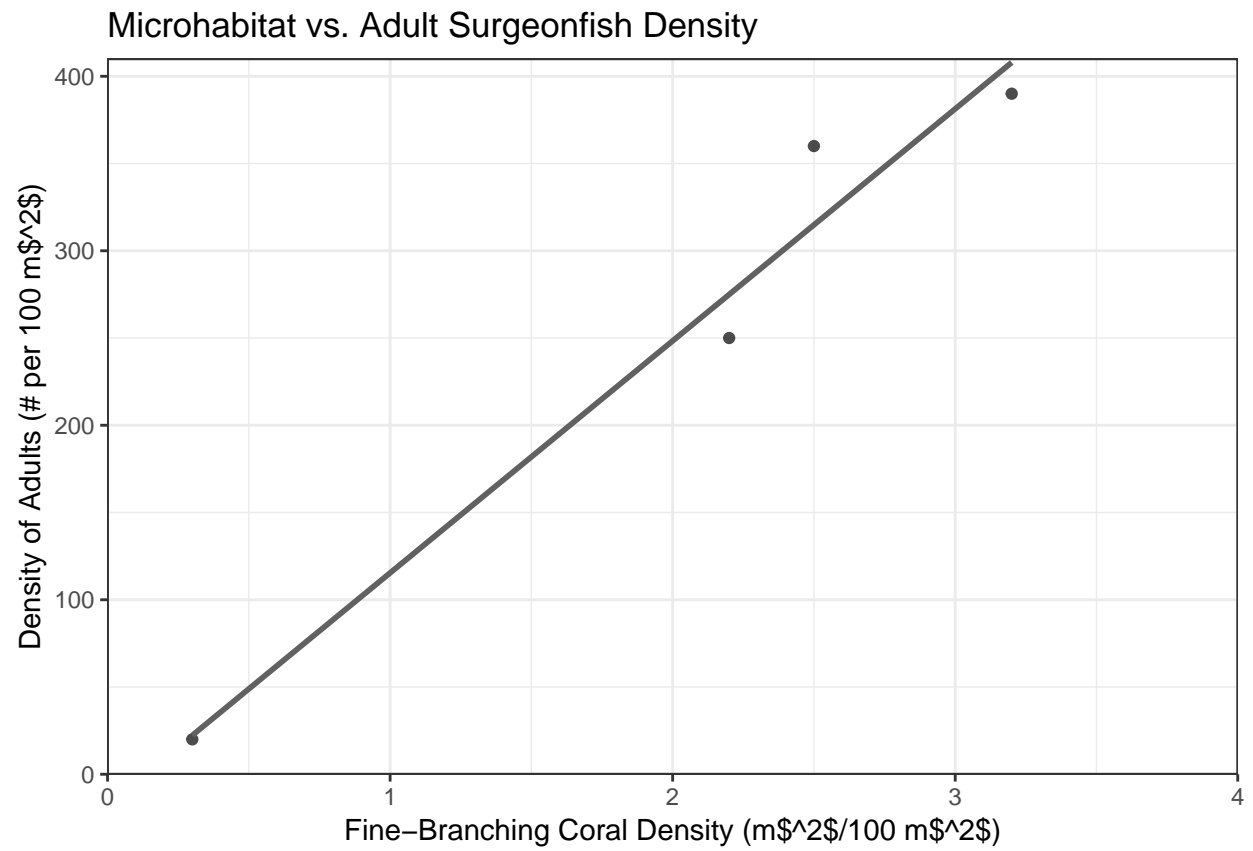
Yellow Damselfish Adult vs. Recruitment Density





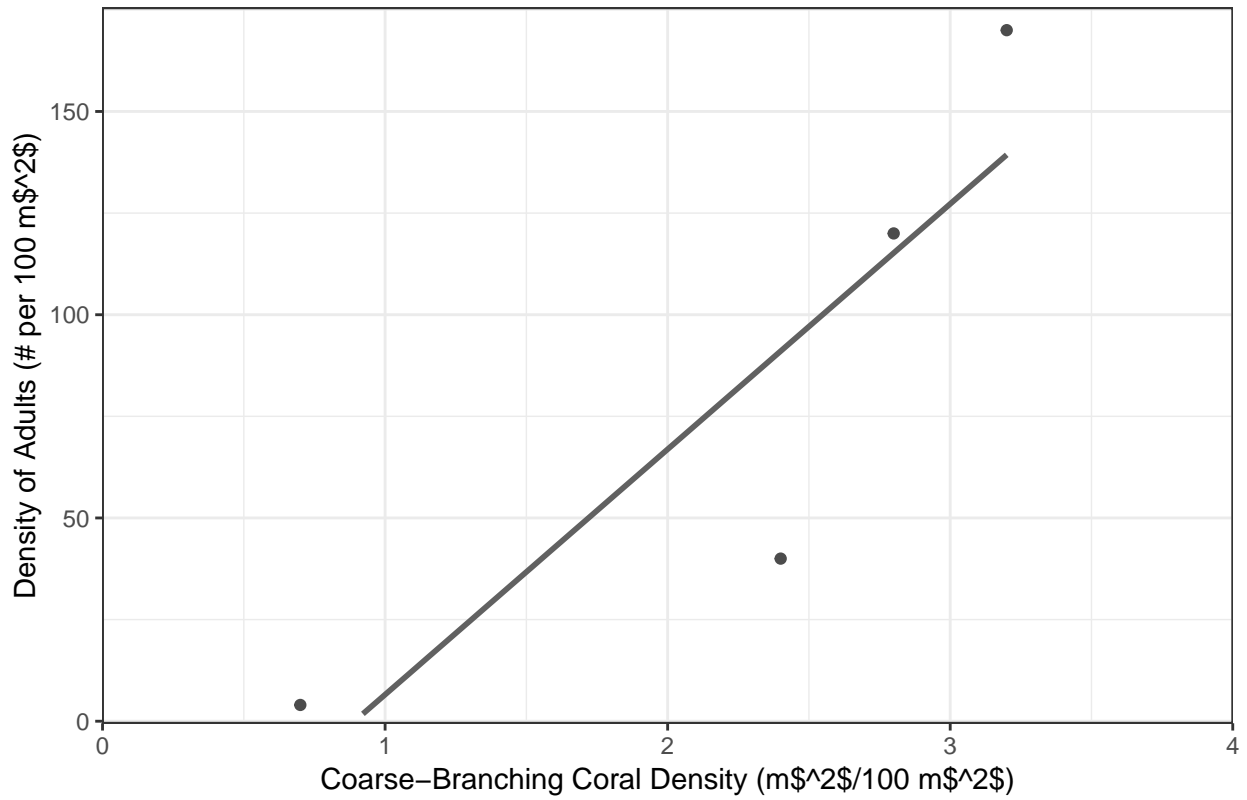
Question 4

Scatterplots of adult density (y axis) vs. density of microhabitat used by young (x axis)

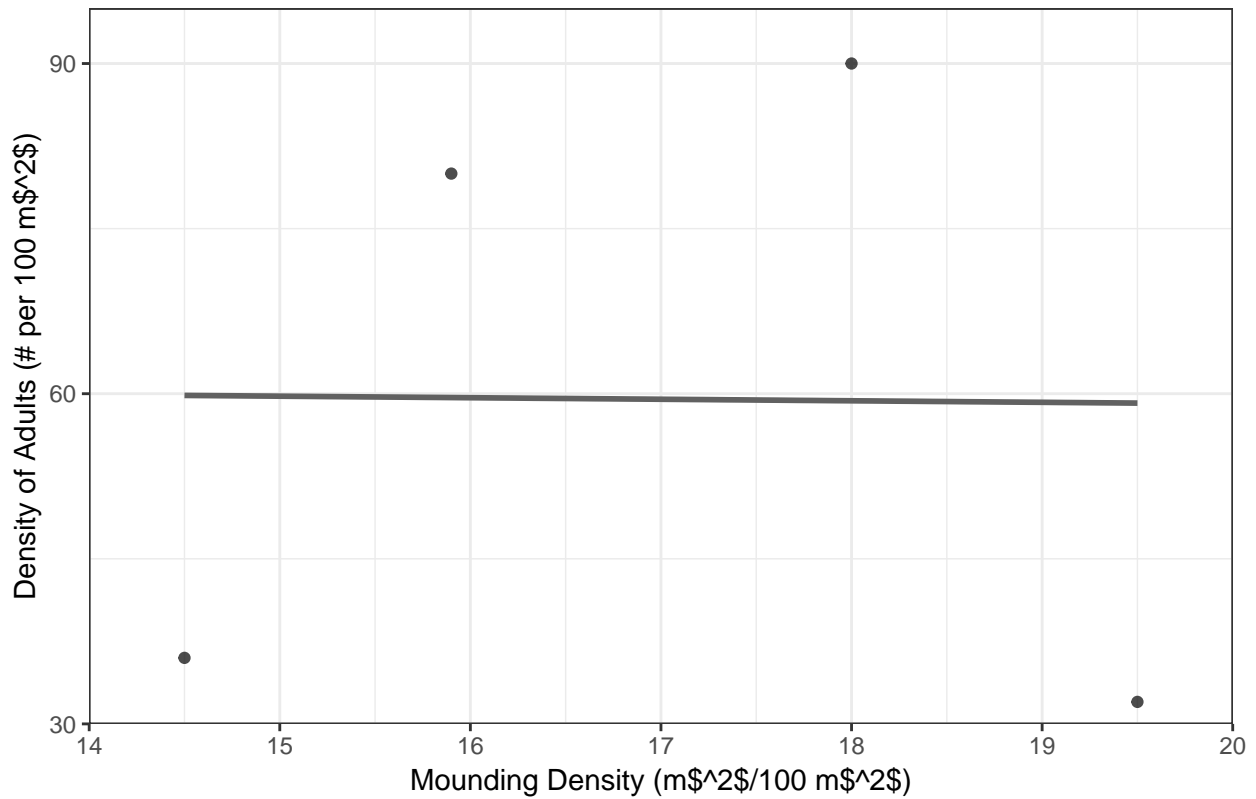


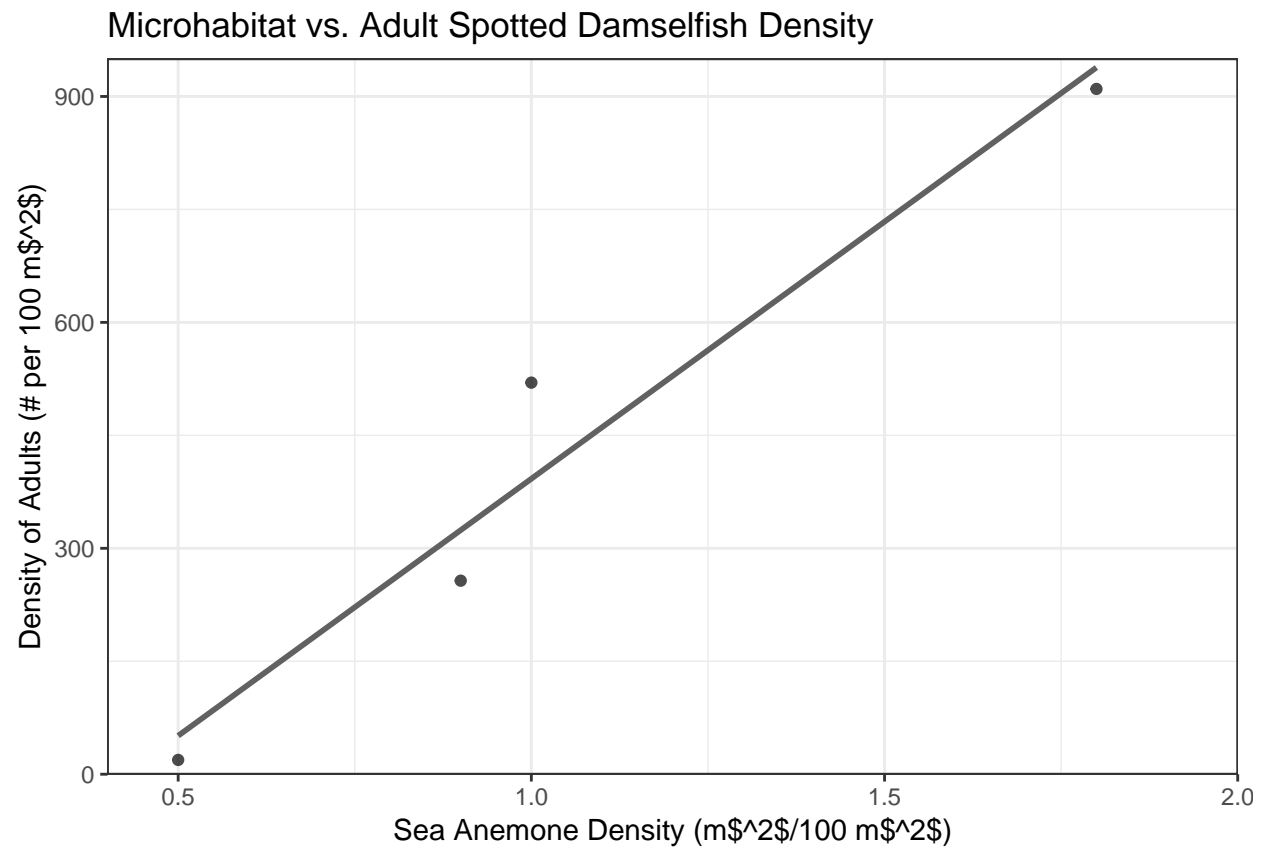
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Microhabitat vs. Adult Coral Trout Density



Microhabitat vs. Adult Yellow Damselfish Density

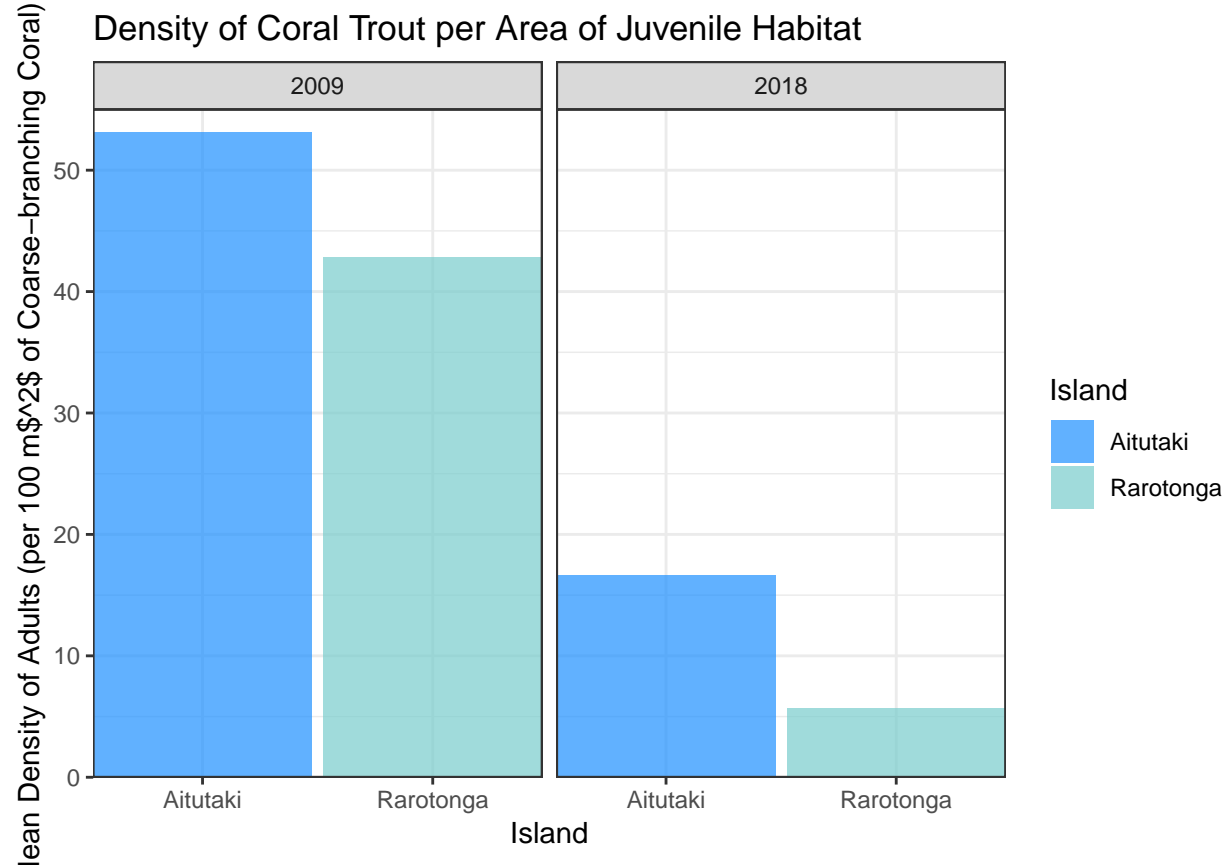
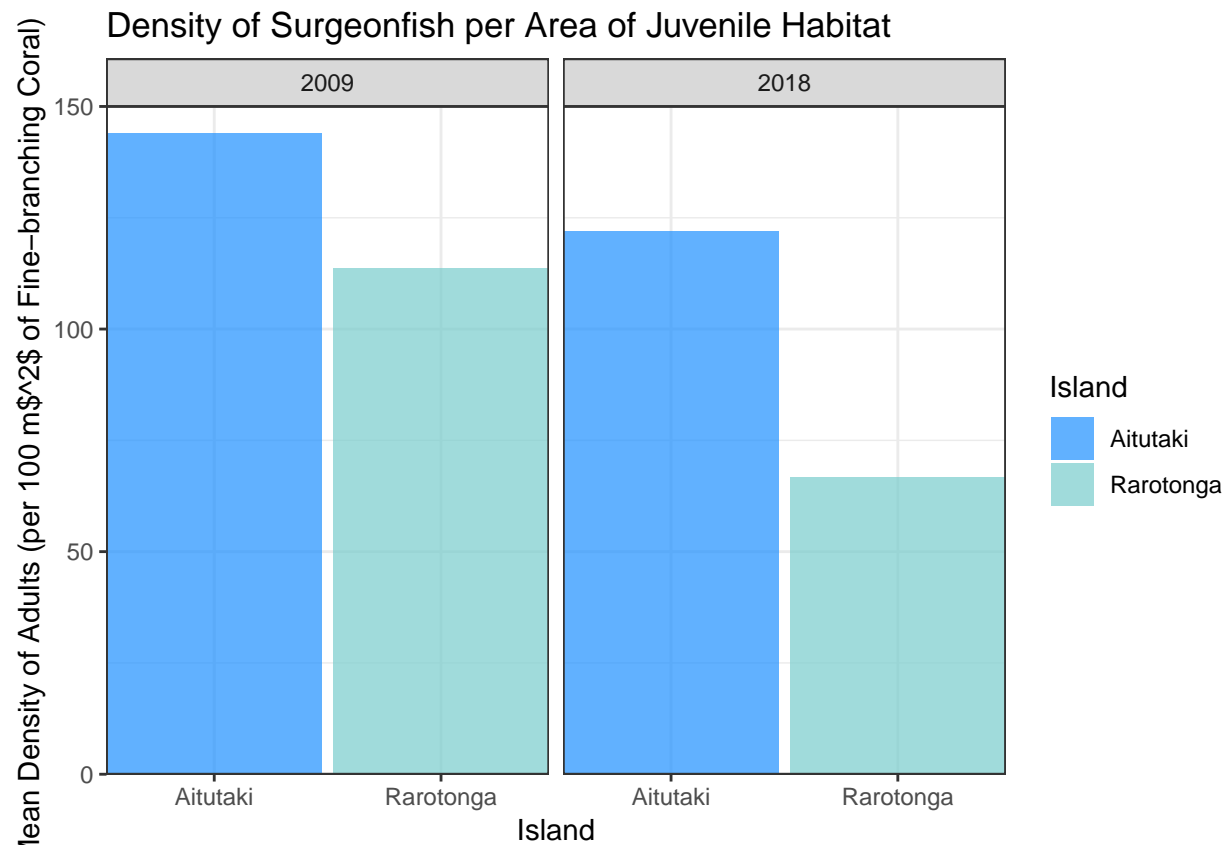


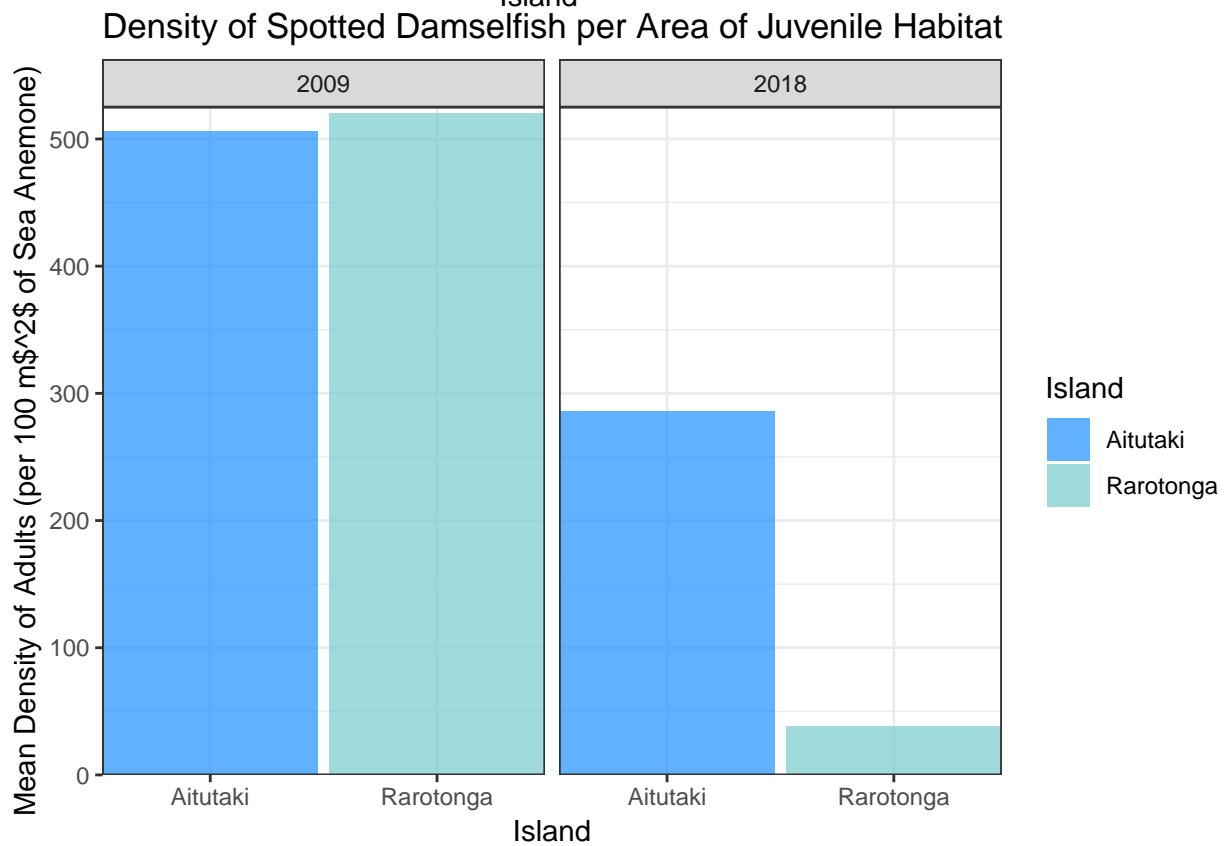
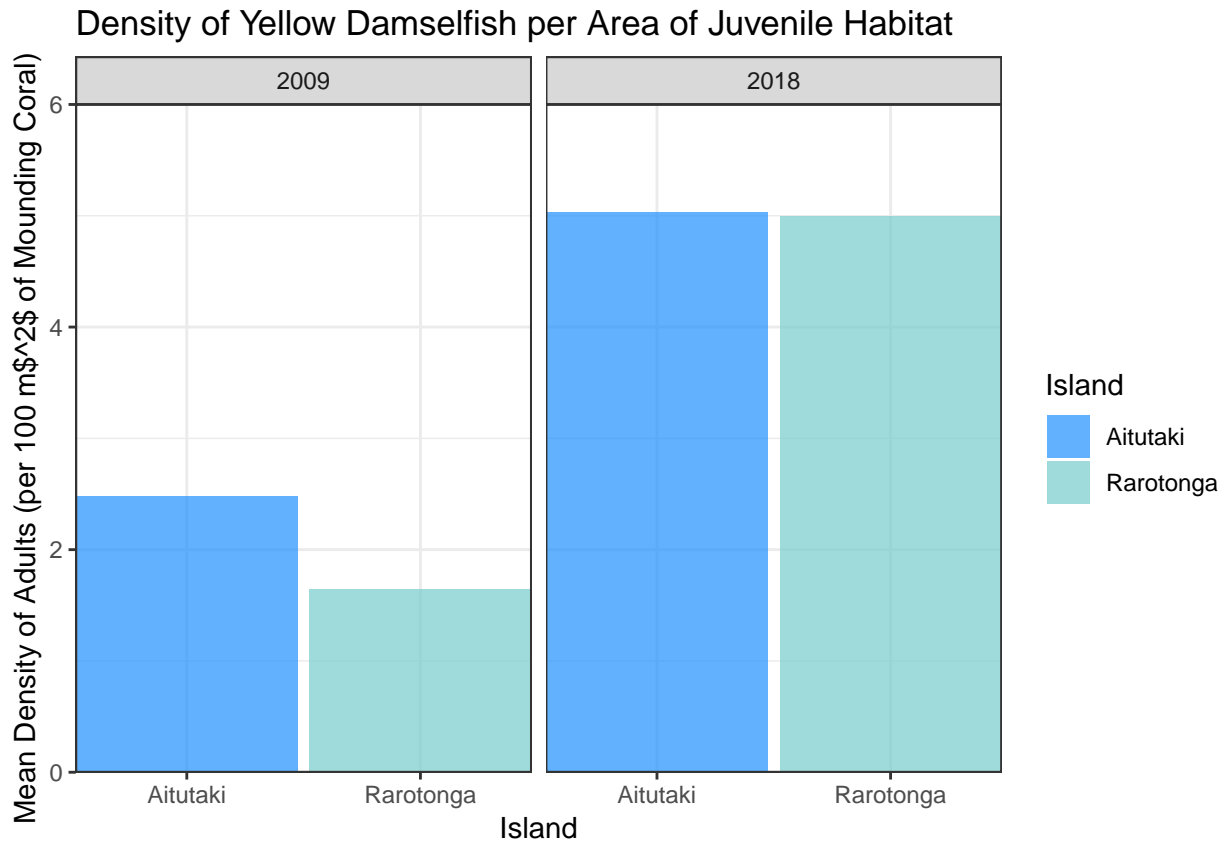


Question 5

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)

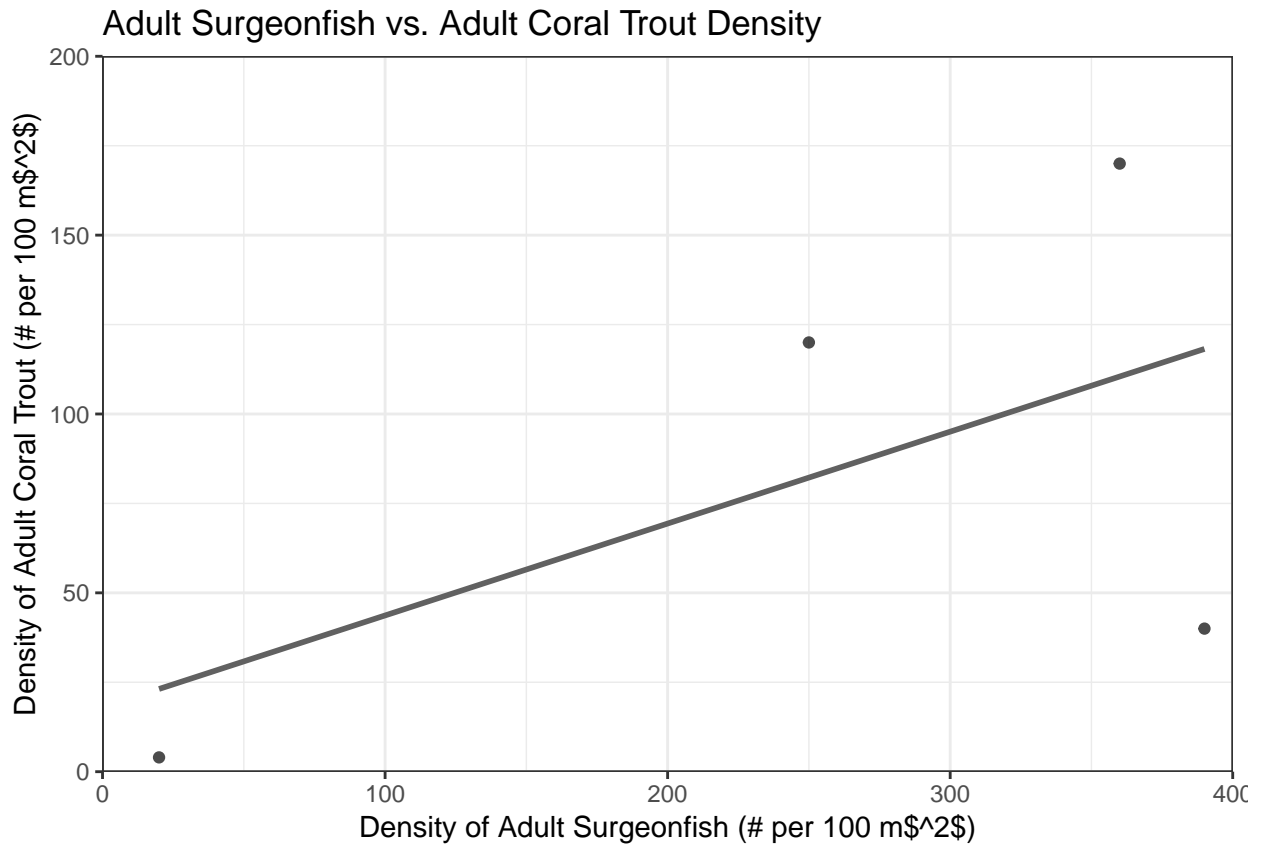




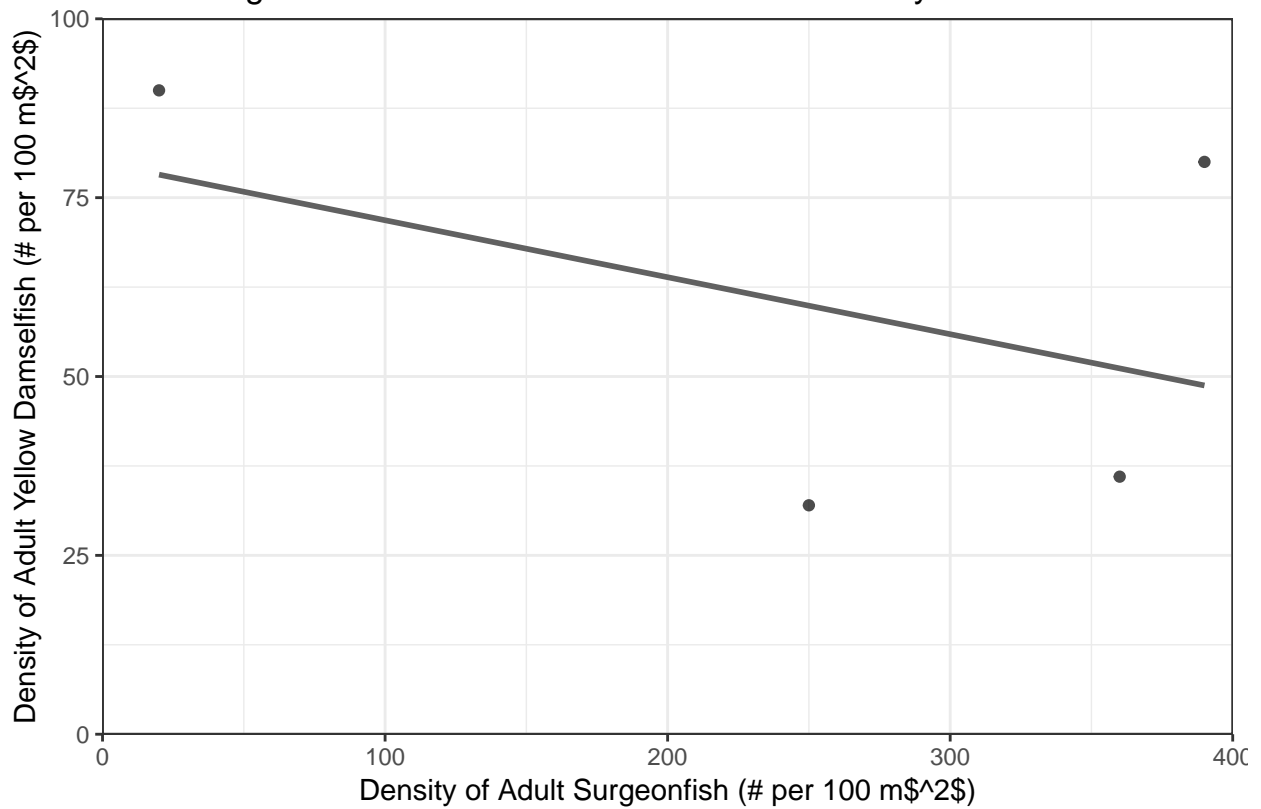
Question 6

Tasks:

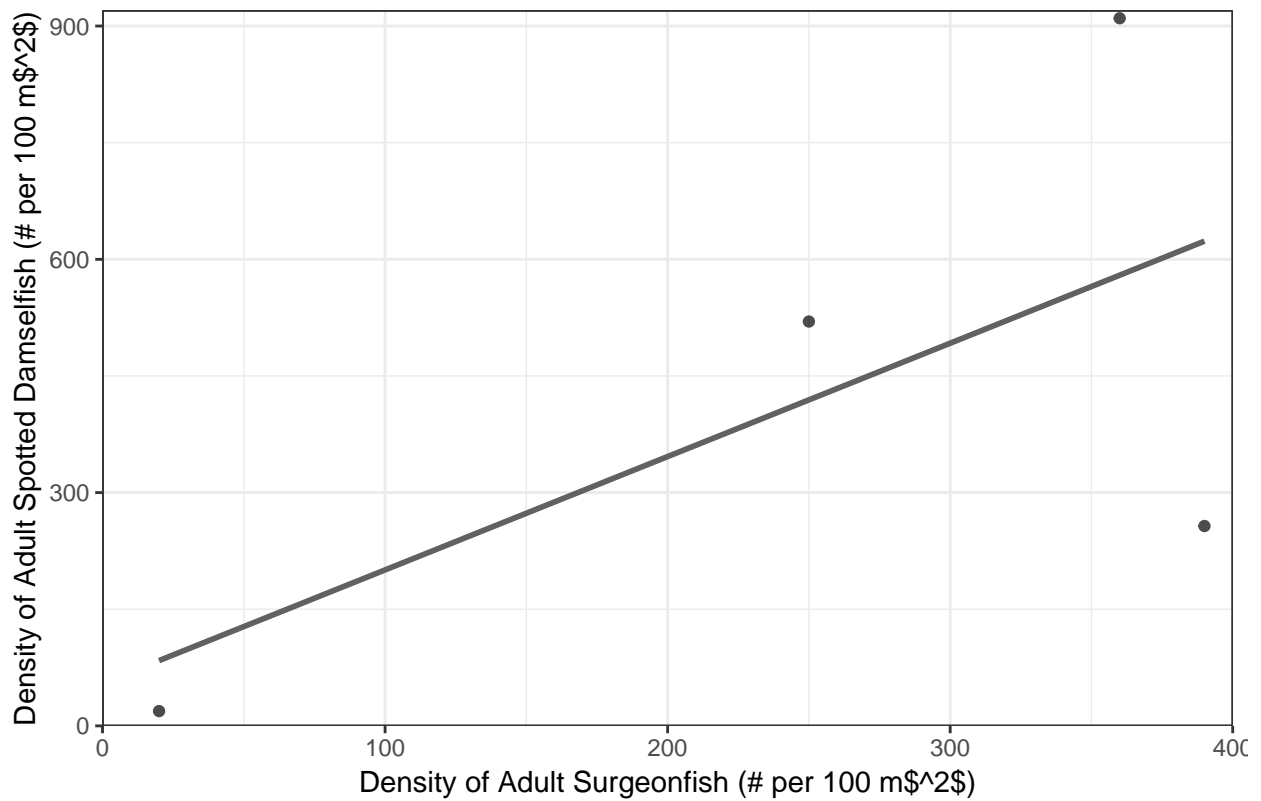
- Scatterplots (adult density) with trend line and r-squared value
- Surgeon vs. Coral Trout
- Surgeon vs. Yellow Damselfish
- Surgeon vs. Spotted Damselfish
- Coral Trout vs. Yellow Damselfish
- Coral Trout vs. Spotted Damselfish
- Yellow Damselfish vs. Spotted Damselfish



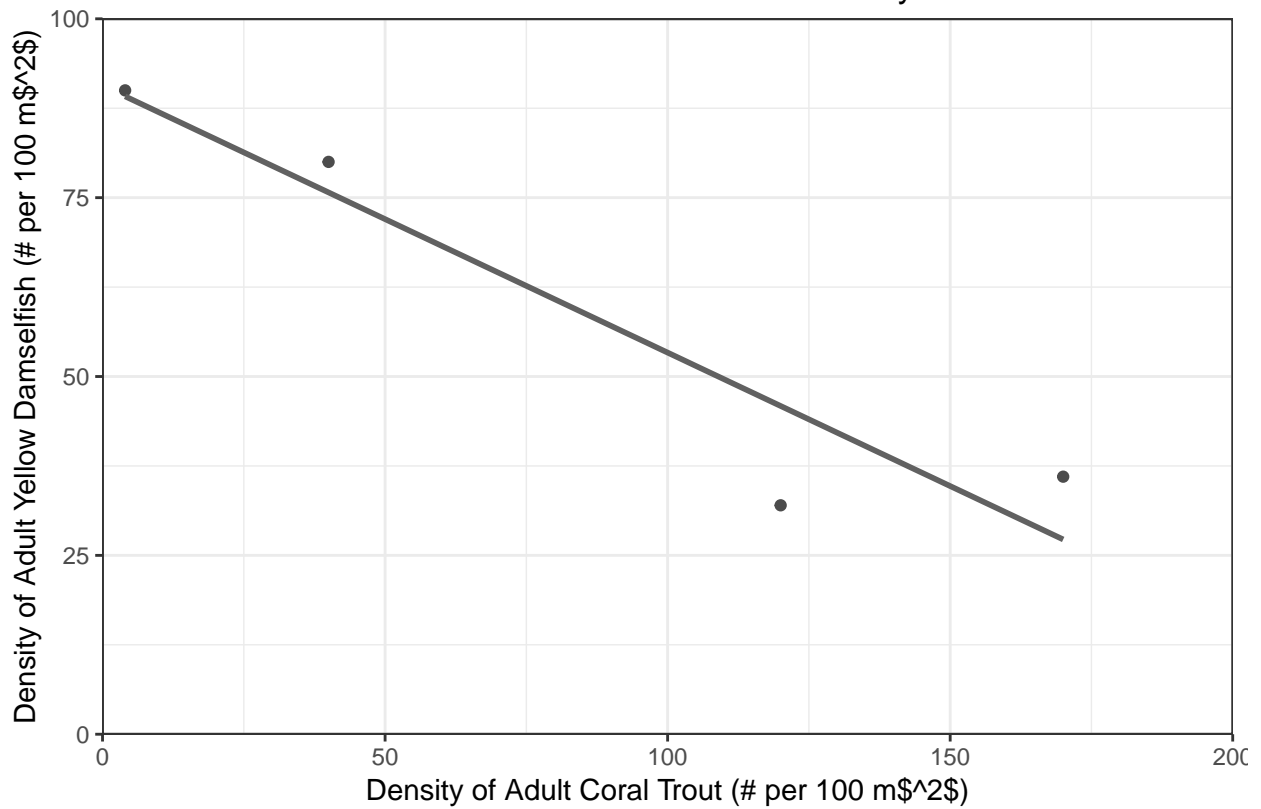
Adult Surgeonfish vs. Adult Yellow Damselfish Density



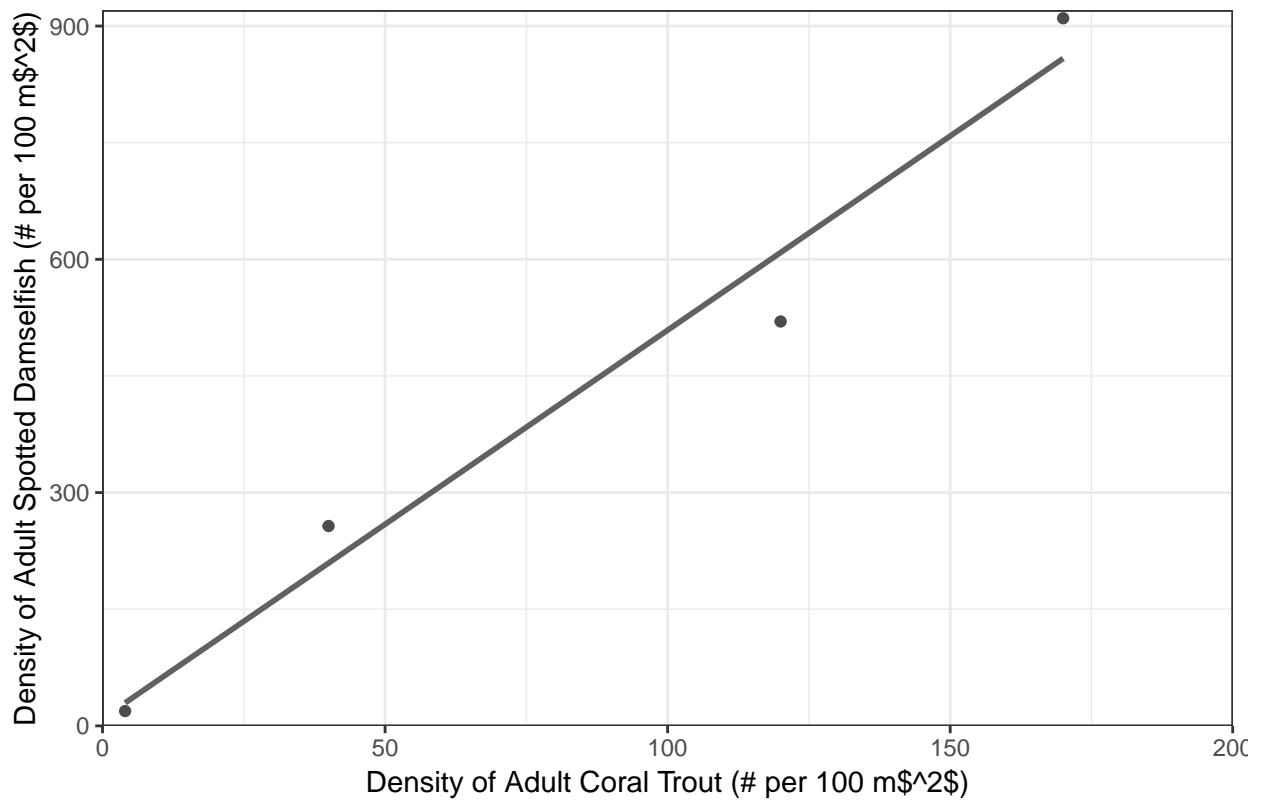
Adult Surgeonfish vs. Adult Spotted Damselfish Density



Adult Coral Trout vs. Adult Yellow Damsel Selfish Density



Adult Coral Trout vs. Adult Spotted Damsel Selfish Density



Adult Yellow Damselfish vs. Adult Spotted Damselfish Density

