Supplementary material

Section S1 - Details on index development

The following sections summarize the index rationale and development used in this study to describe potential sensitivities of tree species to three climate change stressors: more frequent drought events, shifts in suitable climate conditions, and more frequent and intense fires. A framework for each stressor was created based on a common conceptual synthesis of the relationship between traits and tree response to climate change impacts (Figure 1 in main text, see the review in [1] for further details).

Each strategy index is based on a set of mechanisms and traits that characterise species ability to cope with a climate change stressor. The strategies, mechanisms and traits are described below, followed by a table summarizing development of index methodology and its categories.

1. Drought

1.1 – DROUGHT AVOIDANCE

Direct access to the water table is a crucial element of drought avoidance [2]. As the water levels drop in the soil during drought, shallow rooting trees will be most susceptible to mortality, often rapidly [3]. Only a small number of deep roots are necessary to maintain internal water supplies [4]. Wherever possible, we considered **maximum rooting depth** as well as other root characteristics (e.g. presence of taproot) in index development. If not available, **minimum rooting depth** was used along with literature review on species autecology.

1.2 - RESISTANCE TO DROUGHT-INDUCED DAMAGE

When water access decreases but demand remains constant, other mechanisms become important in avoiding drought mortality. A key driver in differentiating drought-adapted species is maintaining hydraulic tension in the stem [5]. When hydraulic tension cannot be maintained, xylem cavitation occurs and water flow stops. **Embolism resistance** (**Ψ_{50}**), defined as the xylem pressure at which 50% of conductivity is lost, is among the most standardized metric, providing homogeneous values across the species-specific studies. Despite some inconsistencies among measurement techniques, this index is widely used and provides values that can be compared among species-specific studies [6-9]. Stomata are an important area of potential water loss in periods of drought but prolonged stomatal closure can inhibit photosynthesis through carbon starvation. Stomatal characteristics can therefore be either measured directly (**stomatal density, guard cell length, and stomatal conductance**) or inferred (**water use efficiency,** along with literature review). Because directional relationships with internal mechanisms are not always well understood [1], literature evidence of negative effects of drought was also used in index development.

1.3 - POPULATION RECOVERY AFTER DROUGHT-RELATED MORTALITY

At a population level, the ability of a species to rapidly recolonize an area after widespread mortality will influence which species can persist at drought-prone sites. Trees will regenerate from the landscape matrix from 1) non-affected individuals, 2) individuals on sites that are less susceptible to drought and/or 3) recovery mechanisms in dying stems (e.g. induced fruiting and shifts in resources towards vegetative propagation). **Vegetative propagation** and **lateral extension** are important for rapid recovery after drought. High **seed production**, good **seed viability** and low **frequency between good seed years** can provide ample propagule pressure to colonize substrates. Finally, long-term **seed persistence in a soil bank** (>5 years) could avoid drought conditions altogether and break dormancy when conditions are more favorable.

Table S1: Index development of **species' sensitivity to drought** for three main strategies, their component mechanisms and traits.

STRATEGY	Mechanism	*Description*/**<u>Traits</u>**/References	Methodology/**Categories**
1.1 DROUGHT AVOIDANCE	**Water uptake capacity**	*Ability to ensure continuous water supply in the stem during drought*	When possible, multiple values were cross-validated and an average maximum rooting depth was calculated. Species were classified into 5 categories based on the maximum rooting depth for species in the study region and whether species creates a taproot or not.
		<u>Maximum rooting depth</u> in conjunction with **<u>presence of taproot</u>** **<u>Minimum rooting depth</u>** [2,10]	Scaled from min to max **Low** : Very shallow, < 1m **Medium-low**: Shallow, 1 - 1.8m **Medium**: Medium, 1.8 - 2.7m **Medium-high**: Medium + taproot **High**: Deep > 2.7m
1.2 RESISTANCE TO DROUGHT-INDUCED DAMAGE	**Xylem resistance to cavitation**	*Ability of xylem to resist embolism as water deficit exerts increasingly negative pressure*	Values were taken for mature individuals only. When value is not available, other conductivity metrics were used (e.g. turgor loss potential) and qualitative rankings were used. When multiple values were available, an average Ψ50 was calculated. Scaled from max to min
		<u>Ψ50</u> , or the xylem pressure (MPa) at which 50% of stem conductivity is lost. Other conductivity metrics were used (e.g. **<u>turgor loss potential</u>**) [9,11]	**Low** : > -2.0mPa **Medium-low** : -2.0 to -2.6mPa **Medium**: -2.6 to -3.3 mPa **Medium-high**: -3.3 to -3.8 mPa **High**: < -3.8 mPa *If data not available*: **Medium**
	Species-specific resistance	*Other mechanisms that influence resistance to drought-induced damage*	Literature review was used to capture other physiological mechanisms linked with mortality and species were classified into 3 categories.

		Qualitative assessment of **root sensitivity to damage** (drought or physical), **Maximum stomatal conductance**, **stomatal density**, **guard cell length**, among others	**Low**: Subtract 1 level for evidence of sensitivity **Medium**: No change **High**: Add 1 level for evidence of tolerance
1.3 POPULATION RECOVERY AFTER DROUGHT	**Resprouting ability**	*Ability to form new shoots after stem mortality* **Vegetative propagation** **Lateral extension**	Species were classified into 5 categories based on whether they reproduce clonally, the type of vegetative propagation, whether or not it is the main mechanism, and its lateral extent. **Low**: No vegetative propagation **Medium-low**: Stump/collar sprouts, not as primary VP mechanism **Medium**: Stump/collar sprouts **Medium-high**: Root suckers, not as primary VP mechanism **High**: Root suckers, clonal extensive
	Ability to produce seeds rapidly post-disturbance	*Total viable seeds produced 5 years post-drought mortality* **Seed production** (seeds/ha) **Seed viability** (% seeds that germinate) **Frequency of good seed years**	Seed production * Seed viability * (5/Frequency of good crops) Scaled from min to max. Species were classified into 3 categories mainly to capture the extremes in seed production. **Low**: Subtract 1 level for low production (<300000 seeds) **Medium**: No change **High**: Add 1 level for high production (>9 million seeds)

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2. Ability to track shifting climate conditions (Migration)

2.1 - Reproductive capacity

Successful migration is dependent on the reproductive capacity of the source population, which is influenced by generation time, seed production, and seed viability [12-15].

Propagule pressure, determined by seed production, is an important determinant likelihood of successful recruitment locally and at their advancing front [13,15,16]. Investment into reproduction varies greatly, generally related to tree longevity - species that invest heavily into seed quantity but not viability are not as long lived as species that create fewer, often palatable seeds but which have a better chance of germinating.

Maximum seed production and **frequency of good seed years** influence propagule pressure into neighbouring areas while **seed viability** dictates the chance that a seed will germinate once it gets there. ***Generation time*** is determined by **age of sexual maturity** is important given the rapid pace of climate envelope shifts projected over the coming century and the long lag for tree species [17,18]. Once a new individual is established, species that reproduce earlier are likely to increase their chances of subsequent dispersal and colonization.

2.2 - Dispersal ability

Dispersal is the primary mechanism through which species expand their distribution [13,18,19] and species able to disperse seeds over long distances have a higher likelihood of keeping up with rapidly shifting suitable habitats [20,21]. There have been relatively few quantitative assessments of actual **seed dispersal distance** so **seed dispersal vector** and **seed weight** are widely used proxies of dispersal ability [22]. For seeds mainly dispersed by wind, **specialized seed structures** (e.g. pappus, wing shape) can also inform dispersal effectiveness.

2.3 - Colonization potential

The ability of individuals to germinate, survive, and reproduce upon reaching new sites will largely determine which species can successfully colonize [23]. The **need for specialized habitats** could place a significant constraint on germination of seeds for many temperate and boreal tree species. Primarily, the **seed bed preferences** are crucial to seed germination and species migration could be impeded by the low availability of appropriate substrate on which to establish. Upon colonizing a new site, a species' ability to tolerate inbreeding and successfully reproduce in small populations will play a critical role in its migration success. Species with a propensity for **self-pollination** [24] and extensive **vegetative propagation/lateral extension** are more likely to develop viable populations from only a few individuals.

Table S2: Index development of species' ability to track shifting climate conditions (i.e. migration ability), their component mechanisms and traits.

STRATEGY	**Mechanism**	*Description*/**Traits**/References	Methodology/**Categories**
2.1 REPRODUCTIVE CAPACITY	**Viable seed production**	*Fecundity of source population and viability of seeds produced* *Propagule pressure*, which is determined by **Maximum seed production** (seed/ha) **Seed viability** (% seeds that germinate) **Frequency of good crops** *Generation time* which is determined by **Age of sexual maturity** [12,20]	Number of viable seeds over 40 years: Seed production * Seed viability * (40 - (Age of sexual maturity/Frequency of good crops)) Calculated values were scaled relative to the species with the lowest seed production (*Fagus grandifolia*) and classified in 4 categories **Low** : < 1 million **Medium-low** : 1-10 million **Medium**: 10-50 million **High**: > 50 million
2.2 DISPERSAL ABILITY	**Dispersal ability**	*Ability of dispersules to move from parent tree to new habitats.* **Seed dispersal vector** **Dispersal distance** (meters) **Seed weight** (seeds/kg) **Specialized seed structures** [13,22]	Species were classified in 5 categories based on their dispersal vector, presence of specialised structures to assist with dispersal, seed size and, when available, information on dispersal distance **Low**: Heavy seeds, dispersed by gravity AND/OR <50m away. **Medium-low**: Heavy seeds, dispersed by wind AND/OR <50m. **Medium**: Medium-sized seeds, dispersed by wind AND/OR <100m away. **Medium-high**: Light to medium sized seeds, dispersed by wind/animals AND/OR >100m away. **High**: Light seeds with pappus to carry seeds, dispersed by wind AND/OR >>100m away

2.3 COLONIZATION POTENTIAL	**Small population dynamics**	*Ability to colonize a wide variety of habitats* **<u>Vegetative propagation</u>** **<u>Pollination system</u>** **<u>Specialized habitats</u>** <u>or</u> **<u>Seed bed requirements</u>** [18,25-27]	Species were classified in 3 categories according to evidence of specialised habitat requirements (low colonisation potential) or capacity to colonize in small population (high). **Low**: Specialized habitat requirements **Medium**: Neutral **High**: Ability to self pollinate, extensive vegetative propagation

3. Fire

3.1 - Protection from burn injury

Surviving fire is contingent on maintaining intact vascular systems capable of circulating water and sap from roots to branch tips. Certain traits can also promote burning (bark and leaf ash, oil and/or volatile content, litter decomposability) and promote regeneration by seed or vegetatively for certain fire-adapted species. However, fire suppression in eastern temperate forests have resulted in a mesotrophication [28], putting these ecosystems at risk of abrupt compositional changes when fire eventually comes through.

***Stem physical protection* – Bark thickness** is an important characteristic of species that are adapted to frequently recurring fires [29,30]. In combination with **bark flammability** (which includes chemical composition, moisture levels, density and ash levels)**,** the ability to reduce heat transmission through the outer layers to the vascular system and cambium influences whether a stem will survive or not [31]. Hence, thicker and less flammable bark acts as a first line of defense from fatal damage. Another important factor is **root susceptibility,** mainly determined by rooting depth and in association with stem physical protection. Deeper roots are protected by soil, since it dissipates heat through its profile and insulates roots from damage.

***Avoid foliage flammability* –** Fire propagation to the crown depends on **leaf flammability** and **litter characteristics such as litter decomposability** [32]**.** These composite proxies are influenced by a complex suite of traits such as specific leaf area (SLA), ash and lignin content, leaf volatile compounds, and leaf caloric value**,** among others**.** Once ignited, low **branching habit** can provide a starting point to spread fire to the crown and can be further aided by the presence of low hanging lichens **('lichen ladder')** or **leaf persistence** (i.e. coniferous or marcescent deciduous leaves) [29,33]. For temperate tree species without marcescent leaves, the risk varies throughout the year, with the highest occurring when drought occurs early in the growing season (i.e. crown lacks leaves).

3.2 – Population recovery by seed

From on site sources - A key adaptation in fire-prone environments is **serotiny**, the encapsulation of seeds in specialized cones stored in the tree canopy [34]. Serotinous cones provide an ample *in situ* seed source when available resources are high and competition is low [35]. Intraspecific variation in the levels of serotiny can occur. Areas where fire is not an important component of the disturbance regime tend to have individuals with lower degrees of serotiny, making them vulnerable to shortened fire return intervals [36]. Serotiny could also favour species subject to larger, more intense fires and could even infer a selective advantage for semi-serotinous species.

Ability to regenerate from a soil seed bank recently exposed from burning also favor rapid recovery [37]. However, most Canadian trees show limited long-term viability. When seeds are exposed to high temperature, **seed dormancy** and **heat resistance** can prevent seeds from burning. Dormancy broken by physical scarification, or destruction of the seed coat using high temperature, are most apt to germinate post-fire. Even if seeds are not directly protected from fire, the **location of the seed bank,** notably aerial seed banks, can provide some protection [38], especially if combined with **high branching habit**.

***From peripheral sources* -** In very intense fires or areas without fire-adapted species, seeds and meristems are not available on-site to favour colonization after disturbance. Hence, trees must regenerate by seeds originating from the unburnt forest along the edge and beyond before other competitors move in [39]. In these cases, propagules from outside seed sources may vary from pre-fire species composition. High **seed production**, good **seed viability** and high **frequency of good seed crops** can provide ample propagule pressure for colonization [40]. Additionally, seed **dispersal distance, dispersal vector and seed size** influence how far seeds go: light seeds that are wind dispersed or animal dispersed seeds can travel long distances away from the edge of the burn [40].

***Colonization potential* -** However, it is not simply enough to produce ample seeds that disperse well into newly disturbed habitat. Seeds must fall on substrates that are suitable for their germination (i.e. dependent on **colonization strategy** and **seed bed requirements)**. In the case of fire, the distinction lies in whether species preferentially germinate in mineral soils or duff over other substrates and how litter influences germination and rooting. In burned areas, small, easily-dispersed seeds and a preference for mineral soil as a germination substrate [41] are favoured after fire. Thick litter layers can inhibit germination of **small seeds**; Litter removal caused by fire can therefore promote their germination.

3.3 – POPULATION RECOVERY BY VEGETATIVE PROPAGATION

High capacity for **vegetative propagation** and broad **lateral extension,** can favor rapid re-establishment. Additionally, **meristematic response to fire damage** can accelerate species reestablishment. Post-fire resprouting ability is determined mainly by where meristematic tissues initiate on the plant and how well protected these tissues are [42]. Underground buds are conferred a certain amount of protection by the surrounding soil and consequently have higher survival probabilities. Ability to reproduce far from parent tree also increases the probability of rapid re-establish. Propagation of new stems can originate from the same clone that covers a large area, particularly when disturbance favours their regeneration. Considering this, bud meristem location, clonality and lateral extension can be inferred from vegetative propagation, making it an important trait in post-fire regeneration.

3.4 – Adaptation to shorter fire return intervals

Fire prior to tree species attaining sexual maturity can prevent *in situ* re-establishment from seed, even for fire-adapted species [43]. Species that have a high growth rate and that can produce seeds rapidly are favored, as determined by their **age of sexual maturity** and **age of optimum seed production, .** Species with **seed persistence** that remain viable for long periods may also be favored.

Table S3: Index development of species' ability to persist in more frequent and intense fires, their component mechanisms and traits.

STRATEGY	Mechanism	*Description*/**Traits**/References	Methodology/**Categories**
3.1 PROTECTION FROM BURN INJURY	**Stem physical protection**	*Ability to resist stem burning and avoid vascular tissue damage.* **Bark thickness** **Bark flammability** [29,31]	Species were classified into 5 categories based on the thickness of the bark, whether the bark offers some sort of protection and if the bark contains compounds that decrease flammability **Low**: Thin to medium-thin bark (<13mm), with observed mortality; **Medium-low**: Thin to medium-thin bark (<13mm), with some evidence of survival; **Medium**: Medium bark (13-20mm); **Medium-high**: Medium-thick bark, or thick at the base (>20mm), with other protective mechanisms; **High** : Thick bark (>40mm), with other protective mechanisms
	Avoid foliage flammability	*Characteristics that reduce leaf flammabilityand mitigate fire spread.* **Litter decomposability** **Leaf volatile compounds** **Branching habit** **Leaf persistence** [29,32,33]	Species were categorised into 3 categories based whether fuel is available. Low branching habit, flammable leaves that decompose slowly or persist for long periods present low avoidance ability and are therefore considered sensitive **Low** to **medium-low**: Subtract 1 level if leaf flammability is high **Medium**: No change **Medium-high** to **high**: Add 1 level if leaf flammability is low
	Other mechanisms	*Other mechanisms that can influence protection from burn injury* **Root** and **cambium susceptibility to fire damage**	Species were categorised into 2 categories based on evidence of susceptibility to fire damage in the cambium and in the roots (i.e. low ability) **Low**: Subtract 1 level for evidence of cambium or root damage or for observed mortality not already taken into account **Medium** to **high**: No change

3.2 Population recovery by seed	**Colonize from on-site source**	*Ability of seeds to avoid burning during fire, providing a readily available source of propagules* **Serotiny** and seed dormancy broken by fire (**scarification**). **Seed bank location** **Branching habit** **Foliage flammability** [34,35]	Species were categorized into 5 categories depending on whether a propagule source is available post-disturbance. Fire can spread to the crown based on branching habit and foliage flammability or if seeds require fire as part of the regeneration process **Low**: Seeds unable to germinate in burnt substrates; **Medium-low**: Aerial bank, low branching habit; **Medium-high**: High off- site production, high dispersal ability AND able to germinate in burnt substrates; **Medium-high**: Aerial bank with high branching habit; **High**: Seeds contained in serotinous cones or seed dormancy broken by scarification
	Colonize from a peripheral source	*Ability to rapidly produce and disseminate seed from along unburnt edge into newly available habitats* Propagule pressure is dependent on **Seed viability**, **Seed production** (seeds/ha) and **Frequency of good seed years.** Dispersal ability is influenced **by seed dispersal distance** as determined by **seed dispersal vector** [12,20,22]	Species were classified in 2 categories to capture species that exert sufficient propagule pressure over 5 years post disturbance and that are effective at dispersing Propagule pressure - Seed production * Seed viability * (5/Frequency of good crops) Dispersal ability - based on their dispersal vector, presence of specialised structures to assist with dispersal and dispersal distance **Low**: No change **Medium** to **high**: Add one level for medium to high seed production (> 750000 seeds produced in 5 years) AND medium to high dispersal ability (dispersed by wind at least 50m from source)
	Colonization potential	*Specific germination substrate requirements for seeds.*	Species were classified in 2 categories according to evidence of inability to colonize burnt substrates (low) or if they can germinate in mineral soil (medium) or in burnt substrates (high).

		Seed bed requirements **Colonization strategy** **Seed weight** [44]	**Low**: No change **Medium** to **High**: Add one level for evidence of ability to colonize burnt substrates (including ability to colonize mineral soil)
3.3 Population recovery by vegetative propagation	**Resprouting ability**	Ability to reproduce clonally (asexually) after fire. **Vegetative propagation** **Lateral extension** **Meristematic response to fire damage** [42,45,46]	Species were classified into 5 categories based on whether they reproduce clonally, the type of VP, its lateral extent and whether fire damage stimulates a clonal response. **Low**: No vegetative propagation **Medium-low**: Layering **Medium**: Stump/collar sprouting, not stimulated by fire **Medium-high**: Root suckering, not stimulated by fire or Stump/collar sprouting, stimulated by fire **High**: Root suckering, stimulated by fire Subtract one level for negative post-fire response (e.g. root kill)
3.4 Adaptation to shorter fire interval	**Ability to produce seeds rapidly post-disturbance**	Ability to re-establish quickly after successive fires in short rotation **Age of sexual maturity** **Age of optimum seed production** **Growth rates** [43,47]	Species were classified into 5 categories depending on if they can re-establish after fire within a short time frame, mainly depending on how long it takes to start producing seeds and their growth rate or the age at which optimum seed production occurs. **Low** : Cannot re-establish after fire or > 40 years to maturity, slow growth rate **Medium-low**: >25 years to maturity or >15 years to maturity and either >30 years optimum seed production or slow growth rate **Medium**: >15 years to maturity or <10 years to maturity and either >30 years to optimum seed production or slow growth rate **High**: <10 years to maturity, rapid growth rate
	Seed banking	Ability to persist in soils for long periods **Seed persistence** [37,48]	Species were classified into 2 categories mainly captures species whose seeds could form a soil seed bank, conferring some protection from heat **Low** (<1 year) to **medium** (1-5 years): No change **High**: Add 1 level for long-term persistence (>5 years)

Add indicates an increase in ability (i.e. more tolerant) while, on the other hand, **Subtract** indicates a decrease in ability (i.e., more sensitive). For example, *add 1 level* increases ability for a given strategy from medium to medium-high.

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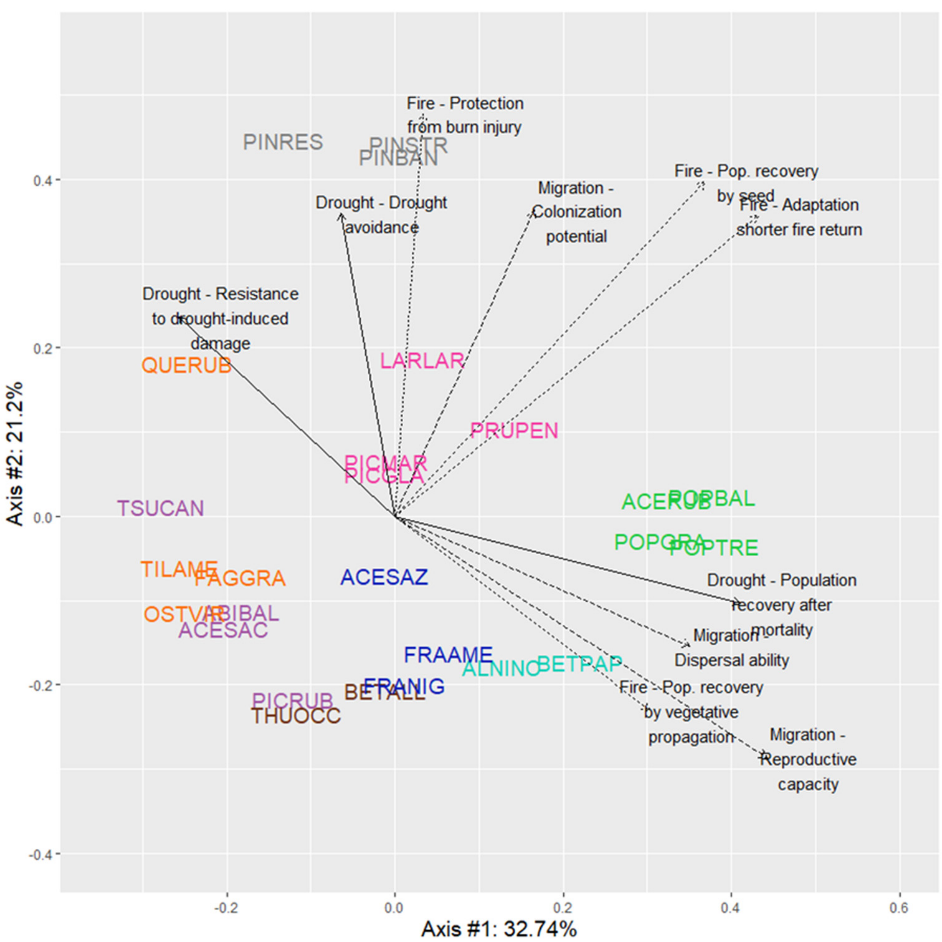
Section S2 - **Results and description of species groups shown in Figure 5 in main text**

A principal component analysis (PCA) was conducted on index scores to distinguish between groups of species with similar sensitivities. To highlight groups in the PCA, strategy axis scores were ranked from low to high ability and numerical values were attributed to facilitate interpretation (10, 20, 30, 40, 50), followed by Hierarchical clustering. Each of these groups (8 in total) are described below.

Figure S1. Principal component analysis showing overlapping sensitivities for the 26 tree species. For reference, higher index values were indicative of high ability. For species codes, see Table S4. The color of the text refers to the species group it has been attributed based on hierarchical clustering (see description below). Average values by index for a species group are shown in Figure 5 in the main text.



With drier, more fire prone environments expected under climate change [1-2], group 1 (grey text in Figure S2.1) comprised of *Pinus spp.* are more likely to persist *in situ* because they possess traits that favour drought avoidance and/or a rapid population recovery after fire. On the other hand, certain species such as *Populus sp*. and *Acer rubrum* (group 2 – green text) do not possess mechanisms that allow individual stems to survive fire or drought events but can recover rapidly afterwards. These species are therefore likely to persist in the landscape but show substantial variation in species composition over time at the local scale. In addition, the species in the latter group possess good migration capacity which favours their shift toward their suitable climate conditions.

Species of the group 3 (*i.e. Larix laricina, Prunus pensylvanica* and *Picea spp*. - pink text) have shallow rooting habits. They are susceptible to burn injury but their populations can re-establish rapidly post-fire via seed. Shallow rooting species will likely increase susceptibility to drought, but this sensitivity may be mitigated by mechanisms favoring internal water efficiency or by xylem resistance to embolism.

Deciduous species such as *Betula papyrifera and Alnus incana ssp. rugosa* (group 4 – turquoise text) have a low resistance to embolism and a shallow rooting system, making them sensitive to drought events (Figure 5 in main text). However, while they are sensitive to fire at the stem level, they possess adaptation strategies that facilitate their recovery after fire or drought event at a population level, such as delayed seed germination, good germination on mineral soils and vegetative propagation.

Species of group 5 (orange text), *Fagus grandifolia, Ostrya virginiana, Quercus rubra, and Tilia americana,* are characterised by a relatively low reproductive capacity and relatively weak dispersal ability, which make these species particularly sensitive to rapidly shifting climatic conditions (Figure 5 in main text). These factors put these species at risk of maladaptation under climate change (i.e. failure to compensate physiologically for changes in the environment; [3-4]).

Both groups 6 *(Acer saccharinum*, *Fraxinus spp.* - blue text*)* and 7 (*Betula alleghaniensis* and *Thuja occidentalis* – brown text) are heavy seeds producers but the migration capacity for the latter group is constrained by specialized colonization requirements which could limit establishment.

Abies balsamea, Acer saccharum, Picea rubens and *Tsuga canadensis* (group 8 – purple text) are particularly sensitive to fire and possess a relatively weak population recovery after a drought event and a low to medium dispersal ability, making them the most sensitive group of species across the indices (Figure 5 in main text).

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Section S3 – Comparing published indices related to drought

Table S4: Comparison of the integrated drought sensitivity indices developed in this paper with six published drought tolerance indices. The definition of drought tolerance used by the different studies is presented below. All indices were standardized and ranked to facilitate cross-comparisons (Values: 1 = drought sensitive, 5 = drought tolerant; Ranks: 1 = drought sensitive, 26= drought tolerant).

		Drought sensitivity - stem only[1]		Drought sensitivity - stem and population[2]		Niinemets and Valladares (2006)[3]				Boulet and Huot, 2013[5]		USDA, and NRCS. 2009[6]		Hightshoe, 1988[7]		OFGAC Native Trees and Shrubs Database[8]	
Species list	Species Code	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Abies balsamea	ABIBAL	2.5	10	2.33	5	1	1	1.67	2	1	1	1.8	2	2	2	2	3
Acer rubrum	ACERUB	2.5	10	3.33	19	1.84	6	3.67	24	3	17	3.4	20	4	17	3	10
Acer saccharinum	ACESAZ	3.5	20	3.33	19	2.88	18	1.67	2	5	22	1.8	2	5	24	2	3
Acer saccharum	ACESAC	3	16	3	12	2.25	12	2.33	15	1	1	3.4	20	2	2	4	12
Alnus incana ssp. rugosa	ALNINC	1.5	1	2	2	2	7	--	--	--	--	1.8	2	2	2	1	1
Betula alleghaniensis	BETALL	2.25	8	2.33	7	3	22	2.33	15	1	1	3.4	20	2	2	2	3
Betula papyrifera	BETPAP	1.5	1	2	2	2.02	11	1.67	2	2	11	1.8	2	3	9	4	12
Fagus grandifolia	FAGGRA	2.75	13	2.67	9	1.5	3	2.33	15	1	1	5	25	2	2	4	12
Fraxinus americana	FRAAME	2.5	10	2.67	8	2.38	14	2.33	15	1	1	1.8	2	3	9	4	12
Fraxinus nigra	FRANIG	2.25	8	3	18	2	7	1.67	2	1	1	1.8	2	4	17	1	1
Larix laricina	LARLAR	3	16	3	12	2	7	3.67	21	2	11	1.8	2	4	17	2	3
Ostrya virginiana	OSTVIR	3.25	19	3	9	3.25	24	3.67	21	3	17	3.4	20	3	9	5	25
Picea glauca	PICGLA	4	23	3.33	19	2.88	18	2.33	15	2	11	5	25	3	9	4	12
Picea mariana	PICMAR	3	16	3	12	2	7	1.67	2	2	11	1.8	2	4	17	2	3
Picea rubens	PICRUB	2	4	2.33	5	2.5	15	1.67	2	3	17	3.4	20	--	--	--	--
Pinus banksiana	PINBAN	4.5	25	4	26	4	25	4.33	25	5	22	1.8	2	4	17	4	12
Pinus resinosa	PINRES	4.25	24	3.67	23	3	22	1.67	2	5	22	1.8	2	3	9	4	12
Pinus strobus	PINSTR	3.5	20	3	12	2.29	13	1.00	1	1	1	1	1	2	2	4	12
Populus balsamifera	POPBAL	2	4	3	12	1.77	4	1.67	2	1	1	1.8	2	--	--	2	3

Populus grandidentata	POPGRA	2.75	13	3.33	23	2.5	15	1.67	2	3	17	1.8	2	3	9	4	12
Populus tremuloides	POPTRE	2	4	3	12	1.77	4	1.67	2	2	11	1.8	2	3	9	3	10
Prunus pensylvanica	PRUPEN	1.75	3	3	9	--	--	1.67	2	--	--	1.8	2	4	17	4	12
Quercus rubra	QUERUB	4.5	25	3.67	25	2.88	18	3.67	21	4	21	1.8	2	3	9	4	12
Thuja occidentalis	THUOCC	3.5	20	3.33	19	2.71	17	1.67	2	2	11	1.8	2	4	17	2	3
Tilia americana	TILAME	2.75	13	2.33	4	2.88	18	2.33	15	1	1	1.8	2	2	2	4	12
Tsuga canadensis	TSUCAN	2	4	1.67	1	1	1	1.67	2	1	1	1.8	2	1	1	4	12

1. Sensitivity to drought-induced mortality and population recovery ability, as characterised by individual drought avoidance and resistance to drought induced damage, and population recovery ability. *Source: Trait data*

2. Sensitivity to drought-induced mortality of adult stem as characterised by individual drought avoidance and resistance to drought-induced damage. *Source: Trait data*

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Drought tolerance characterised as ability to survive extended duration and increased frequency of periods without access to water *Source: Partially from trait data*

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Definition not provided. Source: Partially from trait data.

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Drought tolerance defined by type of soil a given species typically grows in, with species that grow in coarse-textured soils considered tolerant. *Source: Inferred from environmental tolerances*

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   Drought tolerance defined by species moisture requirements (dry to wet). *Source: Inferred from environmental tolerances*

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