

# Singer-Songwriters and the Environmental Movement

## OVERVIEW

### ESSENTIAL QUESTION

How did the singer-songwriters of the 1960s and 70s address the concerns of the environmental movement?

### OVERVIEW

*We are stardust  
We are golden  
And we've got to get ourselves  
Back to the garden*



- Joni Mitchell, “Woodstock” (1970)

In 1962, marine biologist Rachel Carson published *Silent Spring*, a chilling account of the damage done to the environment by pollution, particularly in the form of chemicals and pesticides. Eight years later, on the first “Earth Day,” Americans joined in protests over the degradation of the country’s air and water, launching an environmental movement that continues today.

*Silent Spring* introduced environmental concerns to new audiences, leading to a strengthened environmental movement. But well before the publication of Carson’s book, many Americans were already intimately familiar with the dangers of pollution and the extraction of resources. Poor Americans, people of color, and immigrants have regularly worked in close proximity to dangerous chemicals or other pollutants. For centuries, indigenous people have witnessed the desecration of the environment, from the eradication of the buffalo to the pollution of waterways to the strip mining of mountains considered sacred. Songs created by these communities that address such experiences and concerns have long been part of the American musical landscape.

In part thanks to the publication of *Silent Spring*, environmentally-minded songs began to become commercially popular in the 1960s. In 1962, Buffy Sainte-Marie released the song “Now That the Buffalo’s Gone,” which protested the U.S. Government’s treatment of both Native Americans and the environment. While the song did not make the charts, it was widely influential in the Greenwich Village folk music scene which went on to inform the Folk music genre.

By the late 1960s and early 1970s, some of the country’s most well-known singer songwriters began following Sainte-Marie’s lead. Some made assertive statements about protecting the land from the ravages of corporate greed: As Jackson Browne sang in “Before the Deluge,” “Some of

them were angry at the way the earth was abused/By the men who learned how to forge her beauty into power.” In “Big Yellow Taxi,” Joni Mitchell lamented that “They paved paradise and put up a parking lot,” and invoked a world where “They took all the trees / Put ‘em in a tree museum / And they charged the people a dollar and a half just to see ‘em.” Mitchell explicitly called attention to the insecticide DDT, a specific concern at the heart of *Silent Spring*. Marvin Gaye voiced his sorrow and concern for the polluting of the natural world with his 1971 hit single, “Mercy Mercy Me (The Ecology),” singing, “Whoa, mercy, mercy me / Things ain’t what they used to be, no, no / Oil wasted on the oceans and upon our seas / Fish, full of mercury.”

At the same time, many Singer-Songwriters expressed a more general unease about America’s increasing urban sprawl and suburbanization, and a longing for a closer connection to the land. “In my mind I’m gone to Carolina / Can’t you see the sunshine / Can’t you just feel the moonshine,” sang James Taylor in “Carolina in My Mind.” In “After the Gold Rush,” Neil Young painted a portrait of “a fanfare blowin’ to the sun / That was floating on the breeze / Look at Mother Nature on the run in the 1970s.”

In this lesson, students will analyze a series of songs articulating a connection to nature and the environment—a longing to “get ourselves back to the garden”—and examine the ways in which they reflect a growing attention to environmental issues in American culture.

## OBJECTIVES

Upon completion of this lesson, students will:

### 1. KNOW (KNOWLEDGE):

- The main ideas and historical importance of Rachel Carson’s *Silent Spring* (1962), which detailed threats to the environment from pollution and the use of pesticides
- The events surrounding the celebration of the first Earth Day on April 22, 1970
- The growing attention of Singer-Songwriters in the late 1960s and early 1970s to themes relating to nature and the environment
- The musical contributions of such Singer-Songwriters as Joni Mitchell, Buffy Sainte-Marie, Marvin Gaye, James Taylor, Neil Young, and Jackson Browne

### 2. MASTERY OBJECTIVE

- Students will be able to understand how singer-songwriters from the 1960s to today have addressed environmental concerns in their music by analyzing lyrics, newspaper articles, and photographs.

## ACTIVITIES

### MOTIVATIONAL ACTIVITY

1. Display **Image 1, Environmental Protesters**. Ask the class:
  - Who might be the people in the picture?
  - What are they doing? Where do they appear to be doing it?
  - What props are they using?
  - What is the message they might be trying to get across?
2. Display **Image 2, Front Page of the *Wisconsin State Journal*, April 23, 1970**. Ask students:
  - What does the main headline say? What news is this headline reporting?
  - What is “Earth Day”? What might have people been protesting in the first Earth Day?
  - What does the article say about who participated in Earth Day? Why was this particularly newsworthy in 1970?
3. Inform students that the first Earth Day was on April 22, 1970, and that environmental protests were held all over the country. Earth Day continues to be commemorated every year.

### PROCEDURE:

1. *Note to teacher: You may wish to assign the opening activity with the reading from **Silent Spring** as homework to be completed the night before the lesson. In that case, the discussion questions listed below may be assigned as a homework writing activity.*
2. Distribute **Handout 1 - Rachel Carson, *Silent Spring*** to each student, and ask for a volunteer to read the short introduction out loud.
3. Divide students into pairs. The members of each pair will read the passage aloud, alternating by paragraph. Both students should follow along, underlining key words and phrases.
4. Ask each pair to discuss::
  - How does Carson describe America in the first two paragraphs? How do the people interact with the environment in this world?
  - What does she describe happening to America in the rest of the chapter?
  - How does Carson develop the idea of the “voices of spring”? How is each voice developed? What does she suggest ultimately happens to these voices?
  - How does Carson build her argument? How does her introduction of each “voice” build toward her conclusion?

- Do you think Carson is effective in painting a picture of what is happening to the environment? Why or why not?
  - What do you predict the rest of Carson's book deals with?
  - Why do you think this book resonated with so many readers in the early 1960s?
5. Play the short excerpt from Joni Mitchell's live performance of her 1970 song "Woodstock." Then display **Image 3, Woodstock Lyrics**. (If students are unfamiliar with Woodstock, briefly explain that it was a three-day music festival in 1969 that attracted almost half a million people. It was held on farmland owned by a man named Max Yasgur in Bethel, N.Y.) Ask students:
- What does Mitchell suggest happens when you "camp out on the land"?
  - What do you think Mitchell means when she says, "we've got to get ourselves back to the garden"?
  - Is the idea of "the garden" similar to Carson's depiction of farmlands "where all life seemed to live in harmony with its surroundings"? Why or why not?
  - According to the lyrics, what else would people do while they were at Yasgur's farm? What does Mitchell seem to be suggesting about the connection between Rock and Roll and being back in the garden? How might these two together help "get my soul free"?
6. Set up four listening stations around the room:
- **Station 1:** Joni Mitchell, "Big Yellow Taxi" (1970)
  - **Station 2:** Marvin Gaye, "Mercy Mercy Me (The Ecology)" (1971)
  - **Station 2:** Neil Young, "After the Gold Rush" (1970)
  - **Station 3:** James Taylor, "Carolina in My Mind" (1968)
  - **Station 4:** Jackson Brown, "Before the Deluge" (1974)
7. Distribute **Handout 2 - Lyrics for Songs in This Lesson** and **Handout 3 - Comparing Songs**.
8. Instruct students to visit each station to listen to the song excerpts and follow along with the lyrics. They will record their observations on Handout 3. Divide students so that an equal number begin at each station. (*Note to teacher: it is up to the instructor to decide whether students will complete this activity individually or in small groups or pairs.*)
9. Allow students sufficient time to visit all four stations and complete the chart on Handout 3. Reconvene the class and discuss:
- Are there common themes to all four songs? If so, what are they?
  - Are all the songs overtly about the environmental movement? Are some more explicit about threats to the environment than others? Do you think, for example, that "Carolina in My Mind" is a song about the environmental movement? Why or why not? Does a song have to be explicitly about a historical event to reflect what is happening at the time it was written/performed? Why or why not?
  - Remember that these performers are called "Singer-Songwriters" because they generally perform material that they

themselves have written. Why do you think many Singer-Songwriters might have chosen to write about themes relating to nature and the environment in the late 1960s and early 1970s?

- Do these songs reflect the influence of *Silent Spring*? What specific evidence can you find in the songs to suggest that they do?
- Do these songs reflect the spirit of Earth Day and the idea of getting “back to the garden”? Cite specific evidence in your answer.
- If you had to pick one of these songs to be the theme song for Earth Day, which would it be and why?

## SUMMARY ACTIVITY

1. Form students into groups, and pass out to each group **Handout 4 - Texts in Conversation Activity**. Once completed, ask students groups to share what they wrote on the chart. Then ask students:

- What different arguments did each of the three documents in the handout provide?
- What might have been the motivation for writing each of the documents?
- Did you find one document more compelling than the others? Why?
- Currently, the European Union has banned the use of Neonicotinoids, however they can still be legally used in the United States of America. What might explain this discrepancy?

## EXTENSION ACTIVITIES

1. **Writing Prompt:** How did the Singer-Songwriters of the late 1960s and early 70s reflect the concerns of the burgeoning environmental movement in their music? Be sure to discuss the influence of the publication of *Silent Spring* and the first Earth Day on the environmental movement in your answer.
2. Ask students to research the history of Earth Day since 1970. Have them identify songs by popular artists from later eras that reflect the concerns expressed on Earth Day. You may also wish to ask students to identify a current song that might be used as a theme for an upcoming Earth Day celebration in your school or classroom.
3. Have students engage in a creative writing exercise by writing their own song lyrics about the current state of the environment.

## COMMON CORE STATE STANDARDS

### *College and Career Readiness Anchor Standards for Reading*

Reading 1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Reading 2: Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

Reading 3: Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Craft and Structure 4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

Craft and Structure 6: Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas 7: Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Integration of Knowledge and Ideas 8: Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

Integration of Knowledge and Ideas 9: Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

### *College and Career Readiness Anchor Standards for Writing*

Text Types and Purposes 3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details and well-structured event sequences..

### *College and Career Readiness Anchor Standards for Language*

Vocabulary Acquisition and Use 4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

Vocabulary Acquisition and Use 6: Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate

independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

### *College and Career Readiness Anchor Standards for Speaking and Listening (K-12)*

Comprehension & Collaboration 1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

Comprehension & Collaboration 2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Comprehension & Collaboration 3: Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Presentation of Knowledge 4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

## **NATIONAL CURRICULUM STANDARDS FOR SOCIAL STUDIES – NATIONAL COUNCIL FOR THE SOCIAL STUDIES (NCSS)**

Theme 1: Culture

Theme 2: Time, Continuity, and Change

Theme 3: People, Place, and Environments

Theme 5: Individuals, Groups, and Institutions

Theme 6: Power, Authority, and Governance

Theme 7: Production, Distributions, and Consumption

Theme 8: Science, Technology, and Society

Theme 10: Civic Ideals and Practices

## **NATIONAL CORE ARTS STANDARDS**

### *Responding*

Anchor Standard 7: Perceive and analyze artistic work.

Anchor Standard 8: Interpret intent and meaning in artistic work.

Anchor Standard 9: Apply criteria to evaluate artistic work.

### *Connecting*

Anchor Standard 10: Synthesize and relate knowledge and personal experiences to make art.

Anchor Standards 11: Relate artistic ideas and work with societal, cultural and historical context to deepen understanding.

## **NATIONAL STANDARDS FOR MUSIC EDUCATION – NATIONAL ASSOCIATION FOR MUSIC EDUCATION (NAFME)**

### *Core Music Standard: Responding*

Select: Choose music appropriate for a specific purpose or context.

Analyze: Analyze how the structure and context of varied musical works inform the response.

Interpret: Support interpretations of musical works that reflect creators' and/or performers' expressive intent.

Evaluate: Support evaluations of musical works and performances based on analysis, interpretation, and established criteria.

### *Core Music Standard: Connecting*

Connecting 11: Relate musical ideas and works to varied contexts and daily life to deepen understanding.



## RESOURCES

### VIDEO RESOURCES

- Neil Young - "After the Gold Rush"
- Joni Mitchell - "Woodstock"
- Jackson Browne - "Before the Deluge"
- James Taylor - "Carolina In My Mind"
- Joni Mitchell - "Big Yellow Taxi"
- Marvin Gaye - "Mercy Mercy Me (The Ecology)"

### HANDOUTS

- Handout 1 - Rachel Carson, Silent Spring
- Handout 2 - Song Lyrics
- Handout 3 - Comparing Songs
- Handout 4 - Texts in Conversation

# Lesson Materials



Image 1- Environmental Protesters



Image 2- Front Page of the *Wisconsin State Journal*, April 23, 1970

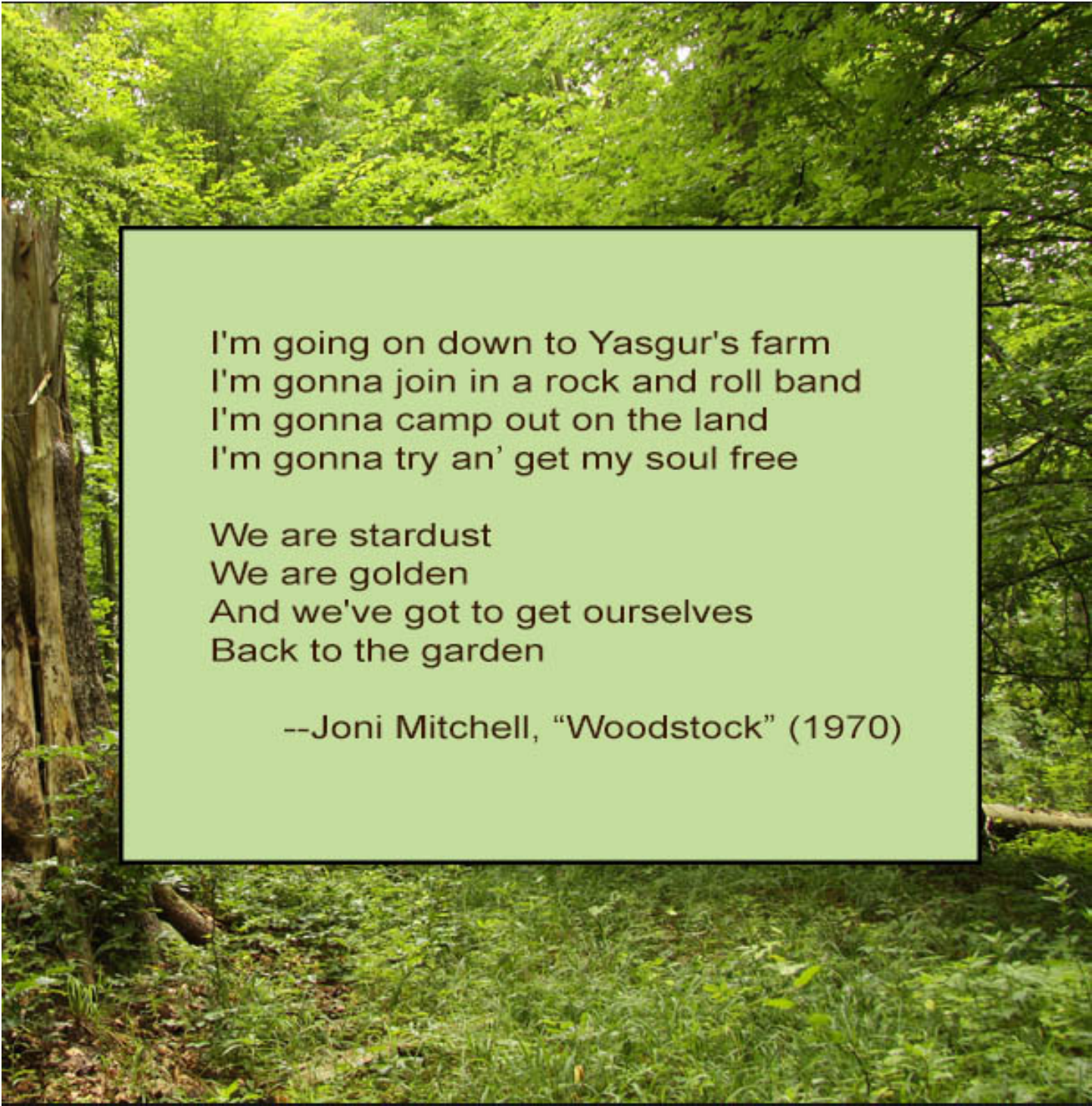


Youth joined hands with age across the generation gap Wednesday in a gigantic array of demonstrations pleading for an end to pollution.

Earth Day, as Wednesday was designated, was a phenomenon in this age of protest—a day when Americans of all shades of belief joined in protesting the spread of contamination which threatens the very existence of life on this planet.

--Wisconsin State Journal, April 23, 1970

### Image 3- Woodstock Lyrics

The background of the image is a photograph of a dense forest. The trees are covered in vibrant green leaves, and the ground is covered in a thick layer of green grass and small plants. A light green rectangular box with a thin black border is centered in the image, containing the lyrics of the song "Woodstock" by Joni Mitchell.

I'm going on down to Yasgur's farm  
I'm gonna join in a rock and roll band  
I'm gonna camp out on the land  
I'm gonna try an' get my soul free

We are stardust  
We are golden  
And we've got to get ourselves  
Back to the garden

--Joni Mitchell, "Woodstock" (1970)

## Handout 1 - Rachel Carson, *Silent Spring*

*In 1962, marine biologist Rachel Carson published *Silent Spring*, which documented the harm to the environment wrought by pesticides—particularly the insecticide DDT—and other chemicals. Although it sparked fierce opposition from critics who challenged her findings, the book became a bestseller and is generally credited with helping to foster a new environmental movement in the United States. The opening chapter of the book appears below.*

### A Fable For Tomorrow

There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hillsides of orchards where, in spring, white clouds of bloom drifted above the green fields. In autumn, oak and maple and birch set up a blaze of color that flamed and flickered across a backdrop of pines. Then foxes barked in the hills and deer silently crossed the fields, half hidden in the mists of the fall mornings.

Along the roads, laurel, viburnum and alder, great ferns and wild-flowers delighted the traveler's eye through much of the year. Even in winter the roadsides were places of beauty, where countless birds came to feed on the berries and on the seed heads of the dried weeds rising above the snow. The countryside was, in fact, famous for the abundance and variety of its bird life, and when the flood of migrants was pouring through in spring and fall people traveled from great distances to observe them. Others came to fish the streams, which flowed clear and cold out of the hills and contained shady pools where trout lay. So it had been from the days many years ago when the first settlers raised their houses, sank their wells, and built their barns.



Rachel Carson

Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community: mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. In the town the doctors had become more and more puzzled by new kinds of sickness appearing among their patients. There had been several sudden and unexplained deaths, not only among adults but even among children, who would be stricken suddenly while at play and die within a few hours.

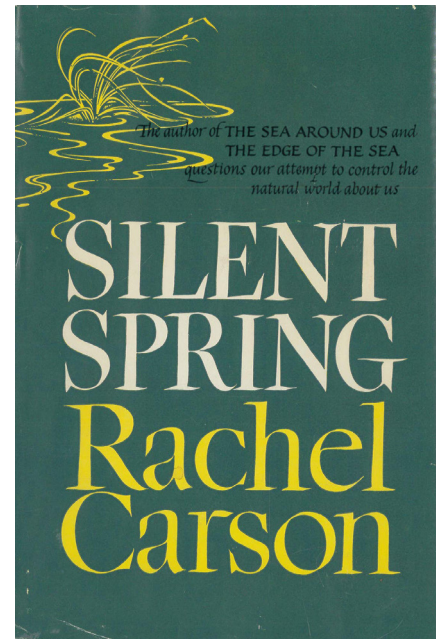
There was a strange stillness. The birds, for example—where had they gone? Many people spoke of them, puzzled and disturbed. The feeding stations in the backyards were deserted. The few birds seen anywhere were moribund; they trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh.

On the farms the hens brooded, but no chicks hatched. The farmers complained that they were unable to raise any pigs — the litters were small and the young survived only a few days. The apple trees were coming into bloom but no bees droned among the blossoms, so there was no pollination and there would be no fruit.

The roadsides, once so attractive, were now lined with browned and withered vegetation as though swept by fire. These, too, were silent, deserted by all living things. Even the streams were now lifeless. Anglers no longer visited them, for all the fish had died.

In the gutters under the eaves and between the shingles of the roofs, a white granular powder still showed a few patches; some weeks before it had fallen like snow upon the roofs and the lawns, the fields and streams.

No witchcraft, no enemy action had silenced the rebirth of new life in this stricken world. The people had done it themselves.



Silent Spring (First Edition)

This town does not actually exist, but it might easily have a thousand counterparts in America or elsewhere in the world. I know of no community that has experienced all the misfortunes I describe. Yet every one of these disasters has actually happened somewhere, and many real communities have already suffered a substantial number of them. A grim specter has crept upon us almost unnoticed, and this imagined tragedy may easily become a stark reality we all shall know.

What has already silenced the voices of spring in countless towns in America? This book is an attempt to explain.



**Station 3: Neil Young, “After the Gold Rush” (1970)**

Well, I dreamed I saw the knights in armor coming  
Sayin’ something about a queen  
There were peasants singin’ and drummers drumming  
And the archer split the tree  
There was a fanfare blowin’ to the sun  
That floated on the breeze  
Look at Mother Nature on the run in the 1970s

**Station 4: James Taylor, “Carolina in My Mind” (1968)**

In my mind I’m gone to Carolina  
Can’t you see the sunshine?  
Can’t you just feel the moonshine?  
Ain’t it just like a friend of mine to hit me from behind  
Yes, I’m gone to Carolina in my mind

Dark and silent late last night,  
I think I might have heard the highway call  
Geese in flight and dogs that bite  
And signs that might be omens say  
I’m goin’, goin’...I’m gone to Carolina in my mind  
Yes, I’m gone to Carolina in my mind

**Station 5: Jackson Browne, “Before the Deluge” (1974)**

Some of them were angry  
At the way the earth was abused  
By the men who learned how to forge her beauty into power  
And they struggled to protect her from them  
Only to be confused  
By the magnitude of her fury in the final hour  
And when the sand was gone and the time arrived  
In the naked dawn only a few survived  
And in attempts to understand a thing so simple and so huge  
Believed that they were meant to live after the deluge

## Handout 3 - Comparing Songs

	<b>Joni Mitchell, “Big Yellow Taxi” (1970)</b>	<b>Marvin Gaye, “Mercy Mercy Me (The Ecology)” (1971)</b>	<b>Neil Young, “After the Gold Rush” (1970)</b>	<b>James Taylor, “Carolina in My Mind” (1968)</b>	<b>Jackson Browne, “Before the Deluge” (1974)</b>
What instruments do you hear? What kind of mood do these instruments create?					
How would you describe the style of the vocals? Are they polished? Raw? What words come to mind?					
What is the overall theme of the lyrics you have read?					

	<b>Joni Mitchell, “Big Yellow Taxi” (1970)</b>	<b>Marvin Gaye, “Mercy Mercy Me (The Ecology)” (1971)</b>	<b>Neil Young, “After the Gold Rush” (1970)</b>	<b>James Taylor, “Carolina in My Mind” (1968)</b>	<b>Jackson Browne, “Before the Deluge” (1974)</b>
Does the sound of the song reflect the message of the lyrics? If not, why not? If so, how does it do this?					
Is the song a clear statement about environmental issues? Why or why not?					
Does the song, directly or indirectly, connect with the themes of <i>Silent Spring</i> ? If so, cite a specific sentence or paragraph from the book and explain the connection.					

## Handout 4 - Texts in Conversation Activity

**Instructions:** As a group, read the following three documents. Then, fill in the chart below, imagining what the people who wrote or were interviewed in each document might say to each other, were they to have a conversation about the use of pesticides.

Olaf Jensen & Matt Shardlow (Document 1)	...might say to Buffy Sainte-Marie:	...might say to Bayer Global:
Bayer Global (Document 2)	...might say to Jensen & Shardlow:	...might say to Buffy Sainte-Marie:
Buffy Sainte-Marie (Document 3)	...might say to Jensen & Shardlow:	...might say to Bayer Global:

**Document 1:** The following article appeared in The Guardian newspaper on October 2019, and discusses recent scientific findings on the use of neonicotinoid pesticides in Japan.

## **Fishery collapse “confirms Silent Spring pesticide prophecy”**

Common pesticides found to starve fish ‘astoundingly fast’ by killing aquatic insects

*Damian Carrington, The Guardian, Oct. 31, 2019*

The *Silent Spring* prophecy that pesticides could “still the leaping of fish” has been confirmed, according to scientists investigating the collapse of fisheries in Japan. They say similar impacts are likely to have occurred around the world.

The long-term study showed an immediate plunge in insect and plankton numbers in a large lake after the introduction of neonicotinoid pesticides to rice paddies. This was rapidly followed by the collapse of smelt and eel populations, which had been stable for decades but rely on the tiny creatures for food.

The analysis shows a strong correlation but cannot prove a causal link between the insecticides and the collapse. However, independent scientists said other possibilities had been ruled out and that the work provided “compelling evidence”.

The research is the first to reveal the knock-on effects of insecticides on fish. Harm to bees is well known, but previous studies in Europe have linked neonicotinoids to die-offs in other freshwater species including mayflies, dragonflies and snails and also to falling populations of farmland bird that feed on insects, including starlings and swallows. The insecticide has also been shown to make migrating songbirds lose their way.

Rachel Carson wrote *Silent Spring*, her seminal book on the dangers of pesticides in 1962. In their report, the Japanese researchers said: “She wrote: ‘These sprays, dusts and aerosols are now applied almost universally to farms, gardens, forests and homes—nonselective chemicals that have the power to kill every insect, the ‘good’ and the ‘bad’, to still the song of birds and the leaping of fish in the streams.’ The ecological and economic impact of neonicotinoids on the inland waters of Japan confirms Carson’s prophecy.”

“This disruption likely also occurs elsewhere, as neonicotinoids are currently the most widely used class of insecticides globally,” worth more than \$3bn year, they said.

**Prof Olaf Jensen**, at Rutgers University in the US and not part of the research team, said: “This study, although observational, presents compelling evidence. A fishery that was sustainable for decades collapsed within a year after farmers began using neonicotinoids. This is a large and astoundingly fast response.”

The research, published in the journal *Science*, looked at data from Lake Shinji spanning the decade before and the period after the introduction of neonicotinoids in 1993, from which point the pesticides started running off into the lake. They found neonicotinoid concentrations in the water frequently exceeded levels that are toxic to aquatic invertebrates.

The midge *Chironomus plumosus*, an important food source for smelt, was one of the worst affected. It vanished completely from all 39 locations sampled in 2016, despite being abundant in 1982. Another important food source, an abundant zooplankton species, *Sinocalanus tenellus*, fell by 83%.

The researchers found annual catches of smelt fell 90% in the decade after neonicotinoids were introduced, compared with the decade before. Catches of eels dropped by 74% over the same time period.

“Several alternative explanations for the collapse were evaluated and rejected: invasive species, hypoxia, or changes in fish stocking cannot plausibly explain the observations,” said Jensen. Furthermore, catches of icefish, which do not rely on the affected invertebrates for food, remained unchanged.

The research shows neonicotinoid pesticides can affect entire food webs, he said. On the lack of other reports of similar collapses, Jensen said: “There is the issue of not seeing a problem if we don’t look for it.”

**Matt Shardlow**, from the charity Buglife, said: “Japan has had a tragic experience with nerve-agent insecticides. In the paddy fields, where the air once thrummed with the clatter of billions of dragonfly wings, these insecticides have imposed near silence.”

“The annihilation of humble flies and the knock on effects on fish serve as further testament to the dreadful folly of neonicotinoids,” he said. “Let’s hope this is a wake-up call for Asian countries and they move to quickly ban the chemicals from paddyfields.”

“It is also extremely worrying that the levels of neonicotinoids in rivers in eastern England, as recently reported by Buglife, are very similar to the levels reported in this research,” Shardlow said. “Unfortunately, while it is clear that harm must have been done to UK river health, the exact impact of neonicotinoids has yet to be quantified.”

**Document 2:** *Bayer is a multinational pharmaceutical and agricultural chemical company that sells insecticides worldwide. After the European Union banned neonicotinoid insecticides, the company released the following press release:*

## **Neonicotinoid ban: a sad day for farmers and a bad deal for Europe**

*Monheim, April 27, 2018* – Today's decision by the EU Member States to restrict the use of certain neonicotinoids to applications in permanent greenhouses is a bad deal for the European agricultural sector and the environment, and one that will not improve the lot of bees or other pollinators. The decision will further reduce European farmers' ability to tackle important pests, for many of which there are no alternative treatments available.

Bayer remains convinced that the restrictions are not warranted, because neonicotinoids are safe when used in accordance with the label instructions. Even under the extremely conservative evaluation criteria of the European Food Safety Authority EFSA, the most recent bee risk assessment reports (1) did not find high risks for many neonicotinoid uses where a definitive risk conclusion could be drawn; in those cases, only low risks were found for honey bees, and for wild bees the risk was also found to be low in the majority of cases.

Bayer is surprised that, once again, legislative measures are being implemented without a prior thorough impact assessment. Beyond the costs for European farmers, the restrictions in place have already brought considerable unintended consequences: a lack of alternative solutions; more spray applications, leading to more CO<sub>2</sub> emissions; an increased risk of resistant pest insects; and a return to older, less-effective chemicals.

Numerous recent studies, inter alia by the Joint Resource Centre of the European Commission (2), have highlighted the impact of these restrictions. As it currently stands, the European crop protection industry will not be able to offer any registered seed treatments or soil-applied insecticides that could replace the current use patterns of imidacloprid and clothianidin.

It is also puzzling that Member States were asked to take a decision at this time, since the verdict of the ongoing court case (scrutinizing the legal basis of the 2013 restrictions) has not yet been delivered; this is due on 17 May. A reversal of the current restrictions could have profound implications for the legal justification of the new proposals.

Finally, the restrictions are intended to address the alleged risks the substances pose to bee health. Bayer cares about bees. They are essential for the pollination of many arable crops. But there are other, better ways to support pollinator health – such as increasing pollinator foraging options or natural habitats and more efficient control of the varroa mite – than banning substances that have helped farmers effectively manage a broad range of significant pests.

As a leading agriculture company that has a vested stake in pollinator health, Bayer has been working with partners around the globe on efforts to improve habitat and nutrition, better understand the science behind pollinator health, and improve stewardship and farmer / beekeeper communication.

**Document 3:** *Buffy Sainte-Marie is an indigenous singer-songwriter who has been active since the 1960s. Her music regularly addresses environmental issues and the rights and histories of native people. The following are lyrics to her 2008 song “No, No, Keshagesh.” In the Cree language, “Keshagesh,” is translated as “greedy guts.”*

Buffy Sainte-Marie, “No, No, Keshagesh”

I never saw so many business suits  
Never knew a dollar sign could look so cute  
Never knew a junkie with a money Jones  
Who’s buying Park Place?  
Who’s buying Boardwalk?

These old men they make their dirty deals  
Go in the back room and see what they can steal  
Talk about your beautiful for spacious skies  
It’s about uranium  
It’s about the water rights

Got Mother Nature on a luncheon plate  
They carve her up and call it real estate  
Want all the resources and all of the land  
They make a war over it  
They blow things up for it

The reservation out at Poverty Row  
There’s something cookin’ and the lights are low  
Somebody’s tryin’ to save our Mother Earth I’m gonna  
Help ‘em to  
Save it and  
Sing it and  
Pray it singin’

No no, Keshagesh you can’t do that no more

Ol’ Columbus, he was lookin’ good  
When he got lost in our neighborhood  
Garden of Eden right before his eyes  
Now it’s all spyware Now it’s all income tax

Ol’ Brother Midas, lookin’ hungry today  
What he can’t buy he’ll get some other way  
Send in the troopers if the Natives resist  
Same old story, boys  
That’s how ya do it boys

Look at these people Lord they're on a roll  
Gotta have it all  
Gotta have complete control  
Want all the resources and all of the land  
They break the law over it  
Blow things up for it

While all our champions are off in the war  
Their final ripoff here at home is on  
Mister Greed, I think your time has come I'm gonna  
Sing it and  
Pray it and  
Live it and  
Say it singing

No no, Keshagesh you can't do that no more