



# DIAMONDS IN THE SAND

**APPENDIX:  
PRINTABLE LESSON MATERIALS**



# Acknowledgements

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Thank you to the MES TERP teachers who helped as we developed, tested, and improved this lesson. We are so appreciative of the opportunity to work with your students and found your feedback invaluable as we prepared this lesson for MAEOE.

Special thanks to Willem Roosenburg and his lab at Ohio University's Ohio Center for Ecological and Evolutionary Studies for lending their expertise and enthusiasm to all of our terrapin education programs. Studying and incorporating details from your student research manual and terrapin nest research data added to the richness and authenticity of this lesson.

# DIAMONDS IN THE SAND SCIENTIST ROLE CARDS

## PRINCIPAL INVESTIGATOR

TEAM # \_\_\_\_\_

- You read the “Nest Scenario Card” aloud for the team.
- You read the directions for nest research aloud for the team.
- You keep the team focused on the activity.
- You lead the team discussion about your data.

## SUPPLIES COORDINATOR

TEAM # \_\_\_\_\_

- You collect the research materials for the team to use.
- You explain how to use equipment safely and correctly.
- You help teammates while they are using the equipment.
- You return the research materials at the end of the activity.

## DATA RECORDER & ANALYST

TEAM # \_\_\_\_\_

- You read the questions on the worksheet aloud for the team.
- You collect and write down information during the activity.
- You help explain your team’s data and answers to the class.

## RESEARCH TECHNICIAN

TEAM # \_\_\_\_\_

- You select the “Nest Scenario Card” for the group.
- You help every member of the team.
- You make sure everyone on the team is involved and is sharing the work.
- You raise your hand to ask the teacher the team’s questions.

# DIAMONDS IN THE SAND

## NEST DATA COLLECTION SHEET

### REVIEW THE NEST SCENARIO & OBSERVE THE NEST

As a team, read your "Nest Scenario Card" and observe the entire nest (without touching it). Discuss the scenario card and any observations you have made.

Nest Scenario #: \_\_\_\_\_

Date: \_\_\_\_\_

Nest Location: \_\_\_\_\_

Lat: \_\_\_\_\_

Long: \_\_\_\_\_

Write 1 sentence about the area around the nest (see the information in your nest scenario):

\_\_\_\_\_

Write 1 observation about how the nest looks:

\_\_\_\_\_

"Lat." and "Long." stand for "latitude" and "longitude." These numbers show the position of any location in the world, or GPS location.

### UNCOVER THE EGGS

Use your hands to gently uncover the eggs. Stop when you can see the first eggs. Use a ruler to measure how deep in the sand the eggs are (the distance from the top of the sand to the eggs).

How deep in the sand is the nest? \_\_\_\_\_

### REMOVE THE EGGS & TAKE NOTES

Carefully remove all the eggs from the nest. Brush sand off of the eggs. Take measurements of the eggs (weight and length). Sketch (draw) the eggs/nest and make notes.

How many eggs are in the nest? \_\_\_\_\_

Pick 1 egg and use calipers to measure it. How long is the egg? \_\_\_\_\_

Describe the color of the eggs: \_\_\_\_\_

Weigh the eggs with the digital scale. Record your measurements below:

EGG #	WEIGHT (GRAMS)	EGG #	WEIGHT (GRAMS)
1	_____	10	_____
2	_____	11	_____
3	_____	12	_____
4	_____	13	_____
5	_____	14	_____
6	_____	15	_____
7	_____	16	_____
8	_____	17	_____
9	_____	18	_____

SKETCH 1 EGG

SKETCH THE NEST

### RE-BURY THE EGGS & COVER/MARK THE NEST

Place all of the eggs back in the nest hole and gently recover them with sand. Lay a screen across the sand (over top of the nest) and place marking flags in each corner.

# DIAMONDS IN THE SAND

## NEST DATA ANALYSIS SHEET - PAGE 1

### NEST SCENARIOS

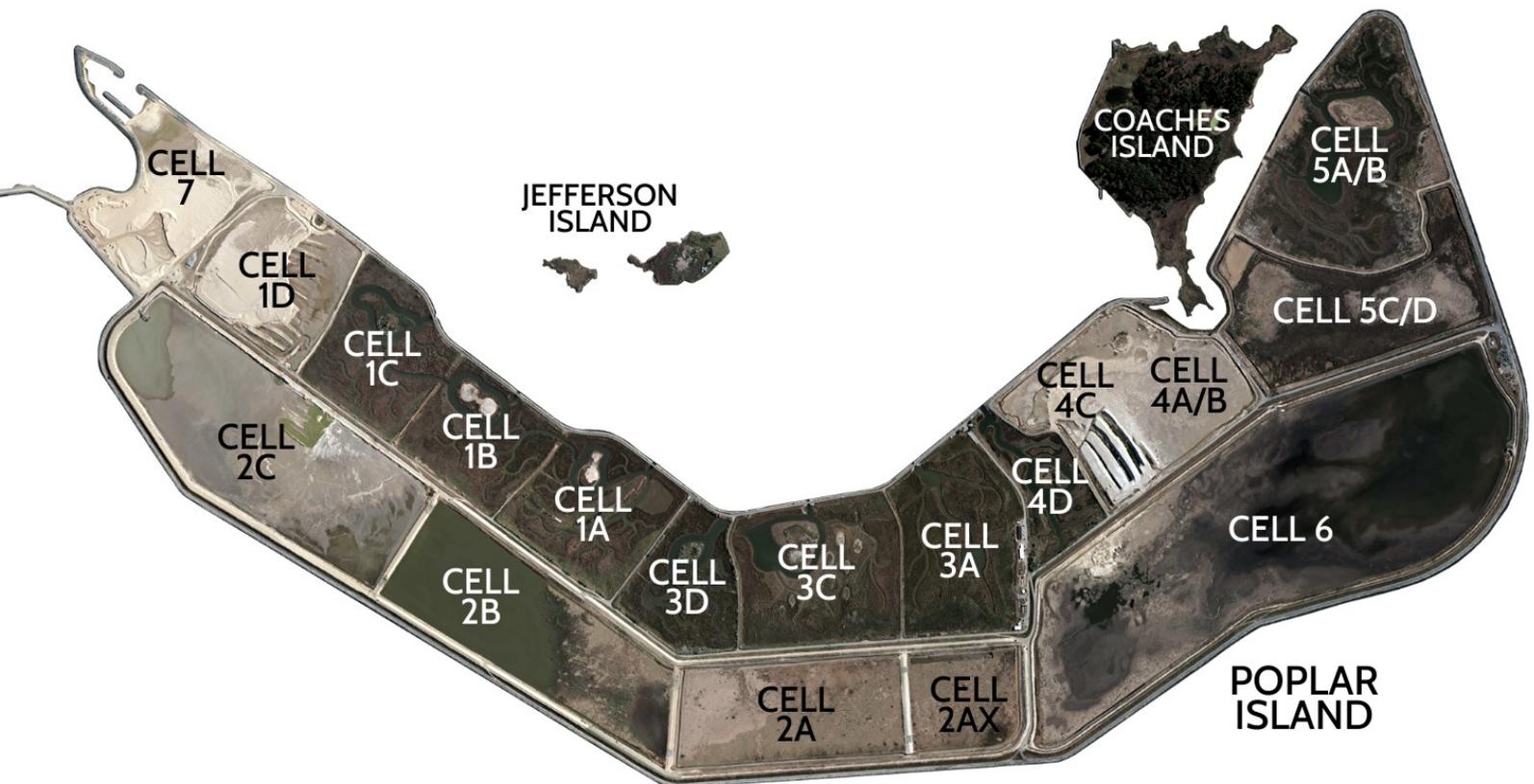
Where terrapins nest can affect terrapin **HATCHLINGS** (baby turtles). For example, some areas might have more predators or other threats. The plants and the environment surrounding the nest can also affect the temperature of the nest, which is important to how eggs develop.

Describe the nest areas and surroundings of each of the nests you studied. Are they near plants or in sandy areas? Are they shaded or unshaded?

Nest Scenario #: _____	Nest Scenario #: _____	Nest Scenario #: _____
The area around the nest is...	The area around the nest is...	The area around the nest is...
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

### NEST LOCATIONS

Poplar Island is divided into different sections, called "cells." Each cell is a different size and has a unique design. This way, the island is valuable habitat to hundreds of different species of animals. Find and mark the locations (cells) on the island where your terrapin nests were located.



# DIAMONDS IN THE SAND

## NEST DATA ANALYSIS SHEET - PAGE 2

### PREDATOR PREDICTIONS

There are many different types of animals that **PREDATE** (eat) adult terrapins, hatchlings, and terrapin eggs. Terrapin eggs are especially at risk of being eaten because they can't run away or fight back. On Poplar Island, some common **PREDATORS** of terrapin nests include birds and snakes. Roots from plants can also grow into nests and kill eggs. Because Poplar is an island and harder for some animals to reach, some nest predators (like raccoons) are less common.

Make a prediction about whether you think each nest is at risk of predation, and from which type of predator.

I predict that the nest is at \_\_\_\_\_

- Low - The nest probably won't be eaten by predators
- Medium - The nest might be eaten by predators
- High - There's a good chance the nest will be eaten by predators

risk of predation from \_\_\_\_\_

- Snakes
- Birds
- Plant Roots
- Other Predators

Nest Scenario #: \_\_\_\_\_

Nest Scenario #: \_\_\_\_\_

Nest Scenario #: \_\_\_\_\_

I predict that the nest is at \_\_\_\_\_

I predict that the nest is at \_\_\_\_\_

I predict that the nest is at \_\_\_\_\_

risk of predation from \_\_\_\_\_

risk of predation from \_\_\_\_\_

risk of predation from \_\_\_\_\_

Write 1-2 sentences to explain your prediction:

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Write 1-2 sentences to explain your prediction:

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Write 1-2 sentences to explain your prediction:

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### MALE VS. FEMALE?

The temperature of a nest is incredibly important to terrapin eggs as they are developing. Terrapins use **TEMPERATURE DEPENDENT SEX DETERMINATION**, which means that eggs develop into male or female terrapins based on the temperature of the nest area and sand. Cooler temperatures cause the terrapins to be male, and warmer temperatures cause the terrapins to be female.

Make a prediction about whether you think the eggs in each nest will develop into male or female terrapins. Think about the conditions in the nest scenario and the depth of the nest as you make your predictions.

Nest Scenario #: \_\_\_\_\_

Nest Scenario #: \_\_\_\_\_

Nest Scenario #: \_\_\_\_\_

How deep in the sand is the nest:

How deep in the sand is the nest:

How deep in the sand is the nest:

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I predict that the eggs will develop into:

I predict that the eggs will develop into:

I predict that the eggs will develop into:

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Write 1-2 sentences to explain your prediction:

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Write 1-2 sentences to explain your prediction:

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Write 1-2 sentences to explain your prediction:

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# DIAMONDS IN THE SAND

## NEST DATA ANALYSIS SHEET - PAGE 3

### SCIENCE & STATISTICS

A **STATISTIC** is a number that comes from studying a large amount of information. Statistics can help scientists understand a group of numbers (called a **DATA SET**). For example, statistics can give scientists a way of studying and understanding patterns in the weights of eggs in terrapin nests. Some of the statistics that scientists might look at are the **RANGE** and the **MEAN** of a data set.

### RANGE

**RANGE** is a number that helps show how far apart numbers in a data set are spread. It is the difference between the lowest and highest number in the data set.

To find the range, find the largest and smallest number in the data set. The largest number minus the smallest number is the range.

$$\text{WEIGHT OF LARGEST EGG} - \text{WEIGHT OF SMALLEST EGG} = \text{RANGE}$$

Nest Scenario #: _____	Nest Scenario #: _____	Nest Scenario #: _____
Weight of the largest egg in the nest: _____	Weight of the largest egg in the nest: _____	Weight of the largest egg in the nest: _____
Weight of the smallest egg in the nest: _____	Weight of the smallest egg in the nest: _____	Weight of the smallest egg in the nest: _____
Range of egg weights: _____	Range of egg weights: _____	Range of egg weights: _____

### MEAN

**MEAN** (which is also called average) is a number that helps show what the typical or average number is in a group.

To find the mean, add all of the numbers in the data set together. Divide the answer by the number of items in the data set.

$$\text{WEIGHT OF EGG 1} + \text{WEIGHT OF EGG 2} + \text{WEIGHT OF EGG 3...} = \text{TOTAL WEIGHT OF ALL THE EGGS}$$

$$\text{TOTAL WEIGHT OF ALL THE EGGS ADDED TOGETHER} \div \text{NUMBER OF EGGS IN THE NEST} = \text{MEAN}$$

Nest Scenario #: _____	Nest Scenario #: _____	Nest Scenario #: _____
Weight of all the eggs in the nest added together: _____	Weight of all the eggs in the nest added together: _____	Weight of all the eggs in the nest added together: _____
Total number of eggs in the nest: _____	Total number of eggs in the nest: _____	Total number of eggs in the nest: _____
Mean: _____	Mean: _____	Mean: _____

# DIAMONDS IN THE SAND

## NEST DATA ANALYSIS SHEET - PAGE 4

### GRAPHING

A **HISTOGRAM** is a type of graph that makes it easier to see patterns in groups of numbers or sets of data.

One side of the graph has results listed (for example, the number of eggs in the nest or the size of eggs in a nest). The other side of the graph shows the number of times that each result happened.



This histogram shows how many eggs were in 6 different nests:

- 1 nest with 10 eggs
- 1 nest with 13 eggs
- 3 nests with 14 eggs
- 1 nest with 16 eggs

MAKE A HISTOGRAM SHOWING THE AVERAGE WEIGHTS OF THE EGGS IN THE NESTS YOU STUDIED



MAKE A HISTOGRAM SHOWING THE NUMBER OF EGGS IN THE NESTS YOU STUDIED



# DIAMONDS IN THE SAND NEST OUTCOMES SHEET

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
1A	No	12
1B	No	10
1C	Bird	0
1D	No	9
1E	No	5
1F	No	9

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
5A	No	10
5B	Bird	0
5C	Snake	0
5D	Snake	0
5E	No	9
5F	No	8

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
2A	No	11
2B	Snake	0
2C	No	10
2D	No	4
2E	Bird	0
2F	Snake	0

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
6A	No	15
6B	Snake	0
6C	Snake	0
6D	No	11
6E	No	7
6F	Bird	0

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
3A	No	15
3B	No	10
3C	No	7
3D	Snake	0
3E	Snake	0
3F	No	8

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
7A	No	16
7B	No	8
7C	Roots	6
7D	No	10
7E	Bird	0
7F	Snake	0

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
4A	No	14
4B	Roots	6
4C	No	13
4D	Snake	0
4E	No	12
4F	Snake	0

NEST #	PREDATION?	# OF TERRAPINS THAT HATCHED
8A	No	14
8B	No	13
8C	No	8
8D	Bird	0
8E	Snake	0
8F	No	12

# DIAMONDS IN THE SAND

# LITTLE SCIENTISTS TERRAPIN WORKSHEET

Name:

Date:



## TERRAPIN RESEARCH

Cross of each step once you've completed it!



UNCOVER



OBSERVE



MEASURE



RECORD



COVER &  
PROTECT

## TERRAPIN NEST OBSERVATIONS & MEASUREMENTS

How many eggs are in the nest?

draw one egg

What color are the eggs?

Are all the eggs the same size?

How long is one egg?

How much does one egg weigh?

What is one other observation about  
the nest or eggs?

draw the entire nest

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# NEST 1A

**DATE:**

6 / 20 / 2018

**NEST LOCATION:**

Cell 5

**LAT:**

38.75013

**LONG:**

-76.3686

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 1B

**DATE:**

7 / 3 / 2018

**NEST LOCATION:**

Beach Area in Cell 3

**LAT:**

38.76083

**LONG:**

76.38007

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is located near the middle of the island. The water near it is shallow and has some small waves.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 1C

**DATE:**  
6 / 7 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.7508

**LONG:**  
-76.37047

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 1D

**DATE:**  
6 / 21 / 2018

**NEST LOCATION:**  
Beach Area in Cell 3

**LAT:**  
38.76064

**LONG:**  
-76.37994

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is located near the middle of the island. The water near it is shallow and has some small waves.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NE

**DATE:**  
7 / 2 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75005

**LONG:**  
-76.36886

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NE1F

**DATE:**  
7 / 13 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.7524

**LONG:**  
-76.37462

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

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# NEST ZAB

**DATE:**  
7 / 18 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75236

**LONG:**  
-76.3746

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST ZAB

**DATE:**  
6 / 6 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75093

**LONG:**  
-76.37061

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST N2C

**DATE:**  
6 / 28 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75195

**LONG:**  
-76.37463

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST N2D

**DATE:**  
7 / 4 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.74978

**LONG:**  
-76.36776

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

Tall plants located a couple feet away from the nest shade it for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST NEZ

**DATE:**  
6 / 28 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75166

**LONG:**  
-76.37465

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NEZ

**DATE:**  
7 / 5 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75091

**LONG:**  
-76.37058

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

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# NEST 3A

**DATE:**  
6 / 1 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75193

**LONG:**  
-76.37468

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 3B

**DATE:**  
5 / 31 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75272

**LONG:**  
-76.37442

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 3C

**DATE:**

6 / 21 / 2018

**NEST LOCATION:**

Beach Area in Cell 3

**LAT:**

38.76089

**LONG:**

-76.38007

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is located near the middle of the island. The water near it is shallow and has some small waves.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 3D

**DATE:**

6 / 25 / 2018

**NEST LOCATION:**

Notch

**LAT:**

38.75114

**LONG:**

-76.37412

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST 3E

**DATE:**  
7 / 5 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75126

**LONG:**  
-76.37432

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for most of the day. The nest gets sunlight for fewer than 4 hours every day and is in the shade the rest of the time.

# NEST 3F

**DATE:**  
6 / 26 / 2018

**NEST LOCATION:**  
Cell 3C/D

**LAT:**  
38.76041

**LONG:**  
-76.38105

## **NEST ENVIRONMENT:**

The nest is in sandy soil along a dirt path on the island. The path is in between two "cells" (areas that were separated into small parts for restoration). Both cells are marshes with shallow, protected water and marsh grasses.

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

There aren't enough tall plants to cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

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# NEST NA

**DATE:**  
6 / 7 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75009

**LONG:**  
-76.36874

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NA

**DATE:**  
6 / 14 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75312

**LONG:**  
-76.37424

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

There aren't enough tall plants to cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NA C

**DATE:**  
6 / 25 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75161

**LONG:**  
-76.37467

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NA D

**DATE:**  
6 / 25 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75135

**LONG:**  
-76.3744

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST NAME

## DATE:

6 / 18 / 2018

## NEST LOCATION:

Cell 5

## LAT:

38.75005

## LONG:

-76.36828

## NEST ENVIRONMENT:

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

There aren't enough tall plants to cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST NAME

## DATE:

7 / 13 / 2018

## NEST LOCATION:

Notch

## LAT:

38.7518

## LONG:

-76.37468

## NEST ENVIRONMENT:

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

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# NEST 5A

**DATE:**  
6 / 8 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75183

**LONG:**  
-76.37466

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 5B

**DATE:**  
6 / 28 / 2018

**NEST LOCATION:**  
Cell 4C

**LAT:**  
38.75446

**LONG:**  
-76.37834

**NEST ENVIRONMENT:**

The nest is in sand in an area where large piles of sand are being stored (to use during the island restoration). It is a little further away from marshy areas on the island or the open water around the island.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NESTS

**DATE:**

5 / 29 / 2018

**NEST LOCATION:**

Cell 5

**LAT:**

38.75095

**LONG:**

-76.37062

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NESTS

**DATE:**

6 / 21 / 2018

**NEST LOCATION:**

Cell 5

**LAT:**

38.75153

**LONG:**

-76.37201

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST NEST

**DATE:**  
5/29/2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75121

**LONG:**  
-76.37122

**NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST NEST

**DATE:**  
5/29/2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75256

**LONG:**  
-76.3745

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

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# NEST 6A

**DATE:**  
6 / 5 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75159

**LONG:**  
-76.37466

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a “notch,” or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

Tall plants located a couple feet away from the nest shade it for most of the day. The nest gets sunlight for fewer than 4 hours every day and is in the shade the rest of the time.

# NEST 6B

**DATE:**  
6 / 1 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75214

**LONG:**  
-76.37469

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a “notch,” or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 6C

**DATE:**

7 / 24 / 2018

**NEST LOCATION:**

Notch

**LAT:**

38.75139

**LONG:**

-76.37457

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST 6D

**DATE:**

6 / 1 / 2018

**NEST LOCATION:**

Beach Area in Cell 3

**LAT:**

38.76091

**LONG:**

-76.38007

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is located near the middle of the island. The water near it is shallow and has some small waves.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 6

**DATE:**

6 / 18 / 2018

**NEST LOCATION:**

Beach Area in Cell 3

**LAT:**

38.76093

**LONG:**

-76.38009

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is located near the middle of the island. The water near it is shallow and has some small waves.

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 6

**DATE:**

6 / 28 / 2018

**NEST LOCATION:**

Notch

**LAT:**

38.75149

**LONG:**

-76.37459

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

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# NEST 7A

**DATE:**  
6 / 1 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75238

**LONG:**  
-76.37461

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 7B

**DATE:**  
6 / 19 / 2018

**NEST LOCATION:**  
Cell 1A/B

**LAT:**  
38.76988

**LONG:**  
-76.37863

## **NEST ENVIRONMENT:**

The nest is in sandy soil along a dirt path on the island. The path is in between two "cells" (areas that were separated into small parts for restoration). Both cells are marshes with shallow, protected water and marsh grasses.

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

There aren't enough tall plants to cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 7C

**DATE:**  
7 / 9 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75133

**LONG:**  
-76.37149

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST 7D

**DATE:**  
6 / 18 / 2018

**NEST LOCATION:**  
Near Offices

**LAT:**  
38.73692

**LONG:**  
-76.38132

## **NEST ENVIRONMENT:**

The nest is in sandy soil along a gravel road on the island and is located near the buildings where the staff on the island work. The road is in between two "cells" (areas that were separated into small parts for restoration). Both cells are marshes with shallow, protected water and marsh grasses.

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for most of the day. The nest gets sunlight for fewer than 4 hours every day and is in the shade the rest of the time.

# NEST SITE

**DATE:**  
5 / 30 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75212

**LONG:**  
-76.37469

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST SITE

**DATE:**  
7 / 27 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75118

**LONG:**  
-76.37354

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for most of the day. The nest gets sunlight for fewer than 4 hours every day and is in the shade the rest of the time.

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# NEST 8A

**DATE:**  
7 / 12 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75185

**LONG:**  
-76.37468

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 8B

**DATE:**  
6 / 7 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75216

**LONG:**  
-76.37469

## **NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest is in open ground with no plants directly around it.

The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 8C

**DATE:**  
6 / 19 / 2018

**NEST LOCATION:**  
Cell 1A/B

**LAT:**  
38.77023

**LONG:**  
-76.37917

**NEST ENVIRONMENT:**

The nest is in sandy soil along a dirt path on the island. The path is in between two "cells" (areas that were separated into small parts for restoration). Both cells are marshes with shallow, protected water and marsh grasses.

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants are very short, and don't cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 8D

**DATE:**  
6 / 27 / 2018

**NEST LOCATION:**  
Notch

**LAT:**  
38.75263

**LONG:**  
-76.37476

**NEST ENVIRONMENT:**

The nest is in a sandy beach area near the edge of the water on the eastern side of the island. The beach is in a "notch," or protected cove. The water near the beach and nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has some plants around it (fewer than 50 stems of grass in the square foot area around the nest).

There aren't enough tall plants to cast any shade on the nest. The nest gets direct sunlight for the whole day (8+ hours every day).

# NEST 808

**DATE:**  
8 / 9 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.7508

**LONG:**  
-76.37027

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# NEST 808

**DATE:**  
5 / 29 / 2018

**NEST LOCATION:**  
Cell 5

**LAT:**  
38.75105

**LONG:**  
-76.37086

## **NEST ENVIRONMENT:**

The nest is in very sandy soil along the edge of the water on the eastern side of the island. The water near the nest is shallow and calm (it is protected from waves by nearby Coaches Island).

The nest has a large number of plants around it (more than 50 stems of grass in the square foot area around the nest).

The plants shade the nest for part of the day, but the rest of the day the nest is in sunlight. The nest gets sunlight for at least half the day (about 4-8 hours every day).

# About the Creator/Presenter Organizations



The Port of Baltimore has been a major economic force in Maryland for over three hundred years. Founded in 1706, the Port offers easy access to the Chesapeake Bay via the Patapsco River.

Today, business at the Port of Baltimore generates about 13,650 direct jobs and over 127,000 jobs in Maryland are linked to Port activities. The Port is responsible for nearly \$3 billion in personal wages and salary, and it generates \$310 million in state and local tax revenue. About 2,000 cargo vessels and cruise ships call on the Port of Baltimore annually, making it one of the nation's busiest ports.

The Maryland Department of Transportation Maryland Port Administration (MDOT MPA) works to ensure that vessels traveling to and from Baltimore have safe, navigable channels. MDOT MPA is also committed to environmental stewardship. The sediment dredged from these channels is playing an important part in restoring valuable habitat in the Chesapeake Bay, and MDOT MPA promotes environmental literacy through outreach and education efforts across Maryland.

want to learn more?  
[maryland.ports/greenport](http://maryland.ports/greenport)



Maryland Environmental Service provides education and outreach on behalf of the Port of Baltimore.

MES' highly trained educators provide hands-on lessons about the Port's history and significance. They also teach about the Port's environmental initiatives throughout Maryland, focusing on environmental projects related to dredging and restoration.

MES and the Port of Baltimore offer education and outreach that can be customized to meet your group's specific needs based on the age and number of participants.

We can provide:

- Classroom education
- Tours
- Field trips & outdoor education
- Public presentations
- Community outreach
- Hands-on learning time with our terrapin ambassadors
- Professional development opportunities for educators

learn more about educational opportunities:  
[bit.ly/MESoutreach](http://bit.ly/MESoutreach)

contact us:  
[outreachtours@menv.com](mailto:outreachtours@menv.com)  
410-729-8200



