



**PROBLEM BASED  
LEARNING  
EDUCATING *for*  
SUSTAINABILITY**

# **Sci-Fi to Cli-Fi**

**Writing Great Climate Fiction for a Water Scarce World**

**Grade Level: 8**

**Subject: Language Arts**

**Created by**

**Rich Butler, Pine Lake Middle School, Issaquah School District**



A person stands in shallow water, their reflection visible on the calm surface. In the background, a range of mountains stretches across the horizon under a soft, hazy sky. The scene is peaceful and contemplative.

# PROBLEM STATEMENT

*How can I apply the elements of great science fiction writing to describe a vivid future of how humans are managing water resources right here in my bioregion? Is this future utopian or dystopian, and how did we get there? How can I share my writing in a way that inspires people to use water resources sustainably?*

## SUMMARY

Science fiction texts are fascinating tools to explore possible futures in our universe and beyond. [Over the last century](#), science fiction writers addressed air and water pollution, anti-establishment values, environmentalism, and activism. Octavia Butler's [Parable of the Sower](#) (1993) was one of the first books to be [labeled as climate fiction](#) as it follows a young girl surviving in a "future destabilized by climate change". Novels like these demonstrate the invaluable intersection of meaning-making for scientists and writers.

Students love science fiction. And they love envisioning intriguing futures. They are fascinated by the idea of **science fiction becoming science fact**. In their lifetime, they are witnessing the phenomena of [Climate Fiction](#) becoming Climate Fact. To best inform and speculate about possible futures, it is important for us to use the most accurate and up-to-date science. Empowered with this, we can explore **dystopian and utopian** futures alike.

The new genre, "**Cli-Fi**", can inspire students to write narratives that have the potential to change the world.

This set of lessons seeks to do just that. It starts by introducing students to examples of Climate Fiction like the novel *Dry* (2018) and the movie *Dune* (1984 or the remake in 2021). Students then use their **narrative analysis tools** to understand and critique those works and the possible futures they present, futures that foresee the inevitable **need for sustainable water use**. Students are challenged to create their own Climate Fiction narrative, publish it online, **find and inspire an audience** to use water sustainably.

There is a growing perception of the reality – globally and locally – that **water is a scarce resource** and must be managed very carefully. School district curricula often include units on water sourcing and conservation but these units are typically relegated to science.

There are seldom other units on water in the core disciplines. A well-planned Language Arts unit using the impact of science fiction narrative and hard-hitting information/argumentative text **inspire and motivate students** to form efficient water habits with a global perspective of encouraging water sustainability.





## Learning Objectives / Student Outcomes

1. I learned what my direct water consumption is at home.
2. Using the [Water Footprint Calculator](#), I learned about virtual water embedded in the products I buy and that my greatest impact comes from the water used to produce what I eat.
3. I discovered that America in general and the Puget Sound, in particular, must be careful with water usage - drought is a regular occurrence in the West.
4. I have researched and am aware of water contamination problems in my bioregion.
5. I have read and watched several Cli-Fi narratives, analyzed them for structure and theme, and then used certain elements to construct my own narrative.
6. I have published my Cli-Fi narrative with a target audience in mind.
7. I have submitted my Cli-Fi narrative for our school Sustainability Symposium. At the symposium, I have exposed and hopefully inspired my audience to sustainable water practices that support my personal goals, my school's goals, and my community's goals.

## Formative Assessment

### *Menu of possibilities...*

1. Students explain the results of their Water Footprint Report.
2. Students analyze Climate Fiction stories for story elements, theme, and impact.
3. Students write short fiction narrative pieces with sustainability themes.



## Summative Assessment

1. Students read, analyze, evaluate, and affirm their peers' stories for effective development of story elements, story impact on readers (will it change water usage behavior), and enjoyment and entertainment value.
2. Students publish and market their stories to a wider community audience.
3. Students create impact projects on sustainable water practices for the PLMS Sustainability Symposium in the spring.
4. Students will demonstrate a wider interest in sustainability issues as presented in other units and disciplines, committing to a sustainable lifestyle.



# ACADEMIC STANDARDS

[ELAS Grade 6-12 Writing Introduction to Standards:](#) Find the basic information on Common Core Writing Standards.

[Narrative Writing Standards – “I Can” Statements \(adapted by Rich Butler\):](#)  
This is a very handy, single-page table that empowers students to self-assess throughout the writing process.

[ELAS Grade 6-12 Reading Literature Introduction to Standards:](#) Find the basic information on Common Core Reading Standards.

## CCSS.ELA-LITERACY.W.8.3

**8th grade Common Core Standards for Writing:** Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

## CCSS.ELA-LITERACY.W.8.4

**8th grade Common Core Standards for Writing:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)

## CCSS.ELA-LITERACY.RL.8.9

**8th grade Common Core Standards for Reading:** Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.

## BIG PICTURE

[NGSS Global Climate Change](#)

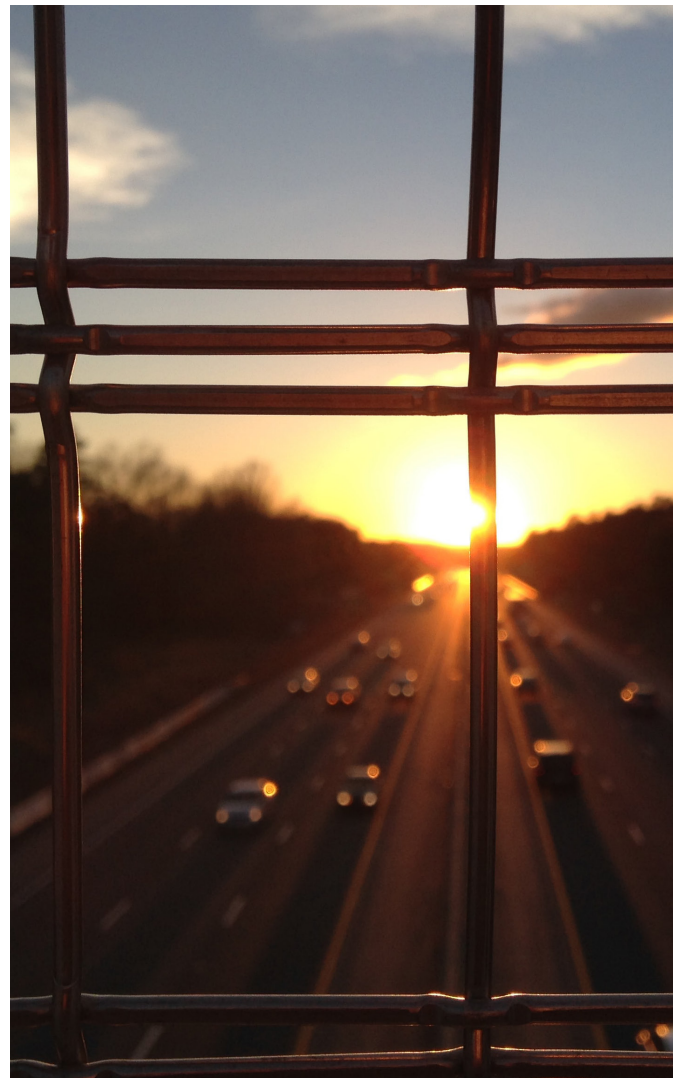
[NGSS Human Sustainability Standards](#)

[OSPI Environmental Sustainability Standards](#)

[OSPI Social Studies Standards](#)

[College, Career, and Civic Life \(C3\)](#)

[Common Core State Standards](#)





# COMMUNITY CONTEXT

My family's sustainable practices

My School and School District

My City Climate Action Plan

My County Climate Action Plan

My Local Water Utility

My Local Energy Utility

My State's policies on climate change

Tribal Treaty Rights

Salmon in the Puget Sound Region

Federal policy on Climate Change





# Breaking Down the Problem Statement

***How can I apply the elements of great science fiction writing...to describe a vivid... future...of how humans are managing water resources... right here in my bioregion? Is this future utopian..or dystopian...and how did we get there? How can I share my writing in a way... that inspires people...to sustainable use of water resources?***

***How can I apply the elements of great science fiction writing...***

- What are the elements of science fiction?
- How can I best apply my science knowledge as a fiction writer so that my story feels accurate and technically plausible?
- How can I best apply my research skills to analyze science topics and trends I have not yet learned about?
- Do I have favorite examples of “great” science fiction? What are my personal criteria?
- How do my personal criteria line up with the elements of science fiction?
- To “apply” these elements, how can I improve my writing skills? What are my goals? Vocabulary? Sentence fluency? Transitions?
- When did Cli-Fi develop as a subgenre?

***to describe a vivid...***

- What are my writer’s tricks, tools, and techniques for vivid description?
- If I copied out a collection of short sections of great science fiction writing that used

vivid description, what would I include in my writer’s journal?

- How do they achieve vivid descriptions in movies?
- Do I “see” a movie in my head when I get into the flow as a writer?
- How aware am I of my cultural and socio-economic frame of reference for describing a vivid life? Do I have the skill to imagine someone else’s lived experience?

***future...***

- When is this future? Within decades, like my own life, or the life of my children?
- Is it a super-precise day and year?
- Is it more than a century beyond my time such that technological and social innovations require deep research and imaginative speculation?
- What is the timeframe or duration of my narrative? One day? Four seasons? Several years? Multiple generations?
- What are the features and drivers of this future? Equity and social justice? Ecosystem health? Economic system? Political system? Climate change?

***of how humans are managing water resources...***

- How do we currently manage our water supply systems: infrastructure, process, policies, financing?
- How do we currently manage our wastewater treatment systems: infrastructure, process, policies, financing?
- How do we currently manage our stormwater management systems: infrastructure, process, policies, financing?
- How do we currently manage our watersheds: dams for water supply and hydropower, land use policies, endangered species policies, habitat restoration, financing?



- How will the shrinking snowpack in the mountains, driven by climate change, impact decision-making on all of the management systems outlined above?
- What happens when we experience a major earthquake that our region is due, geologically speaking? How resilient are we? Who is planning for this?

### ***right here in my bioregion?***

- How should we define our bioregion? Weather and climate? Geography? Indicator species? Language, culture, shared governance structures? Shared ecological values?
- Is our region the new “Oregon Trail” of water-scarce migration?

### ***Is this future utopian...***

- What is a “utopia”? Is it possible? If a utopia is not possible, why do we even try and imagine one?
- What are the utopias that inspire my vision of the future?
- How is water resourced in these utopias?
- Are the Fremen suits in the Dune series an example of sustainable use of water resources and is something like that realistic? What about Orange County, CA turning wastewater into potable water?

### ***or dystopian...***

- What is a dystopia and why would we even consider using them as a vision for our future?
- What are the dystopian futures that I want to avoid, especially those where water resources are squandered?
- Is the environment imagined in the movie Waterworld (1995) a possible reality? Can climate change create conditions where we have an abundance of water and a scarcity of potable water? Could water become a currency?
- Would humanity from 100 years ago even imagine what we would be paying for water today?
- How close is California to a scenario like the one that is imagined in the Cli-Fi novel Dry (2018)?

### ***and how did we get there?***

- How do great writers show the passage of time using narrative devices?
- How do historical patterns help me project future scenarios?
- How do I apply my research skills to be science-based in my vision for the future?
- What are the most useful keywords for internet searches related to a water-scarce future? (Scenario planning, future, sustainable cities water future, water scarce future planning)

### ***How can I share my writing in a way...***

- What are the publishing platforms that I, as a student, have access to?
- What are the audiences for these platforms and are they receptive to Cli-Fi?

### ***that inspires people...***

- How do I write a narrative that inspires people to act on a problem?
- What are some of the examples of Climate Fiction that have inspired audiences to act?

### ***to sustainable use of water resources?***

- What are the sustainable uses of water embedded in my narrative that is reproducible and scalable?
- Will my audience understand the concept of “sustainable water use”?

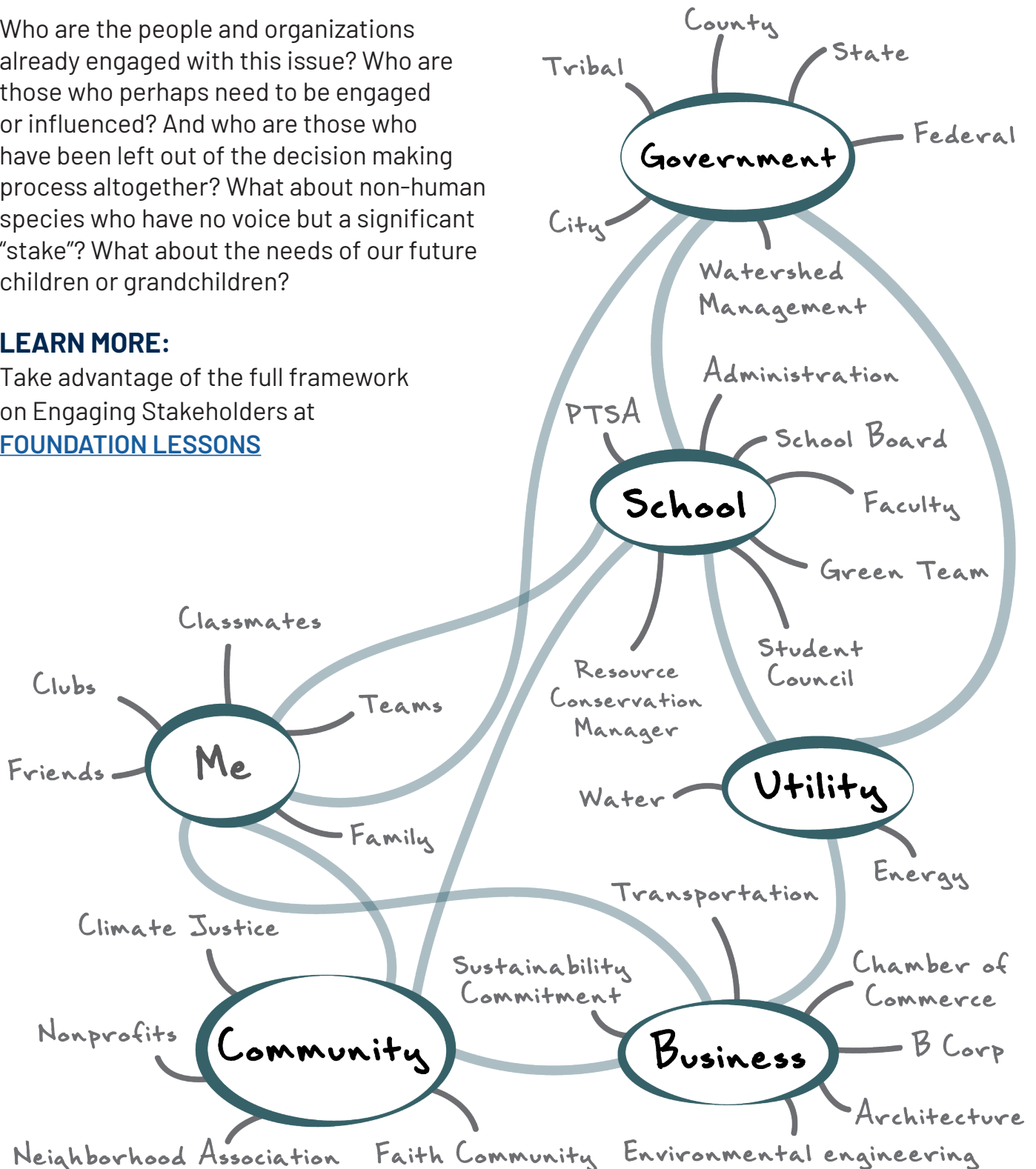


# Stakeholder Brainstorming

Who are the people and organizations already engaged with this issue? Who are those who perhaps need to be engaged or influenced? And who are those who have been left out of the decision making process altogether? What about non-human species who have no voice but a significant "stake"? What about the needs of our future children or grandchildren?

## LEARN MORE:

Take advantage of the full framework on Engaging Stakeholders at [FOUNDATION LESSONS](#)





# Stakeholder Perspectives

As students identify specific stakeholders relevant to this topic, they will want to consider each point of view with integrity. This practice provides a critical opportunity to develop social-emotional learning skills and cultural competency by building an awareness of our own internalized biases and expanding our capacity for empathizing with stakeholder perspectives different than our own.

## EXAMPLE: Stakeholder Engagement Table

STAKEHOLDERS	INTERESTS	GOALS	APPROACH
Name of stakeholder group	What motivates them? What do they care about? What are they responsible for?	Do they have specific action plans, goals, or projects they are pursuing?	What is the best message and timing to engage with this group?
My family	Sustainable future where they can access water for drinking and other household uses.	Thriving and surviving in a water-scarce future.	Word of mouth, conversations about sustainable water futures. Family decisions about water use.
School (Green Team, RCM, PTA, ASB)	Implementing water conservation and efficiency actions.	Saving money. Ensuring ongoing operations in a water-scarce future.	Green Team group chat or social media. PTA and school e-news.
My City	Ensuring residents have access to clean water for drinking, cooking, washing, and irrigation.	Functioning drinking water, wastewater, and stormwater infrastructure in a water-scarce future.	Presenting at City Council meetings. Contacting city staff and elected representatives.
Local Water Utility	Ensuring rate-payers have access for domestic and commercial uses. Financial interest in rate-payers.	Meeting needs for future water use and planning for a water-scarce future. Maintain and update infrastructure as needed.	Email or call utility staff responsible for community engagement. Speak at public hearings.
Tribal Governments	Access to healthy fishing grounds for salmon, shellfish, and plants, as guaranteed by treaty rights.	Maintain natural resources for current and future livelihoods and cultural connections.	Letters of support acknowledging treaty rights and improving and/or building relationships.
Salmon in the Puget Sound Region	Access to habitat and steady food sources.	Survival of the species in a water-scarce future.	Action to conserve, preserve, and restore habitats.



## BACKGROUND Gapless Explanation

**In the Pacific Northwest, our water supply depends on snowpack.** Over the last hundred years, we have constructed dams across a number of our cascade alpine rivers to hold water in large, human-made reservoirs that serve the water supply needs of millions of people. In our region, it rains a lot, especially at the higher elevations. This rain can be captured and held in our system of reservoirs.

What is not known by most people, is that we have been depending on a certain depth of snowpack each year to serve as a **second, natural reservoir of water...a frozen one.** This is important because as we enter the summer months with little or no rainfall until October, our reservoirs would be drained by the water consumption demands of millions of people if not for our snowpack. The snow that packs down through the long winter will **slowly melt through the summer.** We count on this phenomenon to supplement and sustain water levels in our reservoirs. We drink snow in August.

But with a shrinking snowpack over the next several decades, water resource managers, policymakers, and each of us within our own families, schools, and cities need to make critical decisions about how to conserve water right now.

**The same amount of precipitation.** Part of this strange new reality is that we will actually have the same amount of annual precipitation. The water cycle will continue to lift vapor from Puget Sound and the Pacific Ocean and drop it across the landscape. But the science points to a much different annual pattern.

We can expect **much more rain in the winter** (when we don't need it) along with bigger storm events, which can cause flooding and mudslides. And we can expect **much less rain in the summer** (when we do need it) which can lead to droughts, forest fires, parched streams for salmon, and dangerous heat waves for humans. We will experience the same total amount of precipitation. It's just that, as each decade continues to bring warmer temperatures, less of this precipitation will be held in the form of snow. Diminished snowpack throughout the winter means diminished water supply late in the summer.

At the same time that we are grappling with how to adapt to our shrinking snowpack, we will need a **thousand good ideas** for how to slow, stabilize, and reverse the effects of climate change. This will take a century or more. It is critical to understand science and make wise decisions together at all scales right now. We are all stakeholders in this challenge.



# U.S. Water Systems

The U.S. installed most of its water infrastructure in the **early 1900s**, and these pipes have a lifespan of only about 100 years. Instances of leaking pipes and full-on failures have been increasing as these pipes begin to age out. Unless municipalities across the U.S. fully overhaul the drinking water system, **safety and supply are at risk.**

Every day, six billion gallons of water are lost from **leaking drinking water pipes** across the United States – enough water to support the daily needs of 20,000 households. As this water leaks into the ground, it is an out-of-sight, out-of-mind problem. The effort to update the U.S. water supply system, even in the face of compounding threats like **growing population** and **climate change**, has been a slow process.

The [United Nations](#) recognizes access to safe drinking water and sanitation as a basic human right, yet providing clean water is an emerging global crisis. In the United States, infrastructure failures are compounded with **increasing demands, decreasing water supplies**, and

**contamination.** Climate change is affecting **precipitation patterns** and decreasing the supply of urban drinking water sources. Unstable water access in minority and rural communities has created **serious human rights violations.**

## DRYING UP

Securing water supply systems requires **planning for shortages.** In the face of a shortage, managers can either find more water to increase supply or they can reduce demand. The best approach will be a highly localized decision.

Over 70 percent of U.S. watersheds could expect decreased water supplies under future climate scenarios. Furthermore, the highest demands for water occur in areas with the lowest supply levels like the Southwest and Great Plains.



To protect against shortages, conventional solutions could include increasing the use of groundwater and surface water sources or increasing reservoir storage capacity. Solutions can also include increased **irrigation efficiencies** and **soil management** practices that hold more water. Any solutions in the agriculture sector need to be balanced with **food security issues**, and, in the Pacific Northwest, with the legal requirement to have enough water in running rivers to **support salmon populations** as laid out in long-standing **treaty rights** with Native American Tribes.

## RECYCLED WATER

Expanding the **reuse of treated wastewater**, such as using it for agricultural irrigation or groundwater recharge, can remove pressure on treatment systems by creating another option for some of the largest water users. See [King County Recycled Water](#). If the agricultural sector had methods for accessing treated wastewater, for example, a significant portion of demand would be shifted away from the drinking water supply. Recycled water use in [California](#) is a rapidly growing strategy.

Additional efficiencies can come from separating sanitary wastewater into its components to reduce the burden on waste treatment plants. Currently, all wastewater from households is combined in the sewer system as it moves to the water treatment plant. If water from **showers, laundry, and kitchen sinks** was kept separate from toilet wastes, this lightly used “**greywater**” could be used locally for activities like watering lawns and gardens.

## HARVESTING THE RAIN

Harvesting rainwater that falls on the rooftops of homes, schools, and commercial buildings can also improve local water security. **Large underground cisterns** can be engineered to hold water harvested during the rainy season so that it can be used during the dry season for toilet flushing, laundry, and irrigation.

See [VIDEO - Stone 34 Case Study](#)

## INTEGRATION

The key is to move to more local, flexible, and **integrated water management** systems that allow for innovation and adaptation. Policy makers have been averse to overhauling drinking water systems because the process is widely disruptive. However, forecasted water shortages and infrastructure failures could become even more disruptive to daily life, especially when we factor in the dual pressures of population increase and the way that climate change is altering our local water cycle.

The United States can safeguard against future water crises by shifting consumption patterns, investing in long-term infrastructure improvements, and exploring creative, local solutions for water use and management.

**SOURCE:** Much of the content integrated in this section was adapted from the Yale School of the Environment, **Environment Review**, a student-run review that provides weekly updates on environmental research findings. See: [Transforming U.S. water supply systems toward a robust, water-secure future](#).





# LESSON OUTLINE



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## Time Needed:

This set of lessons is designed as a 6-week Narrative Reading and Writing Unit. But, short stories need time to develop. Writers need time to dream, explore, research. Therefore, this project is designed to take place over the course of a school year. It is important to note that other English language arts (ELA) targets are woven into this instruction including vocabulary, grammar, and discussion skills.

1 week to brainstorm and research water sustainability issues

1 week for exposure to Cli-Fi works (movies, novels, short stories)

1 week for short story writing instruction

1 week for draft revisions

1 week for publishing on blogger

1 week for an "Audience Impact Plan"

Stories presented at the Spring Sustainability Symposium





# VOCAB AND KEY SEARCH WORDS

Water Cycle

Climate Change Impacts

Precipitation Patterns

Consumption Patterns

Water Conservation

Water Supply / Water Quality

Water Infrastructure

Drinking Water Treatment

Reservoir

Conveyance Pipes and Pumps

Water Meter / Smart Meter

Water Tank / Tower

Rainwater Harvesting

Cistern

Greywater Reuse

Polluted Stormwater Runoff

Green Stormwater Infrastructure

Stormwater Management Plan

Point Source Pollution

Nonpoint Source Pollution

Wastewater Treatment

Recycled Wastewater

Integrated Water Management

Scenario Futures Planning

Water Equity / Water Justice

Scenario planning

Sustainable cities water future

Water scarcity solutions

Dystopia

Utopia

Climate Fiction / Climate Fact

Science Fiction





## ENTRY EVENT

### Story Starters for Sustainability....

Share a collection of short narrative paragraphs from the Cli-Fi subgenre that start but do not finish a story about climate change impacts on access to water. Set the stage for students that something strange has happened. We are not sure what, but the situation is tense right from the beginning. Below is one example with more here: [Story Starters for Sustainability](#).

***“The peak of Rainier Island was the only thing showing, Seattle buried deep beneath the waves that surrounded it.”***

**Individual Reflection:** Invite students to read several of the Story Starters for Sustainability, to picture themselves in that situation, and to follow their own imagination with what’s happening and why. You may want to offer some of these useful inquiries. Consider this a warm up for their longer, Cli-Fi narratives later on in the lesson.

*What is happening here? How is this day not like any other day? What is not typical here?*

*What do you think the people are feeling? Or starting to realize?*

*What happens next in this story? What do you think may have happened just before this story starts? What event may have triggered this strange moment?*

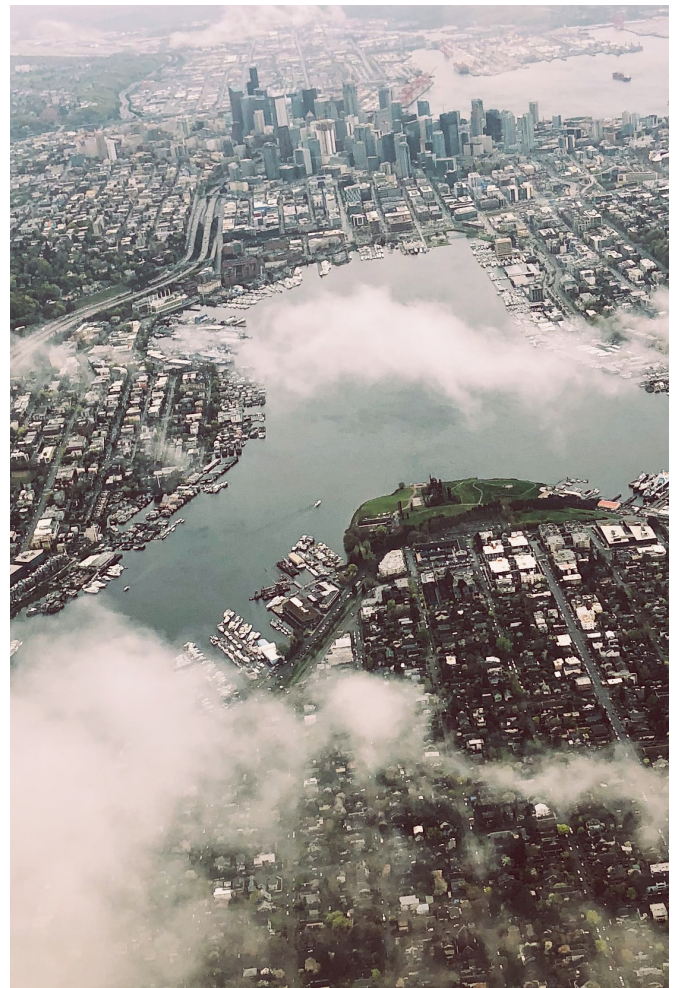
**Small Group Discussion:** Work in a small group to discuss what you noticed in your story starter and where your imagination leads you. Use the round robin method to make sure everyone has a turn to share before you open up for discussion.

**Unearthing Assumptions, Patterns, and Projections:** Go deeper. Discuss with your group how water scarcity impacts human and nonhuman communities. Some useful inquiries...

*What are all the ways we consume water each day? See if you can identify all of them. Some might be direct water consumption. Others might be indirect water consumption, like the water it takes to produce a gallon of gas, or a cheeseburger, or a pair of jeans.*

*What kinds of infrastructure do we depend on each day to ensure that we have water when we want it? How is this infrastructure engineered? Who manages it on our behalf? Who pays for it?*

*What do you already know about various nations in the world where the scarcity of water is a humanitarian crisis, one that is being compounded each year by climate change?*





# ACTIVITY 1

## Prediction Posters

### Research-based Water Scarcity Speculations

Now that students are considering what a water scarce future may look like, ask them to research local and global water issues. Using Prediction Posters, students can project the future of the water issues if no action is taken. In scenario planning, this is often called “business as usual.”

Remind students to ground their speculations and visions of the future in current science they find while researching. It may be useful to generate a class list of local, regional, or global water issues for students to use in their Prediction Posters.

#### Some starter resources include:

Water Stress: A Global Problem That is Getting Worse - [Council on Foreign Relations](#)

World Water Scarcity Overview - [World Wildlife Foundation](#)

How World Water Scarcity Effects Children - [UNICEF](#)

United Nations Sustainable Development [Goal #6](#) Ensure availability and sustainable management of water and sanitation for all

World Water Scarcity Facts - [United Nations Water](#)

[United States 4th National Climate Assessment Report](#): Contains info on climate change and chapters on the impact on water resources and issues. [Chapter 24](#) of the NCA is specifically about the Pacific Northwest.

Pacific Northwest [Climate Impacts in Brief](#). One concise paragraph on each of the major impacts expected in the coming decades based on climate change data analyzed by the University of Washington Climate Impacts Group.

[State of Knowledge Report – Climate Change in Puget Sound](#). A comprehensive synthesis report summarizing relevant research on the likely effects of climate change on the lands, water, and people of the Puget Sound region.

[How Severe Is the Western Drought? See For Yourself](#) - New York Times article with maps

[Product Gallery](#) - Basic facts about how much water is used to produce certain foods.

#### Possible inquiries...

*How does your prediction about a water issue unfold if no action is taken? What is the order of events?*

*When you researched water issues and what would happen if no action was taken, what did you notice about your search results? What did the stories or articles focus on? People, the environment, economics, politics?*

*How did you integrate up-to-date science with your prediction? Was it simple to integrate what we currently know about our water future? Did you find it challenging to imagine a future with our current science and technology?*

*With a business as usual scenario, what do you think will happen at various intervals of time? Do any of these timelines give you ideas about where you will set your story?*

#### Within the next decade

**By the year 2050**

**In your lifetime**

**By the end of the century**

## ACTIVITY 2

### Water Futures on the Big Screen and in Literature

Provide time for students to watch movies and/or read Cli-Fi narratives that project possible water futures. You might curate a list of scenes from a variety of movies or choose to show full length films.

#### Some suggested films include:

*Dune* (1984), remake available 2021

*Waterworld* (1995)

*The Book of Eli* (2010)

#### Some suggested novels include:

*Dry* (2018) by Neal and Jarrod Shusterman

*Parable of the Sower* (1993) by Octavia Butler

*Flight Behavior* (2012) by Barbara Kingsolver

As students watch the movies and/or read the novels, invite them to fill out a mindmap/graphic organizer. Some helpful inquiries:

*What connections can you make to the research you conducted?*

*Is the future predicted in the film grounded in current science?*

*Whose story is being told from what perspective?*

*How is the human experience connected to environmental changes in the movie?*

*Is the movie explicit about what caused the specific water scenario (too much or not enough)? If so, what is the narrative? If not, what is implied?*

#### Additional Resources

Climate fiction is a growing subgenre. [Here are some more examples](#) of Climate Fiction books.

The nonprofit, independent media organization, [Grist](#), published a [Climate Fiction](#) Issue with articles, book recommendations, and conversations based on Climate Fiction.

## ACTIVITY 3

### Exploring Utopian Water Futures

What if we broke free from the assumption that a business as usual scenario is the only way to visualize our future, and instead designed a utopian scenario, one in which people took water very, very seriously?

And what if we could study some models where this is already happening?





Invite students to explore the case studies from Singapore as well as the fascinating (and simple) rain harvesting technologies used on every house in Bermuda. There are resources here on buildings that are carefully engineered to achieve net zero water, harvesting all of the water they need from their “rain budget.” And additional links explaining King County’s mission to reclaim resources from the processing of wastewater.

### Writer’s Inquiry...

*What if some regions of the world develop water utopias, while other regions fall further into a dystopian crisis as a result of ignoring water scarcity issues?*

*How would people in one region react to people in another region?*



### Utopian experiments for sustainable water systems

Singapore International Case Study – [Singapore Water Story](#) | [Singapore Links](#)

Student VIDEO (9:00) [Net Zero Water - Bullitt Center Case Study](#)

[Engineering a Net Zero Water Building | Diagram](#)

Bermuda ARTICLE: [Bermuda’s 400 year old water engineering secret](#)

Bermuda VIDEO (4:58) [Bermuda’s Water Catchment System](#)

[King County Wastewater - Resource Recovery](#)  
[King County - Recycled Water](#)  
[King County - Biosolids](#)  
[King County - Energy from Methane](#)



## ACTIVITY 4

### Write a Climate Fiction Narrative About Our Water Future

Assign the Sustainability Ambassadors [IMPACT PROJECT](#). Write a short Climate Fiction narrative story using revisiting the [Sustainability Story Starters](#).

#### ***Write your narrative in stages using story elements including:***

**PART 1:** Write 3+ paragraphs that introduce the main character and the problem.

**PART 2:** Write 2+ paragraphs that describe the setting (time, place, mood). Challenge yourself to keep it super local to a possible future for our community, city, or bioregion.

**PART 3:** Write several paragraphs that build tension, a number of events that challenge the main character. Add secondary characters and/or antagonists. Keep the conflict clear: person vs. \_\_\_\_\_.

**PART 4:** Write the climax to the problem. Is the story utopian or dystopian? What does the climax suggest about possible futures for sustainability?

**PART 5:** Write the falling action and resolution. What message or sense of hope are you giving readers?





## ACTIVITY 5

### Publish Your Climate Fiction Writing

Publish short stories and have students write a Historical Perspective piece at the end explaining how their story connects to current water realities, encouraging water efficiencies... a sort of "Author's Note."

## ACTIVITY 6

### Share Your Writing with the Community

Share stories at the PLMS Sustainability Symposium, promoting discussions and raising awareness of sustainability issues in the Sammamish and Puget Sound communities.

Look for partners like Cascade Water Alliance, PTSA Reflections, etc. who will also promote student stories, gaining a wider audience.

Examples of Student Shorts - [Stories of Sustainability \(on Blogger\)](#)

## ACTIVITY 7

### My Writing has an Impact

Students do an audience analysis using Google Form surveys on how their stories impacted their audience's desire to adopt sustainable practices.

*A post-performance assessment survey will show an average gain in water efficiency habits of 20-35% among student authors.*

*A post-reading assessment survey among readers of student fiction will show a 10-20% gain in water efficiency habits.*

*Students email their story to an audience of 10 people including friends, family, and classroom peers.*

*At the end of the story, students include a request to give feedback on the story. The request includes a link to a Google Form survey that can provide the data needed to assess the impact of their story.*

This link will take you to a [SAMPLE STORY SURVEY](#).





# ACKNOWLEDGEMENTS



Thank you **Cascade Water Alliance** for supporting student and teacher research on SNOTEL data analysis as a foundational understanding for water resource management decision making. And for supporting the original design of the PBL Curriculum Design Lab and Teacher Fellows Program.



Thank you **King County WaterWorks Grant Program** for supporting additional partnership building and curriculum design related to water quality.

## About Sustainability Ambassadors

Sustainability Ambassadors is a professional development program for student leaders, teacher leaders and community leaders committed to rapidly advance a sustainable future by aligning classroom rigor with community relevance for real world impact.

We support a year-round training program for over 60 highly motivated youth, a paid Equity Advocacy Internship, a Green Jobs Youth Pathways Portal, and a Teacher Fellows Program, working with hundreds of educators to design new models of problem-based, place-based learning around a shared vision of **educating for sustainability**.

We focus on middle school and high school youth, the teachers and school districts that guide their learning, and the community stakeholders, local government and business leaders who are relying on the next generation to be engaged voters, informed taxpayers, conscious consumers, and employees who can create and lead sustainability initiatives.

[Visit: https://www.sustainabilityambassadors.org/](https://www.sustainabilityambassadors.org/)

