



Right Whale Migration: Where Do The Males Go?

How do you tell males and females apart?

Behaviorally speaking, if there is a calf, then we know that the whale is a female as the males aren't seen with the offspring.

Physically speaking, it's easier in some species than others.

[Killer whales](#) have very distinct dorsal fins. The males are up to 6 ft. tall and very straight. Females tend to be more curved and are only 2-3 ft tall.

Humpback females have a hemispheric lobe (about the size of half a volleyball on their bellies near their genital slit which helps identify females.

Right whales don't have a hemispheric lobe, but similar to humpback, it's when they roll around at the surface that scientists are able to identify male or female by their genital slit.



If a humpback rolls around, scientists are sometimes able to identify females by their hemispheric lobes.

Let's meet some males from the North Atlantic right whale population.

Manta was born in 1985 to a female named Shenandoah who was 1st seen in 1982. Manta's father is a whale named Delta who was 1st seen in 1978, but who sadly passed away in 1998.

Peace was first seen in 1970—that's 50 years ago!! Nothing is known about Peace's mother or father and his last sighting that we know of was 2017. He has been seen for a long time!

Ruffian was born in 2004 to a mom named Rat. Rat was 1st seen in 1980. Ruffian's father is #1708 who was born in 1987. (Check out Activity 3: Family Trees to make a family tree of Rat's family.)

Thorny was 1st seen in 1980. Nothing is known about Thorny's mother or father either.

Side note: When we talk about how old whales are in catalogs, we either say they are "born" or "1st sighted" in a certain year. Born means they were seen as calves so the mother and year of birth are known. When a whale is 1st sighted, it means it was not seen as a calf, so it was at least born the year before or perhaps many years before if it's 1st seen as a large adult). Unless matches are made genetically, we don't know anything about the mother's or fathers of these whales.

Directions:

1. Print out the pages of the whales that you want to graph. (These are found on the next 3 pages).
2. For each data point, place a colored dot in the corresponding location of the graph. For example, the first row of Ruffian's data is

| | | | |
|----------|------|---------|----|
| 1 (Pink) | 2004 | Florida | A3 |
|----------|------|---------|----|

 That means that in January of 2004, Ruffian was sighted off Florida. Place a pink dot in block A3. (It should be relatively small). Continue until all the locations are represented on the map. Make sure you use the different colors to represent the different seasons:

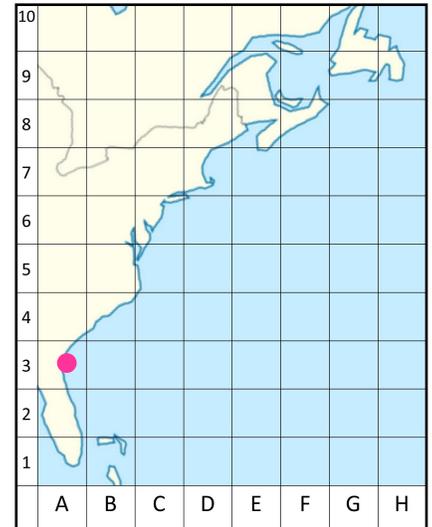
Pink is winter (Dec, Jan, and Feb)

Yellow is spring (Mar, Apr, May)

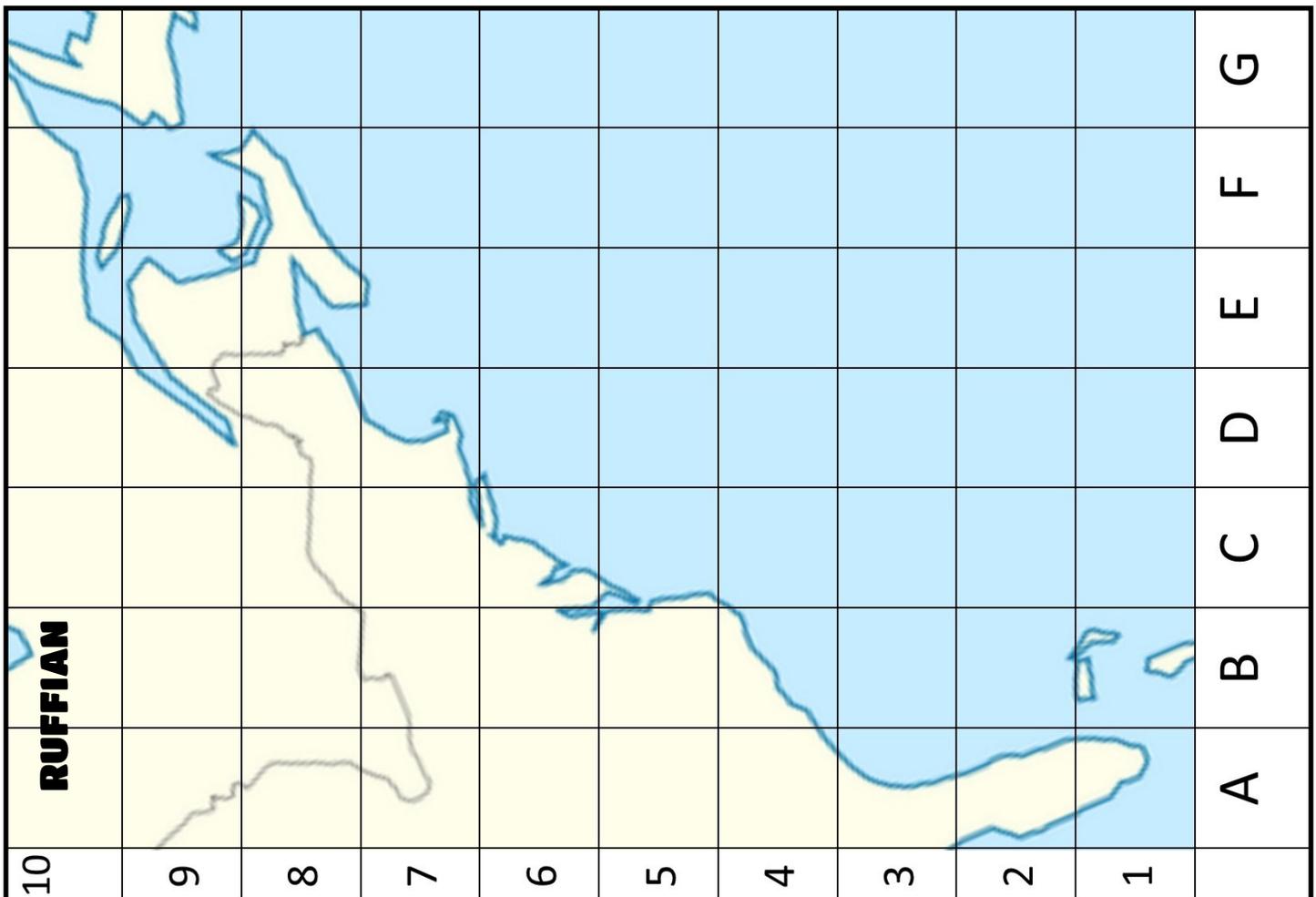
Green is summer (Jun, Jul, Aug)

Blue is fall (Sep, Oct, Nov)

3. Because two of the whales (Manta and Thorny) have been sighted for so many years, we have graphed those for you.
4. When you are finished, answer the questions after the maps!



Sighting data for Ruffian is on the next page

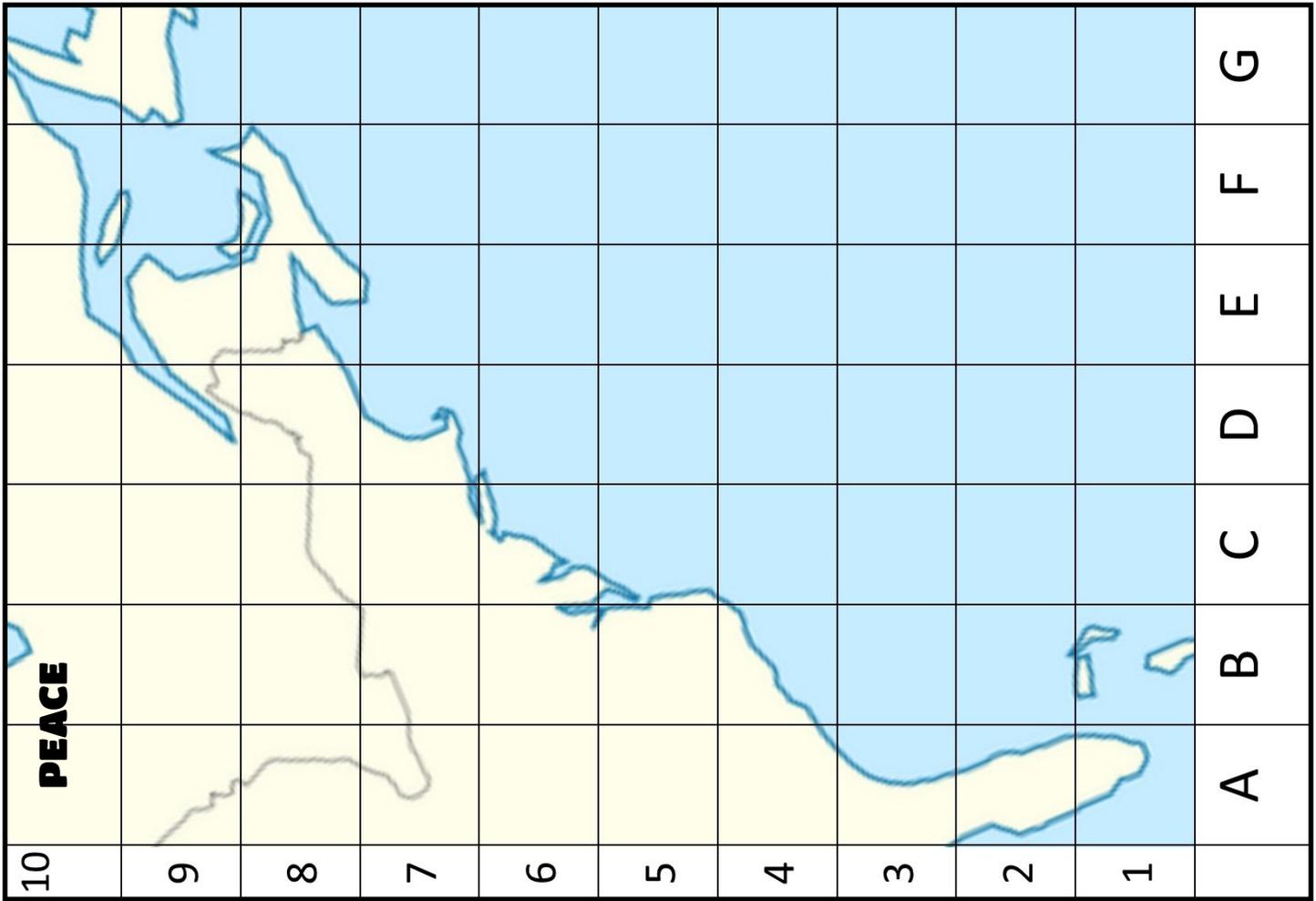


Ruffian's Sighting Data

| Sighting Month | Sighting Year | Ruffian Sighting Area | Graph Location |
|----------------|---------------|-----------------------|----------------|
| 3 (Yellow) | 2011 | Cape Cod Bay | D7 |
| 2 (Pink) | 2012 | South Carolina | B4 |
| 5 (Yellow) | 2012 | Great South Channel | E6 |
| 6 (Green) | 2012 | Gulf of Maine | E7 |
| 6 (Green) | 2012 | Roseway Basin | F7 |
| 11 (Blue) | 2013 | Gulf of St. Lawrence | F9 |
| 1 (Pink) | 2014 | Florida | A3 |
| 4 (Yellow) | 2014 | Southern New England | D6 |
| 4 (Yellow) | 2014 | Great South Channel | E6 |
| 4 (Yellow) | 2014 | Cape Cod Bay | D7 |
| 7 (Green) | 2014 | George's Bank | E7 |
| 1 (Pink) | 2015 | Florida | A3 |
| 4 (Yellow) | 2015 | Cape Cod Bay | D7 |
| 3 (Yellow) | 2016 | Cape Cod Bay | D7 |
| 4 (Yellow) | 2016 | Great South Channel | E6 |
| 7 (Green) | 2016 | Gulf of St. Lawrence | F9 |
| 1 (Pink) | 2017 | Georgia | A3 |
| 2 (Pink) | 2017 | Cape Cod Bay | D7 |
| 5 (Yellow) | 2017 | Great South Channel | E6 |
| 7 (Green) | 2017 | Gulf of St. Lawrence | F9 |
| 12 (Pink) | 2018 | Cape Cod Bay | D7 |
| 2 (Pink) | 2018 | Cape Cod Bay | D7 |
| 3 (Yellow) | 2018 | Southern New England | D6 |
| 4 (Yellow) | 2018 | Great South Channel | E6 |
| 6 (Green) | 2018 | Gulf of St. Lawrence | F9 |

| Sighting Month | Sighting Year | Ruffian Sighting Area | Graph Location |
|----------------|---------------|-----------------------|----------------|
| 1 (Pink) | 2004 | Florida | A3 |
| 1 (Pink) | 2005 | Florida | A3 |
| 10 (Blue) | 2005 | Bay of Fundy | E8 |
| 12 (Pink) | 2005 | Florida | A3 |
| 3 (Yellow) | 2005 | South Carolina | B4 |
| 6 (Green) | 2005 | Great South Channel | E6 |
| 4 (Yellow) | 2006 | Massachusetts Bay | D7 |
| 9 (Blue) | 2006 | Roseway Basin | F7 |
| 12 (Pink) | 2007 | Gulf of Maine | E7 |
| 2 (Pink) | 2007 | Georgia | A3 |
| 4 (Yellow) | 2007 | Cape Cod Bay | D7 |
| 6 (Green) | 2007 | Great South Channel | E6 |
| 8 (Green) | 2007 | Bay of Fundy | E8 |
| 1 (Pink) | 2008 | Florida | A3 |
| 12 (Pink) | 2008 | Georgia | A3 |
| 3 (Yellow) | 2008 | Cape Cod Bay | D7 |
| 5 (Yellow) | 2008 | Great South Channel | E6 |
| 12 (Pink) | 2009 | Florida | A3 |
| 3 (Yellow) | 2009 | Cape Cod Bay | D7 |
| 5 (Yellow) | 2009 | Gulf of Maine | E7 |
| 7 (Green) | 2009 | Great South Channel | E6 |
| 8 (Green) | 2009 | Bay of Fundy | E8 |
| 12 (Pink) | 2010 | Gulf of Maine | E7 |
| 4 (Yellow) | 2010 | Southern New England | D6 |
| 1 (Pink) | 2011 | South Carolina | B4 |
| 1 (Pink) | 2011 | Florida | A3 |

| Sighting Month | Sighting Year | Area | Graph Location |
|----------------|---------------|----------------------|----------------|
| 4 (Yellow) | 1970 | Cape Cod Bay | D7 |
| 8 (Green) | 1982 | Roseway Basin | F7 |
| 5 (Yellow) | 1984 | Great South Channel | E6 |
| 5 (Yellow) | 1985 | Great South Channel | E6 |
| 8 (Green) | 1986 | Roseway Basin | F7 |
| 3 (Yellow) | 1987 | Cape Cod Bay | D7 |
| 9 (Blue) | 1987 | Roseway Basin | F7 |
| 9 (Blue) | 1988 | Roseway Basin | F7 |
| 8 (Green) | 1989 | Roseway Basin | F7 |
| 9 (Blue) | 1992 | Roseway Basin | F7 |
| 12 (Pink) | 2002 | Gulf of Maine | E7 |
| 3 (Yellow) | 2003 | Great South Channel | E6 |
| 7 (Green) | 2003 | Gulf of Maine | E7 |
| 9 (Blue) | 2004 | Roseway Basin | F7 |
| 2 (Pink) | 2006 | Gulf of Maine | E7 |
| 4 (Yellow) | 2006 | Cape Cod Bay | D7 |
| 9 (Blue) | 2006 | Roseway Basin | F7 |
| 1 (Pink) | 2007 | Gulf of Maine | E7 |
| 12 (Pink) | 2007 | Gulf of Maine | E7 |
| 4 (Yellow) | 2007 | Cape Cod Bay | D7 |
| 4 (Yellow) | 2008 | Cape Cod Bay | D7 |
| 10 (Blue) | 2008 | East Scotian Shelf | F8 |
| 9 (Blue) | 2009 | Roseway Basin | F7 |
| 2 (Pink) | 2011 | Georgia | A3 |
| 4 (Yellow) | 2013 | Cape Cod Bay | D7 |
| 1 (Pink) | 2014 | Georgia | A3 |
| 8 (Green) | 2015 | Gulf of St. Lawrence | F9 |
| 8 (Green) | 2016 | Bay of Fundy | E8 |
| 2 (Pink) | 2017 | Southern New England | D6 |
| 4 (Yellow) | 2017 | Great South Channel | E6 |





Extend the Learning

What Did You Observe? Where Do The Males Go?

Place all four maps in front of you. List the locations that the whales are sighted in each month.

1. Winter: _____
2. Spring: _____
3. Summer: _____
4. Fall: _____

What are some interesting observations that you made? _____

Describe any patterns that stand out for you. _____

Are there any holes in the research? Describe where the holes are or times of year that we need more information? Design a project to help scientists figure out where whales are sighted during those times of the year. _____



Extend the Learning (cont.)

What Did You Observe? Where Do The Males Go?

One interesting outlier among the males is Ruffian. He was sighted around Georgia and Florida for many years after he was born while the others are not. What are your thoughts as to why that might be.

What areas are significant for right whales at what times of the year. Fill in the table below.

| Season of the Year | Location |
|--------------------|----------|
| | |
| | |
| | |
| | |
| | |
| | |

In light of this, what suggestions do you have to help protect right whales! Fill in below and then let us know by emailing info@yearoftherightwhale.org _____
