



# Climate Change and Plants

Can you imagine our world without any plants? It's hard to do, because they are everywhere we look, from the weeds growing in the cracks of sidewalks to beautiful spring flowers, from majestic oak trees to the rows of crops growing on farmlands.

People use plants in a lot of different ways: Plants make our food, and things you wouldn't expect, like rubber, medicines, cork, wood, spices, paper, and clothes.

But people can appreciate plants for more than what we do with them.

- For one, without plants we wouldn't be able to breathe: plants take up carbon dioxide, a greenhouse gas, and make the oxygen we need to breathe.
- Plants also make habitats, the place where other animals live- like a place for birds to nest.

Climate change—the way that the planet is warming because of people burning fossil fuels—affects plants too, in many different ways—from changing seasons, to moving forests, to wildfires. Let's talk about a few of the ways that climate changes affects plants and people.

The first way climate change is affecting plants is easy to notice in your own backyard.

- Because climate change is making the earth warmer, the seasons- winter, spring, summer, and fall- are all changing too.
- Spring is starting earlier in the year than it used to which means that spring flowers, like daffodils and tulips, are coming up out of the ground earlier.
- It's also staying warmer longer than it used to - which means a shorter fall and winter. You can see this when you look at trees in the fall; their leaves change color later than they used to.

But this isn't just happening in your backyard; climate change is affecting plants all around the globe.

- Because of the way sunlight hits the earth, it's cold at the poles and hot at the equator. That means in North America, it's colder if you're in Canada and warmer if you're in Florida.
- Like humans, trees are most comfortable at certain temperatures - if it's too cold or too hot for too long, they can't grow well.
- Because climate change is making temperatures warmer- for some species in some places, it's getting too warm for their comfort.

In response, trees, like pine trees and poplar trees, move north to colder temperatures.

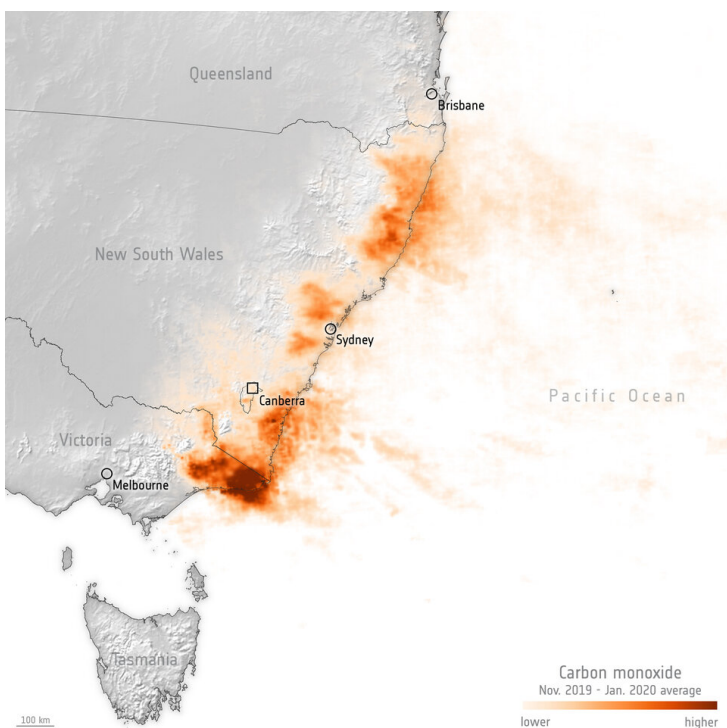
- Trees can't actually get up and move like people and animals can. But what they can do is send their seeds all around them, especially when they're stressed. Their seeds are carried by the wind, by birds that eat their fruit, or by sticking to the fur of animals. Then, if the seed lands in a place with nicer, cooler temperatures, the lucky seed germinates and grows well.
- Now imagine this happening for a lot of trees, for a whole forest: the trees send their seeds north, and over many years, the whole forest moves north.

Being able to send seeds to a better climate is a type of adaptation. Being able to adapt means that you can change things to handle the hard times in your life.

- For some plants, the climate is changing too fast for them to adapt.
- For other plants and animals, the fact that the forest is adapting to move north means that it's replacing other habitats and ecosystems, crowding them out.
- Both of these things—the plants being unable to adapt, and other ecosystems being crowded out, can mean that there are fewer types of plants and animals that live in different environments, which isn't good for the natural cycles of nature.

Lastly, climate change is making some areas much hotter and dryer than normal, which makes wildfires happen more often.

- Some plants are actually adapted to fire. Certain trees have extra thick bark to protect them from the flames. Other trees, like the Lodgepole pine, need fires in order to make their pinecones burst open and release seeds.
- But not all plants have these have adapted this well, so it's hard for the forest to recover.
- In 2020, there were a lot of fires in Australia, and in the amazon rainforest. When those huge rainforest trees burn, they release carbon dioxide, a type of greenhouse gas. So more greenhouse gas from the wildfires means that the wildfires make the climate change even more.
- And these fires are bad for people too. A lot of fires have happened in California and Australia in recent years, making people lose their homes and suffer from air pollution.





Plants are important for our lives, and plants can help us see what climate change is doing to our environment. It's important to protect plants, so here are some things you can do to make a difference in this big problem:

- Working with your family to use less energy, by turning off lights and keeping your house a little warmer in the summer and a little cooler in the winter.
- Plant a tree! Trees take carbon dioxide, a greenhouse gas, out of the air and use it to grow, which can help reverse climate change.
- Learn about conservation organizations, like national parks, the [sierra club](#), [climate kids](#), and many more who are teaching people about climate change and protecting the plants and our environment.
- Help scientists [track the seasons](#) so we can learn more about how climate change is affecting plants

By learning how plants play an important role in our environment, and how climate change impacts them, we're all a step closer to protecting our planet

## Resources

### Links in Learning Module:

[Uses of Plants](#)  
[Plant Habitats](#)  
[Seasons Changing](#)  
[Tulips coming out of ground earlier](#)  
[Staying Warmer Longer](#)  
[Cold at the poles and hot at the equator](#)  
[Tree ranges shifting](#)  
[Seeds can be carried by the wind](#)  
[Plant Adaptations](#)  
[Plant Adaptations 2](#)  
[Climate changing fast](#)  
[Replacing other habitats and ecosystems](#)  
[Climate Change making it hotter and dryer](#)  
[Wildfires and climate change](#)  
[Plant adaptations and fire](#)  
[Amazon rainforest](#)  
[California and Australia Wild Fires](#)  
[Sierra Club](#)  
[Climate Kids](#)  
[Track the seasons](#)

### Links for kids:

[Uses of plants](#)  
[Plant habitats](#)  
[Latitude and Temperature activity](#)  
[Plant adaptations](#)  
[Fire ecology](#)