

FOREST ECOLOGY

WITH DR CRAIG NITSCHKE

Talking points

KNOWLEDGE

1. What is regeneration?
2. What is an ecological niche?

COMPREHENSION

3. What are the limitations of simulation and statistical models (SSMs)?
4. What are three ways in which a drier climate could affect plants negatively?

APPLICATION

5. How could you use the insights from SSMs to protect forests from climate change?

ANALYSIS

6. How can a forest's composition change in response to various environmental stresses?

SYNTHESIS

7. In what way can we use forest management to fight climate change?

EVALUATION

8. To what extent do you think humans should actively manage the Earth's climate? How much should humans interfere, and how much should be left to nature?

CREATIVITY

9. How would you go about designing a media campaign to raise public awareness of the importance of forests? What would be your key messages, and how would you communicate them?
10. Imagine humans were a forest-dwelling species. How would we adapt to our new ecological niche?

Activity

Explore the idea behind simulation and statistical model (SSM) on pen and paper:

1. First, research your local or regional forest ecosystem. What kind of plants grow in your area? What species are most common?
2. Pick three to five of your local tree species, and find out what environmental conditions they prefer. What is their ideal temperature range? How much water and what kind of soil do they need?
3. Now, look up how climate change is expected to affect your home. Do you live somewhere with increasing numbers of wildfires and heatwaves? Is the amount of rainfall expected to go up or down?
4. How do you think these environmental changes will affect your tree species? Which ones will lose out, and which ones will benefit?

If you live somewhere without a lot of trees, you can try this project with other plant species like shrubs or grasses or even animal species.

More resources

- Find out more other forest science projects that Craig works on: findanexpert.unimelb.edu.au/profile/184007-craig-nitschke
- Planting trees has been touted as a nature-based solution to climate change because trees draw down carbon from the atmosphere as they grow. Watch this 5 minute TED Ed talk – “What if there were 1 trillion more trees?” – about how trees sequester carbon and how many we would have to plant: www.youtube.com/watch?v=3hxE7Af98AI
- To take a deeper look at issues of forest regeneration, try Happen Film’s free 30-minute documentary “Fools & Dreamers: Regenerating a Native Forest”: www.filmsforaction.org/watch/fools-and-dreamers-

[regenerating-a-native-forest-full-documentary/](#) This beautiful film describes how botanist Hugh Wilson restored degraded farmland to a New Zealand native forest over 30 years.

- A forest ecosystem contains more than only trees. Other plants and animals are just as important. Read this article by *The Conversation* about how animals and trees affect each other: theconversation.com/with-fewer-animals-to-spread-their-seeds-plants-could-have-trouble-adapting-to-climate-change-174516
- “Forest” (www.forestapp.cc/) is an app that helps you stay focused and plants trees for you at the same time. Give it a try!