The Education Program at the
NJ Marine Sciences Consortium/NJ Sea Grant
22 Magruder Road Fort Hancock, NJ 07732 732-872-1300 njmsc.org

CALCULATING THE SPEED OF THE LONGSHORE OR LITTORAL CURRENT

You can determine the speed of the longshore current by conducting the following simple group experiment. You will need a meter stick (or other measuring device) an orange or two, a watch with a second hand and a group of students. Use the other side of this worksheet to enter and calculate your data.

Procedure:

1. Measure off and draw a ten-meter line in the sand parallel to the ocean.
2. Position one student at each end of the line you have drawn. Position everyone else along the line. One student should assume the role of timekeeper and have a watch with a second hand.
3. Throw an orange (or a piece of driftwood) into the water, just behind the line of breakers, approximately 2 meters SOUTH of the beginning of your line. Note: The longshore current is closer to the shore than you might expect! All students should watch the orange as it moves.
4. When the orange passes the beginning of the line the timekeeper should start timing.
5. When the orange passes the person stationed at the end of the line, he or she should tell the timekeeper to stop timing. Record time on worksheet
6. If time permits, repeat this process again so you can calculate the average of the two (or three) trials.
7. Use the chart on the below to record results and observations. Using the formulas given, calculate the speed of the longshore current for both trials, and then calculate the average of the longshore current today.
8. This procedure is NOT foolproof. If your orange does not move north after a few minutes, try again. If you cannot get this to work at all, it may be due to weather conditions. Make observations of the factors that might cause this experiment to not work and record them on the bottom of this worksheet.

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SCHOOL: _____

TODAY'S DATE:___/___/___TIME OF DAY: _____TIDAL STAGE:_____

WEATHER CONDITIONS: _____

WIND DIRECTION: _____ OBSERVATIONS: _____

_____

	Trial 1	**Trial 2**	**Trial 3**	**Average**
Distance *(Length of Transect Line)*	10 Meters	10 Meters	10 Meters	
Distance of line in Feet *Hint: 1 meter = 3.28 Feet*				
Time *(in Seconds)*				
Speed of Current in Meters *(speed = distance/time)*				
Speed of Current in Feet *(speed = distance/time)*				
Direction of Current				

NOTES:

FORMULA: SPEED= $\frac{\text{Distance}}{\text{Time}}$