

Chelsea is measuring seafloor depth. What does the seafloor look like? Can you help us?

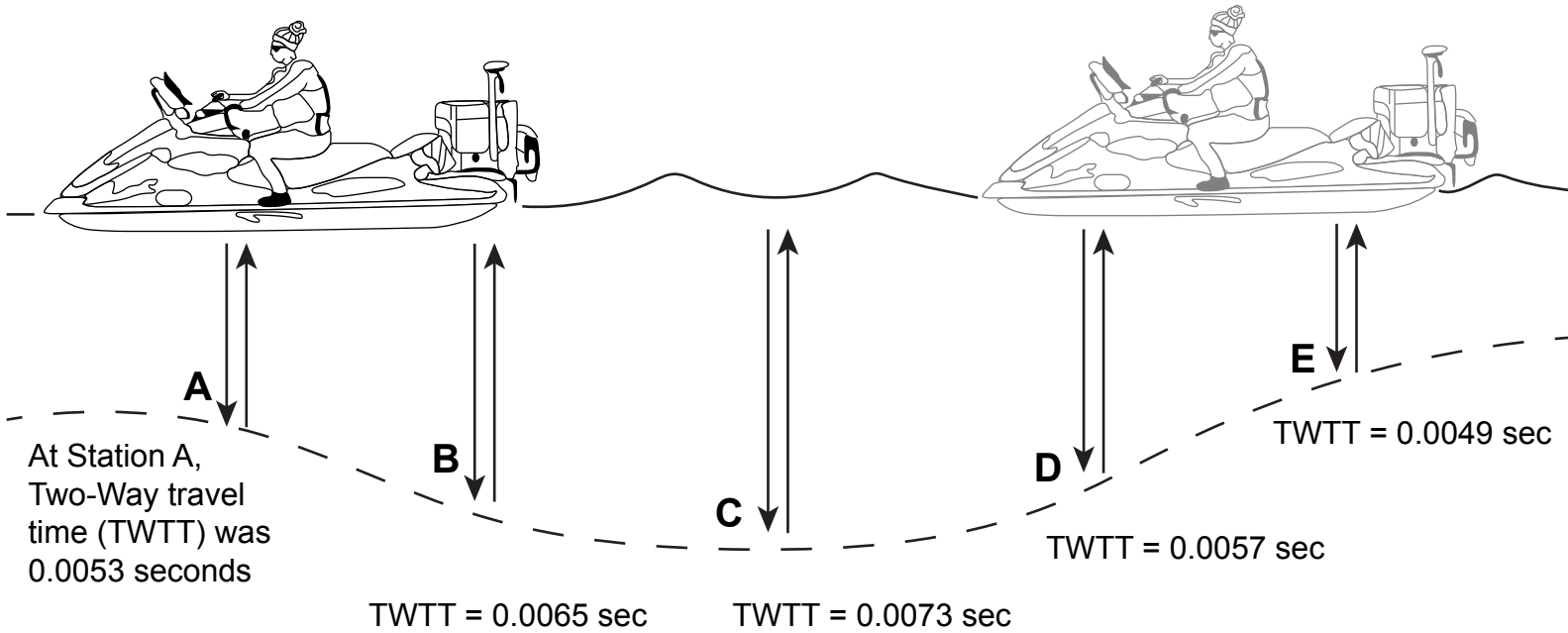
Single beam bathymetry measures the time it takes for sound to travel to and from the seafloor.

We can use this formula:

$$\text{Depth} = \frac{\text{Speed} \times \text{Two-Way travel time}}{2}$$

Sound moves through water at a speed of 4920 feet / second.

The sensor measures the time it takes for sound to move to the seafloor and back again, which we call Two-Way travel time or TWTT. We want to know the one-way distance, or depth, so we divide by 2.



Let's calculate depth!

$$\text{Depth} = \frac{4920 \times 0.0053}{2}$$

= 13 feet

At station A

$$D = \frac{4920 \times 0.0065}{2}$$

=  feet

At station B

$$D = \frac{4920 \times 0.0073}{2}$$

=  feet

At station C

$$D = \frac{4920 \times 0.0057}{2}$$

=  feet

At station D

$$D = \frac{4920 \times 0.0049}{2}$$

=  feet

At station E

Now let's plot our depths to see what the seafloor looks like!

