

Strength in Numbers

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Introduction

Sea turtles will migrate hundreds, sometime thousands, of miles from their feeding grounds to their nesting beach. Female sea turtles return to their natal beach to nest, this is the same beach where they hatched themselves. When ready to nest the female will emerge, after dark, onto the beach and create an egg cavity where she drops her clutch of eggs for incubation. Sea turtles have varying clutch sizes, the 5 presented in this poster are species that inhabit the Gulf of Mexico. Hawksbills, one of the smaller species, with a carapace length of 71-89 cm, can lay upwards of 200 eggs per nest. Whereas the largest species the Leatherback, with a 244 cm carapace length, can lay anywhere from 50-100 eggs per clutch. Additionally egg diameter varies among species; Hawksbills, Kemp's Ridley's, and Loggerheads average a diameter of 3.8 cm, Green sea turtles average a diameter of 4.5 cm, and Leatherbacks average a diameter of 5.3 cm. Species, carapace length, and age of the female are thought to play a role in clutch sizes. Scientists believe there is a positive correlation between carapace length and clutch size. **In this study**, I examined clutch sizes of 5 different species of sea turtles to determine if species type factors into how many eggs a female will have in a single clutch. Based on research done, the smaller species should have larger clutch sizes than the larger species.

Methods

Clutch sizes of 5 sea turtle species was obtained by watching 4 videos and recording the total number of eggs per clutch, for each species, resulting in 20 videos total. Curved carapace length was obtained through a scholarly journal article. With the data collected, a graph was constructed showing the average clutch size for each species, and clutch size versus carapace length.



Hawksbill		Kemp's Ridley		Green		Loggerhead		Leatherback	
123	79 cm	100	62 cm	110	99 cm	123	118 cm	78	147 cm
206	85 cm	105	68 cm	115	100 cm	113	112 cm	94	163 cm
161	73 cm	83	57 cm	128	105 cm	94	100 cm	70	140 cm
137	68 cm	91	60 cm	90	80 cm	101	103 cm	87	150 cm

Figure 1: Clutch size (left) and curved carapace length (cm) (right) of 5 different species of sea turtle found in the Gulf of Mexico.

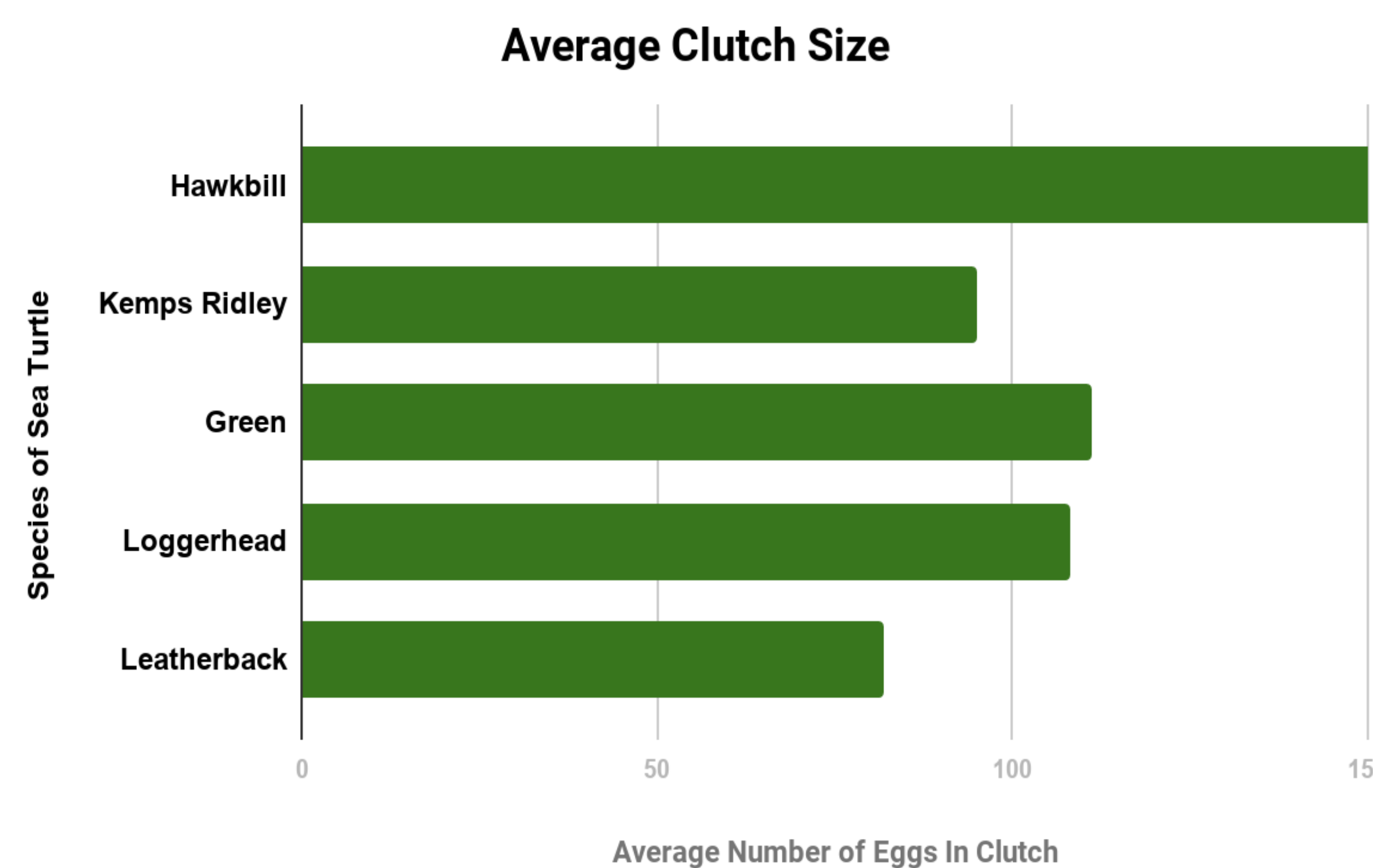
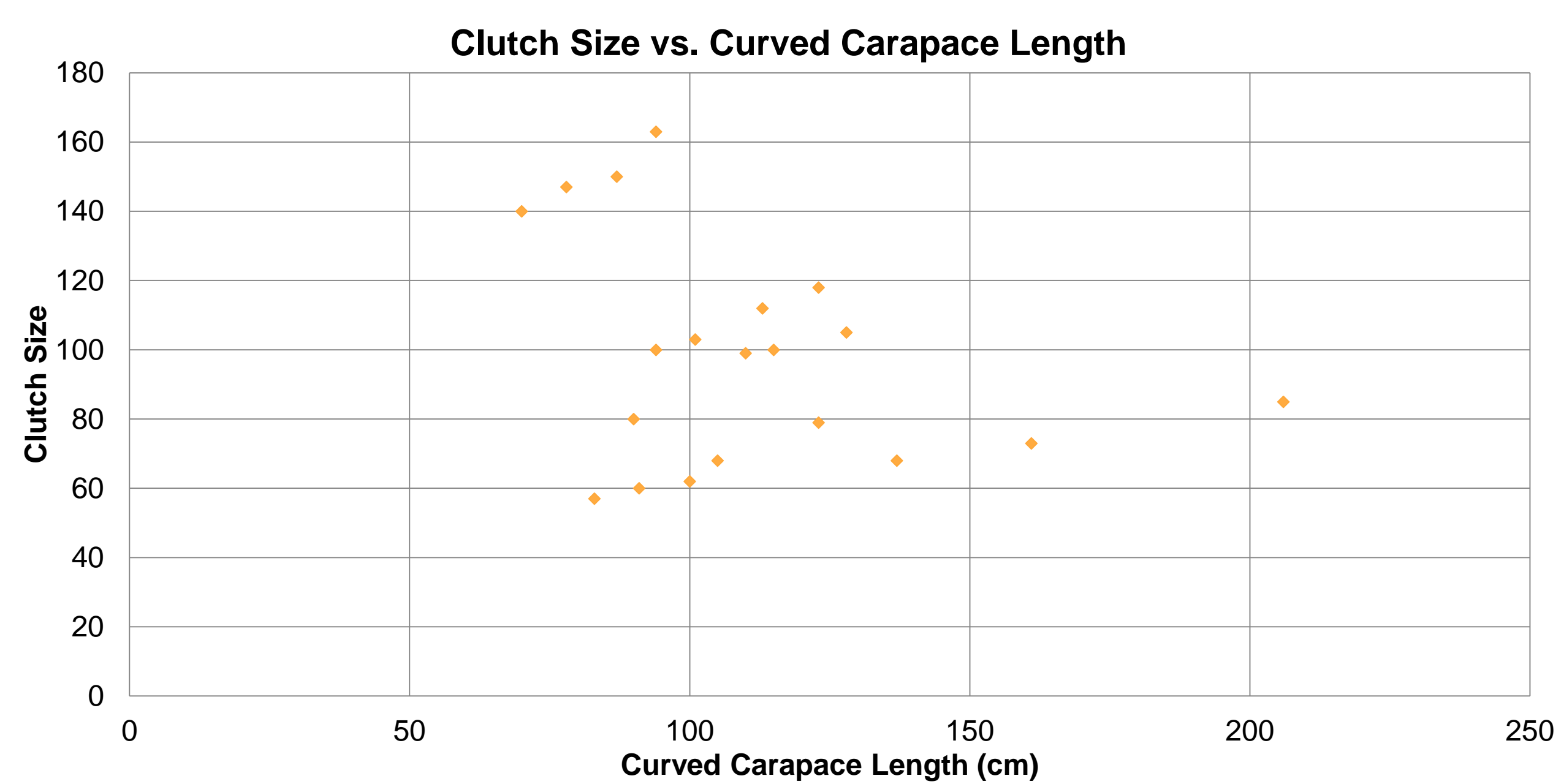


Figure 2: Average clutch sizes of 5 different species of female sea turtles found in the Gulf of Mexico.



Results

This study shows a correlation between species and clutch size. The smaller species on average had larger clutch sizes than the larger species. The species observed to have the smallest average clutch size was the Leatherback, and the species observed to have the largest clutch size was the Hawksbill.

Conclusion

In this study, Hawksbills continuously had the largest clutch sizes, even compared to Kemp's Ridelys and Loggerhead Sea Turtles whose egg diameter is identical. Green and Loggerhead Sea Turtles had comparable clutch sizes throughout the study and had similar averages when compared side by side. Green sea turtles are predominantly larger than Loggerheads, but generally have a larger egg diameter, roughly 4.5 cm. Loggerheads are typically smaller than Greens, and have a smaller egg diameter, roughly 3.8 cm, resulting in these two species having comparable clutch sizes. Leatherbacks are the largest species of sea turtle with carapace lengths up to 6 feet, but they have the largest egg diameter, roughly 5.3 cm, resulting in the smallest clutch sizes of all the species. **In conclusion**, there is a positive correlation between egg size, species and average clutch size. Further studies have been documented confirming the correlation between species and relative clutch size, in varying species around the globe.

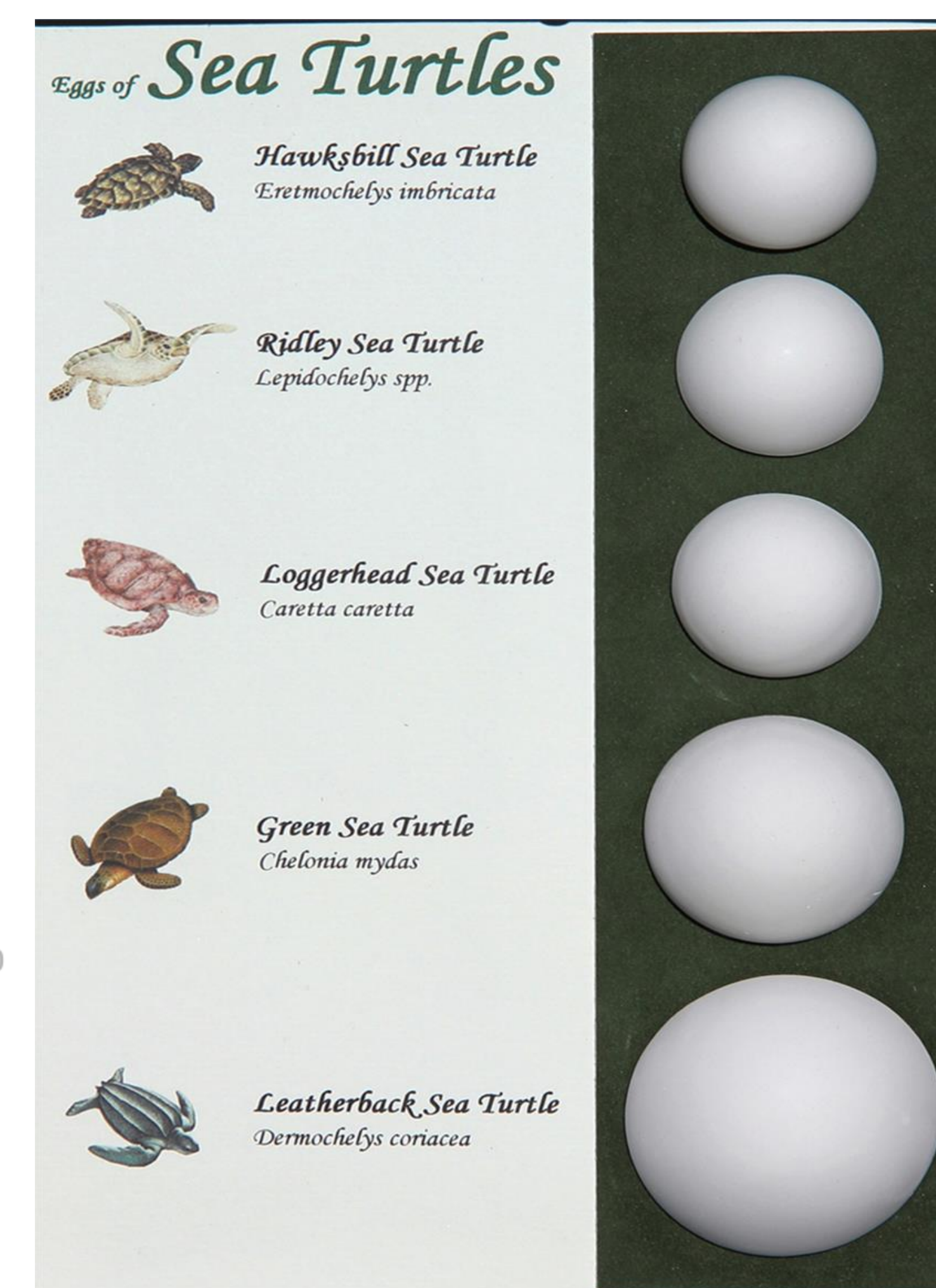


Figure 3: Eggs of different sea turtle species found in the Gulf of Mexico, side by side, comparing relative egg size.



Kemp's Ridley, Loggerhead, Hawksbill, Green, Leatherback

Figure 4: Graph representing the curved carapace length of female sea turtles and their relative clutch size. Demonstrates how carapace length influences clutch size in different species.

References

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