Hello.

Our Shared Forest Exploration Workshop

Stakeholders

5th October 2018

Introductions

Factor 3

Mike Rice – Strategic Planner

Daniel Morris – Creative & Copywriter

Forestry Commission, West England

Kevin Stannard – Deputy Surveyor & Forest Management Director

Dawn Thompson – Head of Recreation & Engagement

Rebecca Wilson – Head of Planning & Environment

Steve Eyres – Head of Land Management & Forestry

Expert speakers

Jonathan Spencer – Head of Planning & Environment, Forest Enterprise England

Mark Broadmeadow – Principle Adviser on Climate Change, Forestry Commission England

Andrew Stringer – Pine Marten Project Manager, Gloucestershire Wildlife Trust

Structure of the day

10:00 – 10:15	Welcome, introductions and structure of the day
10:15 – 10:45	Exercise: Park bench (homework)
10:45 – 11:00	Intro to Our Shared Forest, Kevin Stannard
11:00 – 11:15	Climate change: Why we need to change, Mark Broadmeadow
11:15 – 11:30	**Coffee/tea break**
11:30 – 12:00	Resilience: How we manage the change, Jonathan Spencer
12:00 – 12:15	Natural processes: How we can harness them to best effect, Andrew Stringer
12:15 – 12:45	Exercise: Your future vision
12:45 – 13:15	**Lunch**
13:15 – 14:30	Guided site visit: Spruce Ride & Cyril Arboretum
14:30 – 14:45	**Coffee/tea break**
14:45 – 15:00	Exercise: Our Shared Forest watchwords
15:00 – 15:45	Exercise: Stop/Continue/Create for our themes
15:45 – 16:00	Wrap up

Rules for the day

- Everyone has a voice – speak freely and openly, but respect others
- Don’t hold back – what doesn’t get said won’t get considered
- Focus discussions on land management in the Forest of Dean
- There are no bad ideas
- Contribute and enjoy

Exercise: Park bench (homework)

You're sitting on a park bench and somebody new to the area sits down and asks you to tell them all about the Forest of Dean...

In no more than 250 words:

- How would you describe the Forest?
- What would you tell them you like about the Forest?
- What would you tell them you dislike about the Forest?

Our Shared Forest:
An introduction to our new strategy

Kevin Stannard – Deputy Surveyor & Forest Management Director

Forestry Commission England

FOREST OF DEAN

Our Shared Forest

Protecting our past – preparing for our future

Forestry Commission England

Our Shared Forest

What is 'Our Shared Forest'? What are we seeking to achieve?

'Our Shared Forest' is a project to reshape, to redirect the forest's land management – to set a new direction - for the public forest estate here in the Dean.

An agreed, understood, supported direction from which the Forestry Commission will distil the more detailed Operational Plans.

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Our Shared Forest

FOREST OF DEAN

FORESTERS' FOREST

LOTTERY FUNDED

Foresters' Forest is our community led landscape heritage programme.

Its scope is far wider than the land managed by the Forestry Commission, and goes well beyond land management.

Our Shared Forest will take the learning from Foresters' Forest to shape our future land management.

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Our Shared Forest

Our Vision

What do we want our Forest to look / feel like in 25 and 100 years?

What do we value now that we want to maintain or enhance?

What don't we like, what do we want to have changed in the future?

Principles of management

(Text):

- What have we got now (high level);
- Where do we want to get to;
- What mechanisms / systems of land management will we employ to make that change?

Broad overview of habitats and networks for people and wildlife

(Maps)

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Our Shared Forest

Our Shared Forest

Timescales for production:

Introductory workshops leading to Vision – October

Produce principles of management and broad overview maps – November / December

Public consultation – January / February

Finalise – April

Produce new Forest Plans over following five years.

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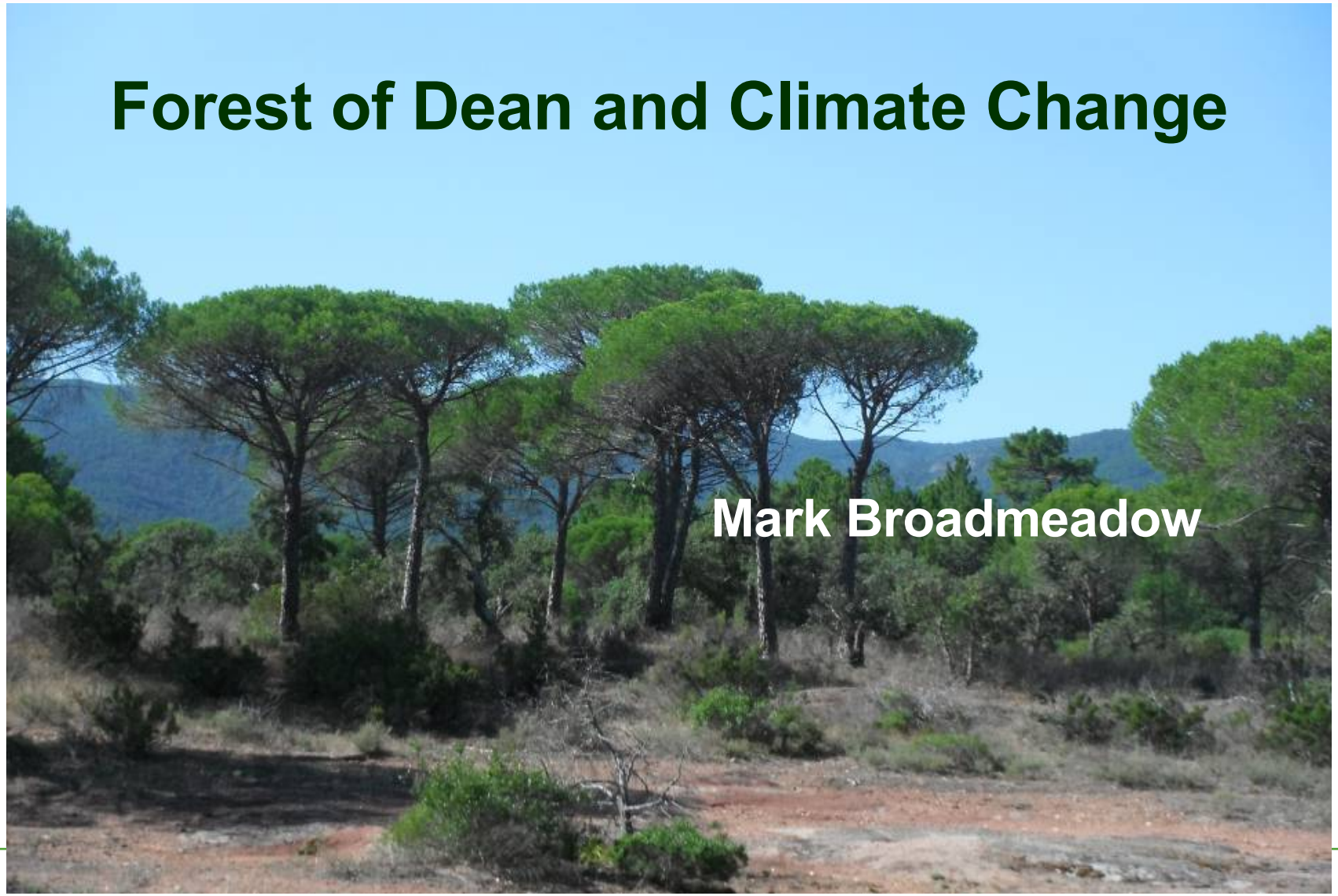
Our Shared Forest

FOREST OF DEAN

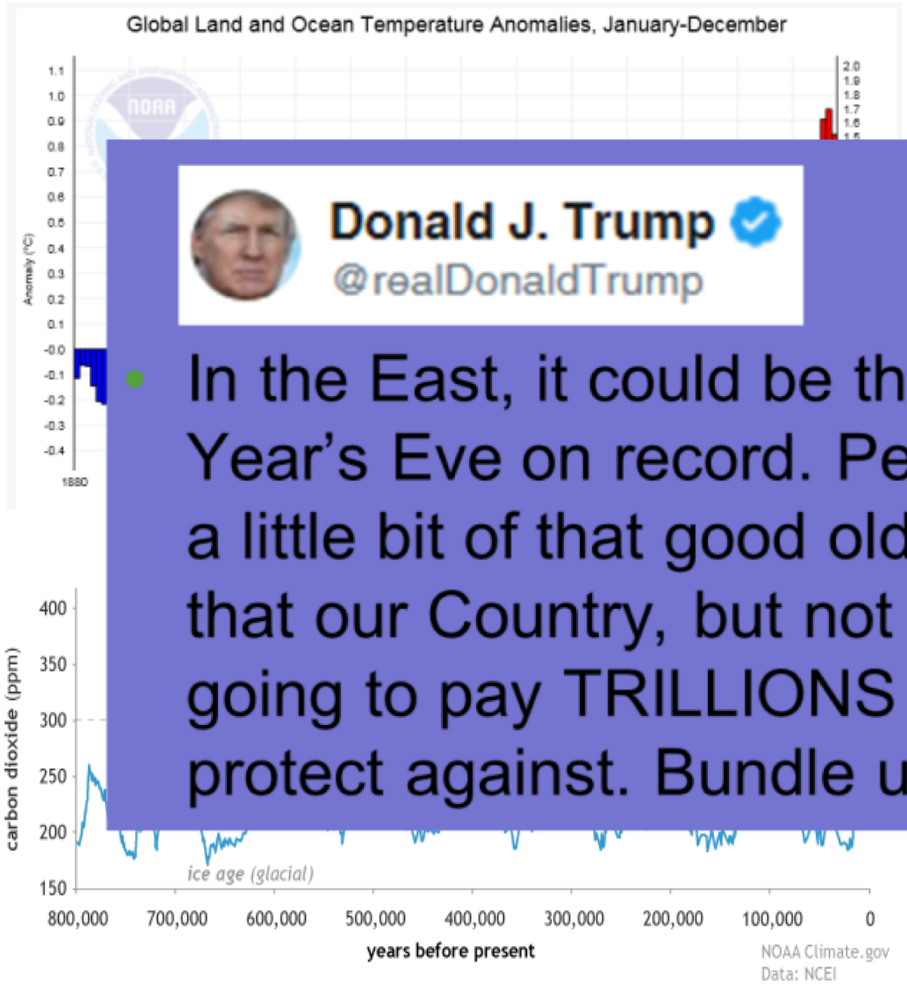
Climate change:
Why we need to change

Mark Broadmeadow – Principle Adviser on Climate Change, Forestry Commission England

Forest of Dean and Climate Change



Real news or fake news?



Donald J. Trump ✓
@realDonaldTrump

- In the East, it could be the COLDEST New Year's Eve on record. Perhaps we could use a little bit of that good old Global Warming that our Country, but not other countries, was going to pay TRILLIONS OF DOLLARS to protect against. Bundle up! [2017]

Climate change is not going away

UK Climate Change Risk Assessment (2016) concluded:

- Current commitments to reduce emissions, even if fully implemented, will lead to an estimated 2.7°C rise….. by 2100.
- *It is therefore prudent to prepare for further warming* whilst pursuing more stringent emission reductions as part of the global effort.
    - Science is getting much better at quantifying climate uncertainty – but not certainty;
    - Science is identifying complexity that is being used to avoid making difficult decisions and taking action;
    - **The 'precautionary principle' demands action, not the status quo.**

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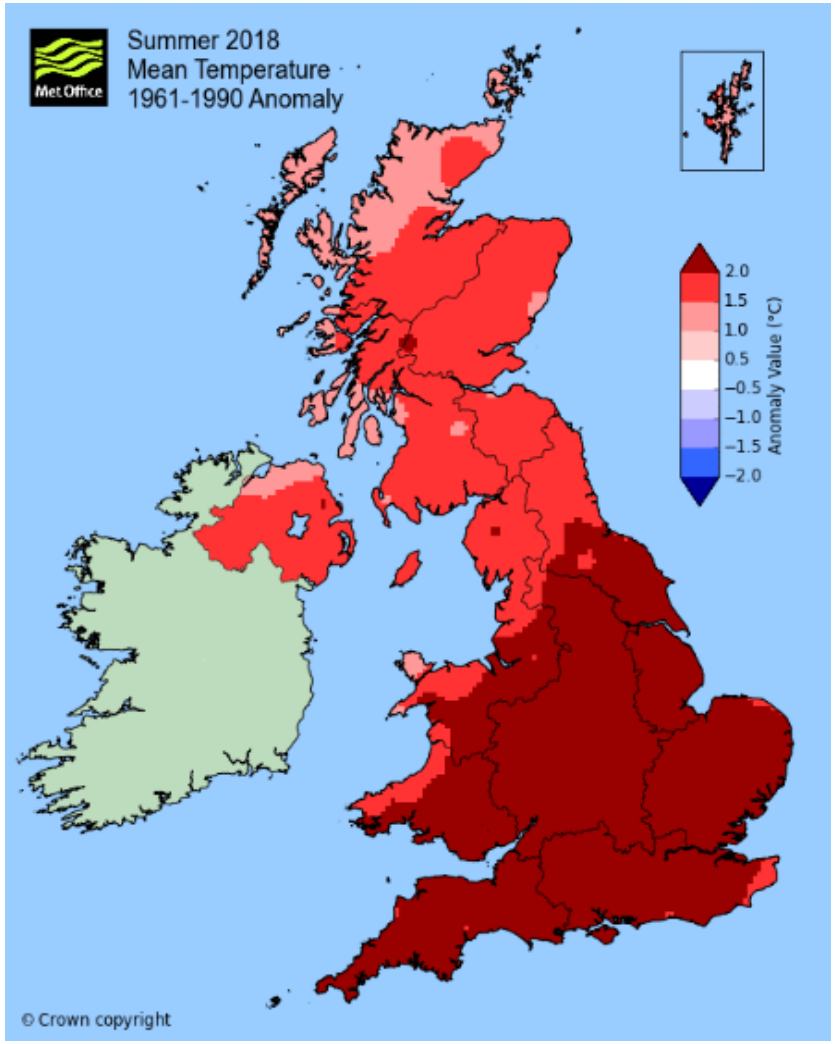
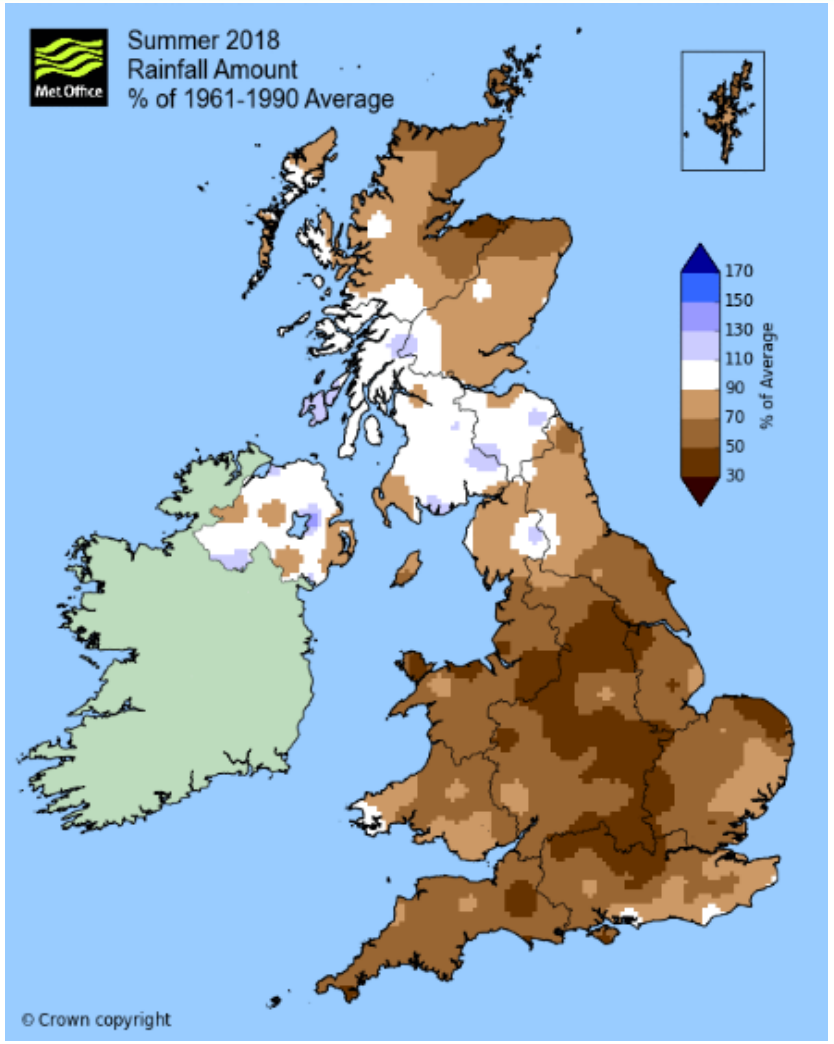
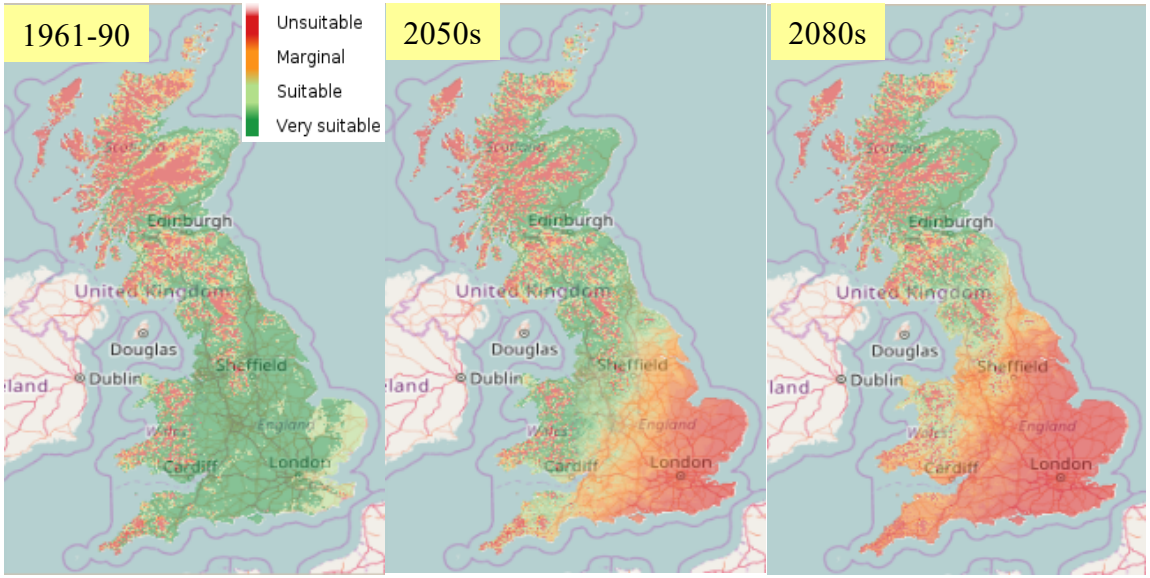
Coleford – climate matching

Summer 2018 weather anomalies





Projecting future tree 'performance'



Sessile oak

- Suitability for timber production;
- Medium-high climate scenario;
- Low resolution soil maps.

Ecological site classification

- Timber production & ecological suitability
- Knowledge-based system
- Based on climate, soil moisture regime, soil nutrient regime and management prescriptions
- Includes climate projections
- NOT a forecast, as we can't second guess exactly how climate change will unfold
- Put in your grid reference and play
- http://www.forestdss.org.uk/geoforestdss/esc4.jsp

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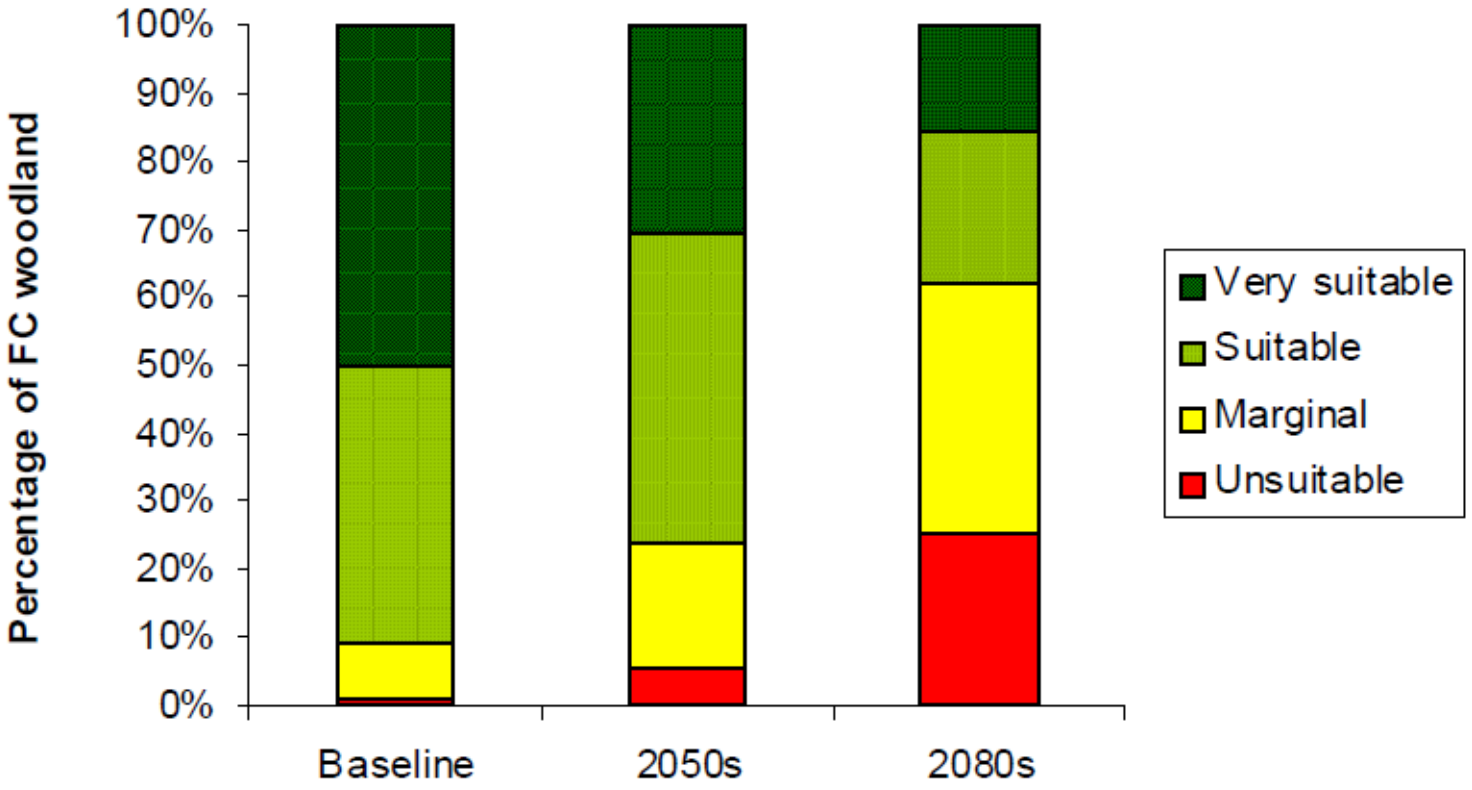
Public Forest Estate: changing species suitability



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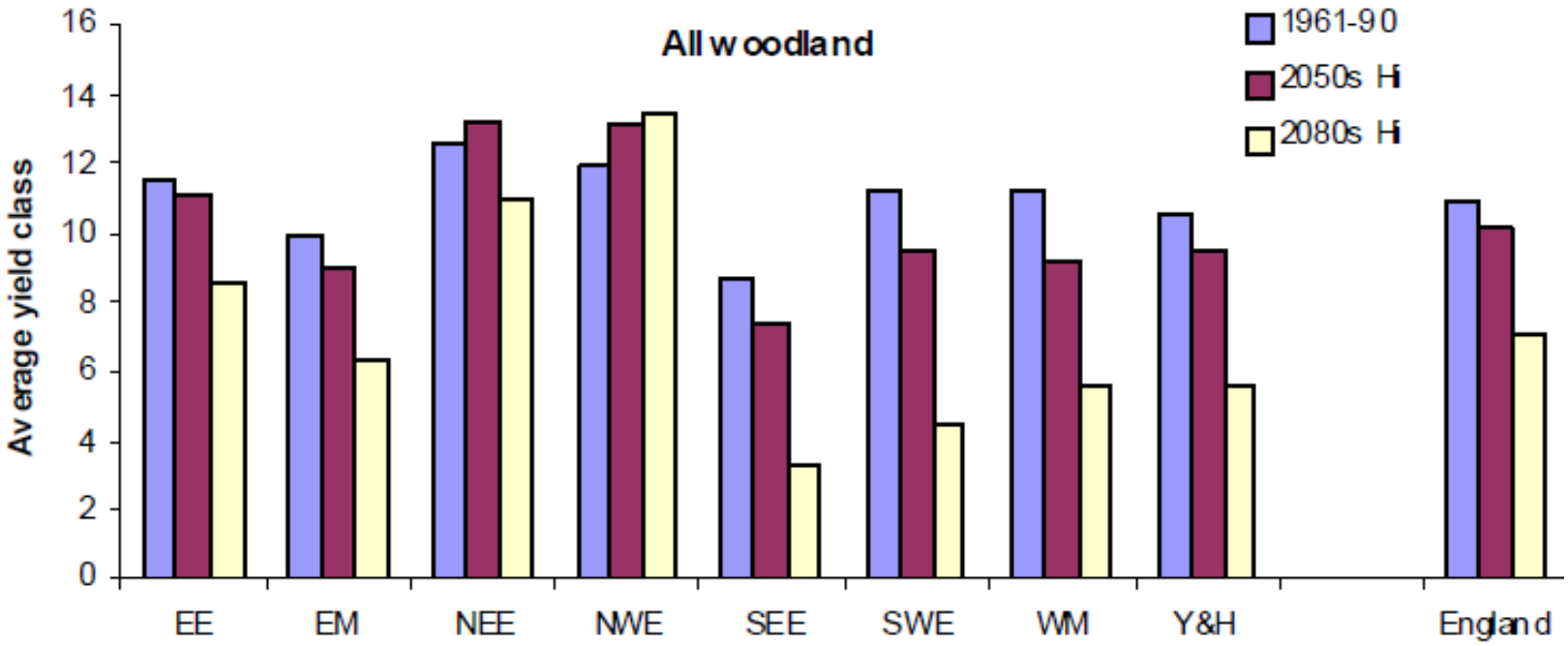
Public Forest Estate: changing species suitability



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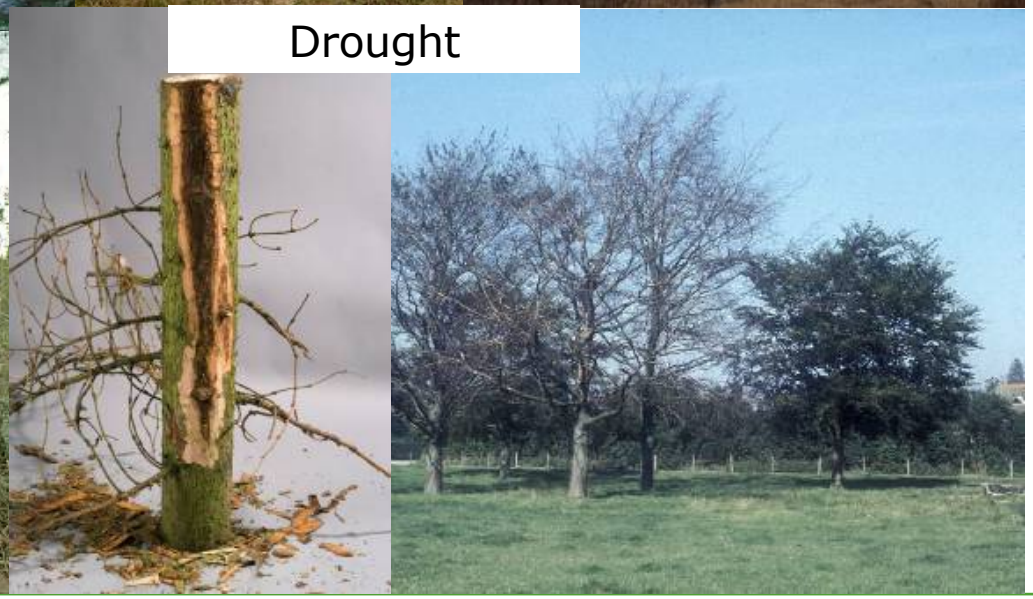
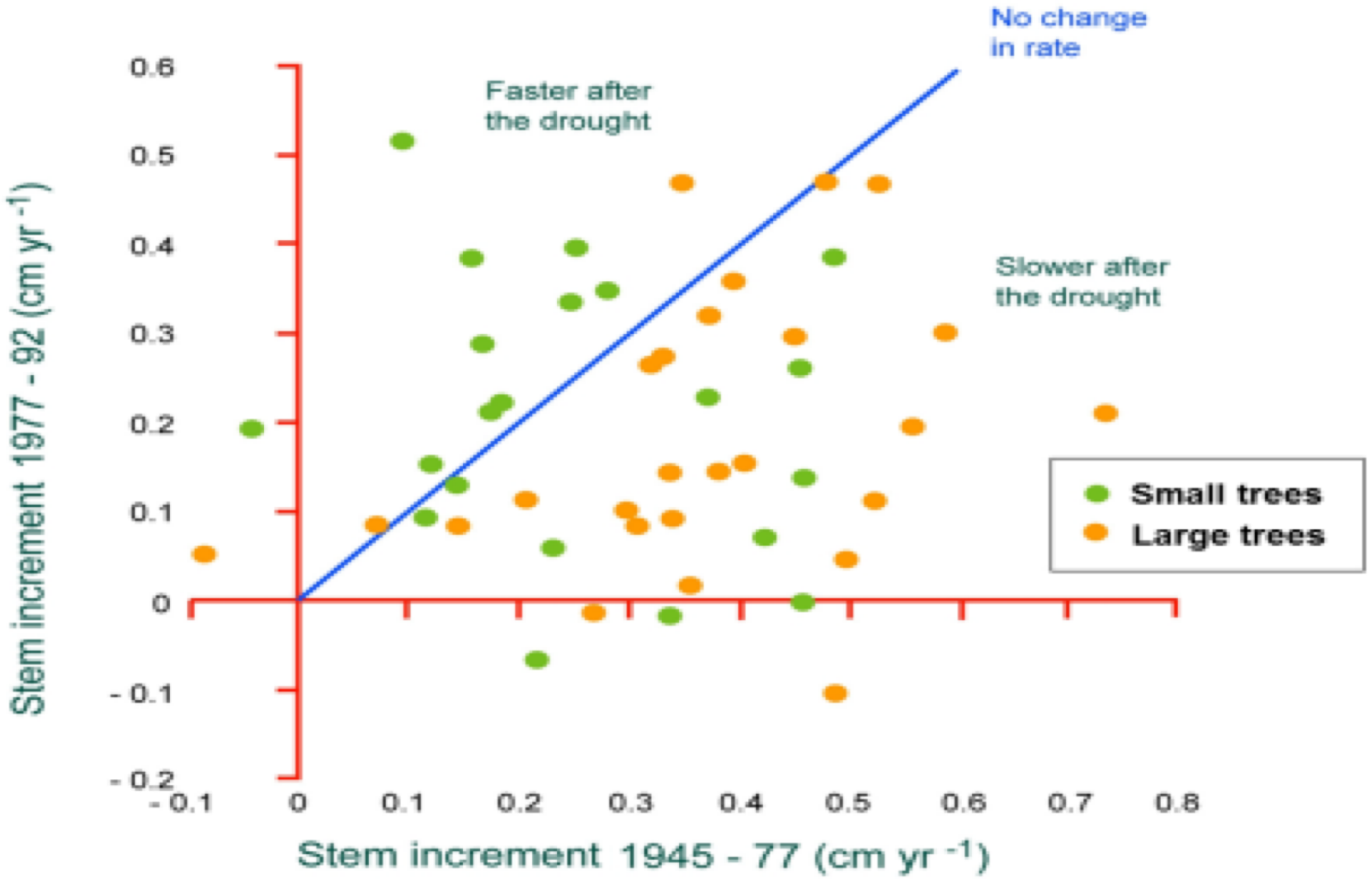
Extreme events: “planning for the (un)expected”



Drought



Source: Peterkin and Mountford (1996). Forestry 69, 125 - 136.

Climate change and plant health

- What does climate change mean for the resilience of our woods to pests and diseases?
  - Existing challenges;
  - Climate stress on woodlands making them vulnerable to pests and diseases;
  - Climate change making the UK climate more amenable to a range of novel pests and diseases;
  - New pathways for introducing P&Ds due to societal response to climate change;
  - **There will be new challenges.**

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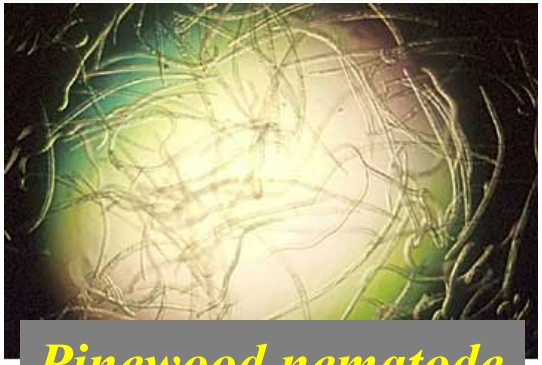
Old favourites

New ‘friends’


Emerald ash borer


Pinewood nematode


Xylella fastidiosa


Bronze birch borer


15°C
20°C
25°C


Pissoides pine weavil


Heterobasidion irregulare


Pine processionary moth
UGA1241017

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Society's expectations: natural capital & ecosystem services

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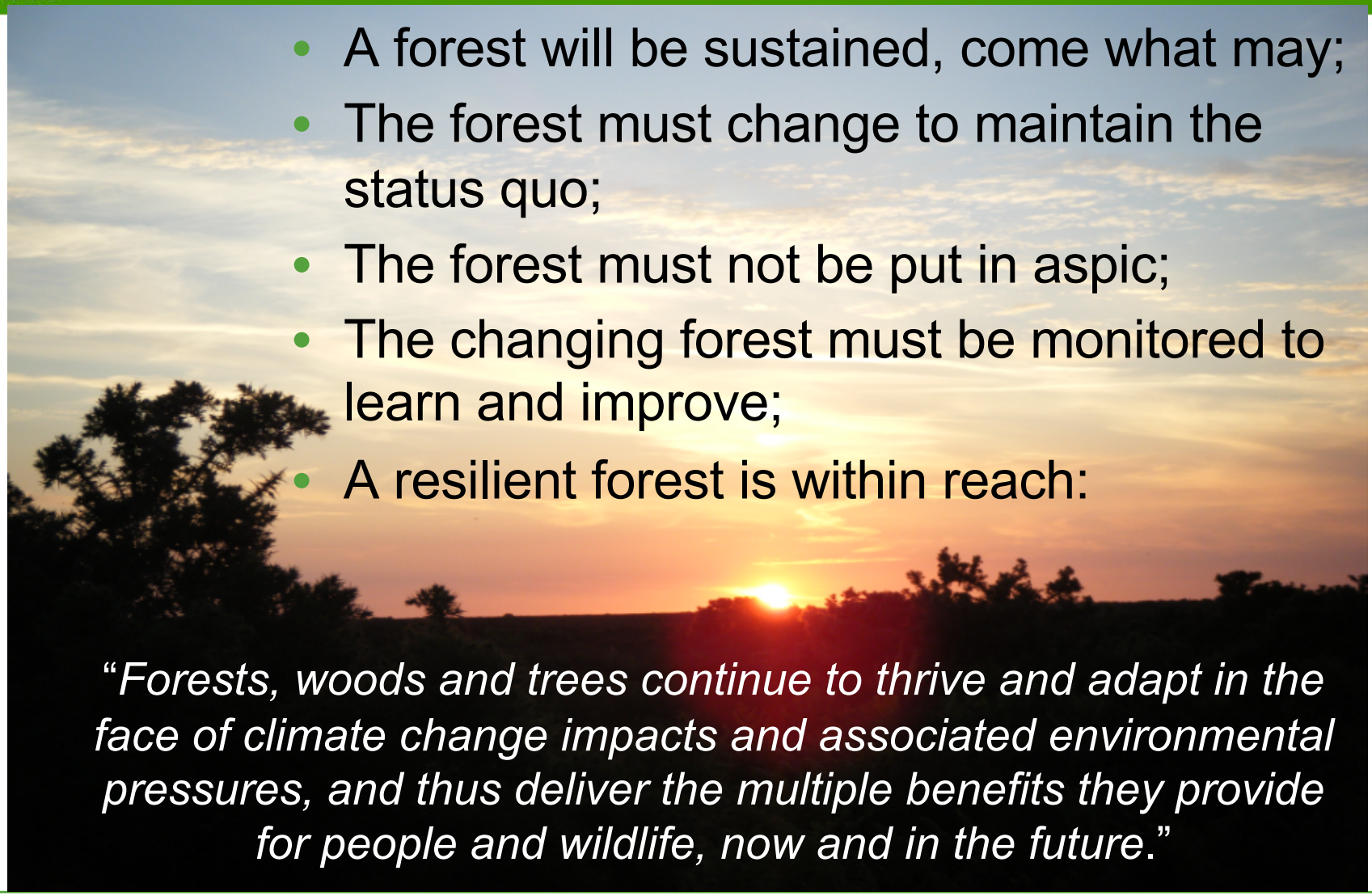
Opportunities and expectations

The future



- A forest will be sustained, come what may;
- The forest must change to maintain the status quo;
- The forest must not be put in aspic;
- The changing forest must be monitored to learn and improve;
- A resilient forest is within reach:

"Forests, woods and trees continue to thrive and adapt in the face of climate change impacts and associated environmental pressures, and thus deliver the multiple benefits they provide for people and wildlife, now and in the future."

Time for a cuppa...

Resilience:
How we manage the change

Jonathan Spencer – Head of Planning & Environment, Forest Enterprise England

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Change & Necessity

Building forest resilience in response to climate change

Forest of Dean 2018

Jonathan Spencer
Head of Planning and Environment
Forest Enterprise England

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Ancient Woods and Coppices

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Past and Recent Priorities - Material or Pleasure

- Timber
- Fuel
- Game & Livestock
- Recreation

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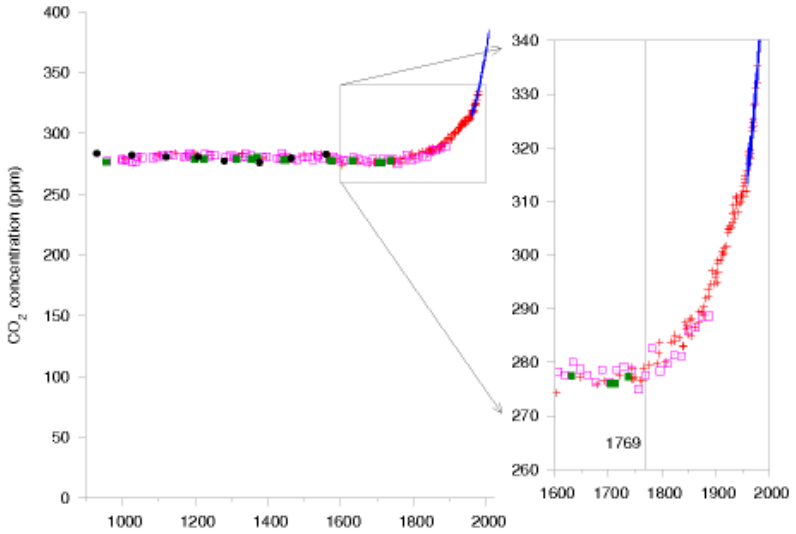
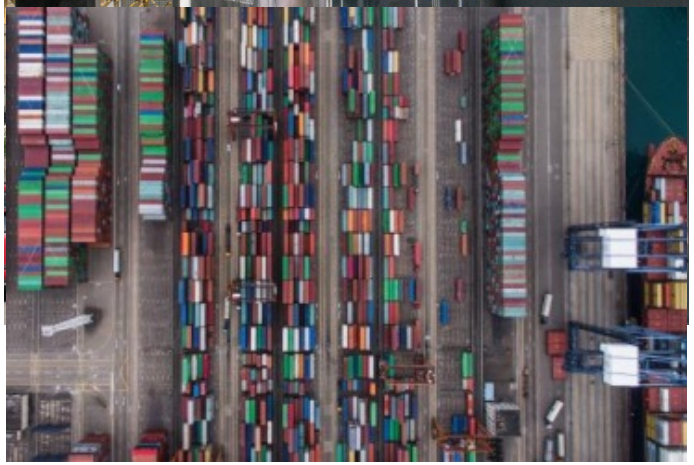
But in past 200 years things have changed profoundly





And Climate Change Presents Particular Difficulties…

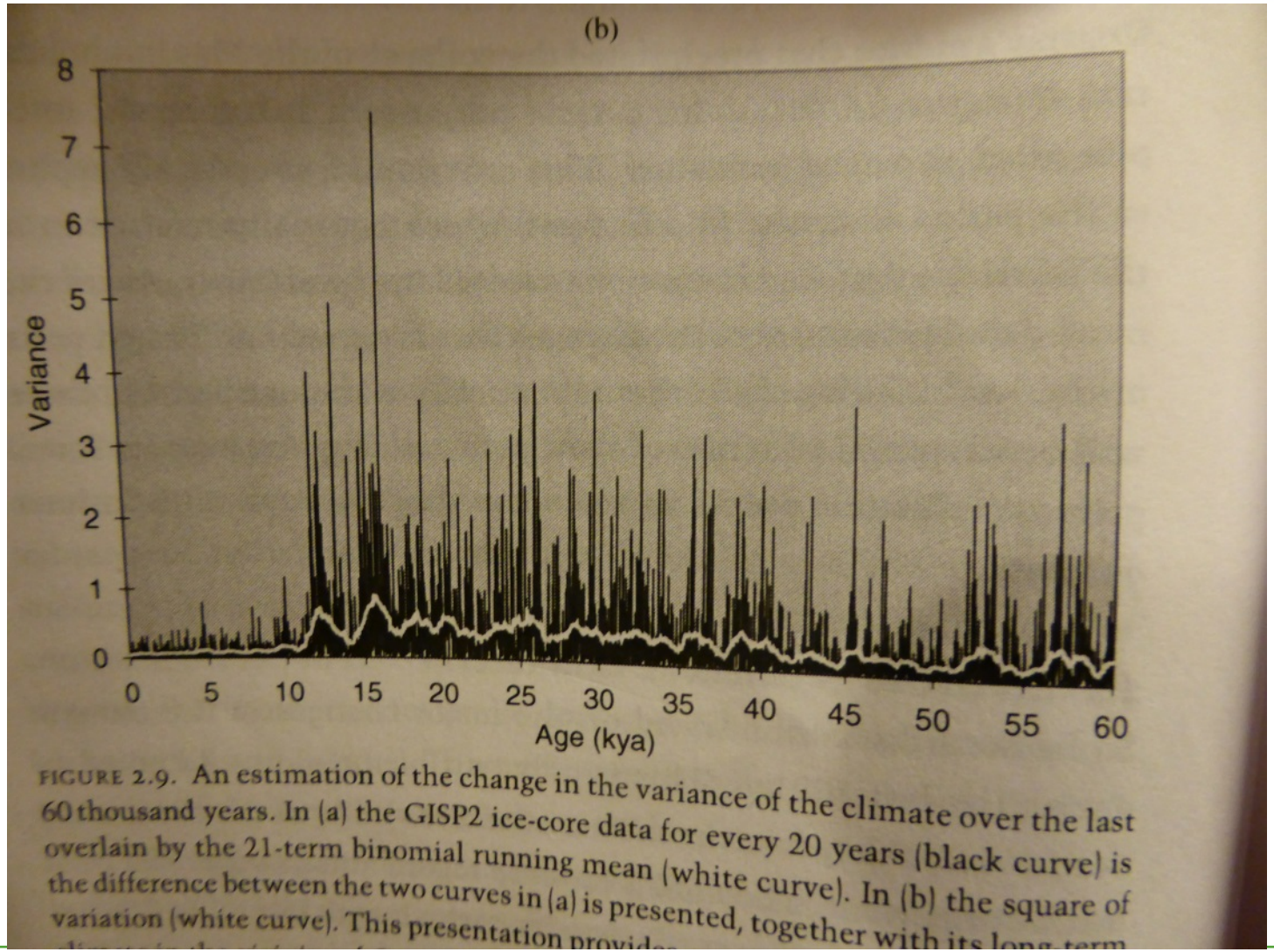
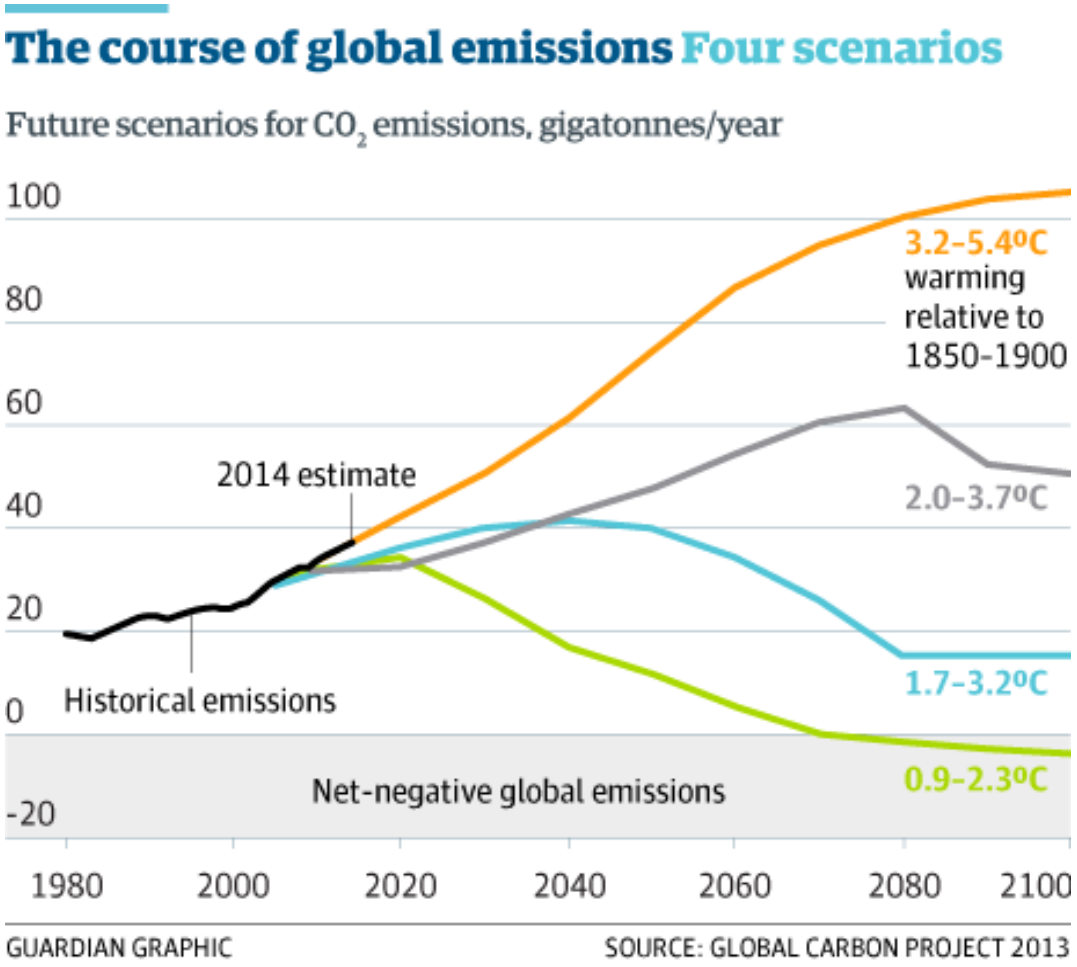


FIGURE 2.9. An estimation of the change in the variance of the climate over the last 60 thousand years. In (a) the GISP2 ice-core data for every 20 years (black curve) is overlain by the 21-term binomial running mean (white curve). In (b) the square of the difference between the two curves in (a) is presented, together with its long-term variation (white curve). This presentation provide

William Burroughs "Climate Change in Prehistory" 2009

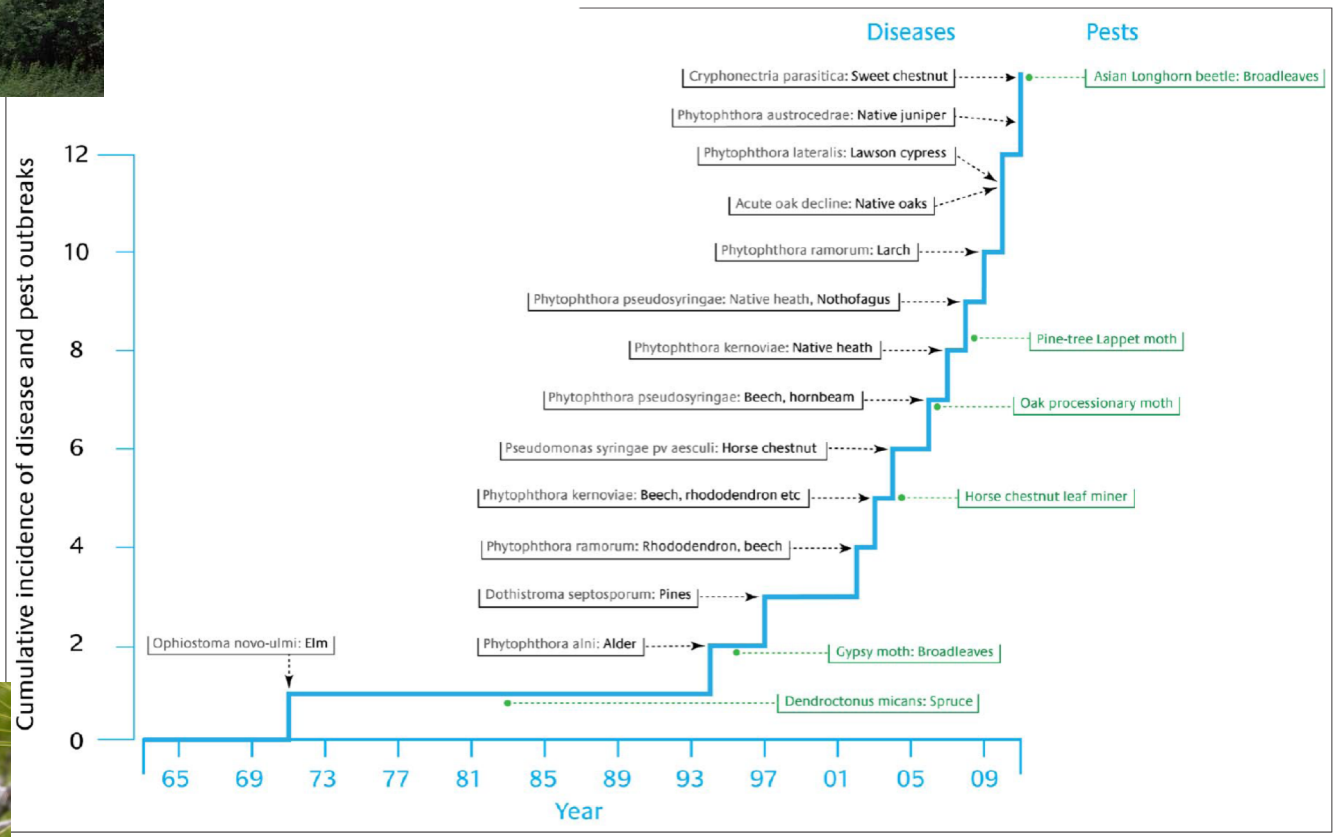
Not only variance in climate but amplitude? Known Unknowns…



- Hotter and drier summers?
- Milder and wetter winters?
- More extreme events certain
- Hot and dry…insects
- Mild and wet…fungi

Multiplying Pests and Diseases...

New tree disease and pest outbreaks UK



ased on data supplied by the Forestry Commission.

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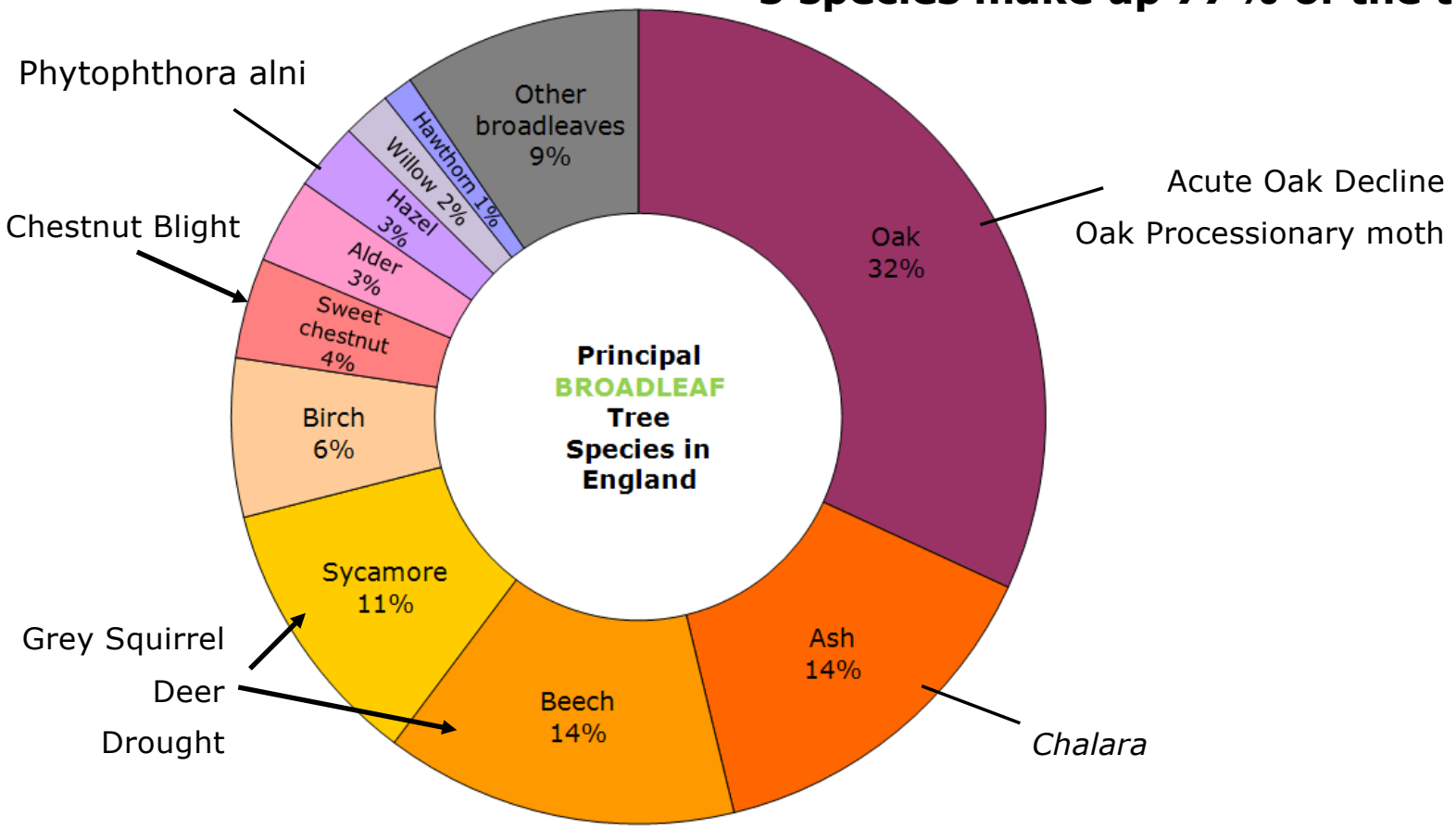
Broadleaf Woodland in England

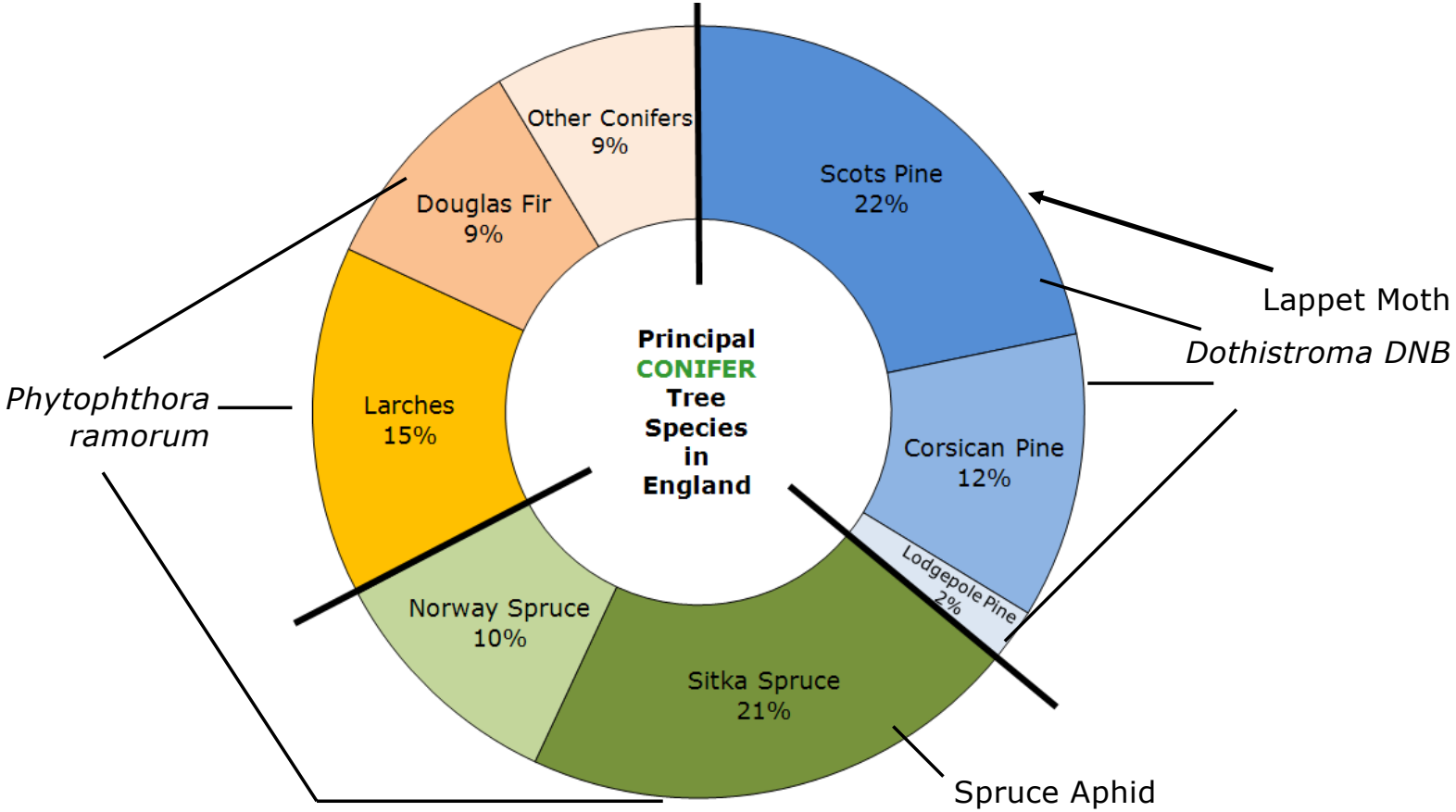
5 species make up 77% of the total



Produced by: Forestry Commission England
Measure: Standing Volume in Millions of Cubic Metres Overbark Standing. **Source: Forestry Statistics 2013**
Broadleaves: *National Forest Inventory: Preliminary estimates of quantities of broadleaved species in British woodlands, with special focus on ash* (2012)

Conifer woodland in England

6 species makes up 89% of the total



Produced by: Forestry Commission England
Measure: Standing Volume in Millions of Cubic Metres Overbark Standing. **Source: Forestry Statistics 2013**
Conifers: *National Forest Inventory: Standing timber volume for coniferous trees in Britain* (2012)

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So now the priorities are very different…

- Climate change
- The Low Carbon Economy
- Biodiversity
- Ecosystem Services and Natural Capital
- Employment & Economy
- Forest Resilience


JOEL PETT
USA TODAY
CLIMATE
SUMMIT
WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?
• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• etc. etc.
JOEL PETT
CAGLECARTOONS
CartoonArts International: www.nytsyn.com/cartoons

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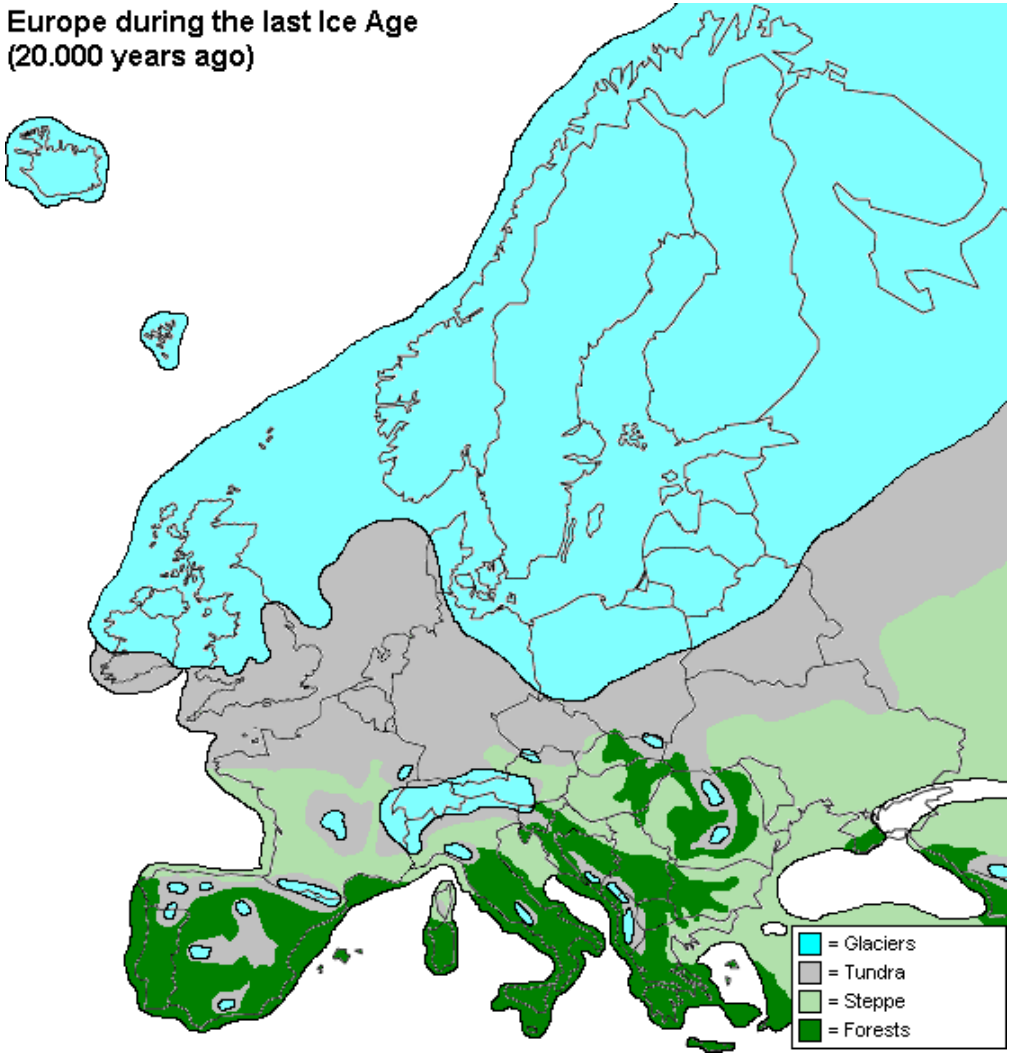
What happened to all our trees?



- Trees and forests repeatedly scraped from the face of Europe
- Surviving refugia found in dry continental conditions in the south and SE of Europe
- Tertiary species lost from Europe

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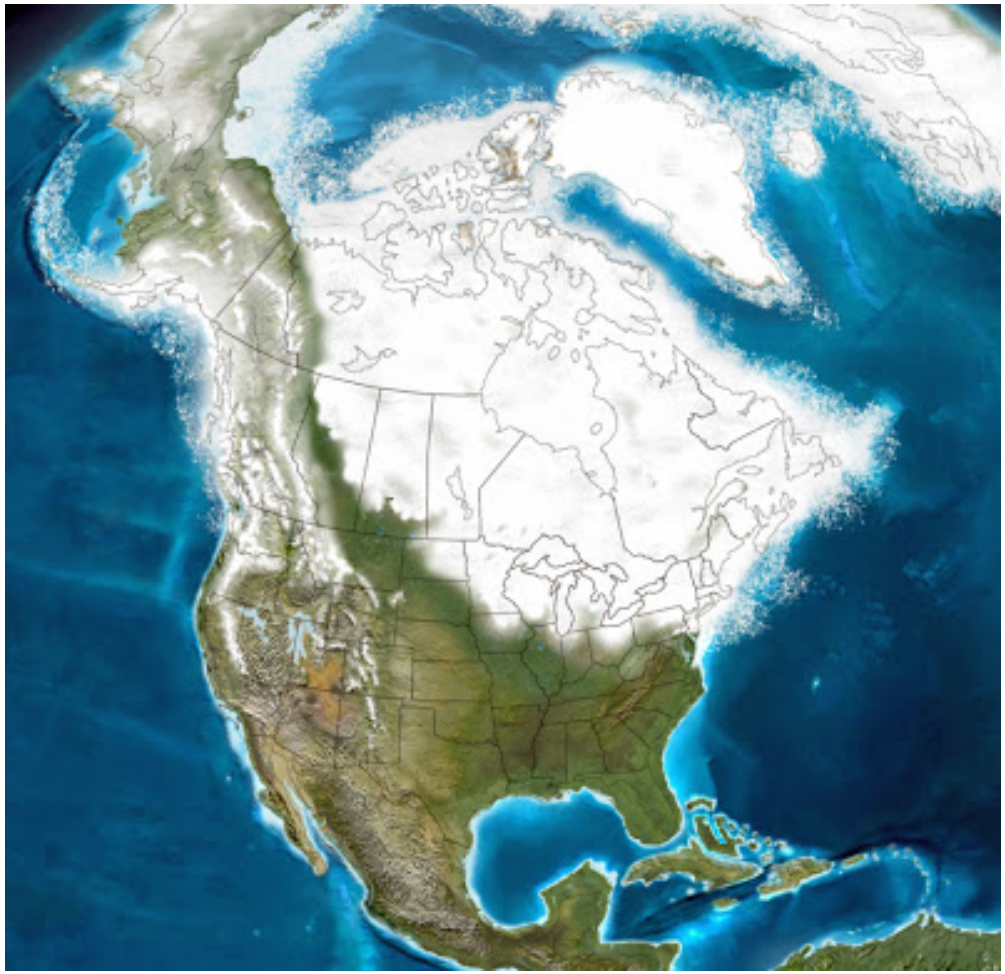
In contrast North America …



- Geographic barriers run north south…
- Possessed in refugia that were both cold and wet … oceanic in character …
- with species now persisting in the pacific NW and West

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So in Britain…

Varying conditions and duration of interglacials, but diminishing diversity of forest species returning between each glaciation, and…

…limited range of timber species chosen by foresters in 20th century…mostly sitka spruce!

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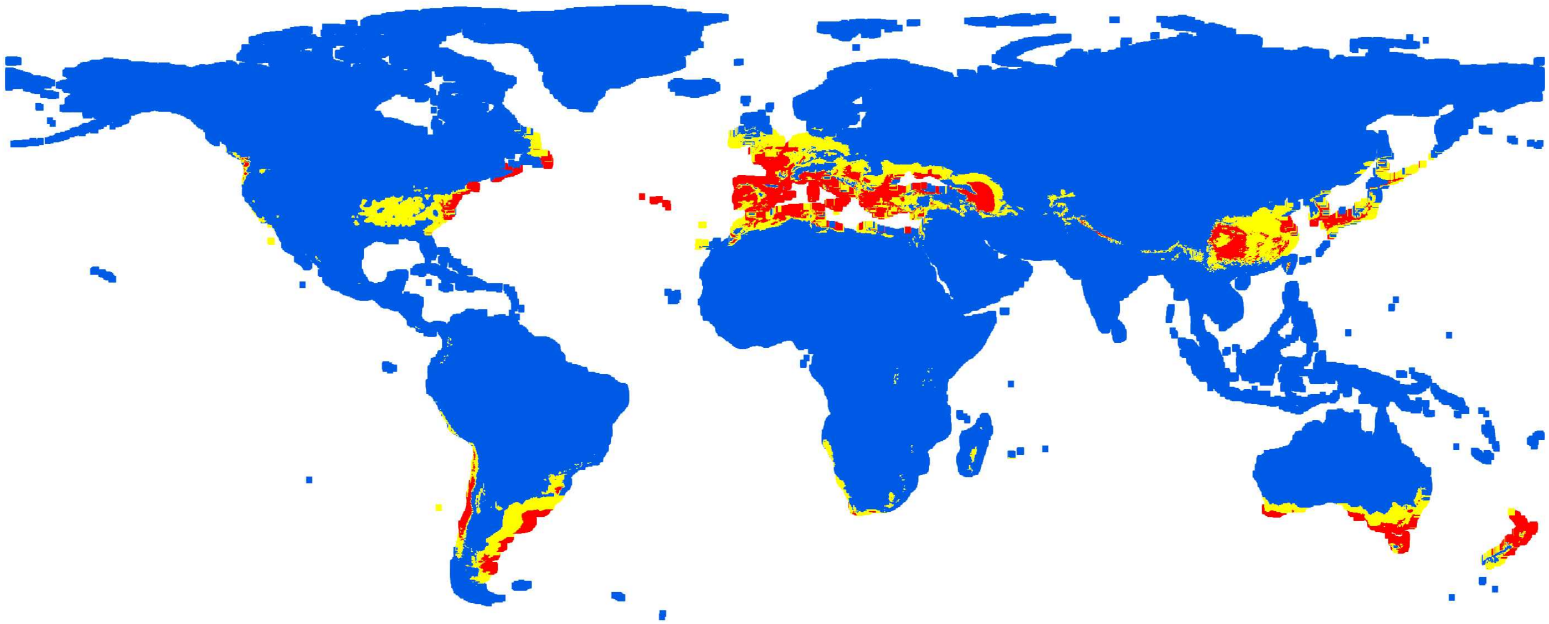
Forest climate matching – the next generation of trees



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Some lessons …

- Native trees:
  - are the "weed trees" that raced back but **are of proven "resilience"**.
  - survived in warm and **dry** or cold and **dry** refugia.
- Trees of **cold and wet** oceanic conditions were lost* but…
- they survived in Northwest America……Douglas Fir, Noble Fir, Sitka, Western Hemlock etc
- **This is why foresters chose Northwest American and Canadian species to afforest northern Britain**

**Rackham speculates that we lost the "atlantic" ecotypes of Abies and Picea once found in Britain*

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Forest Resilience…

Forest and stand:

1. Genetic variation
2. Species diversity
3. Stand and structural diversity

Tree biology and characteristics:

1. Genetic outcrossing, fecundity
2. Phenotypic plasticity
3. Natural and vegetative regeneration
4. Shade tolerance and
5. Interaction with other tree species … and other organisms

Forest soils:

1. Soil integrity and structure
2. Soil species diversity (esp. mycorrhizae)

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2016…. A critical turning point …

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What is recognised is……

- Mixed species stands are more productive as they are better at capturing light, water and nutrients.
- Disease resistance and resilience to climate change is heavily influenced by:
  - species variation
  - soil fungal biodiversity
  - genetic variation
- Natural regeneration and regrowth bolster resilience
- The challenge is in “naturalising” such extensive areas of plantation against the established “Knowledge Culture” of forestry in UK

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The challenge is technical and a cultural one… the FC "knowledge culture"

"well what do we do now?"

Natural processes:
How we can harness them to best effect

Andrew Stringer – Pine Marten Project Manager, Gloucestershire Wildlife Trust

Forestry Commission England

Gloucestershire

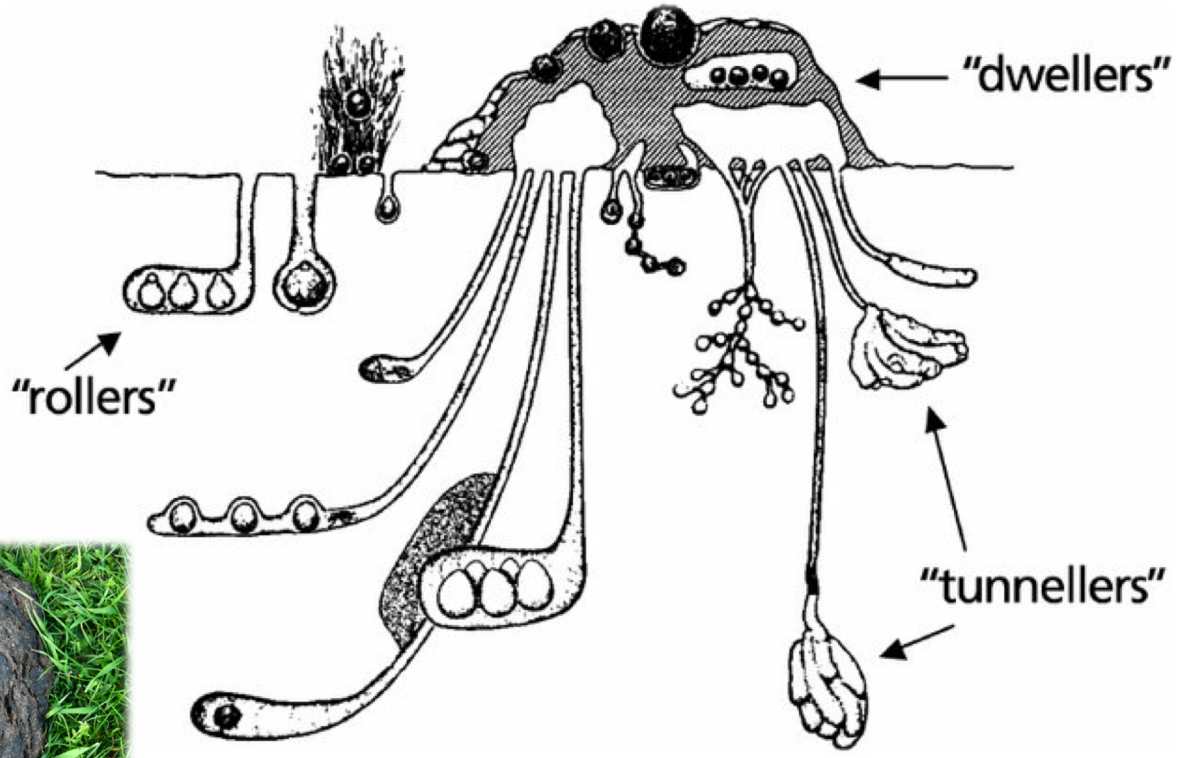
Our Shared Forest – Natural Processes

What are natural processes?

What are natural processes?

Why should we restore natural processes?

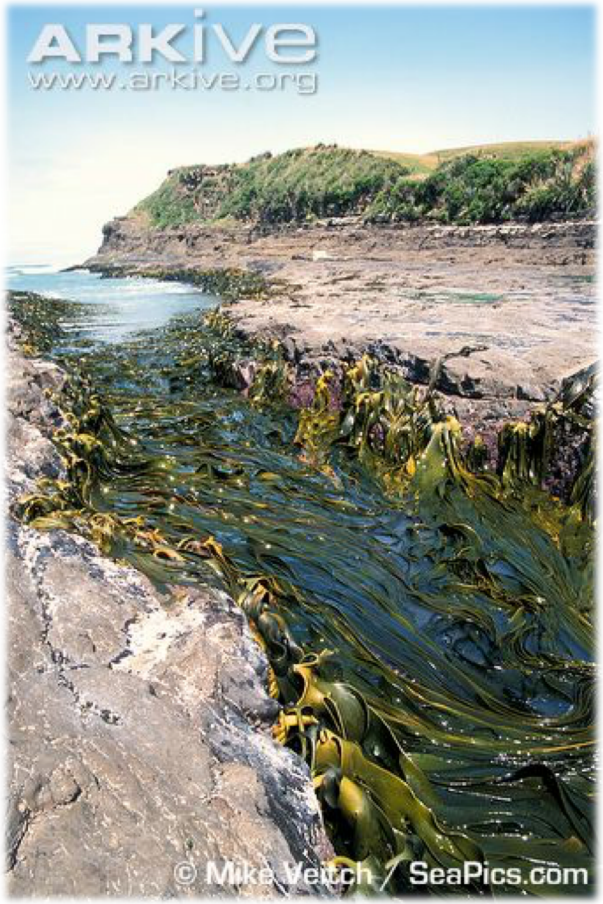
Why should we restore natural processes?



Why should we restore natural processes?

Why should we restore natural processes?

Predators can limit population numbers

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Disturbance

Such as:

- Fire
- Drought
- Herbivory

Examples of disturbance:

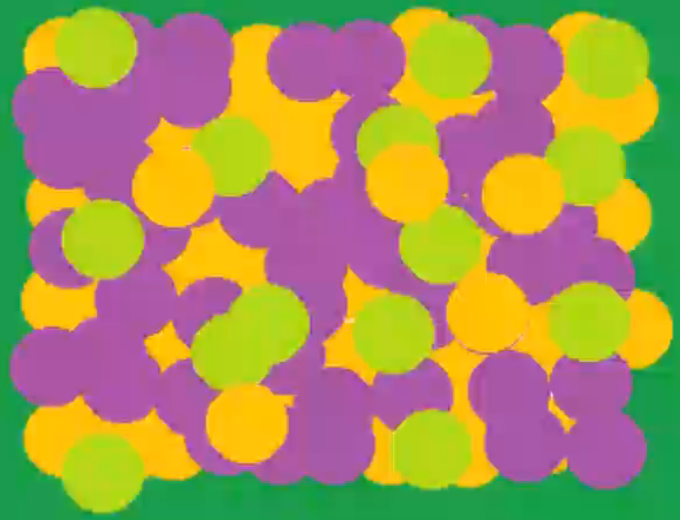
How can we restore natural processes?

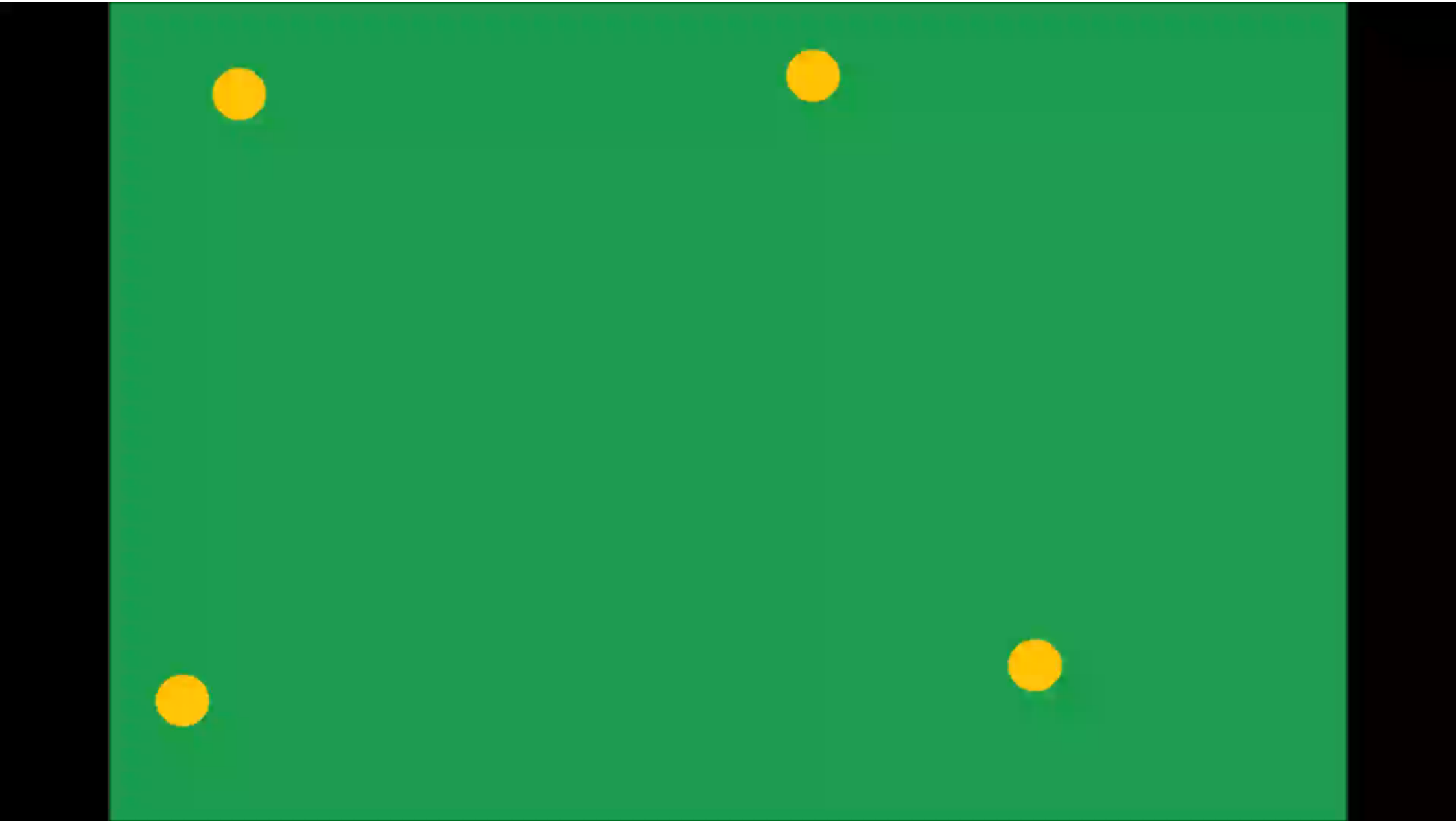
1. Give natural processes greater freedom to operate

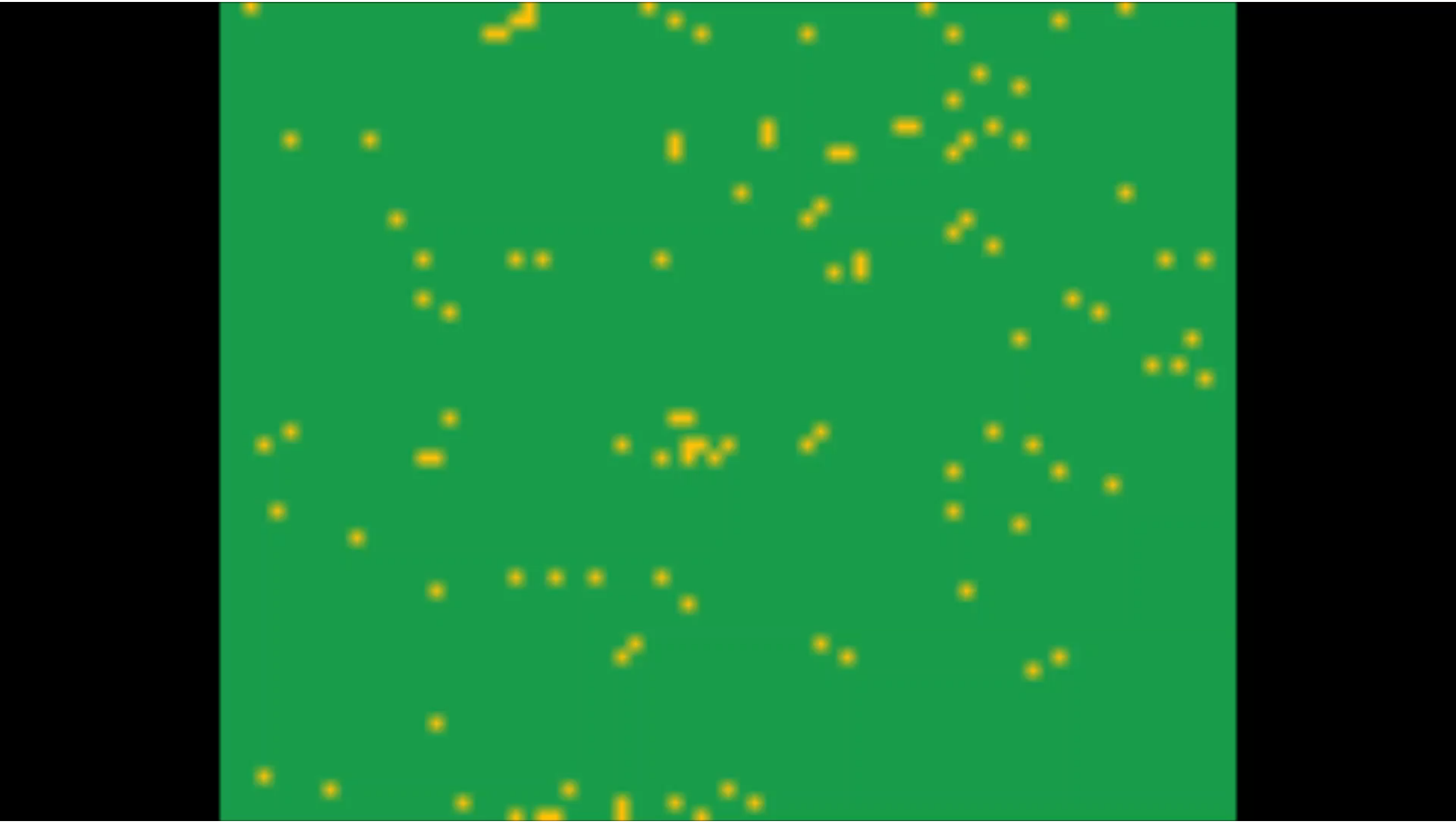
2. Using species – reintroductions or livestock for the processes they provide

3. Simulate missing processes

The Future: **Do we want natural processes to have a greater hand in shaping the landscape and ecology of the Forest of Dean?**







Time for another exercise…

Exercise: Your future vision

Our Shared Forest aims to develop an ambitious long-term vision for the Forest created in partnership with you.

Looking at the pictures on the wall:

- What would you like to see in the future?
- What don't you want to be part of the future?

▶ Use the green and red dots (green for yes, red for no) and stick to the relevant picture

Who’s hungry?

Out and about:
Guided site visit to Spruce Ride & Cyril Arboretum

Time for another cuppa...

Exercise: Our Shared Forest watchwords

- There are a range of attribute words on the wall sheets
- We need to refine these into the key watchwords that should typify Our Shared Forest – what qualities must we strive for to ensure the success of the initiative?

▶ **Place your 6 stickers on the attributes you think are the most important/compelling**

Exercise: Stop/Continue/Create for our themes

- Work to deliver Our Shared Forest will fall under these themes:
  - Geology & soils
  - Water
  - Trees & woodland
  - Wildlife & wild spaces
  - Cultural heritage
  - Built heritage & archaeology
  - Recreation & community
- Thinking about each of these themes:
  - What do we need to stop doing? **(stop)**
  - What should we continue doing? **(continue)**
  - What do we need to start doing? **(create)**

▶ Write each idea on a post-it note and stick it on the relevant wall sheet

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Our Shared Forest

Wrap up, thank you and any questions?