



Core Knowledge **VOICES IN HISTORY™**



Rachel Carson

Nature's Changemaker

by Katy S. Duffield

We are pleased that our materials in the Core Knowledge Curriculum Series™, Core Classics® Series, Voices in History™ Series, Collection of Tales™ Series, and Adventures in History™ Series available on our [website](#), are made available through a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



Through the license, the user is free:

- To share: to copy, distribute, and transmit the work
- To remix: to adapt the work

Under the following conditions:

- You must attribute the work in the following manner:

This work is based on an original work of the Core Knowledge® Foundation made available through licensing under a Creative Commons Attribution-NonCommercial- ShareAlike 4.0 International License. This does not in any way imply that the Core Knowledge Foundation endorses this work.

- You may not use this work for commercial purposes.
- If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that for reuse or distribution, you must make clear to others the license terms of this work. The best way to do that is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>



Rachel Carson

Nature's Changemaker

by

Katy S. Duffield

VOICES IN HISTORY: BIOGRAPHY SERIES™

ISBN 978-1-68380-899-2

COPYRIGHT © 2023 CORE KNOWLEDGE FOUNDATION

ALL RIGHTS RESERVED

PRINTED IN CANADA

EDITORIAL DIRECTOR:

ROSIE McCORMICK

CORE KNOWLEDGE FOUNDATION

801 EAST HIGH STREET

CHARLOTTESVILLE, VIRGINIA 22902

www.coreknowledge.org

TABLE OF CONTENTS

CHAPTER 1:	
Birds'-Nesting Day!.....	1
CHAPTER 2:	
Pen to Paper.....	4
CHAPTER 3:	
A Change in Direction.....	9
CHAPTER 4:	
Scientific Wonders.....	13
CHAPTER 5:	
Putting Science into Practice.....	17
CHAPTER 6:	
Science <i>and</i> Writing?	22
CHAPTER 7:	
Highs and Lows.....	25
CHAPTER 8:	
Another Try?.....	29
CHAPTER 9:	
The Wonder of Nature	34
CHAPTER 10:	
The World Needs to Know.....	37
CHAPTER 11:	
Making a Difference.....	40

DISCUSSION QUESTIONS	45
MEET THE AUTHOR	48
MEET THE ILLUSTRATOR	50

1

Birds'-Nesting Day!

One early May morning, Rachel hopped from her bed. The teenager packed her lunch and filled her canteen. She grabbed her notebook and camera. This was her favorite kind of day. It was birds'-nesting day!

Rachel bounded out the door. Her dog Pal trotted beside her. Soon, they reached the trail near their house. The bright green Pennsylvania woods invited them in. Rachel and Pal followed the twists and turns of the path. Pine needles crunched under their feet. Deeper and deeper into the woodland they went.

Rachel had been in those forests and hills many times. She and her mother had spent a lot of time together there. Her mother had pointed out trees and plants. She'd shared the names of different kinds of birds. She'd shown Rachel how to look closely at the world around her.

As Rachel walked through the woods that day, she listened to the soft rustling of leaves. She heard the gurgle of the creek. And she heard something else, too—"Witchery, witchery!" Rachel knew that sound. She and her mother had heard it before on their visits to the woods. It was the song of a bird called a Maryland yellowthroat.

Rachel and Pal moved in the direction of the sound. Again and again, they listened for the bird's call—"Witchery, witchery!" The sound grew louder as they got closer and closer. Until finally, they saw it!

There in a bush sat a perfectly formed nest. Inside the nest were four creamy white eggs with brown spots. Rachel thought the eggs looked like precious jewels. The nest's owner looked nervous. These visitors were too close to the nest. But the bird didn't fly away. It stayed to protect the eggs. Rachel crept closer. She slowly lifted her camera. Then, *snap!* Rachel took the photo.

Throughout the day, Rachel and Pal walked and listened. Whenever they heard the song of a new bird, they set out in a new direction. They found a nest in a tree that looked like a cup made of grass. The "cup" was filled with oriole eggs. They discovered the tiniest of nests with the tiniest of eggs. It was a home for hummingbirds.

As the sun dropped lower, they followed the sound of another bird. Its song sounded like “Teacher! Teacher! TEACHER!” The ovenbird had carefully hidden its nest on the ground.

Soon, the sun began to set. It was time to head home. Rachel didn’t want to leave her favorite place. But she knew she would return again. There would be more birds to watch and more nests to find.

These birds’-nesting days spent in the woods reinforced Rachel’s love and respect for nature. It was a love that had taken root and grown since those magical childhood days when she explored the woods with her mother.



2

Pen to Paper

In the early hours of May 27, 1907, a plump baby girl entered the world. Rachel Carson was born in an upstairs bedroom in a farmhouse in Springdale, Pennsylvania. Rachel's father, Robert, was a businessman. Her mother, Maria, had been a schoolteacher. But Maria had to give up teaching when she got married. At that time, married women were not allowed to be teachers. So Maria stayed at home. She took care of Rachel and her older siblings, Marian and Robert Jr.

From early in her life, Rachel spent time outdoors. As a baby, she often snoozed on the front porch of the farmhouse. As a small child, Rachel and her mother took walks in the woods while Marian and Robert Jr. were at school. Rachel's mother told her the names of flowers and animals and insects. They played near springs and watched birds fly overhead.

When Rachel grew older, she began exploring the woods on her own—or with one of her dogs. Rachel didn't mind being alone in the forest. She pretended that the birds and the wild animals were her friends. Rachel watched squirrels skitter up trees. She listened as bees buzzed by. She began keeping a list of the different kinds of birds she saw. Rachel felt at home in nature. It was the place she loved the most.



Lots of ideas swirled in Rachel's head when she was in the woods. Rachel liked to write, so she made up stories about the animals she saw. Rachel wrote stories about a family of wrens looking for the perfect house. She wrote about a bunny that napped in a chair. Sometimes, she drew pictures to go along with her stories.

Rachel also loved reading books and stories. *St. Nicholas: For Young Folks* was her favorite magazine. Adults wrote many of the stories in the magazine. But in one part, all the stories were written by children. Each month, the magazine held a contest. They invited readers to send in the stories they had written. The best stories won gold or silver badges.

Rachel was ten years old when she wrote her first story for *St. Nicholas*. She sent it to the magazine and waited. Every month, Rachel ran to the mailbox. Every month, she looked for her story in the magazine. And for a while, it wasn't there. But one day, Rachel's new copy of *St. Nicholas* arrived. Rachel turned to the young writers' section. And she saw something wonderful. Her story was printed right there on the magazine's pages!

World War I

From 1914 to 1918, much of the world was at war. World War I was known as the Great War. Two groups of countries—the Allies and the Central powers—fought against one another. The war was fought mostly in Europe, but it affected people all around the world. The Allies defeated the Central powers. But not before millions of lives were lost.

*Rachel's brother, Robert, went to France to fight in the war. In his letters home, Robert told his family about a brave pilot who died in the war. The first story Rachel wrote for *St. Nicholas* magazine told the story of the man who gave his life for his country.*

Rachel was excited and proud. So she wrote more stories. She sent some of these stories to the magazine too. Within a year, three more of her stories were published. Rachel earned silver and gold badges for the stories she sent. She even earned a ten-dollar prize! Seeing her stories in print stirred something inside Rachel. She knew what she wanted to be when she grew up—a writer.

When Rachel began high school in 1921, books and writing continued to hold a special place in her heart. She read poetry and books about the ocean. She wrote for the school's newspaper and magazine.

Rachel also studied—a lot! She desperately wanted to go to college. To get there, Rachel needed to get good grades. She worked hard, but she had some fun too. In her spare time, Rachel played basketball and field hockey.

In 1925, Rachel graduated from high school at the top of her class. The yearbook staff wrote a poem for each graduating student. Rachel's read:

Rachel's like the mid-day sun

Always very bright

Never stops her studying

'til she gets it right.

With high school finished, Rachel's thoughts turned to college. If she could get into college, Rachel would take her hard work and dedication along with her. She would make her dream of being a writer come true.

3

A Change in Direction

Rachel had always wanted to go to college. But she didn't know if she would get the chance. Attending college cost a lot of money. And Rachel's family didn't have any money to spare. Rachel applied anyway and hoped she could find a way to go.

Rachel applied to the Pennsylvania College for Women. People at the school saw the good grades Rachel made in high school. They believed she would be serious about her education. So they accepted her into the college. They gave her a scholarship that would pay for part of her tuition. Rachel was thrilled. But she knew she would still need more money to pay for her time at college.

A scholarship is money students are given to pay for college.

To help pay her way, Rachel's father sold some of the family's land. Her mother taught piano lessons. She also sold chickens and apples. She even sold the family's china and silver. Rachel earned another scholarship too.

In September 1925, Rachel's father borrowed a friend's Model T Ford. Rachel and her parents drove sixteen miles to the all-girls college. A new world was opening up for Rachel. The English literature and composition classes she would take would help her become a stronger writer.



College life had its ups and downs. Rachel read wonderful new books. She wrote new stories. Teachers at the college taught her things she'd never known before. But Rachel was shy. It wasn't easy for her to be around so many people. She was used to being alone in the woods with her dogs.

Rachel had a hard time making friends. Some of the other students made fun of her. They laughed at her homemade clothes. They thought it was strange that her mother came to visit almost every Saturday. So Rachel skipped most of the college dances and parties. She stayed in her room and studied instead.

Miss Grace Croff was one of Rachel's English professors. She noticed Rachel's talent for writing. She liked how dedicated Rachel was. Miss Croff told Rachel she should write for the school paper and magazine. So Rachel gave it a try.

The first story the magazine accepted was about her favorite subject—the sea. Rachel had never seen the ocean. But the sea and the creatures that lived in and around it fascinated her. Rachel's words made readers feel like they could hear the ocean and feel the sand under their feet. Rachel was good at explaining things, too. She made difficult subjects easy to understand.

Rachel would have been happy to spend all of her college years reading and writing. But to graduate, she needed to take other classes too. Rachel took French. She learned to play the violin. The college also required her to take a science class, so Rachel signed up for biology. She didn't know if it was something she'd like. But the day she walked into her first biology class, Rachel's life changed again.

Biology is the study of life and all living things.

4

Scientific Wonders

For as long as Rachel could remember, all she had wanted to be was a writer. But once she began studying biology, something felt different. Nature had always been a big part of Rachel's life. And in biology class, she was able to study the things she loved even more closely. In biology, she could study trees. She could study fish or the lives of birds. Through a microscope, she got a close-up view of wonders she'd never even imagined.

As with her other classes, Rachel put her all into her biology class. She studied hard. She stayed after class to ask questions. On field trips, she dipped into streams to discover the creatures that lived there. She brought back a frog skeleton to study. Rachel had always had a strong interest in the natural world, and biology opened up that world even more. So Rachel began to think about how science might fit into her life.

microscope: device used to make images larger

It wouldn't be easy for Rachel to become a scientist. In the 1920s, almost all scientists were men. What if no one believed in her? What if she couldn't find a job because she was a woman? It might be a hard road, but Rachel wanted to follow her heart. She made a decision. She wouldn't major in English. She would change her course of study to biology instead.

Roaring Twenties

The Roaring Twenties is a nickname for the decade of the 1920s in the United States. During this time, life was changing. World War I had ended. Many people had money to spend. They bought new cars. They went to ball games and to movies. They ate out and danced to a new style of music called jazz. Life was good.

In 1920, women won the right to vote in elections. Many women kept the jobs they'd gotten during the war. Others went to college. Young women had more freedoms than they'd ever had before. But that didn't mean they could do whatever they wanted. They couldn't hold certain jobs. In some states, they couldn't work at night. They couldn't get a loan to start a business without a man to cosign for them. Women gained more rights in the Roaring Twenties. But they still had a long way to go.

From that point on, Rachel focused on science. She studied chemistry. She took a class to learn about how baby animals grow inside their mothers. She cut open

chemistry: the science of what makes up substances and how they form and change

grasshoppers, fish, and other animals. Dissecting animals let Rachel see inside them. She studied their hearts and lungs. She looked into a microscope to closely see their skin, stomachs, and other parts. Seeing these things up close helped Rachel learn more about animals and what made them live.

In December 1928, Rachel only had one semester left at the Pennsylvania College for Women. Rachel had learned a lot about science. But she wanted to learn more. So she applied to Johns Hopkins University in Baltimore, Maryland. At Johns Hopkins, she could get a graduate degree. But some problems stood in her way.

Once again, Rachel didn't have the money to pay for schooling. And Johns Hopkins accepted only the best and brightest students. Even if she could find the money, would she be able to get in? Rachel faced another big problem, too—she was a woman. In the 1920s, most science students who studied at Johns Hopkins were men. These were big obstacles to overcome. But Rachel didn't let them stop her.

On a warm spring day in April 1929, Rachel got the news she had been waiting for. It was even better than she had expected. She had been accepted into Johns Hopkins. And she'd received a full scholarship that would pay for

semester: about 18 weeks of a school year

her first year at the school. Full scholarships were only given to students with excellent grades, and they were almost never given to women. Rachel couldn't contain her excitement. She still loved to write. But studying biology had become her new passion. Rachel would be taking the next steps to becoming a scientist!

5

Putting Science into Practice

Getting into Johns Hopkins was a great honor. But before Rachel set off to grad school, another adventure awaited her. Rachel had been invited to spend six weeks at a famous research laboratory in Massachusetts. At the Marine Biological Laboratory in Woods Hole, Rachel would work on research projects. She'd spend time with well-known scientists. She'd learn what it felt like to be a real scientist!

Rachel was nervous when she boarded the train to Woods Hole. She was leaving her home behind. She would be farther away from her mother than she had ever been. But Rachel was excited, too. She would see the ocean for the very first time. Rachel couldn't wait to walk on the beach. She dreamed about putting her feet in the salty water. She wondered what kinds of sea creatures she might see.

Working at Woods Hole was a dream come true. Rachel soaked up every minute. She read book after book at the lab's massive library. She and a friend searched the beaches for marine life. They found sea urchins and jellyfish in tide pools. They looked closely at seaweed and at the rocky shore to find out what lived there.



Rachel even had the chance to go out on a research boat. As the *Albatross II* rocked through the waves, its nets dragged the ocean floor. When the nets came in, they were loaded with treasures from the sea—plants and shells, crabs and fish. Rachel saw forms of life she'd only read about.

Of all her activities at Woods Hole, one of Rachel's favorites was walking alone on the beach. On full moon nights, Rachel picked up seashells. She watched worms wriggling in the water. She listened to the sounds of the surf. Rachel felt as if she belonged near the sea. She tried to remember every tiny detail. She wanted to carry those moments along with her for the rest of her life.

Rachel hated to leave Woods Hole behind. But summer was over. It was time to start her graduate studies. At Johns Hopkins, Rachel did what she did best. She got up early to study and go to classes. She worked into the evenings. Then she got up the next morning and did it all over again. In the school lab, Rachel worked with many different kinds of animals. She took care of rats. She worked with catfish. She dissected snakes and lizards.

Rachel enjoyed her time at Johns Hopkins, but she had worries, too. Life was hard in the early 1930s.

dissected: cut into pieces for studying

The Great Depression had hit the United States. Many people lost their jobs, and some lost their homes. Rachel's father had been sick and was out of work. So Rachel invited her parents to move to Baltimore to live with her. And later, Rachel's sister and her two children moved in, too. It was hard enough for Rachel to take care of herself, and now she had others to support as well. Rachel taught classes during her summers off to bring in money. After her first year, she became a part-time student so she could work during the school year too.

The Great Depression

During the 1930s, much of the world faced hard economic times. This period is known as the Great Depression. Banks and businesses shut down. Farms and factories closed. Workers lost their jobs. With no money coming in, many people lost their homes, too. And most did not have money to buy food, clothing, or even medicine.

After three years, Rachel finished her studies at Johns Hopkins. On June 14, 1932, Rachel received her master's degree in zoology. Rachel was thrilled to have her master's, but she wanted to continue with her schooling. She hoped to get a doctoral degree. So, in the fall of 1932, Rachel began classes at Johns Hopkins to earn a PhD. During this time, Rachel kept eels in a big aquarium in her laboratory. She liked to watch as they wiggled and glided from one side of the tank to the other.

Sadly, Rachel was unable to complete her doctoral degree. Once again, money stood in the way. Rachel needed to get a job to support herself and her family.

An eel is a long, slippery fish that looks sort of like a snake.

Zoology is the science that studies animal life.

Finding a job as a scientist would not be easy. Most science jobs went to men. And the Great Depression made it hard to find a job of any kind. Rachel was going to have to figure out how to put all of her hard-earned education to work.

6

Science *and* Writing?

In 1935, Rachel took several federal civil service exams. She met with the head of a division at the U.S. Bureau of Fisheries in Washington, D.C. The division head didn't have a spot for her as a scientist. But he needed someone to write scripts for a radio show. It wasn't a full-time job, and it only paid \$6.50 per day. But Rachel took it.

Scripts are the written words that tell actors what to say and do in plays, movies, and television and radio shows.

In her new job, Rachel wrote “seven-minute fish tales.” The scripts provided information about different kinds of fish. Rachel didn't use big, scientific words in the scripts. She wrote in a way that was easy for people to understand. She made the information interesting to listeners. The radio program became a big success.

federal civil service: jobs in the U.S. federal government

Rachel's boss was happy with her work. So he asked her to keep writing for the bureau. Rachel's next project was to write about living things found in the sea. Rachel wasn't working as a scientist, but she was happy to be writing again.

When Rachel's boss read her paper about ocean creatures, he handed it back to her and said, "I don't think it will do." But not because it wasn't good enough. Rachel's boss thought her paper was too good! He told Rachel she should hold on to it and try to sell it.

A few months later, in July 1936, Rachel got a promotion. She became a junior aquatic biologist at the bureau. In her new full-time role, Rachel stayed very busy. She got back out into nature. She talked to experts. She did research. She wrote reports. On her outings, Rachel always carried a small notebook. She made notes on the birds she saw. She wrote about the weather. She even wrote about how the places she visited smelled. For the first time, Rachel began to feel like a real scientist.

In her spare time, Rachel used the information in her notebooks to write new stories. She wrote about ducks and tuna. She wrote about oysters, eels, and other kinds of wildlife, too. Rachel sold many of these stories to newspapers.

promotion: a better position at work

But not everything in her life was good. Rachel lost her father in 1935, then in early 1937, Rachel's sister, Marian, died. Rachel was heartbroken. But she knew that despite how sad she was feeling, she had to keep moving forward. Her writing helped her do just that. Rachel pulled out the paper her boss had said she should try to sell. She rewrote it until she thought it was perfect. Then she sent it off to an important magazine called the *Atlantic*. To Rachel's delight, the magazine bought it and paid her \$100.

In Disguise

Rachel's story "Undersea" was published in the Atlantic in September 1937. At that time, men still wrote most of the science articles that ran in important magazines. Rachel thought people might not take her work seriously if it was written by a woman. So instead of having "Rachel Carson" as the article's byline, Rachel used "R. L. Carson" instead.

After "Undersea" came out, Rachel received a letter. It was from a book editor in New York. The editor liked the way Rachel wrote. He wanted her to make "Undersea" longer. He thought it would make a great book. This made Rachel begin to wonder. Could she combine her two loves—writing and science? Could she write a book?

7

Highs and Lows

In early 1938, Rachel began work on her first book. The book would tell about incredible animals that lived in and around the sea. Rachel made notes. She created an outline. The book would be divided into three parts. She would write about sea creatures that lived near the shore, in the open sea, and down deep in the ocean.

Rachel hoped to take time off from her job to travel. She needed to do research for her book. At first, Rachel couldn't leave her day job. She needed the money to support herself, her mother, and her sister's two children. But in the summer of 1938, Rachel was finally able to get away.

Rachel and her family went on vacation to a beach in North Carolina. During the day, Rachel was awed by the sight of thousands of tiny fish trapped in the marsh pools. Rachel spent hours watching until a high tide rolled in, finally releasing the fish back into the ocean. This sight touched Rachel deeply and brought tears of joy to her eyes.

At night, Rachel took her flashlight to the beach. Under the full moon, she scribbled in her notebook. She wrote about how the sea spray felt on her face. She watched ghost crabs scurry across the sand. She noticed how the moon's light sparkled on the tide pools. These were the details that would make Rachel's book sing.



Back home, Rachel got up early each morning. She worked on the book before going to work at the Bureau of Fisheries. At night, she stayed up late writing with her cats, Buzzie and Kito, by her side. Rachel wrote about birds and fish and eels. She wrote about how sea and shore animals lived. She told how they sometimes fought to survive. More than anything, Rachel wanted people to know that ocean life was important and that it needed to be protected.

It took three years for Rachel to finish the book. But finally, on November 1, 1941, *Under the Sea-Wind* was published. Rachel had poured her heart into her book. She'd chosen every word with care. Now it was out in the world for everyone to read. She wondered what people would think about the book. Would they like it? Would anyone buy it?

Important newspapers published reviews of *Under the Sea-Wind*. The reviewers loved Rachel's writing style. They said her words sounded like poetry. They also liked how Rachel made hard subjects easy to understand. The reviews were good! Rachel breathed a sigh of relief.

But something else was going on in the world at that time, too. About a month after Rachel's first book came out, something horrible happened. Japanese planes dropped bombs on Pearl Harbor in Hawaii. The United States entered World War II.

World War II

World War II started in 1939 and lasted until 1945. The war was fought between two groups of countries—the Axis powers and the Allies. The United Kingdom, France, The Soviet Union, China, and the United States were the major Allied countries. The major Axis powers were Germany, Italy, and Japan. The United States did not enter the war until 1941, when the Japanese bombed a U.S. naval station in Hawaii. More people died in World War II than in any other war in history.

People were worried about the war. They didn't know what was going to happen. They weren't thinking about reading books—especially poetic books about the sea. All eyes focused on the news. People wanted to know what was happening with the war. Very few copies of *Under the Sea-Wind* were sold. Rachel's book was quickly forgotten.

8

Another Try?

Rachel was sad that more people didn't read her book. She had worked so hard. She'd learned everything she could about her subject. She'd written and rewritten the words to make them the best they could be. Rachel was discouraged. She didn't think she would ever write another book. But that didn't mean she would give up on writing altogether.

Nature was important to Rachel. She wanted to share it with others. She wanted to help people learn how to protect living things. So Rachel kept researching and writing. She wrote for her government job. She continued writing for newspapers and magazines.

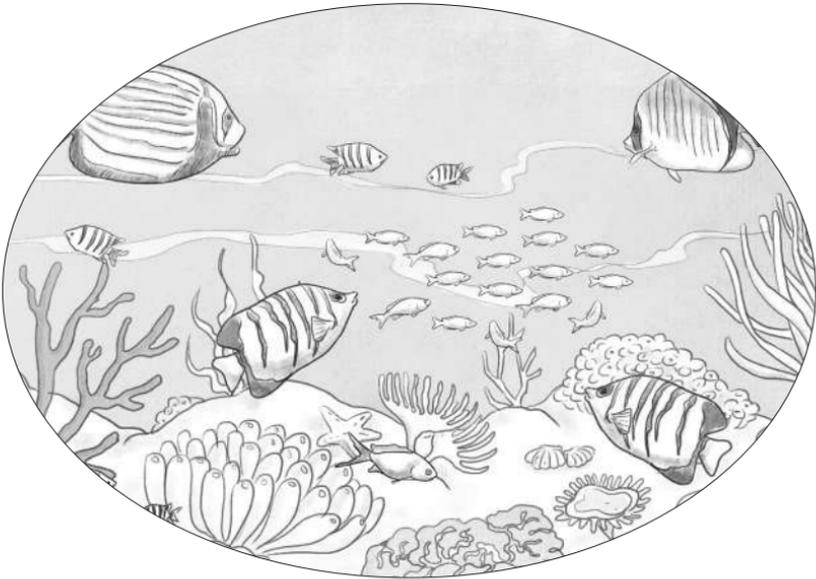
About a year before Rachel's book came out, the Bureau of Fisheries had changed its name. It had become the U.S. Fish and Wildlife Service. The FWS, as it was called, didn't just focus on fish and waterways in the United States. It expanded to include looking at ways to protect rivers, wildlife, forests, and other parts of nature. This change affected Rachel's work, too.

Over the next few years, Rachel spent a lot of time traveling. For her FWS work, she visited Utah, Virginia, Montana, and other places. She studied hawks, eagles, and owls. She also learned more about snow geese, swans, and bats. Rachel used her observations about some of these birds to write articles for FWS and for other publications.

In 1946, Rachel and her mother went to Maine for a vacation. Rachel had been working hard, and she'd been sick a lot. Spending time on the beach helped Rachel feel better. She enjoyed her time in Maine so much that she hoped she might live there some day.

No matter where Rachel was, she always surrounded herself with nature. Rachel was always observing and thinking. She was always researching and writing. And over time, she figured something out. There was more she wanted to write about. Maybe she *did* want to try writing another book.

Rachel's favorite place was the sea, so she decided to write about the ocean again. In July 1949, Rachel and a friend visited the Florida Everglades. They sped across the Florida Bay in a speedboat. They rode through the Everglades and looked for alligators in a vehicle called a "glades buggy."



Rachel even got a chance to dive under the water with a diving helmet. She didn't get to stay down long—the weather was bad, and the currents were strong. Still, Rachel climbed down the boat's ladder and peered through the water. She'd finally caught a glimpse of her beloved underwater world.

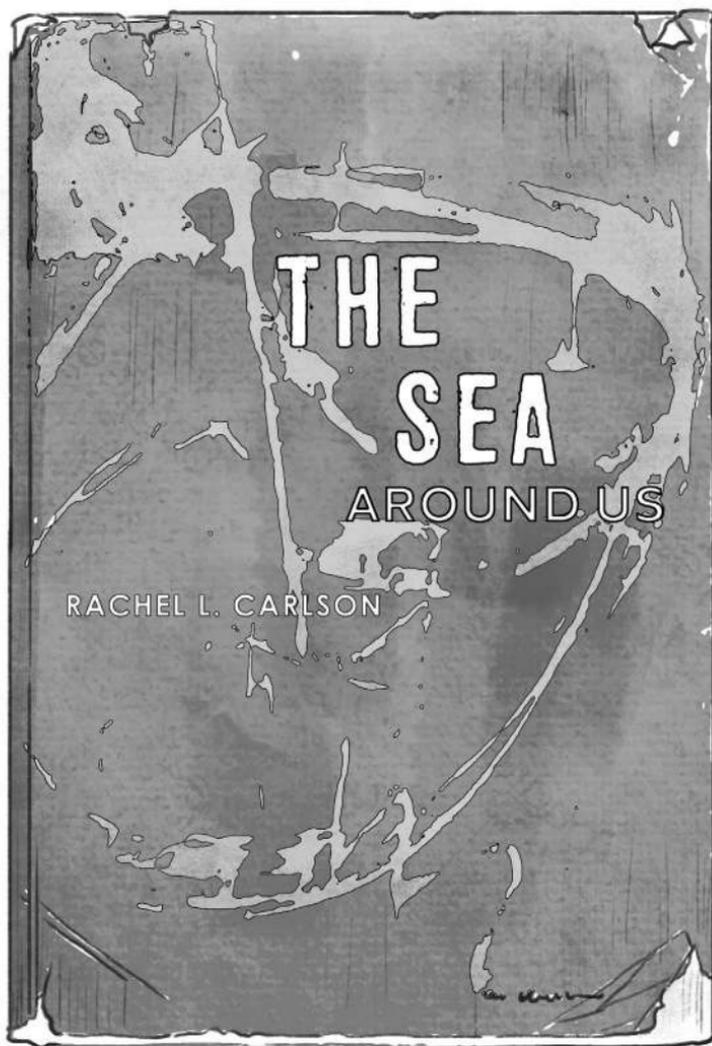
Rachel gathered all the knowledge she'd collected about the ocean. She thought about all the animals in and around the ocean that she'd studied. She looked back at all the wonderful discoveries she'd made. And as with her first book, Rachel poured out the information in a lovely, poetic way. What she wanted most for the book was for it to make people to care about the sea.

The Sea Around Us came out in July 1951. Rachel wasn't sure what to expect. Would the book do well, or would it be a disappointment like her first book? Rachel shouldn't have worried. Readers loved *The Sea Around Us*. Everyone wanted a copy of their own. The book sold 250,000 copies in six months. It was a bestseller!

No Respect

Rachel became well known for her book. But life as a woman scientist still wasn't easy. Some male scientists didn't believe a woman had written the book. They didn't think women could understand and explain difficult science topics. Some men even talked about how Rachel looked. They didn't look at her as a scientist. They only wondered if she was pretty. Even with an important, best-selling book, Rachel didn't get the respect she deserved.

The Sea Around Us also won a big award—the 1952 National Book Award for Nonfiction. All of a sudden, everyone wanted to talk to Rachel. They wanted to meet her and to interview her. They asked her to make speeches. Rachel wasn't sure she liked being the center of attention. She was a shy person. All of this excitement wasn't easy for her. Rachel was glad to have written a book that people liked. But she knew her life would never be the same.



9

The Wonder of Nature

The success of *The Sea Around Us* brought big changes to Rachel's life. For the first time, she didn't have to worry about money. So Rachel made a decision. She left her job at the Fish and Wildlife Service. With more free time, Rachel could devote her life to the things she loved most—writing and nature. The extra time would give her a chance to work on another book, too.

To research for the new book, Rachel and her mother took a trip down the East Coast. They visited the rocky shores of Maine's beaches. They padded across the soft sands in Georgia. On a coral beach in the Florida Keys, Rachel held a baby octopus.

Rachel's cat Muffin went on the trip too. Rachel called Muffin her assistant. He smelled the fishy smells. He kept a close eye on the sea creatures Rachel studied. When they got back home, Rachel said Muffin had seen so much that he was a marine expert, too!

For Rachel's next trip, she headed back to her favorite laboratory at Woods Hole. Rachel caught eels and baby starfish on the Massachusetts beach. She studied sea creatures under her high-powered microscope. Some days, she spent hours in ice-cold waters. She would get so cold and stiff that she couldn't walk. A friend would have to carry her back to the car.

Rachel visited Maine again. It was as lovely as she'd remembered. For so long, Rachel had wanted to live there. She was now able to do that—at least some of the time. Rachel bought some land and built a house near the ocean. She planned to spend summers there.

Rachel worked on her third book whenever she could. But it took a long time to finish. Rachel had been sick again. She faced one health problem after another. But she pushed through. Four years later, the book was finished.

The Edge of the Sea was published in 1955. Rachel hoped the book would make people look at nature with wonder. She didn't want people to just know about nature. She wanted them to *feel* it. People were excited to read a new book from Rachel. *The Edge of the Sea* became a bestseller too.

Sadly, in December 1958, Rachel's mother died. Rachel's mother had been the first one to take her for a stroll in the woods, when Rachel was just a baby. Her mother had taught her to appreciate birds and trees. She had sacrificed to help pay for Rachel's schooling. She had shown her that nature is important and that it needs to be protected. These were things that Rachel shared in her books. And they were things she would never forget.

10

The World Needs to Know

Spending time with her mother in the woods had taught Rachel a great deal. And Rachel's research over the years had taught her even more. Rachel understood the importance of all living things. She became more and more aware of how everything in life is connected. She believed that the earth and everything on it should be protected.

Rachel had seen smoke rising in the air from factories. She'd seen trash floating in the ocean she loved. These things were bad for the environment, and Rachel knew it. They were harmful to people and animals, too.

During her time at the Fish and Wildlife Service, Rachel had read about strong chemicals called pesticides. Farmers spray pesticides on their crops to kill insects that can damage the plants. Cities use pesticides to kill mosquitoes that can carry disease. People also use pesticides around their homes. The chemicals kill weeds in their yards and cockroaches in their homes.

environment: the natural world

pesticides: chemicals that kill insects



Rachel dove into research on a pesticide called DDT. She visited research libraries. She talked with scientists and people she used to work with in her government job. She talked to doctors, too. Rachel needed to understand more about illnesses that might be caused by pesticides. And the more she learned, the more she understood how dangerous these chemicals could be.

Pesticides play an important role in the world. But Rachel learned that pesticides weren't just killing bugs. They were also killing birds, fish, and good insects like bees. People exposed to pesticides like DDT could get sick as well. Rachel had never faced an issue that was more important to her. She had to make people aware of the dangers of these pesticides. And she knew just how to do it. She would speak out through her words. She would write a new book.

Speaking out wouldn't be easy, though. Big businesses made a lot of money selling pesticides. If Rachel told the truth about their products, people might stop buying them. Rachel knew pesticides were important, but she believed scientists should study the chemicals more closely. She wanted them to make sure the chemicals were safe. It was important to know exactly how pesticides affected wildlife—and, more importantly, how they affected people.

Rachel kept her new book a secret while she worked on it. She didn't want anyone to try to stop her from telling this story. She also needed plenty of time to make sure everything she wrote was correct. If she was going to make people listen, she needed to have all the facts. She had to make sure the information she presented was clear and that it could be backed up with scientific research.

This was the most important book Rachel would ever write. She had to get it right. But that was sometimes hard to do. In 1960, Rachel, having suffered from health problems, found out she had cancer. Rachel was in pain. She had to spend time in the hospital. And her cancer treatments made her feel extremely tired.

It was difficult to write, but Rachel didn't stop. Sometimes, she wrote in bed. Other times, she wrote propped up with pillows in a wheelchair. No matter how bad Rachel felt, she kept working. The world needed to know about DDT.

11

Making a Difference

Rachel's illness often interrupted her work. Sometimes, she couldn't write at all. But when she felt up to it, Rachel kept writing and researching. In early 1962, she finished the book. Rachel decided to call the book *Silent Spring*. If people didn't take a close look at the harm pesticides could cause, the earth could lose its birds. Springtime would be silent without birds singing in the trees.



Even though the book was finished, Rachel had more work to do. She had to make sure that every fact she included in the book was true and accurate. She sent the book to experts to read. Most of them found nothing they would change. Some found a few small changes that would make Rachel's words clearer.

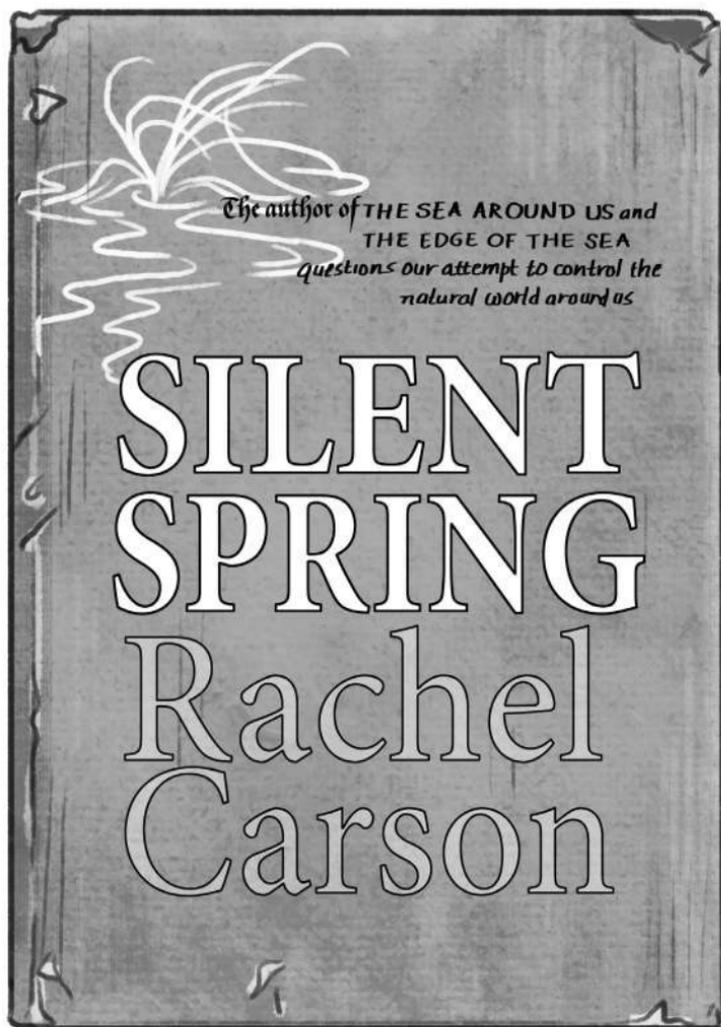
In June 1962, the *New Yorker* magazine began publishing parts of *Silent Spring*. Rachel's words caused a stir. Most people were glad that Rachel was talking about the dangers of pesticides. Some were surprised that the government had allowed these dangerous products to be used. Others just thought Rachel didn't know what she was talking about.

Big chemical companies that made pesticides like DDT were angry about Rachel's book. They were afraid it would hurt their business. They went on radio shows and said that Rachel's facts were wrong. They said she just wanted to scare people. But Rachel knew that wasn't true. And Rachel didn't want people to stop using pesticides completely. She only wanted to make sure the products they used were safe.

Silent Spring was published in September 1962. By that time, almost everyone had heard about Rachel's book—even the president of the United States.

accurate: without errors

At a press conference, a reporter asked President John F. Kennedy if the government was looking into the dangers of pesticides. President Kennedy mentioned Rachel's book and said that studies were being done on the chemicals.



Rachel and her books had been popular before, but she became even more well known after *Silent Spring* came out. Everyone wanted to interview her. They wanted her to give speeches. Rachel was still the same shy person she had always been, and she was still very sick. But this book was important to nature and to people. So Rachel made an effort to get out and talk about it.

In April 1963, Rachel appeared on a television show called *CBS Reports*. More than ten million people tuned in to watch. People who hadn't even read her book learned about the harm pesticides could do. Rachel had achieved what she had hoped. The facts about DDT were out in the world. She hoped her words could make a difference. And they did.

On May 15, 1963, the government released its report on pesticides. The report showed that Rachel's concerns were true. The facts she had presented were accurate. Pesticides needed to be studied more. New, safer methods would have to be investigated. Rules were needed to make sure that both animals and people stayed safe. Over time, laws were changed because of Rachel's words.

That summer, Rachel's health continued to get worse. She needed to rest, so she went back to her favorite place. In Maine, she once again spent time on the beach.

She listened to the ocean's waves splashing on the seashore. She watched the birds fly overhead. The beauty around her was what she'd worked so hard to share with others. Her work was done.

On April 14, 1964, Rachel Carson died. She was fifty-six years old.

DDT Banned

After Rachel's death, government scientists continued to study DDT. They found that DDT could cause serious harm to the environment and to people. As of December 31, 1972, DDT was no longer allowed to be used in the United States.

Discussion Questions

1. What are some ways in which Rachel's mother helped her over the course of her life that contributed to Rachel's success?
2. From what you've read about Rachel's personality, what do you think would have happened if Rachel's stories had not been chosen to be published in *St. Nicholas* magazine? Do you think she still would have grown up to be a famous writer? Why or why not?
3. What are at least three examples of times when Rachel could have given up but didn't? What do these examples tell you about her?
4. What would you do if someone told you that you couldn't do or be something just because of your gender or how you look? What steps could you take to convince them otherwise?
5. Rachel's first book, *Under the Sea-Wind*, didn't sell well because people were more focused on World War II than on books. Rachel was discouraged and thought she'd never try to write another book. Why do you think she changed her mind? If you failed at something, would you try again? Why or why not?

6. Rachel was a shy person who didn't enjoy being in front of people, yet she often spoke to reporters and in front of large groups. Why do you think she put herself out there if it made her uncomfortable?
7. From the time Rachel was a young girl, she dreamed of being a writer, but then she changed her mind and decided to become a scientist. It took a while for her to figure out that she could combine science and writing. What are some of your passions? How might you combine two or more of the things you love?
8. Rachel knew that it would be hard for her to become a scientist—especially because she was a woman—but she didn't let that stop her. Can you think of a time when you knew something would be hard but you tried anyway? What happened?
9. People who read Rachel's books about the ocean said that her words made them feel like they were standing right there on the beach with her. How do you think Rachel accomplished this?
10. Throughout her life, Rachel stood up for what she thought was right. It wasn't easy, but Rachel felt strongly about what she believed in. Can you think of a time when you were challenged to stand up for something you knew was right? What did you do or say? Why was it important for you to stand up?

DISCUSSION QUESTIONS

11. What are some qualities that Rachel had that made her a successful scientist? What qualities made her a successful writer?
12. If Rachel were still alive today, how do you think she would feel about the way we are protecting nature? How do you feel about the way the world is being taken care of?
13. Can you think of any environmentalists today who are working to make Earth a cleaner place?
14. What are three things you can do to help protect nature and our planet?
15. Rachel's words showed that one person can make a difference in the world. What is one step you can take today that could lead to making the world a better place?

Meet the Author



Katy S. Duffield is the author of more than forty children's books. She's written fictional picture books about a farmer who lost his cows, a little country girl with a big ol' voice, an alien with a cold, a house looking for a home, and others.

She's also written many nonfiction books about a wide range of topics such as orangutans, hurricane hunters, movie stunt doubles, venom extractors, and dogs that protect penguins. Her most recent award-winning nonfiction title, *Crossings: Extraordinary Structures for Extraordinary Animals* (illustrated by Mike Orodán), shares information about how wildlife crossings help protect animals around the world.

Katy enjoys writing fiction because it's fun to make up characters and to use your imagination to figure out where the story will take those characters. With nonfiction, Katy gets to research and explore all kinds of things that interest her—and then write about them!

Katy has a soft spot in her heart for animals of all kinds. She loves spending time outdoors, hiking, and camping. She also enjoys observing and photographing the birds, deer, and possums—and once even a fox family!—that visit her backyard.

Given her love for nature, Katy feels honored to have had the opportunity to write about Rachel Carson, an amazing woman who devoted her life to protecting animals and our earth. For more information about Katy and her writing, please visit www.katyduffield.com.

Meet the Illustrator



Kailien Singson. A born artist, Kailien hails from the northeastern region of India known for its rich natural beauty that serves as a constant inspiration in his work. His passion for art began at a young age with artistic scribbles in notebooks at school, and gradually developed into a serious career that led him to pursue a degree in Arts. Having explored several techniques in art through his education and professional years in publishing, Kailien specializes in using striking colors, and depicting realistic forms in his work. He is equally adept at traditional art styles, taking inspiration from everyday life.

Credits

Cover Illustration by

Kailien Singson & Ivan Pesic

Title Page Illustration by

Kailien Singson

Text Illustrations by

In Courtesy of Kailien Singson / 50

In Courtesy of Katy Duffield / 48

Kailien Singson / 3, 5, 10, 18, 26, 31, 33, 38, 40, 42

Voices in History is a Core Knowledge Biography Series that encourages young readers to learn about real superheroes in history. As a result of acts of extraordinary bravery, ingenuity, strength, and determination, these people made a difference and changed the world. Perhaps their remarkable stories will inspire young readers to become the superheroes of the future.

Core Knowledge VOICES IN HISTORY™

These books are suitable for readers aged 8 and up.

ISBN: 978-1-68380-899-2

