

[http://photos1.blogger.com/blogger/7439/426/1600/florida\\_manatee.jpg](http://photos1.blogger.com/blogger/7439/426/1600/florida_manatee.jpg)

West Indian manatees are large, gray aquatic mammals with bodies that taper to a flat, paddle-shaped tail. The West Indian manatee is related to the West African manatee, the Amazonian manatee, the dugong, and to the Steller's sea cow, which was hunted to extinction in 1768. The average adult manatee is about three meters (9.8 feet) long and weighs between 362-544 kilograms (800-1,200 pounds). ... West Indian manatees have no natural enemies, and it is believed they can live 60 years or more. Many manatee mortalities are human-related. Most human-related manatee mortalities occur from collisions with watercraft. ...

<http://www.savethemanatee.org/manfacts.htm>

Q. What are the different types of speedboats that are dangerous to the manatees?

A. All types of boats that are going too fast are dangerous to manatees. On average, most manatees only travel about three to eight kilometers (three to five miles) per hour, so any boat that is traveling faster than 24-32 kilometers (15-20 miles) per hour is capable of injuring or killing a manatee.

<http://www.savethemanatee.org/faqmortality.htm>

Manatees are large sea creatures that live in the shallow waters along the coast of Florida. Many manatees are injured or killed each year by powerboats. The table below gives data on manatees killed and powerboat registrations (in thousands of boats) in Florida for the n=14 year period 1977 to 1990 (from Moore and McCabe *Introduction to the Practice of Statistics*).

```
MANATEE.df<-read.table("/Users/johnbailer/Desktop/manatee.csv",header=TRUE,sep=",")
> MANATEE.df
```

	year	Number.Boats	Manatees.Killed
1	77	447	13
2	78	460	21
3	79	481	24
4	80	498	16
5	81	513	24
6	82	512	20
7	83	526	15
8	84	559	34
9	85	585	33
10	86	614	33
11	87	645	39
12	88	675	43
13	89	711	50
14	90	719	47

Q: Is there a relationship between boats registered and the number of manatees killed by powerboats? If so, how would you describe this relationship?

Q: What is the relevance of data observed in 1977-1990 for decisions you might make today?