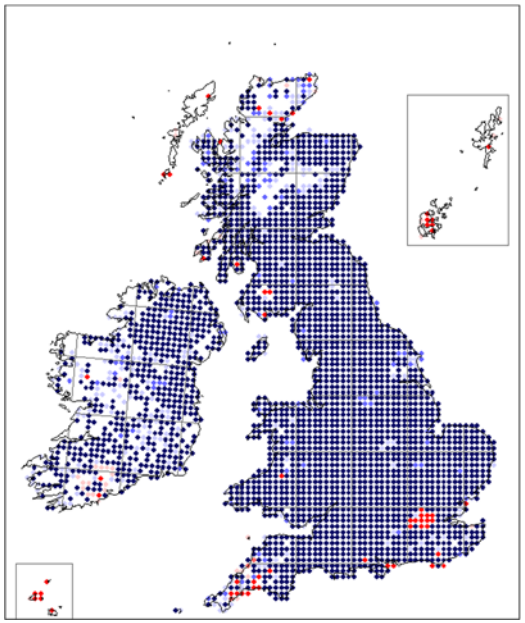
Species: *Ulmus glabra* Huds.
Assessor: Dr R. Gargiulo
Methodology: Neaves, L. A Framework for Maximising the Capture of Genetic Diversity in Sampling for ex situ Conservation. *Preprints.* 2019, 2019120176 (doi:10.20944/preprints201912.0176.v1)

Recommendations:		**Confidence**
Sampling	***Moderate risk of sampling limited diversity:*** Dutch Elm disease and the disappearance of riparian ecosystems are currently the main threats for *U. glabra*. It is fundamental to sample the entire genetic diversity of autochthonous populations, in order to guarantee genomic representativeness. Hybrid individuals should be avoided in the areas of contact with other species of the genus *Ulmus*.	High agreement/ Moderate evidence
Donor selection (risk of mixing)	***Some risk of mixing****:* Compared to the other species of the genus, sexual reproduction guarantees gene flow and no clonality within the populations, but it might affect mixing. Caution is needed when mixing populations from different environmental conditions, as no information is available about adaptive variation.	Moderate agreement/ Limited evidence
Knowledge gaps	Information on genetic diversity of British populations is lacking. Native range difficult to be established.	

Information:				
Taxonomy	Taxonomy of the genus *Ulmus* is regarded as ambiguous, in particular because of the uncertainties related to the *U. minor* complex[1]. However, *U. glabra* is sexually reproducing and has a wide distribution throughout the British Isles, in contrast with *U. minor*, which is relegated to Southern and Central Britain and reproduces via suckers[2]. In *U. glabra,* sometimes two subspecies are recognised (ssp. *glabra* and ssp. *montana*), differing for leaf morphology and distribution[3].			
Hybridisation	*Ulmus glabra* hybridises with the *U. minor* complex in the areas of contact (= *U.* x *vegeta*); other hybrids reported: *Ulmus glabra* x *minor* x *plotii (= U.* x *hollandica); Ulmus glabra* x *plotii (= U. x elegantissima).*			
Life history traits/attributes		**Organisation of diversity**	**Negative outcomes of mixing**	**Strength of evidence**
Dispersal ability	Effective Seeds dispersed by wind Pollen vector: wind	Higher diversity/ Lower differentiation	Lower vulnerability	Robust evidence
Mode of reproduction	Mixed (outcrossing and selfing)	Higher diversity/ Lower differentiation	Higher vulnerability	Robust evidence
Longevity	Long-lived	Higher diversity/ Lower differentiation	Lower vulnerability	Robust evidence
First reproduction	-	-	-	-

Reproductive output	-	-	-	-
Ploidy	Diploid (2n=28) Reported as segmental tetraploid[4]	-	-	Robust evidence
Range/ Fragmentation	Widespread and continuous distribution. Widely planted, native status of many records is uncertain.  **Map source:** https://www.brc.ac.uk/plantatlas/plant/ulmus-glabra	Higher diversity/ Lower differentiation	Lower vulnerability	Robust evidence
Ecological amplitude	No information about local adaptations in the UK.	-	-	-
Genetic diversity	Genetic diversity of British populations requires investigation. Microsatellite markers have been developed for *U. glabra* and related species[5,6]. Allozyme variation in *Ulmus* species from France revealed high genetic diversity[7]. In Belgium, gene flow	Higher diversity/ Lower differentiation	Lower vulnerability	Limited evidence

	from cultivars to autochthonous individuals was detected by employing AFLPs[8]. A study conducted in Czech Republic based on ISSR markers revealed a high level of genetic diversity. The authors also pointed out the occurrence of hybridisation among closely related species[9]. In five Norwegian populations (peripheral part of the range), within population variation and among populations differentiation were found[10]. A recent study of Spanish populations revealed high differentiation among populations and recent decreases in population size[11].			
Demography	Declining (connected to riparian ecosystems' decline and threatened by the fungal disease known as "Dutch Elm disease")	Lower diversity		Robust evidence

References

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