

MY CLIMATE RESILIENCY GUIDE

A guide to building personal, family,
and community resilience for a
changing climate

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Image: J. Bailey

My Climate Resiliency Guide

Why we need climate resiliency

Climate change is here, and cities all over the world are working to protect their community members from harmful climate effects like rising average temperatures, heat waves, flooding, and severe weather. While our leaders keep building, working and planning, we can adapt! This guide will help you develop strategies to help you, your family, and your community thrive. Be a force in climate change. Learn how from our best teachers: trees, parks, and nature.

A MESSAGE OF HOPE

This guide is dedicated to every person experiencing climate change. That's us! You, me, and countless people across the world who are feeling the effects of a changing climate. Let's work together and help each other out. We can do it!

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Table of Contents

	Page
I. Welcome.....	4
II. My Climate.....	5
III. My Habitat.....	7
IV. What is Resiliency.....	9
V. My Climate Effects.....	18
VI. My Climate Story.....	19
VII. My Health.....	20
VIII. My Heart.....	24
IX. My Forest	25
X. Adopt a Tree.....	28
XI. My Forest Friends.....	29
XII. My Community.....	30
XIII. The Power of Knowledge.....	31
XIV. Climate Action Planning.....	32
XV. Do I Live on a Heat Island?	33
XVI. Urban Prairie Communities.....	39
XVII. Plant a Pollinator Food Forest.....	40
XVIII. Climate Tools.....	41
XIX. My Rivers, Wetlands, and Marshes.....	43
XX. Resiliency Strategies.....	44
XXI. My Climate Action Plan.....	46
XXII. Becoming an Advocate.....	48
XXIII. What Will You Do?.....	49
XXIV. Creating Action Plans.....	50
XXV. Notes, Diagrams, Pictures.....	61
XXVI. Evaluating My Climate Resiliency Guide.....	67

Welcome!

This climate resiliency guide will take you on a journey to explore the ways that the climate is changing where you live. It will show you ways that you can help your family, friends and your community meet those changes with resilience and prepare for changes that may come to your neighborhood. The activities will help you connect with others, find your voice, and become a climate advocate in your community. You will find ways to be happy and healthy outside. You will learn how to protect trees, so that they may protect you and provide healthy spaces to live, work, study, and play.

I have spent years building healthy fish and wildlife communities as a conservation biologist. Through my time working to help fish, animals, plants and rivers live in harmony and health, I discovered that the most powerful way to support these wild things is to partner with the people that live in and among them and care about them most. People are fierce protectors! I found that my most important work is in connecting people, families, and communities to the natural resources all around, so that together we can build resistance to climate change. We can work together to build strength, discover our own unique superpowers, and direct the changes that we want to see in ourselves, our families, our climates, and our communities.

In this guide I gathered tools, resources and information to help you connect to your own climate protective powers. I researched ways to build personal, family, and community resilience for a changing climate. Working through these activities as an individual or with friends, family, or a group of kindred spirits will guide you towards resiliency, and I think it will be fun!

This climate resiliency guide was developed in partnership with:



My Climate

This is my climate.

Climate describes the pattern of weather conditions in a particular place that happens over a long period of time throughout the seasons. For example, the climate in Florida is known to be hot in the summer, and mild in the winter. You might experience a tropical storm or a hurricane if it is hurricane season. These are weather patterns that are normal for a region. In Oregon, winters might be rainy, and summers sunny and mild. You can expect to see lots of snow in a Minnesota winter, and the desert in Arizona might be hot and dry in the summer.

Draw or describe your climate. What is it like?

What is your climate like throughout the seasons?

Spring

Summer

Fall

Winter

Climate change effects.

When climate changes, there is a disruption in normal weather patterns of temperature and precipitation. People and even animals can be surprised by unexpected weather events.

Increased temperatures, changing precipitation patterns and heavy rain events in some areas, droughts in other areas, and increasing or unexpected numbers of tornadoes or other disasters (hurricanes, flooding, heat waves, forest fires), are all examples of climate change effects. Air quality is affected - allergies caused by pollution in the air from forest fire smoke and emissions gases contribute to asthma and other breathing problems. Insect pests can hurt plants and trees and transmit more tick and mosquito-borne diseases because of a longer, wetter growing season. Climate change can disrupt natural patterns in ecosystems and overwhelm a person's or family's ability to adapt.

How trees help.

Trees have superpowers in their ability to protect us from climate change.

Trees cool by evapotranspiration. They also remove carbon dioxide, a major greenhouse gas that contributes to climate change, from the air and store it in their roots, trunks, branches and leaves. They remove air pollution so we can

breathe better, and absorb excess precipitation, decreasing the chances of flooding and erosion. Trees also provide us with cooling shade to enjoy by ourselves, with family, or with friends and neighbors.



How I can help. Changes you make to the places you live, learn, play and work can help slow the process of climate change and help you be more adaptable to its effects. Learning about trees by protecting them and helping them grow in your park or neighborhood helps build climate resiliency for your community.

My Habitat

Habitat Building

A habitat is a place where a person, animal or plant lives and has everything that organism needs for survival. If you are an animal, you need food, water, and shelter. If you are a person, you call this your home.

Animals build or find their habitats in natural places. A beaver builds a lodge from sticks and logs. A badger digs a cozy den. Birds are happy in their favorite trees, and they might build a nest when it's time to lay eggs.

Draw a habitat for a mouse. What types of places or natural materials might be nice for a mouse habitat? Don't forget the necessities! (food, water, shelter)

Have a fun picnic with your family or friends!!

Picnic Habitat: Have you ever packed a picnic? Packing a picnic habitat can help you rest and refresh when you are out for adventure in a park, green space, or even your own back yard.

You will need to bring:

- **Food:** Pack a delicious lunch or some snacks
- **Water:** Something cool, clear and fresh to drink
- **Shelter:** Bring a string or rope about 10-25 feet in length, and an old sheet or blanket that can be used outdoors.

- 1) Go to your favorite park, green space, backyard, or anywhere you like to be outside. Find a place to set up your habitat.
- 2) You will need to find a place with two trees or places to tie your rope to. Attach your rope ends so that the rope hangs like a clothesline between your trees or attachment places. Place it about head or shoulder height.
- 3) Drape your sheet or blanket over the line so that it makes a tent or simple structure to duck underneath for a simple picnic shelter.
- 4) Find some sticks, rocks or natural objects to weigh down the corners of your sheet or blanket.
- 5) Place your objects on the corners to hold your shelter in place.
- 6) Climb inside and enjoy your picnic habitat!

Draw or describe your picnic habitat here:

Build a habitat: Have you ever built a habitat? You can build a habitat for a small creature, such as a mouse, snail, bug, chipmunk, or even for yourself in a park, green space, garden, or even your own back yard. Use natural objects such as sticks, fallen leaves, seed pods, rocks, sand, or other materials you can find all around you to build a habitat for a small creature. Come back later to see if anyone has moved in. Were the inhabitants who you expected?

What is Resiliency?

Resiliency is the ability to bounce back and recover from harmful events. A tennis ball bounces back due to its resilient structure. A tree will pull up strength from its roots to recover from a storm. Resiliency can also be defined as the ability to adapt and even thrive when faced with tough challenges. What helps to build resiliency?

Scientists who study youth resiliency believe that individual and social factors can influence the ability to adapt and thrive. Take a closer look at some of the factors that strengthen resilience.

Inner Strength: confidence, awareness and self-care, emotional health, empathy

What gives you inner strength? Do you have a special source of inspiration? Close your eyes and find your inner strength. What does it feel like? Where does it come from? Diagram or describe it here:

Outline your inner strengths:

I have confidence in my ability to _____

I believe I can _____

I am aware of my feelings and needs. When I feel unwell, I take care of myself by

When I need help, I reach out to _____

for support to help me take care of my body, my heart, and my mind.

Tap into Your Superpowers

Empathy is an important component of building inner strength. Understanding how others may feel and acting to support them helps build a stronger you. You may do this quietly, or you may shout it out loud. Recognizing that someone may feel pain or discomfort, and showing that you care is important.

Think of a time when you supported or helped someone. How did you know they might be experiencing difficulty? _____

How did you show them you cared? _____

Are you glad that you connected with them? _____

Friends and Family: Connecting with friends and family builds social strength. List, draw, describe, or diagram your favorite friend and family interactions.

School and Community: schools and communities provide support, knowledge and connections to resources. Learning to identify needs and communicating that message to your community builds individual, family, and community resilience.

List your favorite school resources here:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

List your favorite community resources here:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

Think about how these resources support you.

Can you share how connecting with these resources makes you feel supported?

Draw a picture of your school or favorite community resource:

My School Community and Schoolyard Habitat:

Think about your favorite school resources and how they support you throughout your day. Think about your schoolyard habitat and how it supports you throughout your day. If you would like to share your observations and ideas, you can cut this page out or take a picture and share with your favorite school staff member.

Dear _____,

My name is: _____, and I am in _____ grade at
_____ School.

My favorite school resources are: _____
_____.

I feel supported through my school community because: _____
_____.

To improve my school community, I recommend _____

_____.

I feel _____ during free time or recess.

My schoolyard habitat supports me by: _____
_____.

To improve my schoolyard habitat, I recommend _____

_____.

Thank you for providing me with a healthy place to learn and grow!

Sincerely, _____

This page is intentionally blank.

Trees are much like humans, and live in networks of families and communities just like we do.

Investigate how people and trees build resiliency to climate challenges.

Resiliency Factors	People	Trees and Forest Communities
Individual Strength	Grow strong bodies, hearts and minds	Use carbon from the atmosphere to grow strong trunks, canopies, and root systems
Family	Live in family or friend Groups within a Community or alone	
Friends	Care for and support family, friends, and community members when in need	
Empathy	Hold out a hand when they see a friend in need	Send chemical warnings when they recognize danger or share nutrients or protective medicine to family or friends in need
School	Source of knowledge and social support	Do trees teach and learn?
Community	Share and trade knowledge	Share and trade nutrients

Can you think of any other resiliency factors people, trees and forests have in common?

Resiliency Venn Diagram

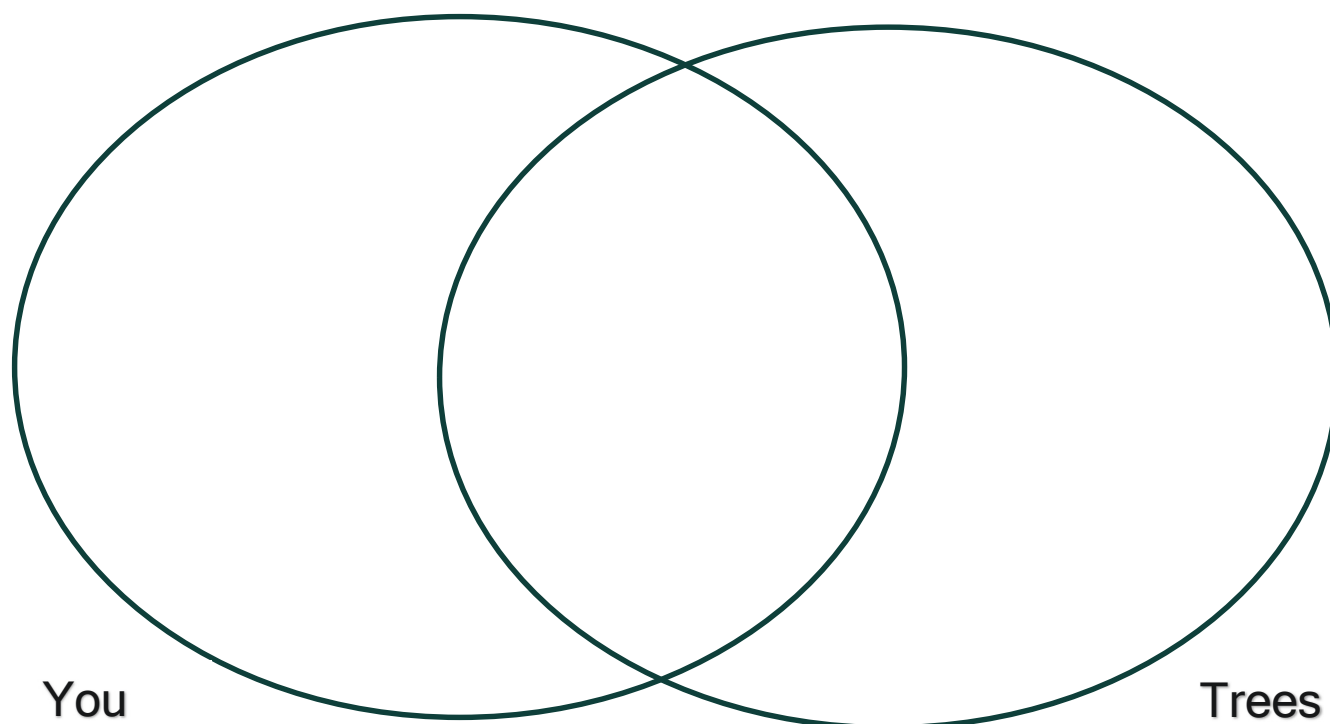
A Venn diagram is used to show relationships that are separate and in common. Overlapping circles can help visualize how factors relate to each other.

List some resiliency qualities or strengths you have:

List some resiliency qualities or strengths that trees have:

Do you have any qualities or strengths in common? Try to think of a few:

Now you can fill them into the appropriate spot in the Venn diagram:





Forest Community J. W. Bailey

Resources:

1. Anderson, J. R., Killian, M., Hughes, J. L., John, R. A., Trivedi, M. H. (2020). The Adolescent Resiliency Questionnaire: Validation of a Shortened Version in U.S. Youths. *Frontiers in Psychology* (11) DOI=10.3389/fpsyg.2020.606373. Retrieved from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.606373>
2. Zara Hussan. (2022). Friendly Fungi Help Forests Fight Climate Change. Association of British Science Writers Young Science Writer of the Year Award Essay. <https://www.bbc.com/news/science-environment-61787248>
3. Suzanne Simard. The Networked Beauty of Forests. Ted-Ed. <https://youtu.be/dRSPy3ZwpBk>
4. Simard, S. (2021). *Finding the mother tree: discovering the wisdom of the forest* (First edition). Alfred A. Knopf.

My Climate Effects

Are you experiencing climate effects? These could be intense weather events that you normally do not experience in your climate, or more frequent events than you are used to. Smoke and poor air quality from forest fires or pollution. Increased flooding events in your neighborhood, or Extreme Heat events that can become an emergency if you don't have access to air conditioning or ways to control the temperature of your home.

List climate effects that you have experienced. You may ask a friend or family member if they can recall experiencing climate effects. If you have a grandparent or older community member, they may be able to provide insight into how your climate has changed from 20 or 30 years ago in the same city or neighborhood.

My climate effects: _____

My Climate Impact. What you do and how you live matters!

- ✓ Walk, ride a bike, skateboard, or learn how to take the bus. Every time you ride in a car, emissions contribute to the greenhouse effect.
- ✓ Help plant trees or a garden. Make efforts to protect existing trees and forests. You know the superpowers of trees! They are our biggest defense against climate change and its effects.
- ✓ Save water and energy. Every time you switch off a light, or close a door to keep heat or cool air inside, energy is saved. Every clean drop of water is good for the planet and can be used for drinking and keeping cool.

My Climate Story

Share your climate story on this page. You can use pictures, drawings, songs, cartoons, poetry, or just words in sentences. Your story can include an experience of climate change or a story of resilience, something that happened to you, your family, your community, or a friend. It can be an action that you did to protect yourself and others from the effects of climate change, or a happy day that you experienced or would like to experience in your climate. Does your community have a place where you can share or upload a picture or video of your climate story?

My Health

Climate change can lead to stress, anxiety and even emotional distress. Building resiliency to climate stressors will help you understand and deal with the health effects. Part of building resiliency is taking time to care for your health and emotional well-being. Spending time in nature, in parks and gardens, and enjoying the benefits of trees can have positive effects on your health, reduce stress, and even improve mood and well-being.

Spending time in nature, parks, gardens, is so good for you!

Just 2 hours per week, or 20 minutes per day can have a measurable effect.

Here is a way to self-check how you are doing in your connections to nature and access to clean air and water, trees and green space.

This quiz is adapted from the Well-being Tool for Youth (WIT-Y) Guide. It is for you to assess your environmental wellness and relationships with nature. You can take this quiz daily, or after a good day outside.

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Do a self-assessment of your environmental connections over time to see what helps you feel healthy and connected to clean air and water, trees and nature.

If you enjoy using this simplified version of the WIT-Y environmental wellness questions, you can connect to the complete Well-being Tool for Youth at this address: https://umn.qualtrics.com/jfe/form/SV_eMb02bcxMDSQtuJ

It can help you develop a personal Blueprint for wellness, and it will connect you with resources if you like. There is no intention for you to share your results. Just to connect you with resources like this website about Healing Gardens:

<https://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment/what-are-healing-gardens>

Use these to compare your results and feelings about your environment over time, or before and after certain activities. See what activities have a positive effect on your connections to nature.

Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Do you see any trends? Are certain activities making you feel more connected?

Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

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Activity:

Date:

Which measure best describes your environment? This is your time in nature and things like clean air and water, plants and animals, parks and a balance between screen time and being outdoors.

Circle the answer that matches best.

In Crisis Just Surviving Doing Okay Doing Good Doing Great

Describe your favorite activities that helped you feel like you were connected and doing great:

If you were in crisis or just surviving in environmental awareness, are there activities or actions you could take to improve your situation? What might help?



My Heart

Addressing the effects of climate change can be overwhelming. Sometimes the effects of climate change can make you feel sadness or loss. It is ok to recognize and acknowledge that loss and to experience sadness or anxiety over how we will persist. Japanese wisdom states that spending time in the forest will improve your health and help you feel happy. In fact, traditions and cultures from all over the world celebrate nature for its restorative values. Scientists are just learning how to measure this. A recent scientific study showed that forest bathing, or *Shinrin-yoku*, as it is called in Japan, can actually heal your heart! The protective effects of spending time in a forest or with trees decrease blood pressure, heart rate, and other effects that could lead to heart disease. Keep your heart healthy! Breathe in the healing heart effects of forests and trees.

Forest breathing Just breathe in that forest air, or sit or walk quietly in nature. Breathe. Listen. See. Feel. You might recognize a kindred spirit in the branches of a tree, a birdsong, a butterfly, or a little animal friend.

Birdsong - listen for a dawn or day chorus Find a nice spot to close your eyes and listen to the symphony of songs from birds. The longer you listen, the more songs you will hear. What songs are they singing?

Seeds of hope Did you ever blow on a dandelion seed to make a wish? These are little acts of nature that help the plants to spread their seeds while you let a special wish, thought, or emotion float away on the wind.

Maple seeds in spring make helicopters as they fly through the air when you release them. Make a special wish before you throw them up into the air to helicopter down as you release them. Maple seeds grow into sugar maples, which provide plenty of shade and make sweet syrup if you collect and cook their sap in the spring.

Milkweed - seeds of hope for monarchs. Milkweeds are the only plant that monarch butterflies lay eggs on, and the only leaves that the larvae can eat. Help these amazing butterflies by spreading the milkweed seeds in fall. The seed pod will crack open when the seeds are ready.

Pick up a seed and hold it carefully. Make a wish, or hold a special feeling. And then, let it go. Blow! And see that special seed float away on the breeze.

Celebrate completion of these activities by decorating your heart at the top of the page.

My Forest

My Forest - Describe and connect with an urban forest or your neighborhood forest. Write your forest and field notes here:

Count your trees - How many trees can you count on your city block, in your city park or green space. Is there room for more? Write your forest and field notes here:

City Block:

City Park:

City Green Space:

Forest Canopy Measures - Find a favorite tree in your neighborhood and measure its canopy shadow and time of day. (You will need a long measuring tape, or a piece of yarn with a knot tied at intervals of 12 inches = 1 foot/interval)

Tree location and description:

Time of Day:

Feet of Tree Canopy Shade at this time:

Height:

Width:

Take measurements on the same tree at different times of the day.

Time of Day:

Feet of Tree Canopy Shade at this time:

Height:

Width:

Time of Day:

Feet of Tree Canopy Shade at this time:

Height:

Width:

Is this tree valuable to its community? Why do you think it is or isn't?

Forest Path - Forest Walking Corridors can target common walking paths that people use to get to school, the grocery store, or work to plant high quality shade trees to make that a healthier, cooler, and shadier walkway for pedestrians.

What are your paths? Identify, diagram, or describe your most common walking paths to target for tree cover. Choose a name (like my path to school) for each path, and diagram, label, or describe its location.

Now walk that path!!

How much of the time were you shaded?

Could you add the trees to your diagram or notes and describe your sunny or shady experience? Was it hot? Cool?

Does your forest path have adequate shade? Could it use more trees to create shade?

You might decide to write a letter to your community leader to share the results of your forest path survey.

Adopt a Tree

Do you have a place where you could plant a tree? Some communities offer free trees or might have species recommendations for you to plant in your own yard. Check out your city or county forestry website, or call them to ask about trees.

You might already have a special tree in your yard, neighborhood, or green space. You can adopt this tree and visit many times throughout the seasons.

My tree lives and grows at: _____ (location)

Do you know what species it is? If not, describe it here: _____

Measurements:

Height (You might have to estimate if it is very tall): _____

Canopy Height: _____ Canopy Width: _____

Measure your tree each year and track its growth. You might be growing, too!



My Forest Friends

Did you know that friendly fungi help trees absorb nutrients and transport water underground?

Underneath the ground, forests are connected by friendly fungi, called mycorrhizal fungi, that live in a symbiotic relationship with trees. The fungi are interconnected underground with the tree roots and help break down and transport carbon, water and nutrients from the earth, making it easier for the trees to access these elements. In exchange, the trees provide food for the fungi by sharing sugars produced through photosynthesis. Living underground makes it tough to access food produced by sunlight for the fungi, but by making friends with trees, the fungi get all the food they need without popping up for some sunshine!

Life cycle of fungi: When the mycorrhizal stages of fungi get hungry, or lose connections with their tree friends, they need to move so they can access resources and find a new place to live. They create a fruiting body that pops up out of the ground from the mycorrhizae underground. We call these mushrooms! The mushrooms reproduce by creating spores that are released when the mushrooms mature and can spread on the wind. Spores that settle in a happy place where they can make friends with trees will germinate and eventually become interconnected with tree roots underground, spreading their networks as mycelium and eventually maturing into a symbiotic mycorrhizal network with their trees.

Mushroom Hunt: Go on a mushroom hunt in a forest or woods!

How many friendly forest fungi can you count?

Draw the types of mushrooms that you find. Can you imagine what their mycorrhizal connections to their tree friends underground look like? Can you draw those, too?

My Community

My Community Resource Map - Make a diagram or map of your city

Map climate risk factors and describe here:

Map climate resilience resources and describe here:

List your best community climate resources here (forests, cool paths and green space, does your city have cooling shelters for extreme heat or weather?):

The Power of Knowledge

Library Research – Bring your map to the library and ask for help confirming and finding more resources. Write your notes for your library resource discoveries here:

Map city resources

- Cooling centers
- Parks
- Forest paths
- Wetlands to prevent flood
- Severe weather shelter
- Water and food sources

Map city vulnerabilities

- Areas that might flood
- Heat Islands
- Hot walking paths
-

Identify and list areas that needs attention:

-

Climate Action Planning

Does your community have a Climate Action Plan?

Visit your city's website to see if your community has a Climate Action Plan.
Does your community have a Climate Action Plan in place? Yes No

If it does, you can learn about your community's goals and strategies for protecting you from the effects of climate change. Read and explore your community's plan to learn about actions you can take to further protect your community and build resilience for you and your family.

I _____, have read and explored my
(print your name here)
community's Climate Action Plan. Now I have tools, inspiration, and ideas for ways I can protect my community and build resilience for me, my family, my neighbors, and my friends so that we can thrive in our community into the future.

(Insert your signature and today's date here)

Climate Change Predictions for My Community: Study your community's Climate Action Plan and research which climate change impacts are expected to be experienced in your neighborhood. What actions will you take?

Conduct research to describe climate conditions for your area using the federal Climate Mapping for Resilience and Adaptation tool:

<https://resilience.climate.gov/>

Consult the NOAA National Centers for Environmental Information State Climate Summaries 2022: <https://statesummaries.ncics.org/>

Knowledge is power! Understanding which climate change impacts are likely to affect your community will help you determine which actions will work best as you develop your own Climate Action Plan to improve resiliency for your family.

Do I live on a Heat Island?

Heat Islands are an effect that happens when urban areas experience higher temperatures than their surrounding areas. This happens when city structures such as pavement, building and roof top materials absorb and hold heat. Daytime temperatures are 1-7°F higher, and surfaces continue to release their heat, making it 2-5°F hotter in urban heat islands at night. **The effect is not permanent**, and can be improved by planting trees, plants, and using cool roof and paving materials. White or light colors, and native trees and plants work best. Some people even paint their roof tops white, or cover their roof tops with grass and native plants!

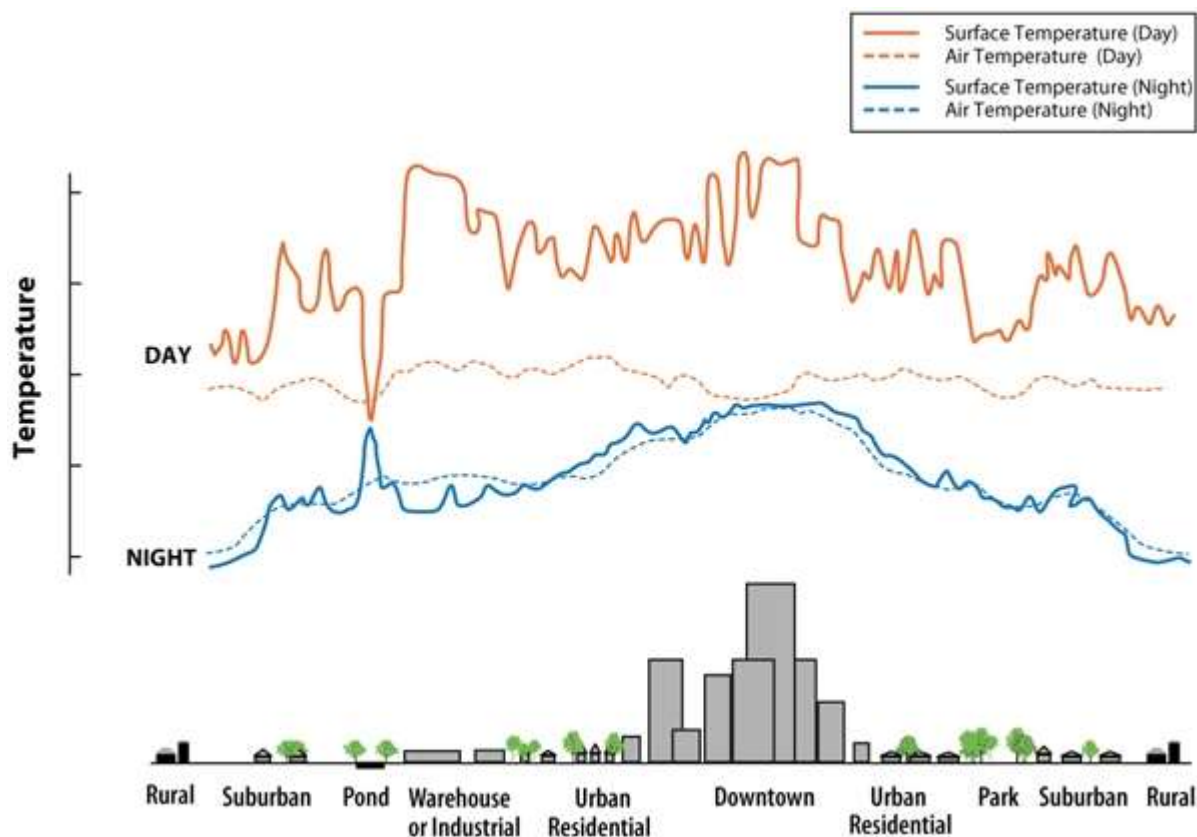


Image Credit: United States Environmental Protection Agency

Resources:

- 1) NASA Climate Kids - What is an Urban Heat Island?
<https://climatekids.nasa.gov/heat-islands/>
- 2) United States Environmental Protection Agency - Heat Island Effect
<https://www.epa.gov/heatislands>
- 3) My NASA Data - Urban Heat Islands
<https://mynasadata.larc.nasa.gov/phenomenon/creation-of-urban-heat-islands>

Here is how you can determine if you live on a heat island. You will need a thermometer, your Climate Resiliency Guide, and a pen or pencil:

Go to your nearest street intersection and record the street names:

I live at: _____ and _____ streets.

Do you live in an urban, suburban, or rural setting? _____

Record the ground surface temperature at the intersection: _____ °F.

Record the Date: _____, time of day _____ and what type of surface material was measured: _____.

Go to your nearest shady spot and record the ground surface temperature there.

Ground surface temperature at shady spot: _____ °F .

Record the Date: _____, time of day: _____ and what type of surface material was measured: _____.

Describe your shady spot. Were you under a tree or other shade structure?

_____.

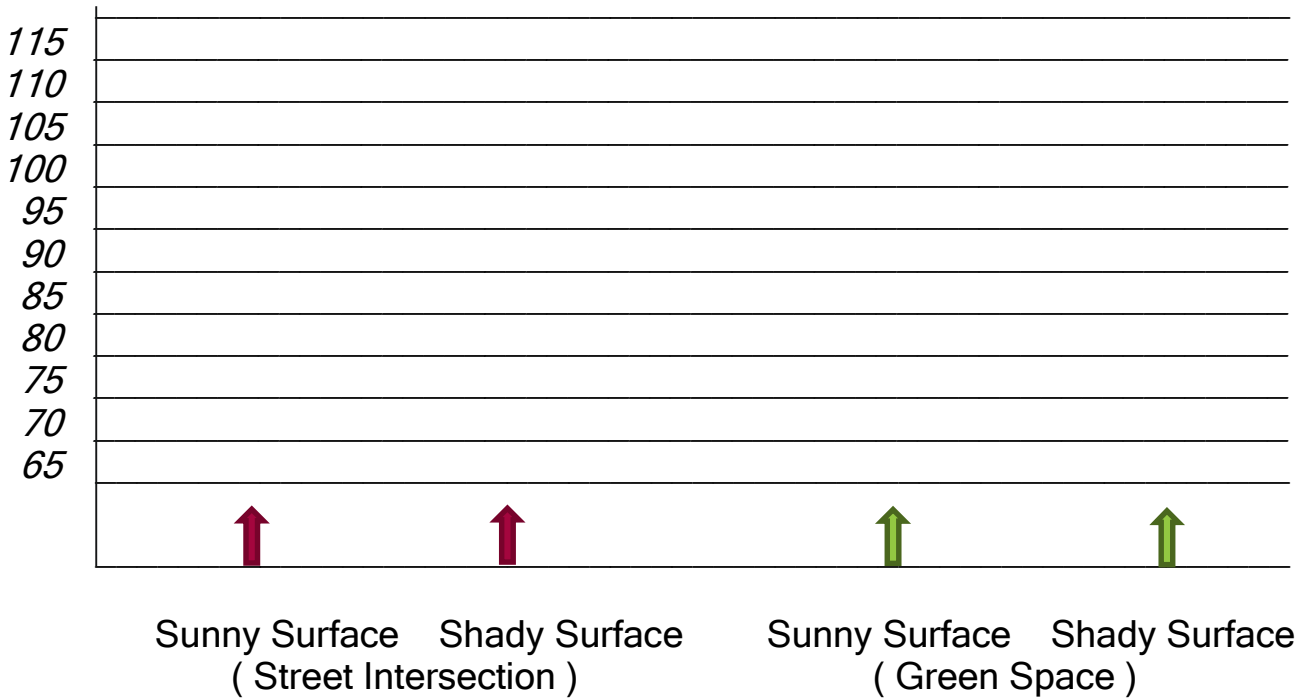
Now go to your nearest green space or park. Can you describe it here?

_____.

Ground surface temperature at green space: (sunny) _____ (shady) _____

Date: _____, time of day: _____ and what type of surface materials were measured: _____.

Graph your data! Make a dot on the line corresponding to the nearest temperature recorded for each location (make the dot above the arrow for each location). You should have four measurements to compare.



Data: _____ °F - _____ °F = _____ °F _____ °F - _____ °F = _____ °F
(street sun) (street shade) (difference) (green sun) (green shade) (difference)

Do you see a difference between your street intersection and your park or green space temperatures?

_____ Yes _____ No Degrees of Difference: _____ (sun) _____ (shade)

If the difference is 1-7°F or higher, you might live on a heat island.

Let's check. Can you check the local temperature for your city right now? You may need a TV, computer, or phone. You can always gain access at the library.

What is the reported temperature for your city today?

Were temperatures higher or lower at your street intersection?

Were temperatures higher or lower at your green space?

Do you live on a Heat Island? _____ yes _____ no _____ maybe

What can you do about Heat Islands?

Even if you do not live on a heat island, you can learn about how to reduce local surface area temperatures and create a cooler and healthier environment.

Research ideas using library references or websites above:

Strategies:

Brainstorm ideas that will work for your situation:

If you live on an Urban Heat Island, consider reaching out to your community leaders to let them know you may be experiencing disproportionate heat effects. You can help your community by sharing this news. Ask a family member, librarian, teacher or a trusted neighbor to help you address and mail this letter. (You can cut out this page and mail it)

(your name)

(your address)

(your city)

(your state and zip code)

(today's date)

Dear Community Leader _____,
(Who is your mayor? Or enter the name of another community leader that can help)

I may be experiencing the disproportionate effects of living on an Urban Heat Island.

On _____, I measured surface temperatures in my neighborhood, and
(enter date of collected temperatures)

my results showed that temperatures at the intersection of _____ and
(street name where you measured)

_____ were _____ degrees (°F) higher than temperatures in a nearby
(street name where you measured) (surface temperature difference = street intersection - green space)

green space at _____. Shady
(name or location of your green space or park)

areas offered protection. I measured a difference of _____ °F between sunny and
(green space difference = sun - shade)

shady areas of that spot. **Thank you for protecting my green space! Can you help us more?**

My ideas to reduce Heat Island effect are:

(You can list, explain and/or diagram your ideas in this space below)

Sincerely,

(your signature)

This page is intentionally blank. It is the back of the letter. You may want to expand on your ideas on this page, or illustrate, diagram or draw your vision for how your ideas for Heat Island Reduction will look once completed.

Urban Prairie Communities

Urban Prairies are beautiful and can help with water retention and heat mitigation. Research studies have shown that native prairie plants help moderate garden temperatures even better than non-native plants can in the summer, and will survive cold winters, so no need for replanting each year. Plus, native plants prairies provide food and habitat for pollinators!! Who doesn't love those! Some pollinators overwinter in native prairie habitats and emerge early in spring, so prairies are essential for pollinator species. Look into prairie communities for butterflies and caterpillars, bees, moths and bugs.

Pollinator Count - Discover a garden where there are blooms and plants to support pollinating insects. Now sit very quietly for a certain amount of time. It could be five minutes or five hours. You decide! How many pollinators can you count during this time?

Time spent counting:

Number of pollinators:

Types of pollinators:

Plan a pollinator food forest - Use crayons, markers or paint to design your own pollinator food forest here. Be sure to include blooms and nectar, shelter areas such as native grasses to protect on windy days, and a shallow bowl or depression for a water source (habitat = food + water + shelter):

Plant a Pollinator Food Forest

Whether you have a pot, large container, corner, or a large area outside for a garden, you can help pollinators find habitat in your neighborhood or schoolyard. Native plants are necessary for pollinators to feast, find shelter, and complete their lifecycles. Follow these steps to help your garden grow.

- 1) Choose your location. Sunny is best, and soil is necessary. If you don't have much space, choose or build a container and fill it with soil. Make sure it has a way to drain so plants don't get too wet.
- 2) Research native plants for your climate and geographic location. Use your library. Visit plant nurseries in your community and ask what native plants help pollinators in your area. Learn about native plants and pollinator life cycles.
<https://nativegardendesigns.wildones.org/>
<https://www.almanac.com/building-pollinator-garden>
<https://www.fws.gov/story/how-build-pollinator-garden>
- 3) Remove existing grass or vegetation and loosen the soil. Cover the surface with mulch, grass clippings, compost, or shredded leaves to keep moisture in.
- 4) Add a water source such as a shallow bowl to capture rain. Remember habitat = food + water + shelter.
- 5) Plant your garden with seedlings or nursery plants. Try to include a native grass species for shelter on windy days, as well as nectar and pollen producing flowering species to provide food for bees, butterflies, moths and insects.
- 6) If you can find a milkweed species that thrives in your area, that will provide nursery habitat for monarchs. Milkweeds are the only plants monarch larvae can eat, and the leaves are the perfect place to lay eggs on. Look underneath milkweed leaves for eggs and larvae throughout the summer!
- 7) Water daily, weed, and watch your pollinator food forest grow!
- 8) Celebrate every time you notice a new blossom.
- 9) Celebrate every time you see a new pollinator visit your garden habitat.

Climate Tools

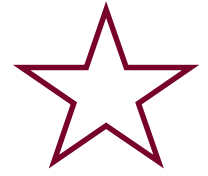
Collect and visualize data on this page. What will you measure? Will you measure rainfall in inches over 1 month? Will you measure temperature data? How will you visualize your data? Will it be a graph? You could design a pie chart to display your data (Number of days I spent at the pool/library/park/neighborhood/backyard/home this summer). You could make a table of weather throughout the year (sunny, cloudy, rainy or snowy) corresponding to the number of days you played outside. What about a timeline to document the date and timing of your favorite seasonal events? (What date did you see your first robin this spring? The first dandelion? First monarch butterfly? Red leaf in fall? The first snowfall?) Use your imagination! You may collect lots of data and visualize it in many ways. Use the blank note pages near the end of this guide if needed.

This page is intentionally blank for notes

My Rivers, Wetlands, and Marshes

Rivers, wetlands and marshes cool and protect during hot weather and extreme heat events. They also provide protection and resistance to flooding during high water, intense storms, and heavy rainfall by absorbing excess water. By protecting areas of wetlands and marsh, habitat for animals is created, park lands and wild spaces provide healthy places for recreation, and city buildings and neighborhoods are protected from flooding.

Take a tour of your community and document each river, wetland and marsh. Note how each location might help cool and provide refuge when it is hot. Notice how each location might absorb excess water during flooding and intense storms:



Resiliency Strategies

Log time in nature - just 120 minutes per week to boost resilience.

Day 1 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Day 2 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Day 3 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Day 4 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Day 5 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Day 6 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

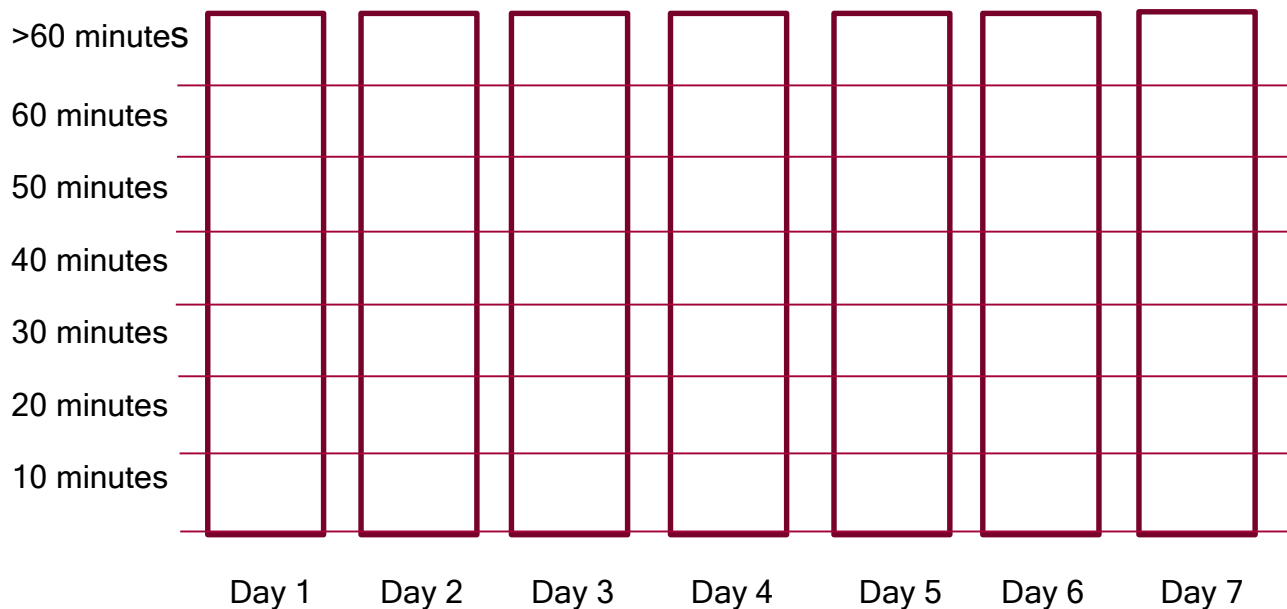
Day 7 - Date: _____ Place: _____ Minutes: _____

Describe your experience:

Celebrate by decorating your star at the top of the page.
How did it feel to meet your goal?

Graph your time in nature - just 120 minutes per week to boost resilience.

Shade in the bar for the amount of time you spend in nature in a week.



Record your weekly time in nature by drawing a star, rainbow, or other shape for each 15 minutes. Is your time in nature increasing over time?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

15 min 30 min 45 min 60 min 75 min 90 min 105 min 120 min

My Climate Action Plan

Make an individual or family climate action plan.

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

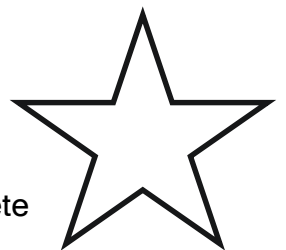
Actions Necessary: _____

Steps to take:

Steps to take (continued):

How will you celebrate when you reach your plan goals?

Decorate your star when plan is complete



Becoming an Advocate

Reaching out to communicate: You are learning and building resilience for yourself and your family, friends and neighbors. Getting involved with local people and resources is a great way to share what you know. How would you like to do that? Have you identified a special strength or goal you would like to share? Is there a specific need that could help the people in your community?

This will help get you started.

List your Strengths:

Do you have a special goal?

List a special goal here:

What Will You Do?

Brainstorm and journal what you can do to impact your own resiliency and engage with community resources.

How might you use your strengths?

What goals would you like to make?

Create an Action Plan

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

Actions Necessary: _____

Steps to take:

Notes, diagrams, pictures

Notes, diagrams, pictures

What Will You Do?

Brainstorm and journal what you can do to impact your own resiliency and engage with community resources.

Action Plan

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

Actions Necessary: _____

Steps to take:

Notes, diagrams, pictures

What Will You Do?

Brainstorm and journal what you can do to impact your own resiliency and engage with community resources.

Notes, diagrams, pictures

Action Plans

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

Actions Necessary: _____

Steps to take:

Notes, diagrams, pictures

Action Plans

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

Actions Necessary: _____

Steps to take:

Notes, diagrams, pictures

Action Plans

Plan for _____

Goal: _____

Justification (Why do this?): _____

Players (Who will do what?): _____

Actions Necessary: _____

Steps to take:

Notes, diagrams, pictures

Notes, diagrams, pictures

Notes, diagrams, pictures

Notes, diagrams, pictures

Notes, diagrams, pictures

Notes, diagrams, pictures

Help improve My Climate Resiliency Guide!

Use this page to communicate what you liked and didn't like. Share what worked and what didn't.

Date: _____ Age (optional): _____ Individual or Group use: _____

What I liked about My Climate Resiliency Guide:

What I did not like about My Climate Resiliency Guide:

What worked or didn't work:

Did you learn ways to become more resilient to climate change?

Do you feel more engaged with your community?

Do you feel more connected with nature?

Do you feel confident you can make a change in your family, neighborhood, or community?

Send a picture of this completed page to: myclimateresiliencyguide@gmail.com

