How to create resilience in your forest.

What is resilience?

Global Forest resilience,

Your Forest resilience,

Species resilience,

Product resilience,

Price resilience,

Summary

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CHARTERED SURVEYORS

What is resilience?

- There are around 160 definitions of resilience including;
- **1.the capacity to recover quickly from difficulties; toughness.**
- ***"the often remarkable resilience of so many British institutions"***
- **2.the ability of a substance or object to spring back into shape; elasticity.**
- ***"nylon is excellent in wearability, abrasion resistance and resilience"***
- **a. the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress.**
- **b. an ability to recover from or adjust easily to misfortune or change.**
- **Key phrases;**
- **Cope,**
- **Adapt,**
- **Recover.**

For our forests resilience means the future ability of our forests to cope, adapt and recover from major changes, traumas and difficulties.

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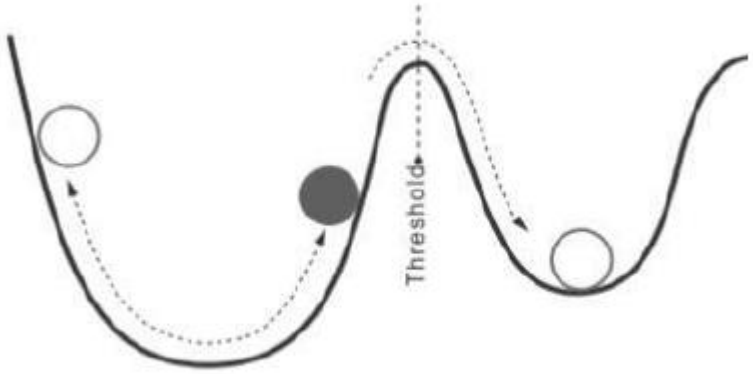
What is resilience?

While the exact definition is still debated, resilience of a system is often presented as a ball and cup metaphor as was done by professor Rupert Seidl from the University of Natural Resources and Life Sciences in Vienna (BOKU). If the ball in the cup always returns to the bottom, we can say that the system is resilient. However, if the ball gets easily out of the cup, the system lacks resilience.



Our forests appear to be facing greater threats that will push the ball further up the sides of the cup, such as;

- Climate change,
- Globalisation and volatility in markets,
- Diseases,
- Political short termism,
- Increasing public scrutiny often via social media

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What is resilience?

Resilience depends on different scales;

- **Our economies operate on a 3 month and 1 year perspective.**
- **Our politicians operate on a "reign" perspective , 4 years in the west!**
- **Our ecosystems operate on "decadal" or "centennial" perspective.**

Resilience depends on different factors

- **We should look to identify what factors we as forest managers can influence and what we cannot and actions we can carry out to improve resilience.**
- **So identify "external" that we cannot influence and "internal" factors that we can influence.**
- **We cannot influence the demand for spruce timber or small roundwood, EXTERNAL FACTORS.**
- **We can change how the trees are grown and what is produced from them INTERNAL FACTORS.**
- **We can extend or shorten rotations, thin or clear-fell, change ground prep. Change provenance or species and use improved seed sources. ACTIONS**

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Global Forest Resilience?

UN General Assembly December 2007 set out key objectives for building resilience in our forests in terms of climate change.

- **Maintain healthy forests** (disease control, sustainable management, monitor).
- **Restore degraded forests and reforest degraded lands, conserve and enhance biodiversity**(ASNW but also overgrazed shelterbelts, degraded land, replace lost forest.)
- **Deal with uncertainty**, (monitor, adjust, improve, learn, effective research and technology)
- **Develop Sustainable Forest Management for livelihood resilience**, (economic, social and environmental resilience through management planning, monitoring and sharing of information)
- **Landscape Level Resilience**, (work with other land users and work on a scale that can have an effect)
- **Build Forest Related Institutions** (Governance, policy and laws should support actions to build resilience).

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Your Forest Resilience?

These principles can be applied to private woodlands through "active" management.

- **Keep your forests healthy** (species choice, forest hygiene, fire breaks, good drainage, monitor health)
- **Restore and expand your woods** (improve biodiversity, control grazing, replant properly, maintain stands, develop infrastructure.) Intimate mixture of simple species stands?
- **Have a management plan**, (monitor, adjust, improve, learn what works and what does not, but keep it simple and make it easy to act).
- **Economic sustainability** (social and environmental resilience are easier to deliver with a wood that pays. Understand what makes money and what does not.)
- **Landscape Level planning**, (look outwards from the woods, work with other land users and work on a scale that can have an effect, how do your woodlands interact with other land uses)
- **Keep aware of policy** (Confor plays a vital role in engaging with decision makers and influencing policy makers but needs resources to do this and members must engage with consultations).

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Beetle damage in German Forest (drought induced?)

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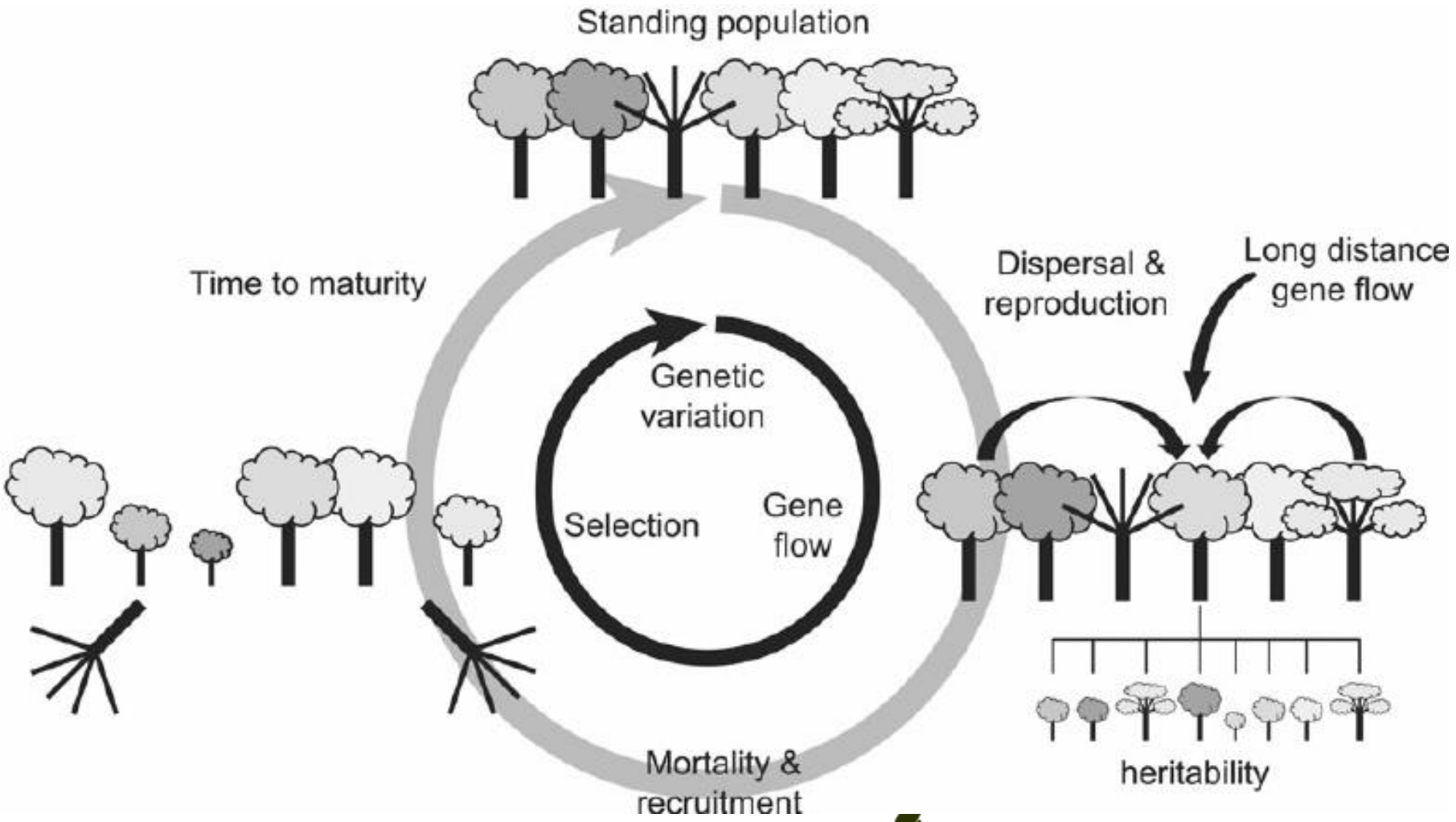
Species Resilience

- **Healthy species are more resilient than unhealthy ones,** (understand your sites and what grows well there, look around to see what else is growing well).
- **Scotland has a fantastic climate for growing a wide range of species** (but the sites are very varied and maybe we need to be a bit more careful with what we plant where on a restock).
- **We know what species grow well from the early F.C trials so we don't need to try everything everywhere.** (5 key productive conifers and 5 key productive broadleaves would give most owners reasonable choice)
- **Critical species mass is important.** (markets, silviculture, nurseries and research all need critical mass so we need to plant viable areas of each species)
- **Consider provenance or seed orchard changes to improve the resilience of species** (subtle changes aimed at better matching to the local site conditions).
- **Plant breeding has huge potential.** (In forestry we are about where the wheat farmers were in the Iron Age when they had grown 2 or 3 rotations. Improved stock has huge potential to reduce risk by shortening rotations).

Processes conferring species resilience for forest trees



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Product Resilience (the “value” tree)

- **Versatile softwood species have higher levels of demand,** (a wide range of markets gives greater resilience, markets may ebb and flow but there are choices).
- Spruce can be sold as saw logs, pallet wood, pulpwood, chip wood, energy wood.
- Pine can be sold as saw logs, pallet wood, slat wood, shavings bars OSB, chip wood, energy wood, fencing
- Larch and Douglas fir can be sold as Saw logs, pallet wood, chip wood, energy wood, fencing .
- Grand fir, pallet wood, chip wood, energy wood.
- **Specialist markets sometimes have high value but are normally small volumes** (specialist softwood and hardwood products can command high prices but it is very difficult to match supply to demand, Morgan cars, cedar for beehives).
- **Oak**, veneer, planking logs, beam logs, fencing and landscape logs, energy wood.
- **Ash & Beech, planking**, export logs, firewood.
- **For the grower consider species which are versatile, fast growing, naturally durable and have critical mass.**

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Price resilience!

- We cannot predict the future but we can learn from the past
- THERE ARE SOME DESIRABLE TRAITS IDENTIFIABLE FROM THE MARKET IN THE PAST;
- Straight, (good stem form and fine branching),
- Versatile (Veneer, sawlog, small round wood),
- Durable (natural durability and the ability to take up chemicals),
- Fast growth but markets with wide diameter ranges. (long felling window).

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Price resilience

- Very difficult for the owner to keep in touch with the market.
- You need a professional manager to do this.
- Exchange rate is probably the biggest single influence so when pound is weak domestic demand is strong as imported timber is expensive
- Confor journal will provide good data on market trends.

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Price resilience?

- **Log value – (logging cost and margin) = stumpage (owners price).**

- **Log value** from sawlog, palletwood, small roundwood and fencing sales (exchange rates huge influence on this).

- Logging cost includes site access infrastructure, cutting, extraction, haul to customer**,**

(Influences, location, volume removed / ha, species, terrain, stem size & quality, etc)

-Margin, supervision, admin, insurance, credit and profit

= **Stumpage (money to the forest owner). Market cycles have a greatest influence on the stumpage.**

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Price resilience!

- **A successful timber sale needs five things;**

1. **Adequate access,**
2. **Sufficient volume.**
3. **Quality trees**
4. **A willing buyer.**
5. **Professional management.**

- **If you are approached and asked to sell your timber it is time to get expert advice.**
- **Would you sell a cottage, building plot or field to the first person that approached you?**

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Price resilience

- Very difficult to hit the peak but easier if you stay connected with the market.
- You can identify trends and try to hit the up.
- Invest in measuring and mapping the crop so you know what you have to sell.
- Understand your objectives, costs and net return.
- Get open market prices from three or more bidders.
- Consider felling “little and often” but keep some strategic parcels to try and hit the peak.
- Be prepared to hit the peak you need to be able to move quickly, (have a management plan).

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Summary

- Cope, Adapt, Recover are the key principles
- Have a plan, integrate, monitor, adapt & update,
- Identify your core species and grow them well,
- Maintain and improve productivity,
- Understand the markets.
- Test the market regularly.
- Look to “extend the felling window” and “spread your risk”

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Thank you

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