

Saving Summer

How Climate Change is Reshaping the Season We Love

Summer is woven into the American experience. It's hiking shaded trails and pitching tents under the stars. It's playing parachute games at summer camp. It's afternoons spent swimming in lakes and grilling poolside. It's early mornings casting a fishing line into cool water. These rituals connect us to nature, to each other, and to our public lands.

96%

of national parks
have harmful air
pollution levels

5 million

acres burned
nationwide in 2025

84%

world's coral reef area
impacted by latest
global bleaching

467,000

Americans treated
for Lyme disease
each year

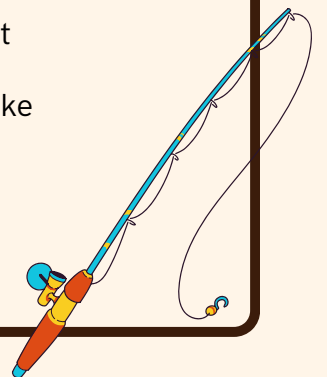
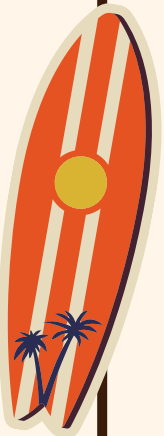
Summer is changing

Across the United States, climate change is reshaping the season in visible and deeply personal ways. Rising temperatures, worsening drought, stronger storms, wildfire smoke, and warming rivers are changing when, where, and how we spend time outdoors. The places we typically go to cool off, unplug, and make memories are increasingly being disrupted by extreme weather and environmental change.

The impacts we are witnessing are interconnected. Heat intensifies drought, drought fuels wildfires, and wildfires worsen air quality. Warmer temperatures are heating up lakes, rivers, and oceans – affecting aquatic and marine species. Together, they are reshaping summer as we know it.

This report explores how climate change is affecting some of our most cherished summer activities and what those changes tell us about the urgent need to protect the places, traditions, and ecosystems that make our summer – no matter how we like to spend it – possible.

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Hiking and Camping

Whether you enjoy a day hike at your local park, or a backcountry trip through Shenandoah National Park, hiking and camping in America's public lands are, for many, a quintessential summer activity. However, a changing climate is affecting when and how we recreate on these public lands.

Dangerous Heat

Summers in the United States are becoming hotter and longer. Heat waves are now more frequent, intense, and prolonged, increasing the risk of dehydration, heat exhaustion, and heat stroke for hikers and campers.

In 2023 and 2024, multiple national parks across the Southwest issued extreme heat warnings as temperatures exceeded 100°F for days at a time. Park officials in the Grand Canyon and Death Valley urged visitors to avoid daytime hiking due to life-threatening temperatures. This heat also creeps into the evenings, making it harder for the body to recover after long days outdoors.

Wildlife suffers from rising temperatures too. Animals that rely on cool habitats and healthy seasonal conditions are being pushed out of their ranges or forced to change migration and feeding patterns. Drought and heat can dry out forests, reduce streamflow, and damage alpine habitats. Wildlife species adapted to cooler environments — including pika, trout, moose, and some migratory birds — are losing habitat as temperatures rise.

Expanding Tick Season

Warmer winters and longer summers are allowing ticks, and the diseases they carry, to survive longer and spread into new regions across the United States.

Areas that historically experienced fewer tick-borne illnesses - including Lyme disease, Rocky Mountain Spotted fever, and alpha-gal syndrome - are at risk of seeing more cases, as climate conditions become more favorable for ticks and the animals that carry them, including deer and rodents.



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Hiking and Camping

Far-reaching Wildfires

We are now experiencing wildfires outside of the normal season and in places not typically known for wildfires. Hotter temperatures and worsening drought, coupled with decades of harmful fire suppression policy, are fueling larger and more destructive wildfires across the United States. Existing challenges such as fuel buildup, invasive species, loss of open space, and unmanaged recreation further increase fire risk. While these fires take an immense toll on the immediate communities and wildlife they ravage, their impacts are far reaching.

As we saw during the record-breaking Canadian wildfires of 2023, smoke and fine particles traveled thousands of miles, blanketing much of the northeastern and midwestern United States in an orange haze. Even communities far from the fires experienced unhealthy air quality, making it difficult to breathe and forcing many people indoors. National parks and recreation areas once known for clean mountain air are increasingly experiencing these smoky skies and poor air quality. Smoke pollution can make hiking and camping unsafe, especially for children, older adults, and people with asthma or other respiratory conditions.

Nearly 9 million acres burned throughout the U.S. in 2024, forcing campground and trail closures in many parks and recreation areas. Unnaturally severe wildfires further damage ecosystems by destroying forests, nesting grounds, food sources, and migration corridors. Ash and debris from fires can pollute rivers and streams, harming fish and other aquatic species. Poor air quality can stress animals, disrupt migration patterns, and force species to relocate from already shrinking habitats. Heat waves, drought, wildfire, and smoke pollution are becoming increasingly interconnected in a warming climate.

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Fishing

Every summer, millions of Americans head to quiet lakes, fast-flowing streams, and winding creeks to fish. Whether a lifelong angler or casting for the first time, they support a robust outdoor recreation economy and are often powerful advocates for conservation.

Climate change is breaking the rhythms of this cherished pastime. Warmer weather means warmer water, warmer winters with less snowpack, and more extreme drought. Spikes in water temperature have particularly devastating impacts for fish like trout and salmon, which need continually flowing cold water to survive. Fish can get stressed and sick in warmer water, largely due to its lower dissolved oxygen levels. Climate change has already helped drive sharp declines in fish species abundance (the number of individual fish) and richness (number of individual species) in cold water streams in the U.S.

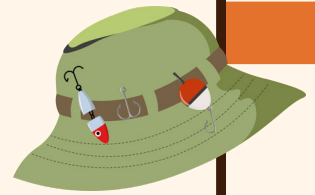
Declines or shifts in streamflows also impede the ability of freshwater fish to migrate and reproduce. Wild sockeye salmon have already shifted their migration timing in response to climate change; other salmon species likely won't be able to adapt as well.

Fishing restrictions are increasingly common in the summer. States in the west, including Montana, implement "hoot owl" restrictions - which prevent fishing after 2 p.m. - once river temperatures reach around 73 degrees Fahrenheit for consecutive days. Last summer, Yellowstone National Park closed multiple rivers to fishing to protect trout inside park borders. These closures came earlier than ever in 2025 and likely will again. The Idaho Fish and Game Department has already warned anglers to expect fewer and smaller trout this season, due to persistent drought and poor water quality.



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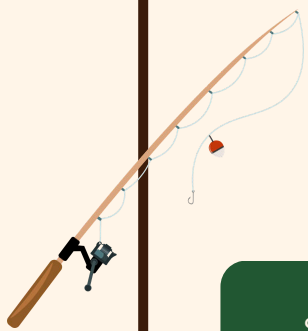
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Fishing

Anglers in the East and Midwest are also seeing declines in the iconic and much-beloved brook trout: Rising temperatures could lead to a 77 percent decline in brook trout habitat in the East. There are climate threats beyond warmer water, too. Eastern hemlocks, an evergreen that grows along streams and helps keep them cool, are being killed by the invasive hemlock wooly adelgid – and climate change is extending the pests' range northward. Hurricane Helene scrambled miles and miles of trout habitat in North Carolina, and devastated one of the state's fish hatcheries, killing 600,000 fish.

Fish that can withstand warmer waters, like bass, aren't spared. Warmer water can lead to increased bacteria and parasites, which impacts the health of fish and has led to mass mortality events worldwide. Hybridization, when native fish species reproduce with non-native species, is also becoming more common due to climate-induced expansions of non-natives. Hybridized fish – like cut-bows, a cross between native cutthroat trout and invasive rainbow trout – aren't as genetically suited to their environment, and are even less able to adapt to climate change.



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Swimming and Snorkeling

Whether it's cooling off in a lake, swimming at the beach, or snorkeling over coral reefs, water-based recreation is a defining part of summer for millions of Americans. But climate change is rapidly altering oceans, lakes, rivers, and coastlines, threatening both aquatic ecosystems and the species that rely on them.

Ocean Acidification Threatens Coral Reefs

The ocean absorbs nearly 30 percent of the carbon dioxide released into the atmosphere, helping slow the pace of climate change. But as carbon pollution from burning fossil fuels, deforestation, and industrial activity increases, oceans are absorbing more carbon than they can naturally process. This causes ocean waters to become more acidic - a process known as ocean acidification.

Ocean acidification makes it harder for marine organisms like oysters, clams, corals, and some plankton species to build and maintain their shells and skeletons. In severe cases, shells and coral structures can begin to weaken or dissolve.

Coral reefs are especially vulnerable. Often called the "rainforests of the sea," coral reefs support nearly 25 percent of all marine species despite covering less than 1 percent of the ocean floor. They provide habitat, breeding grounds, and food sources for thousands of species while also protecting coastlines from storm surge and erosion by absorbing wave energy.

For snorkelers and beachgoers, coral reef decline means the loss of some of the world's most vibrant marine ecosystems. In Hawai'i, reefs that once attracted millions of visitors each year are increasingly threatened by warming waters, coral bleaching, and ocean acidification.

Wildlife that depend on coral reefs - including fish, sea turtles, sharks, and countless invertebrate species - face shrinking habitat and declining biodiversity as reefs deteriorate.

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Swimming and Snorkeling

Algal Blooms are Worsening

Freshwater algal blooms in lakes, ponds, rivers, and swimming holes are becoming more common, longer-lasting, and more dangerous as climate change accelerates across the United States. An algal bloom is the overgrowth of microscopic algae in water. Not all algal blooms are toxic, but harmful algal blooms can produce toxins dangerous to people, pets, wildlife, and aquatic ecosystems.

Climate change is creating the ideal conditions for these harmful blooms to thrive. Rising temperatures are warming lakes, rivers, and coastal waters earlier in the spring and keeping them warmer later into the fall. Cyanobacteria, or blue-green algae, grow especially well in warm, stagnant water, meaning longer and hotter summers are extending algal bloom seasons across much of the country.

Climate change is also intensifying droughts and extreme rainfall events, which together, worsen nutrient pollution in waterways. During drought, water levels drop and pollutants become more concentrated. When heavy rainstorms occur, runoff from farms, lawns, and developed areas washes large amounts of nitrogen and phosphorus into lakes and rivers. Melting snowpack also releases nutrients that were previously locked up in snow and ice. These nutrients act like fertilizer for algae growth.

When blooms die, they decompose and consume oxygen in the water, creating low-oxygen "dead zones" where fish and aquatic species cannot survive. These events can trigger fish kills, disrupt food chains, and damage freshwater ecosystems relied upon by birds, amphibians, and mammals.

For swimmers and summer recreation, harmful algal blooms can force beach and lake closures and create serious health risks. Exposure can cause stomach pain, rash, headache, coughing, watery eyes, nose irritation, and sore throat. Pets and wildlife are especially vulnerable and can become severely ill or die after exposure.

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Summer Camp

For millions of children across the United States, summer camp is a long-awaited tradition after the school year ends. From water balloon fights and scavenger hunts to swimming, hiking, and team-building games, summer camps give kids the opportunity to spend time outdoors, build friendships, and develop confidence, resilience, leadership, and communication skills. The summer camp industry also plays a major role in the U.S. economy, generating roughly \$70 billion annually and supporting nearly one million jobs.

But climate change is increasingly threatening the safety of outdoor summer camp activities. Air quality isn't just worsening in urban regions, but also in places where people used to go to escape pollution, like summer camp.

Poor Air Quality Puts Children at Risk

Children are especially vulnerable to air pollution. Compared to adults, children breathe more air per pound of body weight, have developing lungs and immune systems, and often spend more time outside during the summer months.

Today, nearly half of children in the United States are exposed to unhealthy levels of air pollution. As temperatures rise and wildfires become more frequent and severe, summer air quality is worsening across much of the country. Because of federal efforts to dismantle bedrock air protection policies, children spending time outdoors in summer camp may face greater harm.

Smoke pollution, ground-level ozone, and fine particulate matter can trigger asthma attacks, breathing difficulties, headaches, and other respiratory illnesses, particularly during strenuous outdoor activities common at summer camp. Asthma already affects nearly 4.5 million children in the United States, making poor air quality especially dangerous during the summer months.



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Summer Camp

Extreme Heat

Extreme heat has been the leading cause of weather-related deaths in the United States for more than 30 years. And heat waves – prolonged periods of unusually high temperatures – are becoming more frequent, intense, and long-lasting because of climate change.

For summer camps, rising temperatures can make outdoor activities dangerous. Long days spent running, swimming, hiking, or playing sports increase the risk of dehydration, heat exhaustion, and heat stroke – especially for children, whose bodies heat up faster than adults and are not as capable of regulating temperature.

Some camps have had to adjust schedules by moving activities earlier in the morning, shortening outdoor recreation periods, or increasing cooling breaks and hydration stations. In extreme cases, camps may cancel outdoor programming altogether during dangerous heat conditions.

Rising temperatures are also affecting ecosystems and wildlife around camps and recreation areas. Heat and drought stress forests, dry out streams and wetlands, and reduce habitat quality for many species. Animals that rely on cooler temperatures and predictable seasonal conditions may struggle to find food, water, and shelter during increasingly hot summers.

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