



North Atlantic Right Whales

In honor of Earth Week, the Audubon Society of RI *Audubon at Home* is showcasing some special endangered animals that need your help, including the North Atlantic right whale.

To help you learn more about North Atlantic right whales, we have included fun and educational North Atlantic right whale activities to the *Audubon at Home* page. These activities will teach you how to identify North Atlantic right whales and some of the reasons why they are endangered. Activities include whale curriculum, word search, crossword puzzle, resources page and videos.

These activities were developed in partnership with members of the North Atlantic Right Whale Consortium (NARWC) Education Committee, which includes the Audubon Society of Rhode Island, New Bedford Whaling Museum and Whale and Dolphin Conservation.

The NARWC started in 1986 as a collaborative base and has grown to include more than 200 individuals from various non-profit organizations, industry, fisheries, government agencies, technical experts and more, all who are dedicated to the conservation and recovery of the North Atlantic right whale (www.narwc.org).

To request a full list of available North Atlantic right whale curricula please contact Anne DiMonti, Director of the Audubon Society of Rhode Island Nature Center and Aquarium at adimonti@asri.org.

Right Whales Did you know?



Hunted almost to the point of extinction, North Atlantic right whales have been protected by an International Treaty since 1935. Unfortunately, they have been slow to recover and are now considered one of the most endangered whales in the world. It is estimated that there are fewer than 400 of these whales left.

North Atlantic right whales, like all whales, are mammals. Like us they breathe air, are warm-blooded, give birth to live young, feed their young milk, and even have hair.

These whales belong to the group of whales called Mysticetes or baleen whales. They do not have teeth; instead they have plates of bristles in their mouth called baleen. This baleen is made of keratin, like your fingernails, and helps strain their food out of the water. North Atlantic right whales eat a small shrimp-like creature called copepods. They weigh 50 billion times more than the food they eat. That's like humans feeding on only bacteria.



Copepods (*Temora*) Douglas P. Wilson

North Atlantic right whales migrate from Canadian waters, where they feed, to the coast of Florida, Georgia, and the Carolinas where they give birth. During their migrations north, they pass by Rhode Island and Cape Cod, usually in the early Spring. They may stay for long periods of time around Cape Cod and Stellwagen Bank National Marine Sanctuary if food is plentiful.

On average, adult North Atlantic right whales are 45-55 ft long and weigh 40-70 tons. A newborn calf is almost 15 feet long and weighs almost 1,800 pounds. By their first birthday they will be 28-30 feet long and probably weigh over 11,000 pounds. It is believed that North Atlantic right whales can live at least 70 years, if given the chance.

North Atlantic right whales are identified by the unique pattern of 'callosities' on their heads. Callosities are roughened patches of skin that appear in many of the places that humans have hair – on the top of the head, along the chin and jaw and above the eyes. Since each right whale's callosities are unique, like the human fingerprint, scientists use these callosities to help them identify the whales. The white coloration on the callosities comes from the small crustaceans, called cyamids, that live on the callosities.

Today, North Atlantic right whales are under increasing stress from human activities including ship strikes and entanglement in fishing gear, which are two of the major causes of their death. Sadly, approximately 85% of all North Atlantic right whales have scars from entanglement in fishing gear.

On a positive note, these unfortunate threats are leading to increased collaboration among stakeholders. Through the North Atlantic Right Whale Consortium and the federally-mandated Atlantic Large Whale Take Reduction Team, a number of new initiatives are being explored that would reduce human-caused risk to this endangered species. Additionally, Congress is currently considering a bill known as the "SAVE Right Whales Act" which would open up funding to explore some of these new initiatives. There is hope yet, but it takes a village!

All Tangled Up

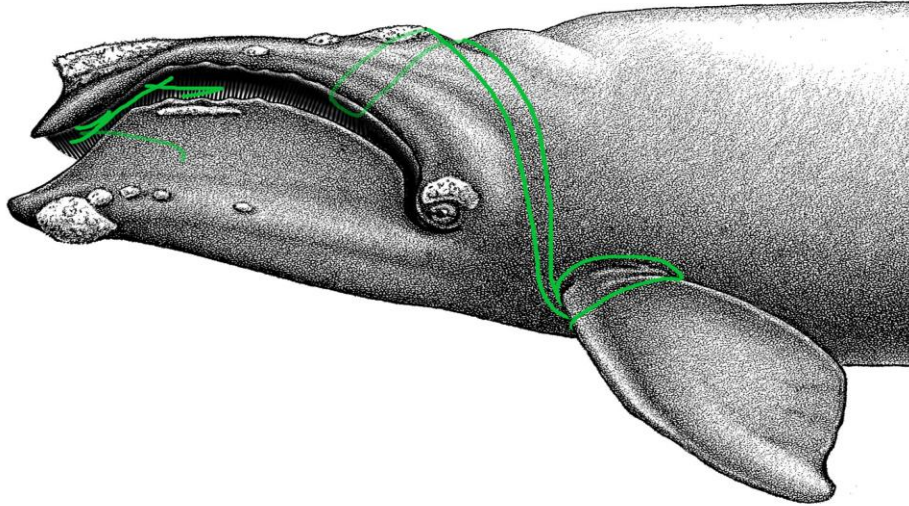


Image by Scott Landry, Center for Coastal Studies

Background Information: Approximately 80% of North Atlantic right whales exhibit scars from entanglements in fishing gear. Entanglements, as well as ship strikes, are the leading causes of North Atlantic right whale deaths. Entanglements happen most often in fishing gear that is set and left unattended in the water for a while as it catches its fish, lobster, or crabs in traps. Sometimes this fishing gear gets damage and lost at sea where it can't be collected by its owner, but can entangle whales or other marine life. At that point it is considered a form of marine debris and can lead to suffocation, starvation, drowning, increased risk for predators, or other injury. In 2018, the International Coastal Cleanup (ICC) estimated that more than 800 marine species are effected by marine debris (2019 ICC Annual Report, Ocean Conservancy). Between fishing gear still being used and marine debris, whales can get pretty tangled up in their ocean homes.

Check out this simulation video to see how North Atlantic right whales get entangled in fishing gear. <https://youtu.be/TaKq-CKnOAI>

Based on curriculum from Project Oceanography 1999.

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Activity Objective: This fast activity is a simple way to learn what life may be like for entangled North Atlantic right whale. Could you get yourself untangled if you were caught in rope or marine debris?

Materials:

- Rubber bands

Activity:

- First, hold your hands up in front of your face, with the back of your hands towards your face.
- Hold the rubber band in your right hand and hook one end of it over the little finger of your left hand.
- Hook the other end of the rubber band over the left-hand thumb. The rubber band should be taught and resting across the bottom knuckles on the back of your left hand.
- Place your right hand behind your back and keep it there. You can also sit your right hand if you are tempted to use it.
- Try to free your hand of the rubber band without using your right hand, teeth, face, or rubbing it on anything.
- Give yourself 2 minutes to see if you can get the rubber band off you hand.



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Wrap Up:

After you are done, imagine what it is like for a North Atlantic right whale that has gotten a section of fishing rope, abandoned net, or other debris wrapped around their body.

- How would you feel after struggling like this all morning?
- How would you feel after missing breakfast?
- What would happen if you continued to miss meals and spend all of your strength fighting to get free?
- Would you be able to care for your young, surface for air or swim?



Photo: Katie Jackson, FWC, taken under NOAA Fisheries Permit #932-1905/MA-009526

This is scary to think about but there is some good news. Teams of scientists are working with fishermen to develop a new kind of fishing called ropeless fishing. Ropeless fishing removes the buoy lines that let fishermen know where their lobster and crab traps are to be able to haul them up to the fishing boat. Instead, they can send an acoustic signal when they are close to their traps to have them float back up to the surface where they can be removed right away. Removing this line from the water would dramatically reduce or eliminate whale entanglements. To learn more visit www.ropeless.org or view a demonstration of one version of this technology here: <https://youtu.be/Xieqr5M ULM>

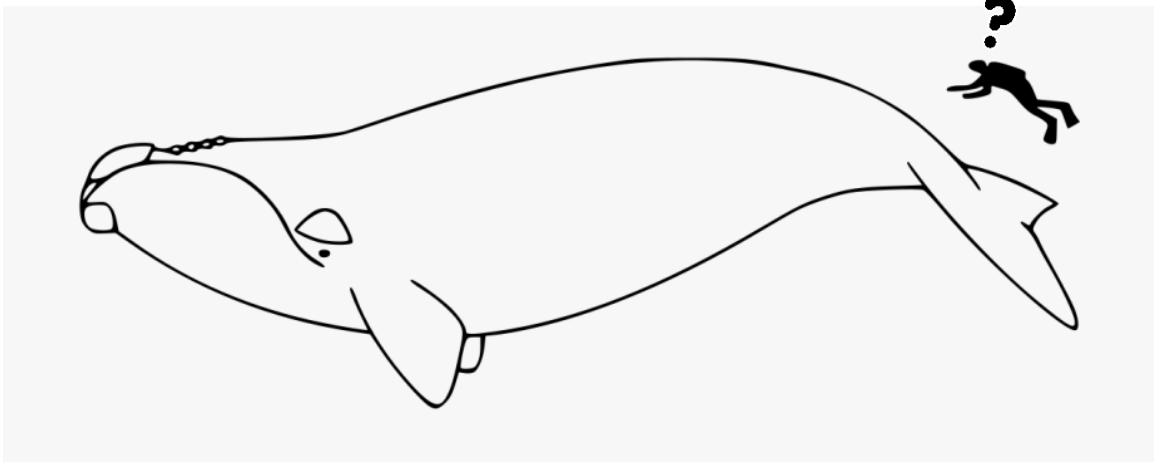
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Want to Learn More?



*Are you interested in learning more about North Atlantic right whales?
Below are some online resources, books and more to help you.*

Apps

- **WhaleAlert** by International Fund for Animal Welfare (IFAW), National Oceanic and Atmospheric Administration (NOAA) and Conservation. www.whalealert.org
- **See & ID Dolphins and Whales/Whale and Dolphin 911** by NOAA Southeast Regional Office <https://digital.gov/2013/10/24/dolphin-and-whale-apps-from-noaa-fisheries/>
- **Marine Debris Tracker** by NOAA & Southeastern Atlantic Marine Debris Initiative <http://marinedebris.engr.uga.edu/>
- **Ocearch Global Shark Tracker** by OCEARCH <https://www.ocearch.org/app/>

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Partner Resources:

Audubon Society of Rhode Island: www.asri.org	New Bedford Whaling Museum www.whalingmuseum.org
Whale and Dolphin Conservation www.whales.org	Face-ing Extinction: The North Atlantic Right Whale – Facebook Page www.facebook.com/faceingextinction

Other Online Resources:

- **Center for Coastal Studies:** www.coastalstudies.org
- **Canadian Whale Institute:** <https://www.canadianwhaleinstitute.ca/>
- **Dalhousie University’s Whalemap:** <https://whalemap.ocean.dal.ca/>
- **Florida Fish and Wildlife Conservation Commission:**
<https://myfwc.com/research/wildlife/right-whales/>
- **International Fund for Animal Welfare:** <http://www.ifaw.org/united-states>
- **Interactive North Atlantic Right Whale Sightings Map:**
<http://www.nefsc.noaa.gov/psb/surveys/>
- **National Marine Fisheries Service:**
<https://www.fisheries.NOAA.gov/species/north-atlantic-right-whale>
- **National Oceanic and Atmospheric Administration (NOAA) Fun for Kids:**
<http://oceanservice.noaa.gov/kids/>
- **National Oceanic and Atmospheric Administration (NOAA) National Marine Sanctuary Program:** www.sanctuaries.noaa.gov
- **National Oceanic and Atmospheric Administration (NOAA) Fisheries Service Regional Offices:**

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- **Greater Atlantic Region Marine Mammal Information:**
<https://www.greateratlantic.fisheries.noaa.gov/Protected/mmp/>
- **New England Aquarium/Anderson Cabot Center for Ocean Life**
<http://www.andersoncabotcenterforoceanlife.org/>
- **North Atlantic Right Whale Catalog:** <http://rwcatalog.neaq.org>
- **North Atlantic Right Whale Consortium:** www.narwc.org
- **Marine Resources Council:** <https://savetheirl.org/>
- **Society for Marine Mammalogy:** www.marinemammalscience.org

Books

- Carwardine, Mark. Handbooks of Whales, Dolphins and Porpoises of the World. Princeton press, 2020
- Clapham, Phil. Right Whales. World Life Library, Voyageur Press, 2004
- Stewart, Brent and Pieter Folkens. National Audubon Society Guide to Marine Mammals of the World. A.A. Knopf, 527 pages: 2002
- Haley, Nelson Cole. Whale Hunt, Mystic Seaport Publication, 1970
- Kraus, Scott and M. Rolland. The Urban Whale: North Atlantic Right Whales at the Crossroad. Harvard University Press, 2007
- Kraus, Scott, Marilyn Marx, Heather Pettis, Amy Knowlton and Ken Mallory. Disappearing Giants: The North Atlantic Right Whale. Fitzhenry & Whiteside, Ltd., 2019
- Leatherwood, Stephen and Randal Reeves. The Sierra Club Whales and Dolphins. Sierra Club Books. 1983
- Wynne, Kate and Malia Schwartz. Guide to Marine Mammals and Turtles of the US Atlantic and Gulf of Mexico. Sea Grant Publication. 1999

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Children's Books:

- Davies, Nicola. Big Blue Whale. Candlewick Publications. 2001
- Fichter, George: Golden Guide: Whale, Dolphins and Other Marine Mammals. Golden Guides from St. Martin's Press. 2001
- Himmelman, John. Ibis: A True Whale Story. Scholastic, 2003
- James, Simon. Dear Mr. Blueberry. Aladdin Picture books. 1996
- Littlefield, Cindy. Sealife Games and Puzzles. Storey Publishing. 2006
- Papastavrou, Vassili. DK Eyewitness Books: Whales. DK Children Publishers. 2004
- Tate, Suzanne. Wendy Whale: A Tale of a Huge Creature. Nags Head Art, Inc., 2014

MISC

- Steven Lewers and Associates: **North Atlantic Whale Watch Folding Guide** (Waterproof): info@foldingguides.com, 1-603-654-7649

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Who, Why and What about Whales...

How much can you learn about the North Atlantic right whale?

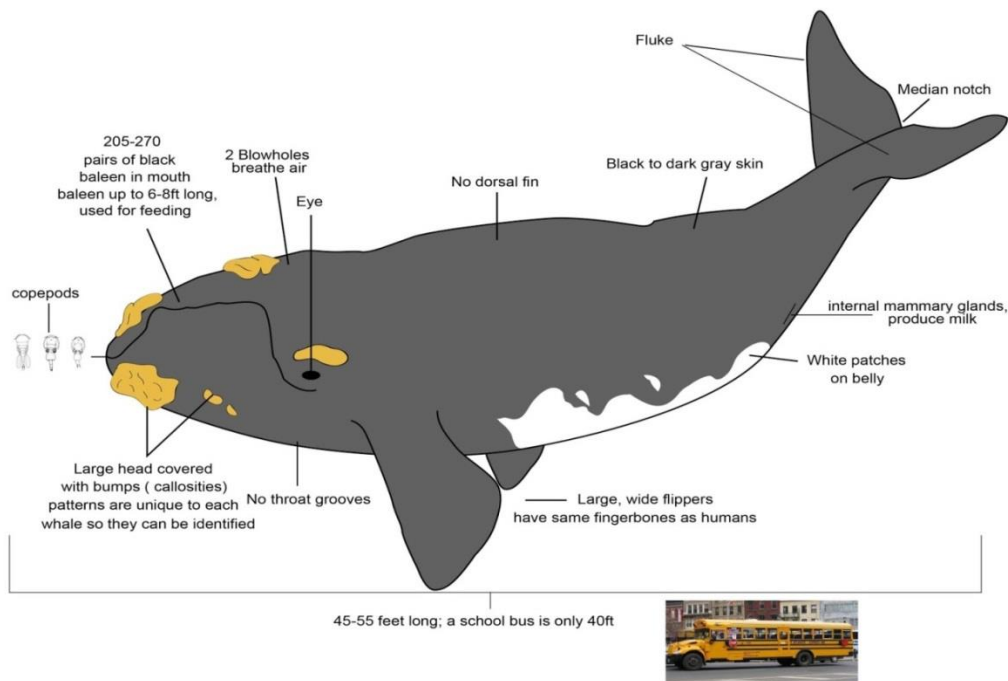
Background Information:

Did you know that North Atlantic right whales, like all whales, are mammals? Like us they breathe air, are warm-blooded, give birth to live young, feed their young milk and even have hair. Did you also know that North Atlantic right whales eat tiny zooplankton called copepods, and that a right whale's mass is 50 billion times more than the food it eats?! It is also 38,000 times longer than its prey!



copepod, by eekwi.org

On average adult right whales are 45-55 ft long and weigh 40-70 tons. By their first birthday they will be 28-30 feet long and probably weigh over 11,000 pounds! You can learn about some of their other features in this diagram:



There is so much to know about North Atlantic right whales! This activity will help you to self-discover some important facts about North Atlantic right whales.

Activity Objective:

Marine biologists and other scientists spend many hours researching the animals they study, such as the North Atlantic right whale. You can be a marine biologist by researching the answers to the questions below. The information for these questions can be found in the links provided in the "Want to Know More?" Resources page.

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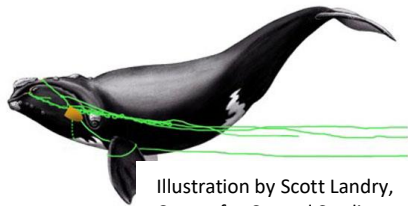


Please get adult permission before venturing online to find the answers to these questions.

How big is a right whale calf when it's born?



Find a story about a right whale that was freed from entanglement and write a brief summary.



How far do North Atlantic right whales migrate? Why do they migrate?



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List three products for which whale blubber was used in the 1800's.



Find a picture of a North Atlantic right whale eating. What type of feeding technique is it using?

copepod, by eekwi.org



Why do right whales get struck by ships?



© New England Aquarium

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What is the current population size of North Atlantic right whales?



The right whale's nickname is the "urban whale". Why is it called that?



List three things you can do to help the North Atlantic right whale.

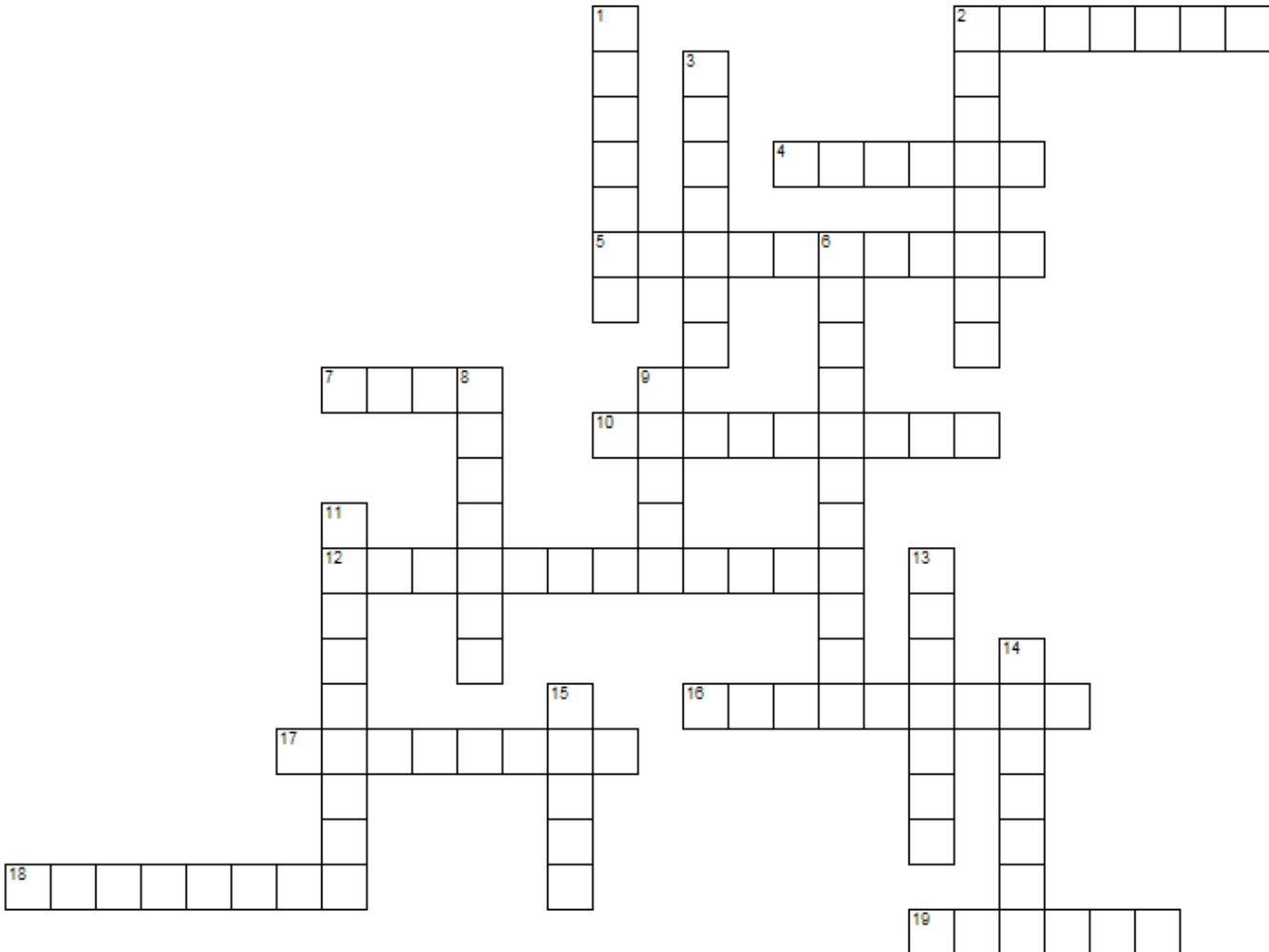


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North Atlantic Right Whales

Fill in the puzzle below using the clues on the next page.



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ACROSS:

2. The Florida and Georgia coasts are their ____ grounds
4. What right whales have instead of teeth
5. Right whales are facing _____ if their numbers don't increase
7. They are _____-blooded
10. Whales have 2 _____, just like we have 2 nostrils
12. Sinking ground line was created to prevent this
16. Right whales lack a _____ that most other whales have
17. Right whales have paddle- shaped _____
18. Busy ports such as Boston and Charleston have _____ lanes
19. The number of months (on average) that a female is pregnant

DOWN

1. What keeps whales warm.
2. Right whales feed on _____
3. Critical _____ is a designated area for increased protection
6. We can identify right whales based on patterns of these
8. Right whales are not fish, but _____
9. To dive, they sometimes bring this out of the water
11. This action helps to keep plastic out of the ocean
13. The main reason why they became endangered
14. Right whales _____ from Florida to the Gulf of Maine each winter
15. Right whales are referred to as the _____ whale because they stay close to shore

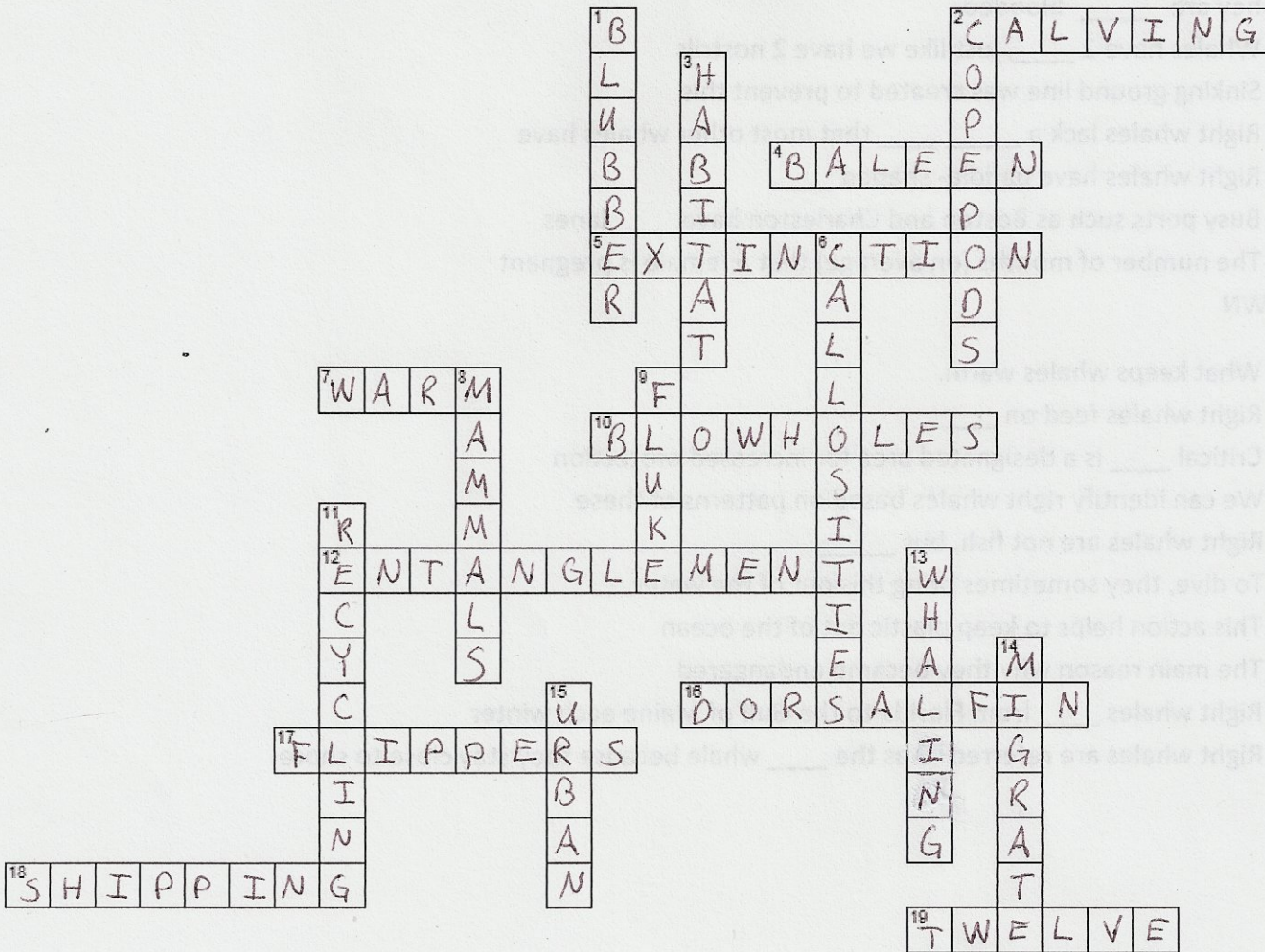
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North Atlantic Right Whales

Fill in the puzzle below using the clues on the next page.



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North Atlantic Right Whales

Find the words listed in the puzzle below:

J Q A Y E N T A N G L E M E N T V M
 Z Q X J U S C M M A T T N F Y B K A
 B Q M A M M A L I P J F J S F L S Z
 C O P E P O D S G Z Z L I H L O U E
 N S H H B U M K R O N U V I I W R M
 E I K Q T Z B P A C O K N P P H B Q
 N T Q A A O L O T T L E F S P O A X
 D U I F F W J L E Q V K J T E L N M
 A E C K E X W L V N H G M R R E W X
 N M G Z I R M U L O O R D I S S H E
 G F S C A R S T G Z H M R K H C A R
 E S M D O W K I J W A B K E M S L I
 R T N N M H Z O P H B O A W U N E P
 E L P X F A P N O R I O E L S V U Q
 D G N Q Y P G I R A T U H C E G T F
 I G S L K W B O G D A B G I W E P E
 U V X B L U B B E R T X H U V K N V
 X A Z X X C C A L L O S I T I E S L

- | | | | |
|-------------|--------------|---------|-------------|
| Baleen | Copepods | Fluke | Pollution |
| Blowholes | Endangered | Habitat | Scars |
| Blubber | Entanglement | Mammal | Ship Strike |
| Callosities | Flippers | Migrate | Urban Whale |

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North Atlantic Right Whales

Find the words listed in the puzzle below:

J Q A Y E N T A N G L E M E N T V M
 Z Q X J U S C M M A T T N F Y B K A
 B Q M A M M A L I P J F J S F L S Z
 C O P E P O D S G Z Z L I H L O U E
 N S H H B U M K R O N U V I I W R M
 E I K Q T Z B P A C O K N P P H B Q
 N T Q A A O L O T T L E F S P O A X
 D U I F F W J L E Q V K J T E L N M
 A E C K E X W L V N H G M R R E W X
 N M G Z I R M U L O O R D I S S H E
 G F S C A R S T G Z H M R K H C A R
 E S M D O W K I J W A B K E M S L I
 R T N N M H Z O P H B O A W U N E P
 E L P X F A P N O R I O E L S V U Q
 D G N Q Y P G I R A T U H C E G T F
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 U V X B L U B B E R T X H U V K N V
 X A Z X X C C A L L O S I T I E S L

- | | | | |
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