

Exploring patterns of foraging by
Hawaii green sea turtles
on *Gracilaria salicornia* in
Kane`ohe Bay"

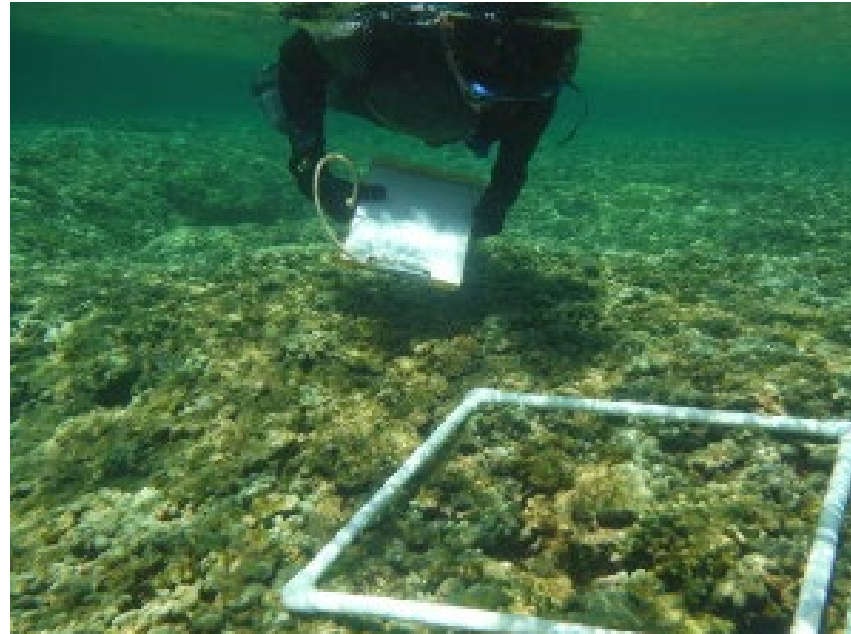
UHM BIOL 403 class of Summer 2019

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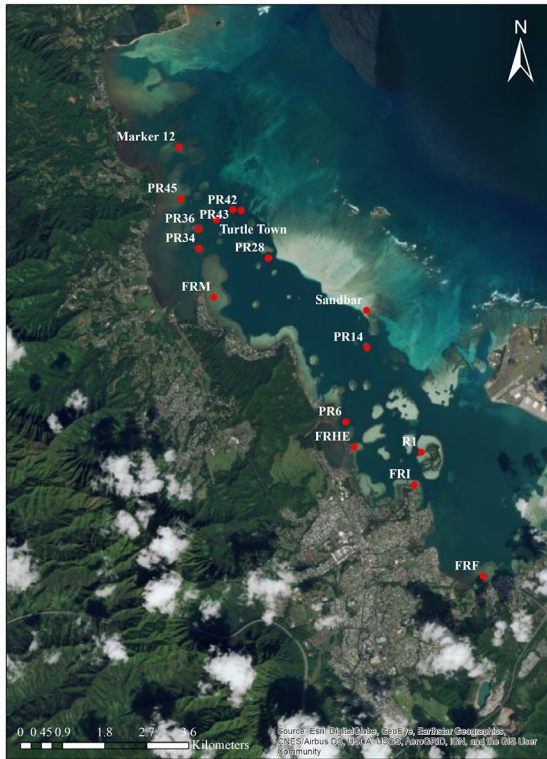
Field Problems in Marine Biology

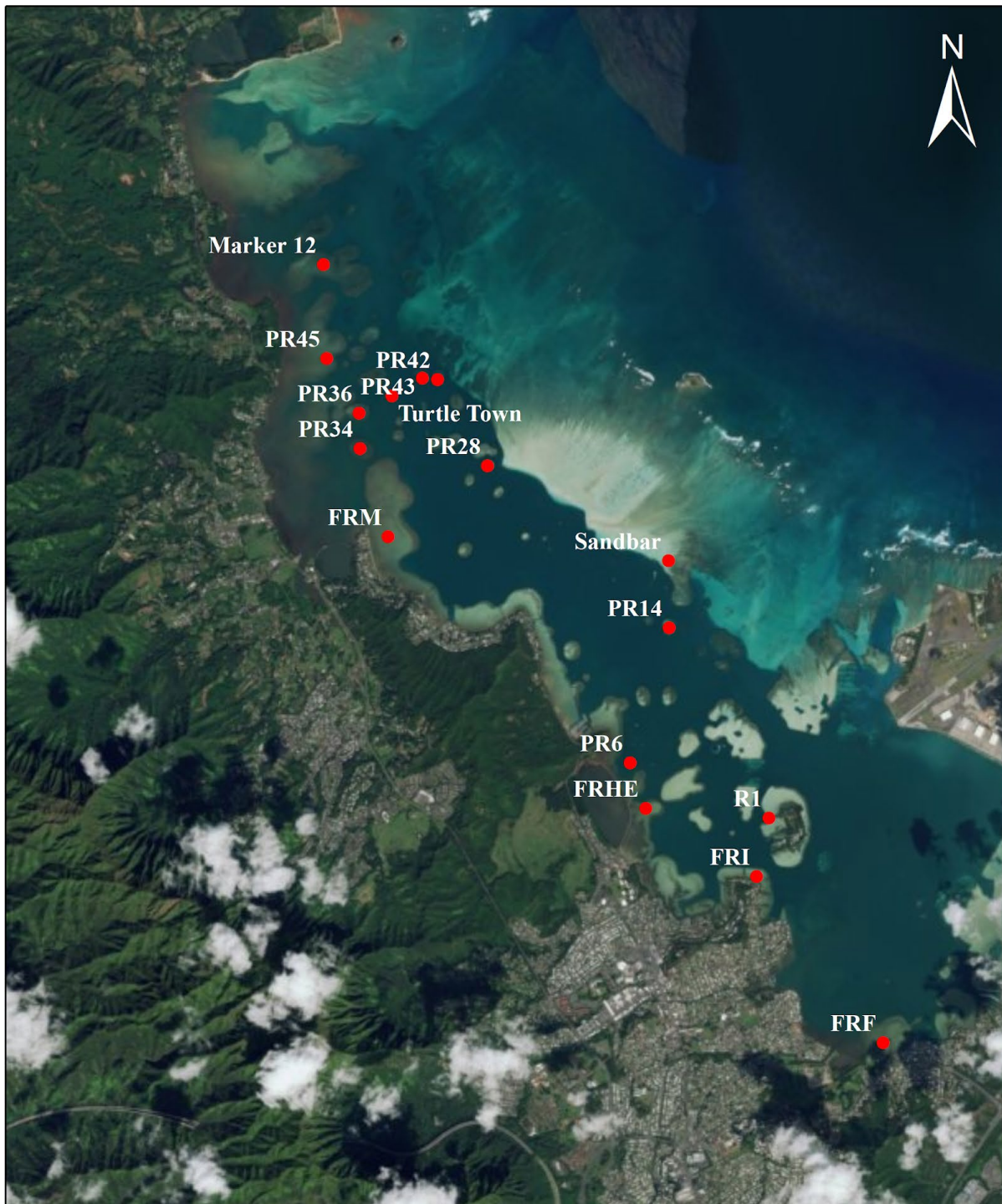
UHM BIOL 403, 4 cr



BIOL 403 2019 Research Goals

- Determine current distribution of *G. salicornia* in Kaneohe Bay
- Determine whether the abundance of *G. salicornia* and *C. mydas* were related
- Observe whether *C. mydas* were still eating the invasive alga

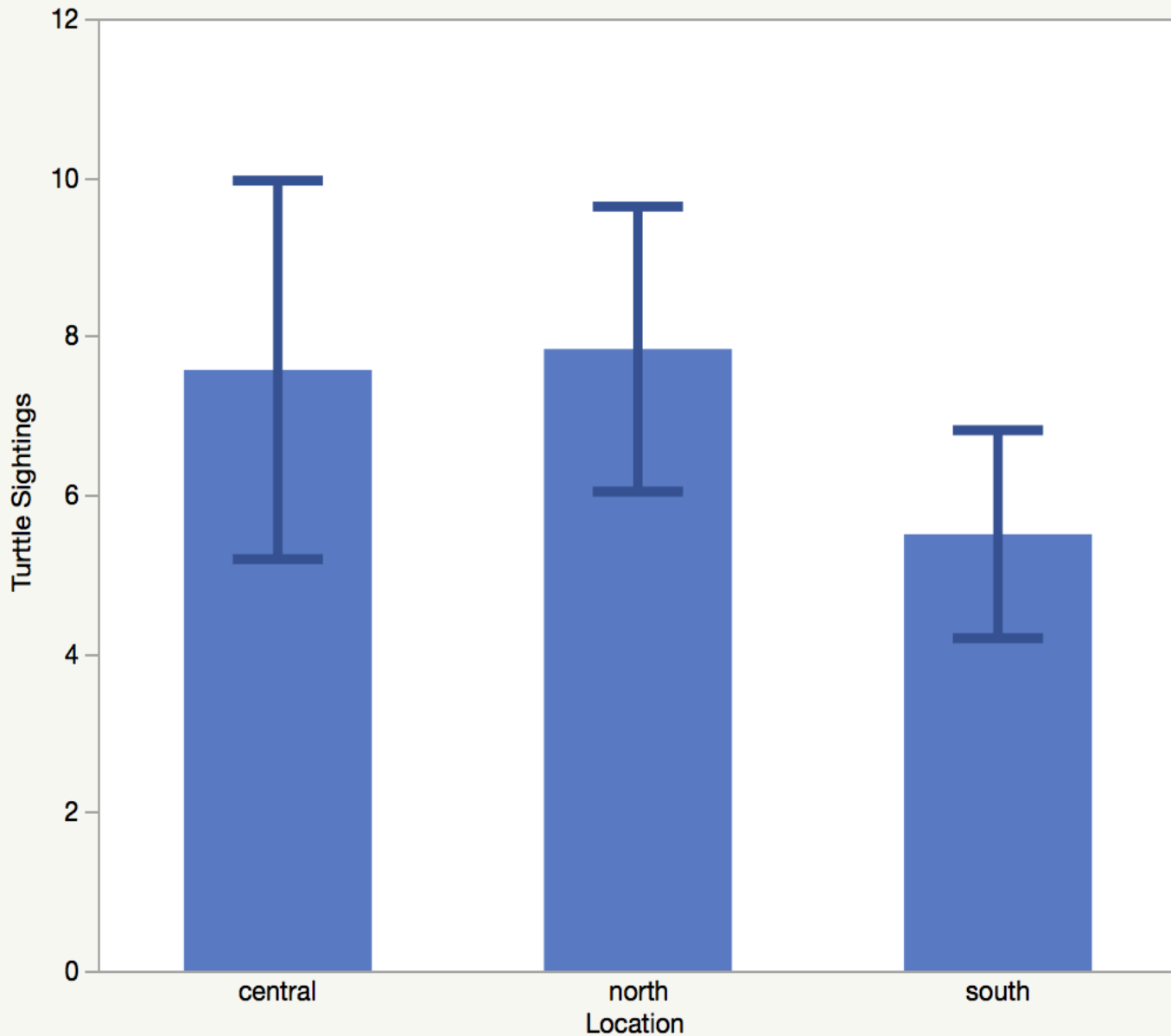




Sites of turtle and reef surveys in Kāneʻohe Bay conducted from May 15-June 4, 2019 [avoiding DAR treatment reefs, PR 26 & 27].



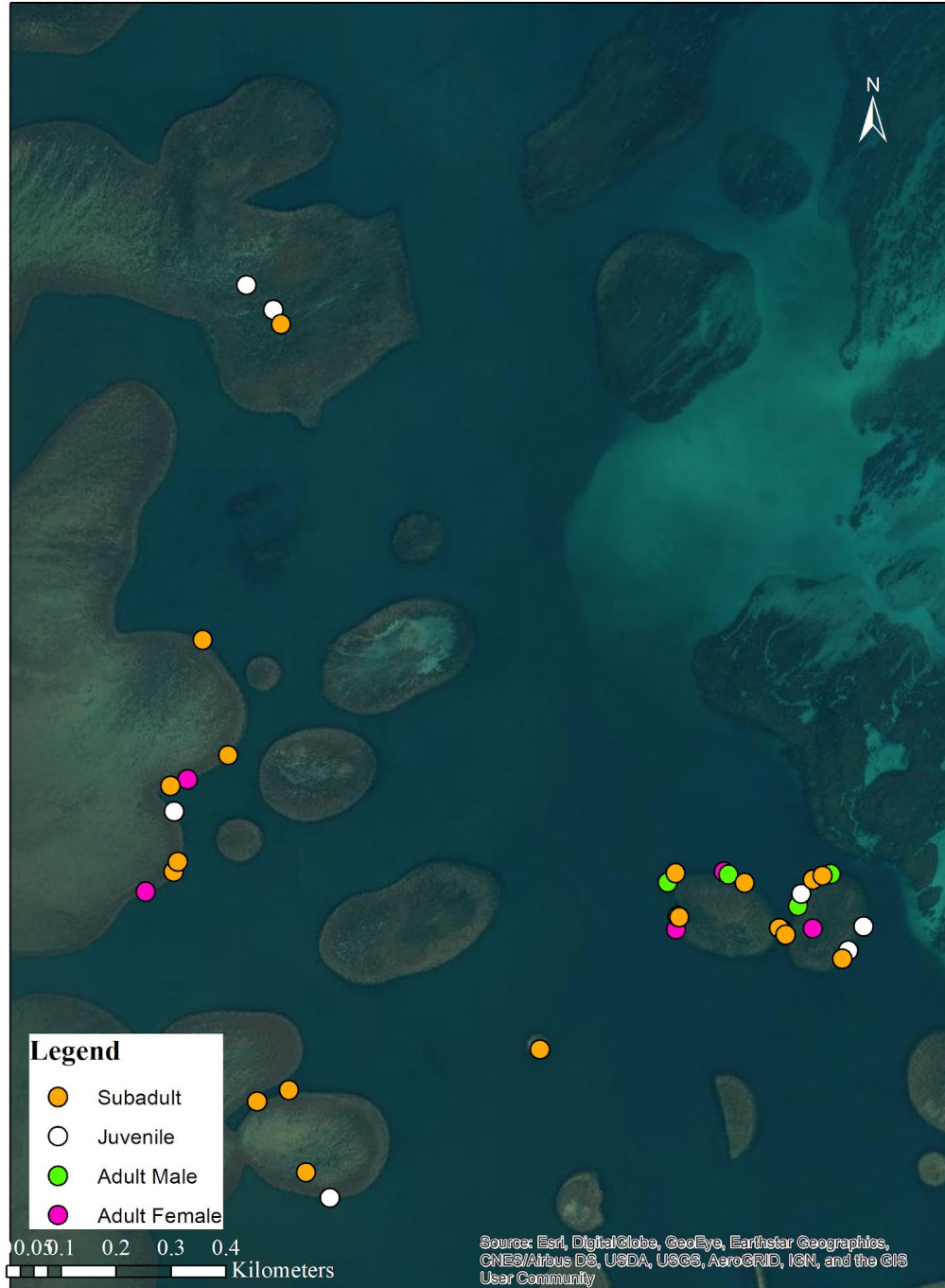
Average number of *Chelonia mydas* sightings over two survey days at each study reef.



Mean number of turtle sightings per site in each sector (North, Central, and South) for 16 reef locations in Kāneʻohe Bay, Oʻahu surveyed 5/25 to 6/01/2019.



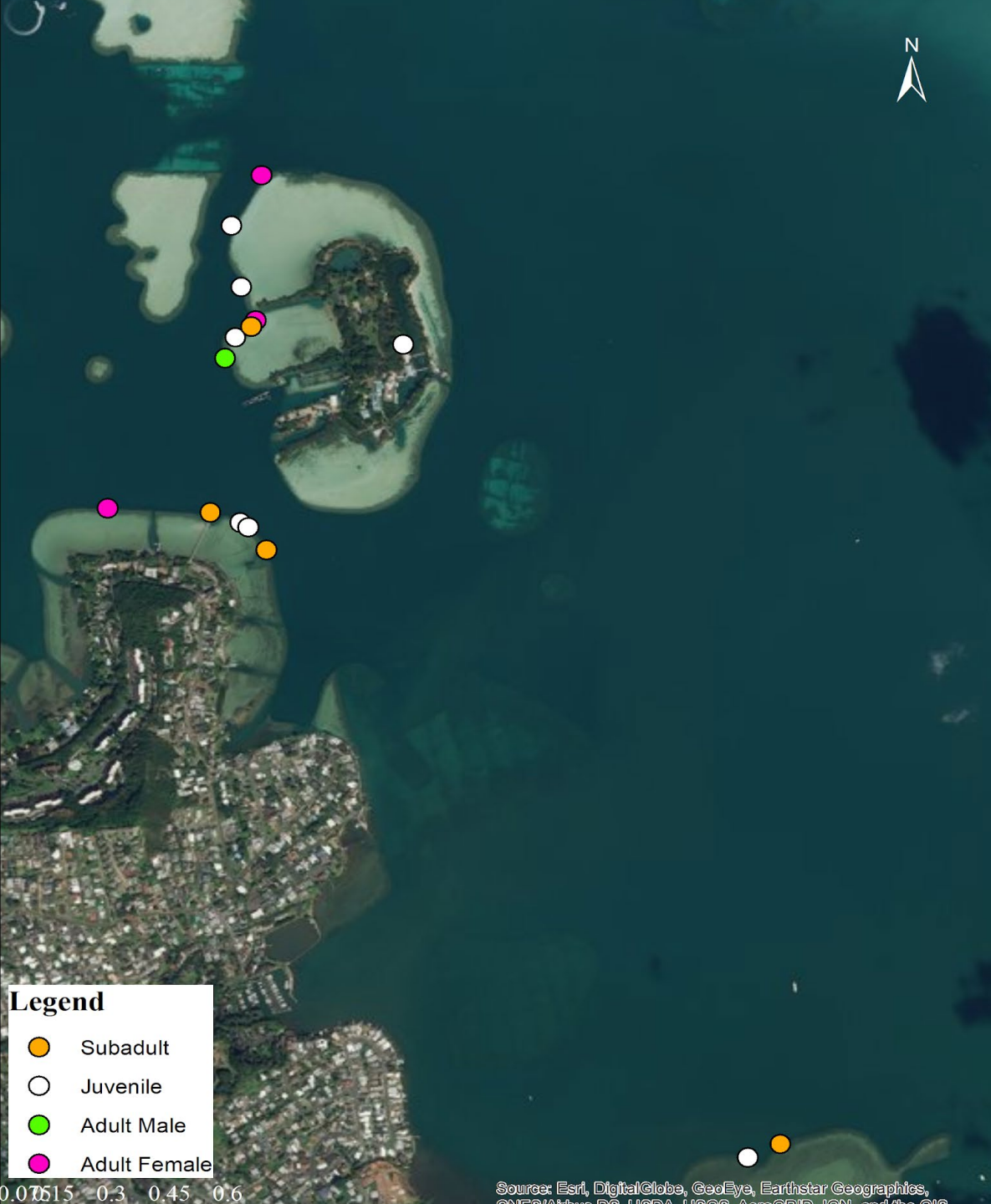
Distribution of age classes of *Chelonia mydas*, juvenile (white), subadult (orange), adult male (green), and adult female (pink) sighted around Kāneʻohe Bay, Oʻahu from May 25th to June 1st, 2019.



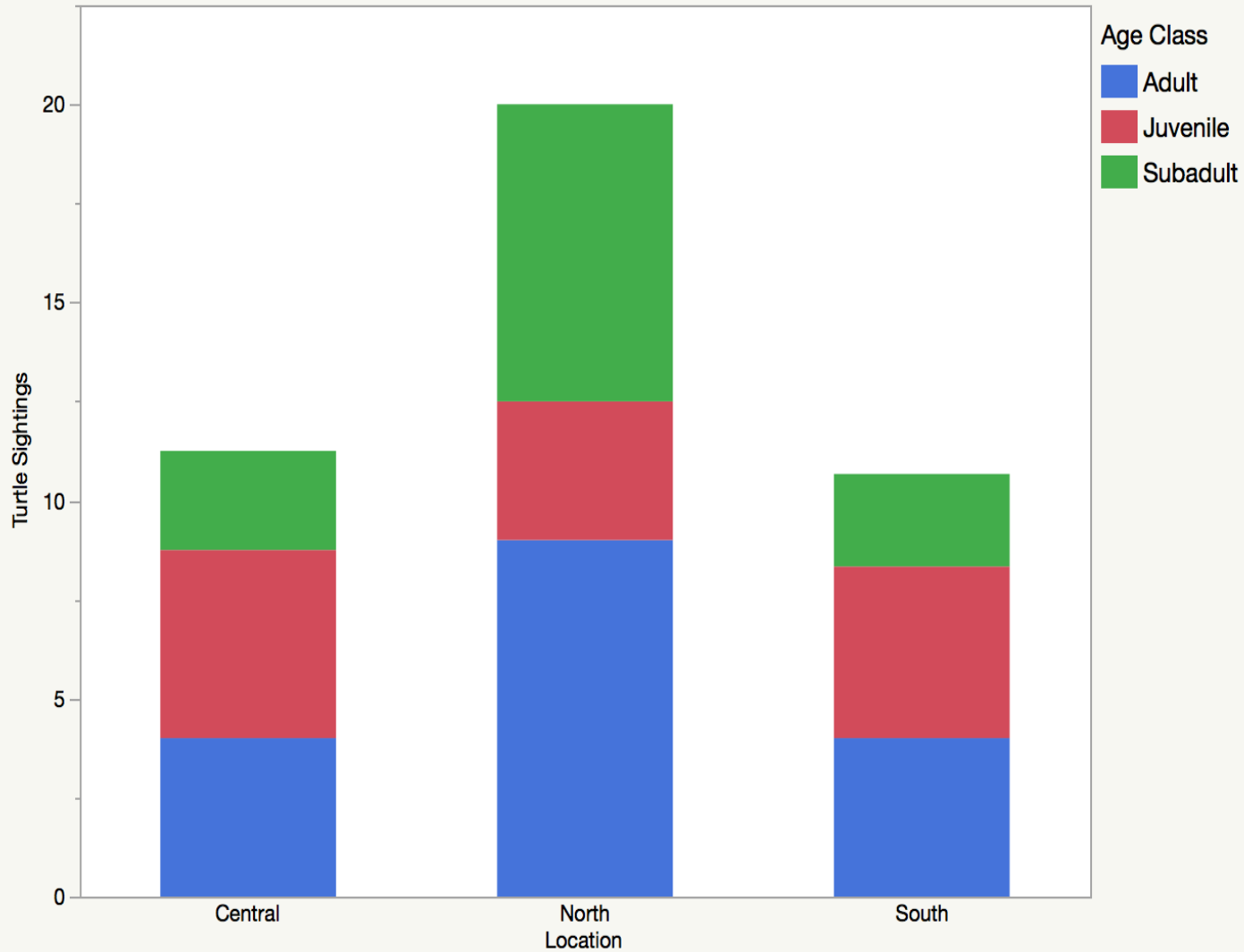
Chelonia mydas sightings separated by age class [Juvenile, Subadult, Adult Male, and Adult Female] for North Bay reefs throughout the study period (5/24-6/01).



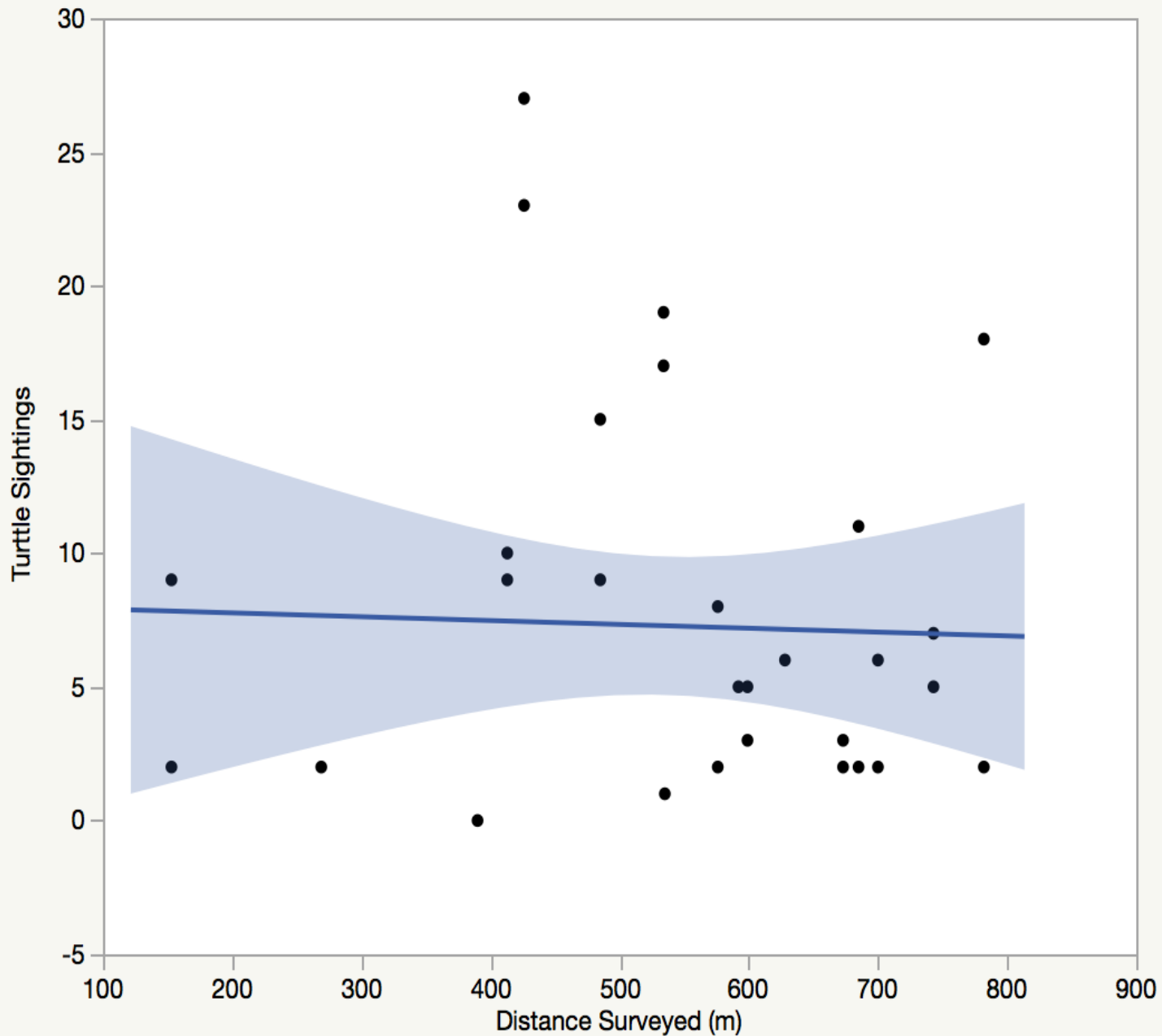
Chelonia mydas sightings separated by age class [Juvenile, Subadult, Adult Male, and Adult Female] for Central Bay reefs throughout the study period (5/24-6/01).



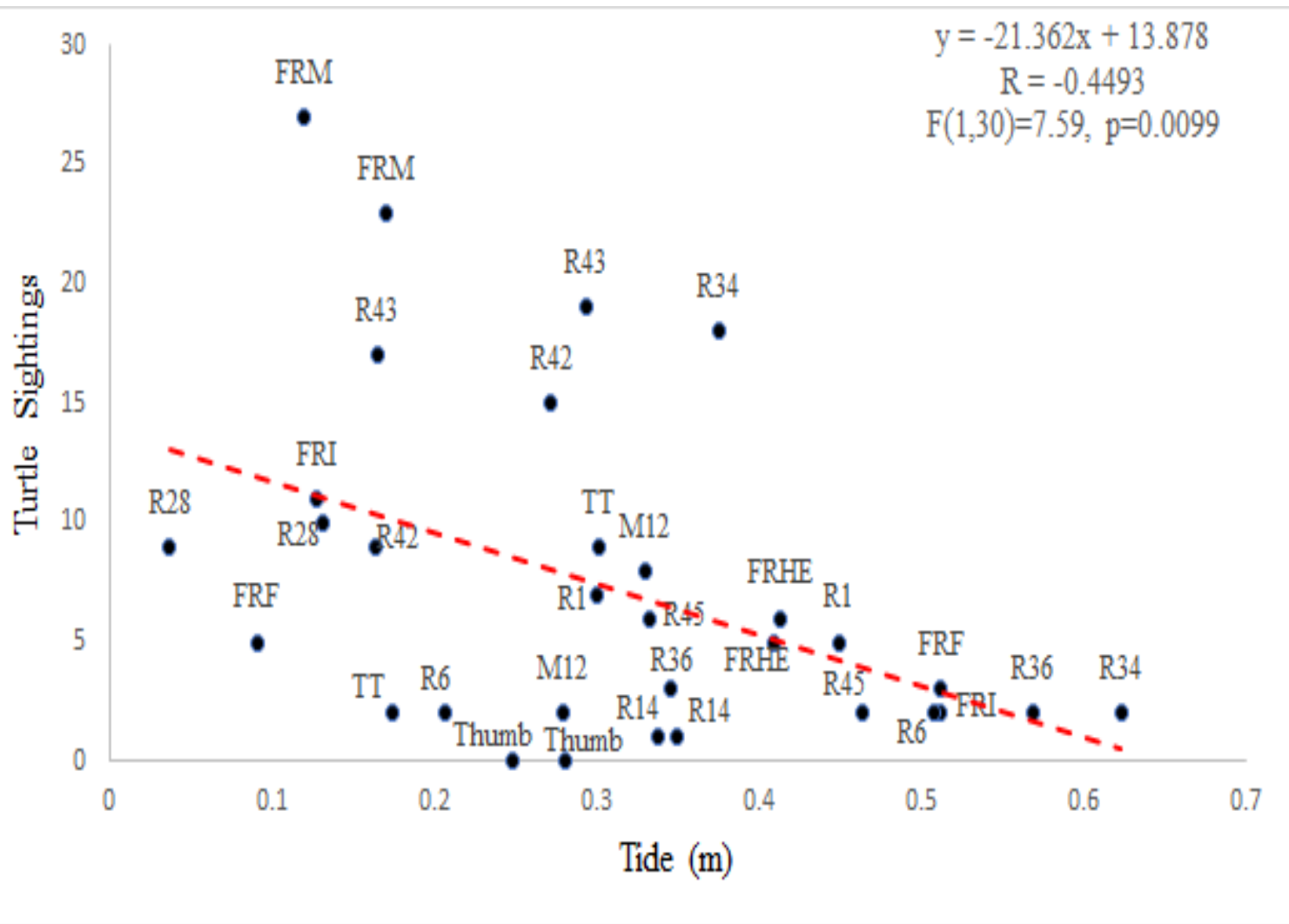
Chelonia mydas sightings separated by age class [Juvenile, Subadult, Adult Male, and Adult Female] for South Bay reefs throughout the study period (5/24-6/01).



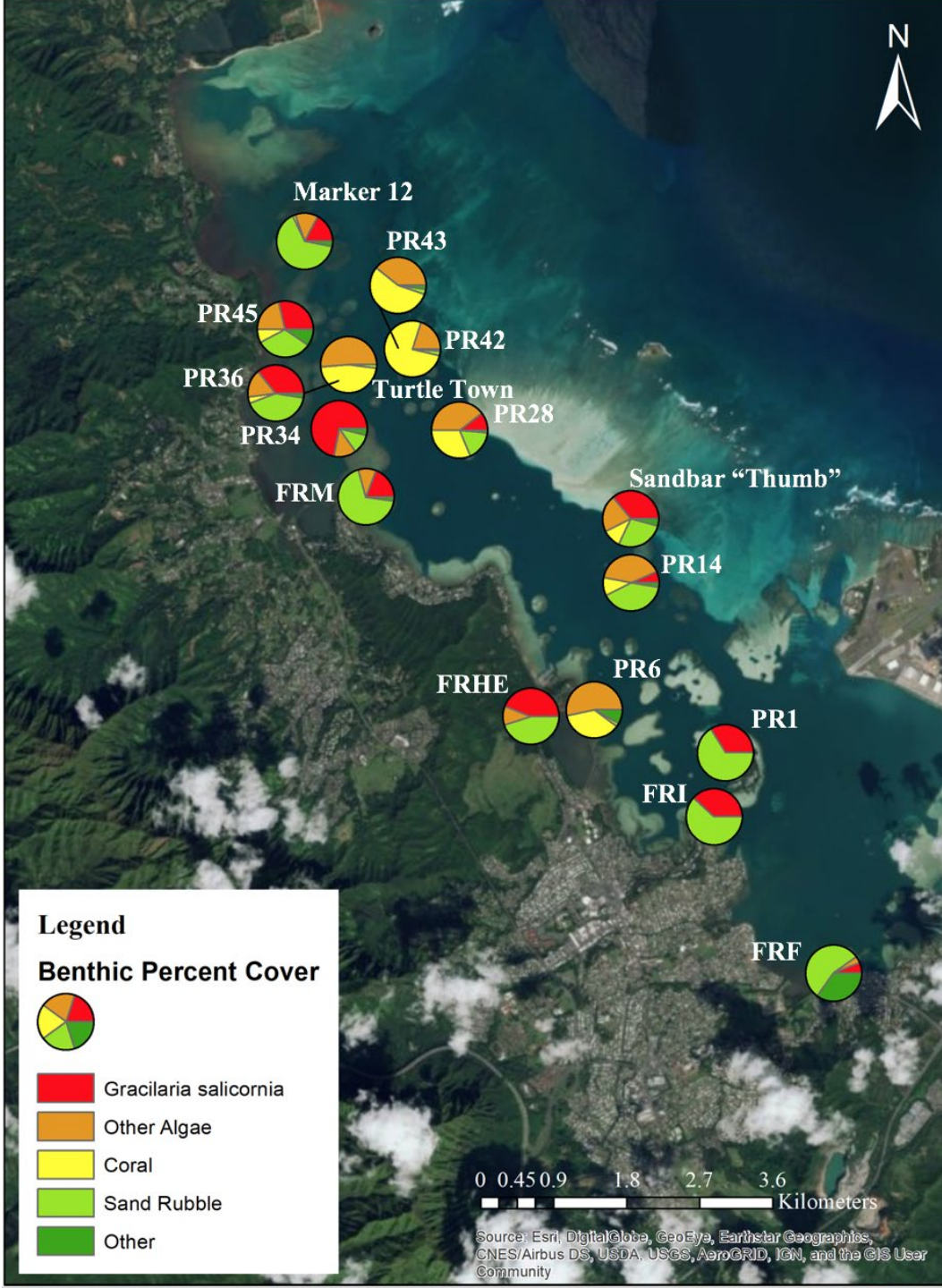
Number of turtles sightings by age class juvenile (< 40 cm, red), subadult (green), adult (> 80 cm, blue) in each bay sector (South, Central, North).



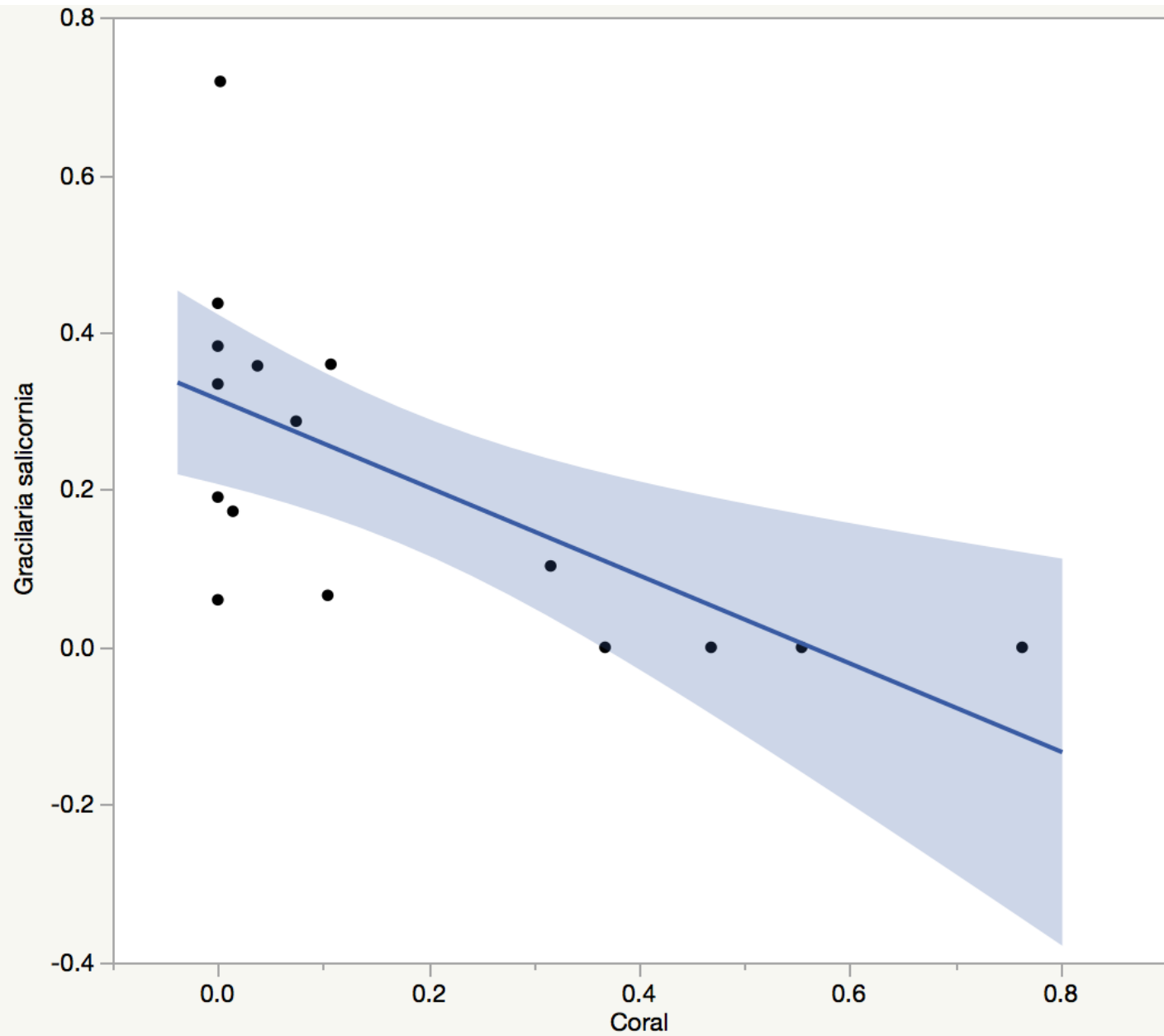
Relationship between turtle abundance and the distance surveyed (m) at 16 reef locations in Kāneʻohe Bay, Oʻahu.



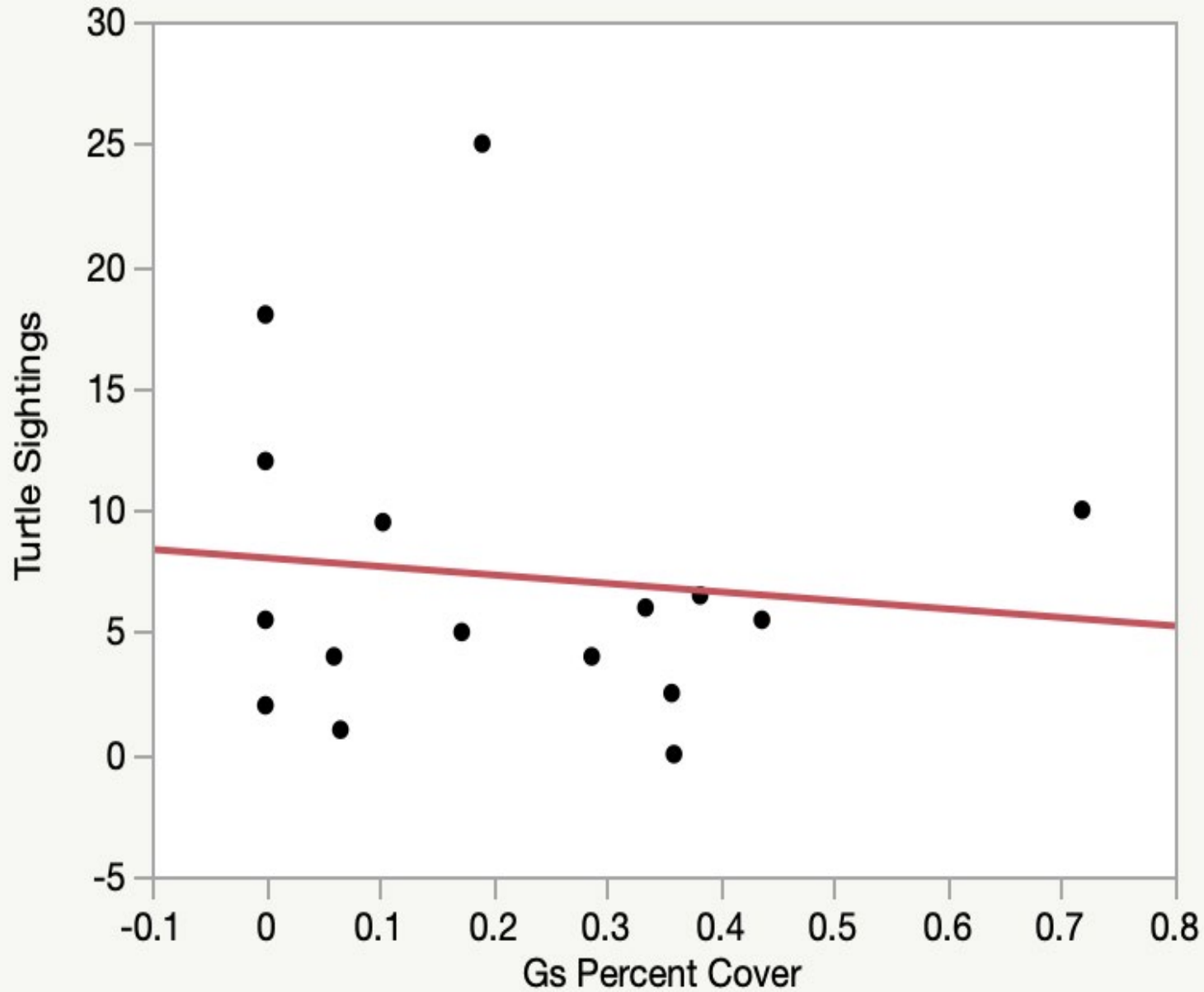
Correlation between *Chelonia mydas* sightings in response to tide height (m) in Kāneʻohe Bay.



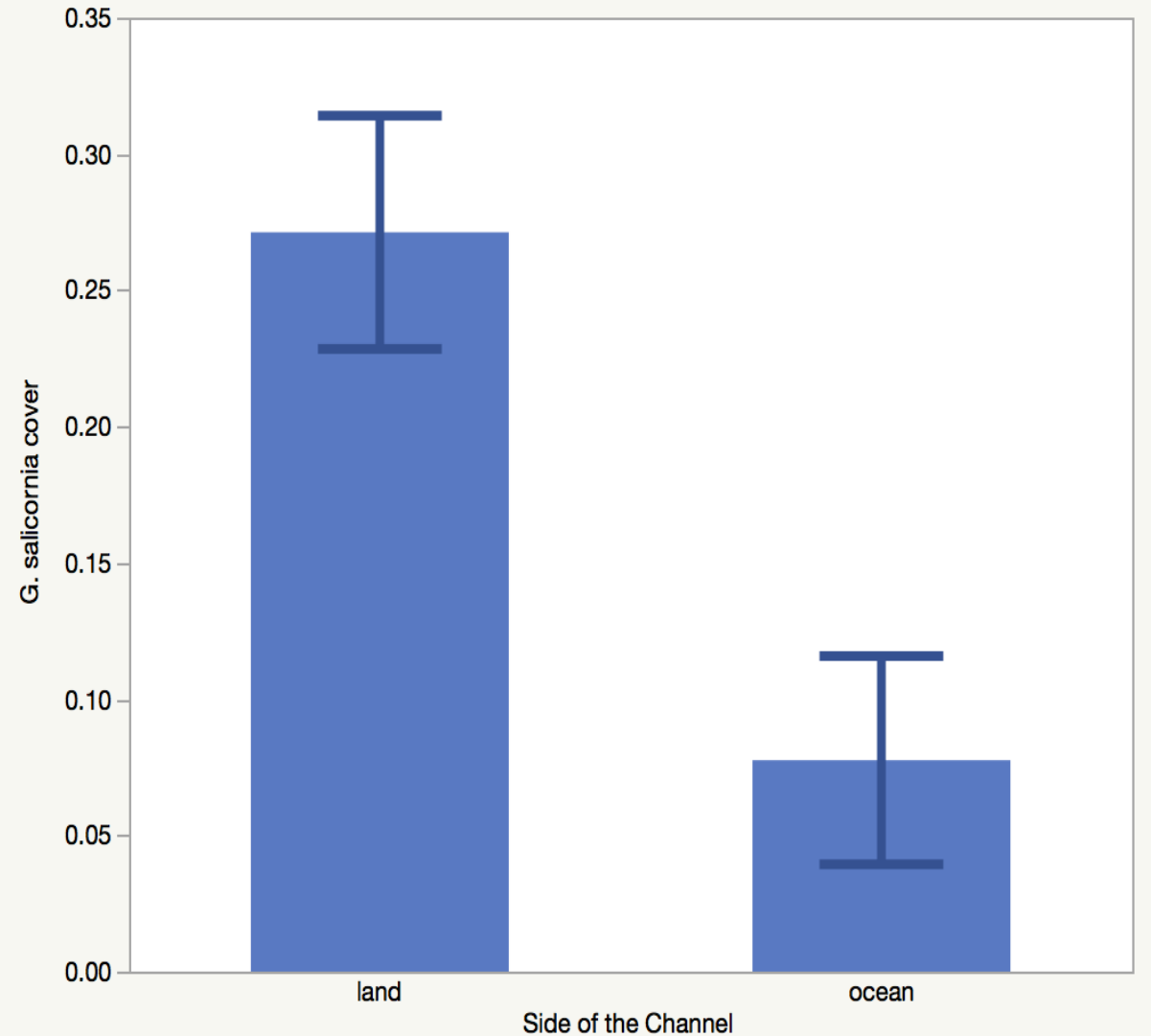
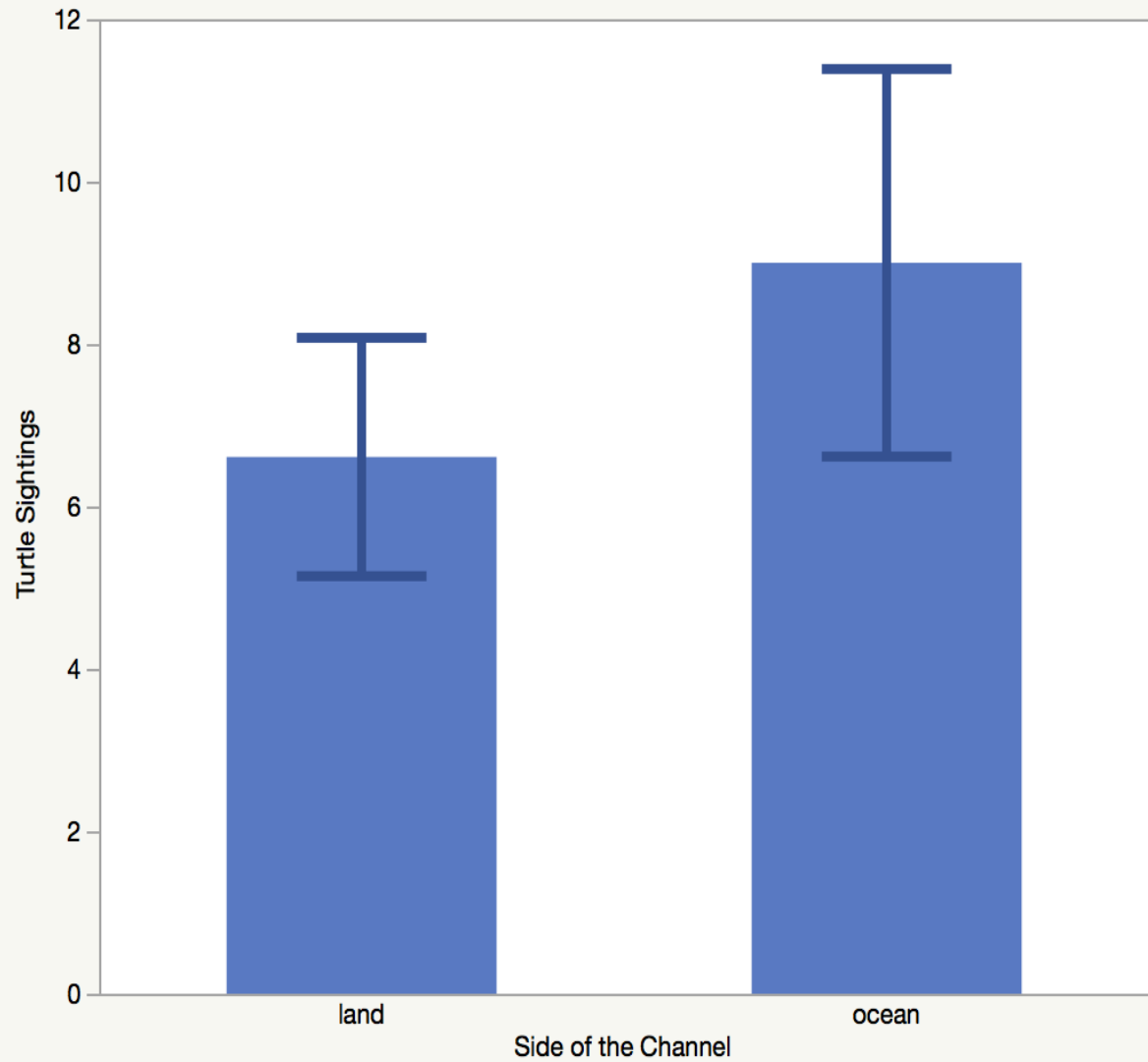
Benthic cover (%) in areas of highest density of *Gracilaria salicornia* at each survey site.



Relationship between mean percent cover of *G. salicornia* and all coral species across all survey sites.



Correlation between mean number of turtle sightings and *G. salicornia* abundance at sixteen reefs, each visited twice.



Distribution of mean turtle sightings [LEFT] and *Gracilaria salicornia* abundance [RIGHT] on the west (land) vs. the east (ocean) side of the main channel in Kāneʻohe Bay.

Results summary

- Determine current distribution of *G. salicornia* in Kaneohe Bay
 - *G. salicornia* generally higher on leeward fringing reefs
- Determine whether the abundance of *G. salicornia* and *C. mydas* were related
 - Turtles were generally higher in abundance where *G. salicornia* cover was low
- Observe whether *C. mydas* were still eating the invasive alga
 - Turtles were observed feeding on *G. salicornia* on FRM (mid-bay fringing reef) and PR 34 (north bay patch reef)



8-14 UHM students

2 TAs

3 Co-instructors

4 weeks =

Research potential!

