Future Forest Podcast Transcript

Episode 2: Building resilient forests

About this episode:

* Speakers: FLS Resilience Manager, Alan Gale; FLS Content Writer, Meghan Kjartanson
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Podcast transcript

Alan Gale: It’s changing the way we manage our forests, thinking into the future. And the sort of things we are doing is we’re diversifying species, we’re doing more thinning, and we’re doing different structures of our forest, we’re trying to build resilience into our forests and land. So, that it is ready for the fight against climate change and pests and diseases.

Meghan Kjartanson: That’s Alan Gale, he is the Resilience Manager at Forestry and Land Scotland.

Alan Gale: A key role is to help our Forest Planners, plan our forests to be robust and resilient into the future. So, our Forests Planners are thinking about future forests in a future climate and with more pests and diseases. So, it’s about giving them science and information and helping planners design appropriate forests for the future.

Meghan Kjartanson: This is Future Forest, a podcast exploring the environmental stories shaping Scotland and how land management can help create future ready places equipped for the climate emergency and biodiversity crisis.

Meghan Kjartanson: This series showcases how Forestry and Land Scotland is building resilient and sustainable forests across Scotland that can adapt to change – change in climate, change of land use, change of lifestyle.

Meghan Kjartanson: Climate adaptation, natural capital, and resilient forests are things we often talk about at FLS. But what do they mean? And how are we using them alongside biodiversity to help Scotland adapt to the climate challenge?

Meghan Kjartanson: In this episode, we are going to explain some of these key terms around how we are reimaging land in a way that helps create stronger and more adaptable forests.

Alan Gale: So, we call these Future Ready Places, and what I mean by Future Ready Places is ‘future’, is into the future, 2050, or year 2080. Trees take a long time to grow and so that’s looking into the future. ‘Ready’, means, being ready for the biodiversity crisis and being ready for the climate change emergency. And the word ‘places’, well that’s the places that we manage, whether it’s our forests, or hills, the meadows, or the rivers, or the peatlands. So, we use these three words to explain what we’re doing. We are designing future ready places.

Alan Gale: We’ve been managing trees and forests in Scotland since Forestry Commission was set up in 1919. Initially, it was set up to grow trees and produce timber because there was a shortage of timber in the First World War and now there is a whole new set of challenges which we didn’t know then.

Alan Gale: Things like climate change and pests and diseases. Now, we have been managing our forests in light of climate change, pests and diseases for a couple of decades now, we’ve been restructuring our forests, we’ve been building resilience into them. But, as more science comes forward and the evidence is really clear that we’re going to have significant impacts from climate change and pests and diseases we need to accelerate our adaptation of the forests and land.

Meghan Kjartanson: But, how are we doing this? And what are the main concerns facing Scotland in terms of climate change?

Meghan Kjartanson: The threat of climate change, biodiversity loss, and pests and diseases has changed how we are managing our forests and Alan says, that as Forest Planners we need to be mindful that the decisions we take today will be with us for the next 50 to 100 years.

Alan Gale: In agriculture you often got a rotation that lasts only a year, but in forestry you got a long rotation of 50 to 100 years. So, you got to think about what I call ‘future forests in a future climate. So, you’ve got to take your mind and think what it might be like in 2080 or 2100. So, you need to think about what the climate is going to be like then and will these trees be suitable for growing in that condition.

Alan Gale: And one other thing linked to this of course, is pests and diseases. Globalisation has meant there are more pests and diseases attacking our trees and we’re seeing that over the last few decades, and unfortunately, climate change has genuinely exacerbated this because conditions are more warmer and suitable for pests and diseases.

Alan Gale: So, when a pest of disease gets in, it’s more suitable for it to succeed and damage our trees. So, we have climate change impacts, and in addition, we have pests and diseases, and more heat, warmth, sometimes damper conditions mean it’s more suitable for pests and diseases and that is an additional threat we have to think about.

Alan Gale: A pest and disease can arrive pretty much overnight, and it can devastate our forests. Like we’ve had with larch, we’ve had phytophera ramorum and if you would have said to me 20-years-ago that we were going to have virtually no larch in South Scotland by 2021, I wouldn’t have believed you.

Alan Gale: Pests and disease can have a really fast impact on your forests and so we need to work hard to make sure that our forests are robust and resilient to pests and diseases that we know about and also to pests and diseases that we don’t know about yet. And Covid has shown us, we don’t know what variants are a head of us. There could be new variants that we don’t know about yet, so, generally, we need to build resilience into our forests to make sure we we don’t have single catastrophic events in the futures.

Alan Gale: In terms of climate change in Scotland, what we’ve been doing is we’ve been using data from the likes of the MET Office. Now this is authoritative data and were trying to understand what the climate will be like in the future. In the next rotation of trees. In the next 50 or 100 years.

Alan Gale: There’s three main areas that we are looking at, one is temperature, two is water, and three is wind. Temperature we expect high extreme temperatures going forward. With water, there can be more rainfall or there can be increased spring and summer droughts, and with wind we are more likely to have more frequent storms going forward in the future. So, these are the main areas we are looking at. It’s more heat, it’s more draught, it’s more rain, more storms, and we’re having to plan our forests so they are ready.

Meghan Kjartanson: So, how are we making these future ready places? We’re looking at how we can use climate change adaptation, and biodiversity to create resilient forests that can cope better with the changing weather and increasing threat from pests and diseases.

Alan Gale: So, adaptation to climate change and biodiversity, often these things go hand in hand in a site level. So, for example we can do things on the land and the forests to help with biodiversity and often they can help adapt for climate change also.

Alan Gale: things like riparian zones, riparian planting of trees that can help with the biodiversity through strengthening the habitats for species for the long term, but these woodlands will also help improve water quality, they also help reduce flooding downstream, and of course, these trees are capturing carbon dioxide and reducing the amount of carbon dioxide. So, trees are great things for climate change and helping biodiversity.

Meghan Kjartanson: Adapting to climate change is about doing things differently in the light of climate change, and all of this is working alongside biodiversity to build a more stable and robust environment.

Meghan Kjartanson: Another term you’ll hear a lot through this podcast series is natural capital, and trees are amazing sources of this. Natural capital means using what nature does naturally to help reduce the stress on habitats and infrastructure, such as cleaning the air or stabilising hillsides.

Alan Gale: We use words like ecosystem services, natural capital, well basically the natural capital delivers ecosystem services, so the natural capital is things like trees and water, the things you can see and touch. Whereas ecosystem service is the services that they generate, so things like water quality, flood mitigation.

Meghan Kjartanson: We are going to learn more about this in later episodes, including our next one where we look at how trees can help restore salmon and other fresh water fish populations across Scotland.

Meghan Kjartanson: FLS manages almost 10% of land in Scotland, meaning we have a lot to offer the country in terms of natural capital. Currently, only 18% of the country is actually forested, and we want to plant more trees. But, what will these Future forests look like? And what can we expect?

Alan Gale: Yah, that is a really good question, what are the forests going to look like in 10, 30, or 50 years from now?

Alan Gale: We call forests long lived assets, so, what we mean by that is that these forests or stands of trees are there for quite a long time, maybe 50 years, or 100 years, we’re not changing them once every year. So, some of the forests will be the same stands that will be there today, they’ll just be a bit older. They’ll be some stands of Douglas fir, and there will be some stands of Sitka spruce and they’ll be there, just a bit older.

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Alan Gale: But, there’ll be others, that have changed. They’ll have reached the end of their rotation and they have been felled and they’ve been replanted and I think will be redesigning them for climate change. We will be diversifying the species, we will be diversifying the structure, all in a bid to build resilience into our forests, and a lot of these things are connected with nature and biodiversity and nature based solutions.

Alan Gale: It’s about linking biodiversity and growing trees and timber and society and economics and it’s about the multiple benefits of forests and I think climate change, threats from climate change and the threats from pests and diseases are going to accelerate our change. We’re going to have more diverse forests, more resilient forests that are delivering on multiple fronts.

Alan Gale: Now, that doesn’t mean we’re not going to be producing timber, we will be producing lots of timber, because we don’t want to be importing lots of timber from other countries where maybe the forests are not as sustainably managed. We’ve got a core role in producing timber for Scotland and the people of Scotland. But, we will be using different species, some of them will be fast growing also, so timber production will still remain a big part of Scotland.

Alan Gale: But, what will forests look like? I feel like more diverse, I think the structures will be more diverse, the species will be more diverse. And there will be a better place for wildlife and biodiversity than there are now.

Meghan Kjartanson: Even after the timber is removed from the forest, carbon remains locked up for a long time, whether it is in the timber frame of your house or within your kitchen worktop. Keeping carbon locked up for as long as possible will help reduce the amount of CO2 in the atmosphere and associated global warming; this is why we call trees long-lived assets!

Meghan Kjartanson: Future Forest podcast is produced by Forestry and Land Scotland, a Scottish Government agency. I’m Meghan Kjartanson and I’m a content writer at FLS.

Meghan Kjartanson: You can learn more about the topics presented on our website, forestry – and land dot gov dot scot. Thank you to our Resilience Manager Alan Gale for being on this episode, and thank you for listening to Future Forest, join us next time as we explore how planting trees alongside rivers can help create better habitats for fresh water fish. Our mission is to look after Scotland’s forests and land for the benefits of all, now and for the future. Forests and land that Scotland can be proud of.