

# Auckland's elms

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## Introduction

Elms (*Ulmus*) are northern hemisphere deciduous trees of the family Ulmaceae. Worldwide there are about 45 species. European elms in particular are prominent in Auckland's treescape as large specimen trees in parks, as street trees, and as ornamentals in private gardens. Elms are some of the very tallest of all broadleaved trees planted in the city, with large specimens commonly exceeding 35 m in height. There are around 20 000 elm trees in Auckland. Most parks have elm trees. Point Erin Park in Herne Bay is one of Auckland's best elm places, with large, old trees of four species – wych elm, English elm, Dutch elm, and Huntingdon elm. Local elms have been occasionally milled for timber (Mortimer 1994).

## Health issues

Dutch elm disease (Wilkinson 1979) was first detected in Auckland in December 1989 (Gadgil *et al.* 2000). The causal agent is a fungus, *Ophiostoma novo-ulmi*, which is transmitted by an insect vector, *Scolytus multistriatus*. Dutch elm disease can affect all elms. American and European elms are considered to be the most susceptible with the Asian elms the most resistant. Sanitation fellings have been regularly carried out to remove infected trees, and Auckland's thousands of elm trees are still regularly checked for signs of the disease. While not completely eradicated, it is seemingly contained, and elm trees in Auckland are generally healthy.

Some other problems include live wood-boring larvae, which can cause significant damage to branches, the main culprits being lemon tree borer (*Oemona hirta*) and puriri moth (*Aenetus virescens*). Elm aphid (*Eliosma lanuginosum*) causes the leaves to curl. Commonly noticeable on wych elm in particular is a mass of white fungal spores on the undersurface of leaves, caused by *Phloeospora ulmi*, the asexual stage of *Mycosphaerella ulmi*.

## Identification

There has been much confusion over the taxonomy of the European elms (Jobling & Mitchell 1974, Mitchell 1974, Krüssman 1976, Richens 1983, Stace 1991, Huxley, Griffiths & Levy 1992, Armstrong & Sell 1996), with various versions of what the names of species and cultivars should be. Several Australian references are helpful (Rowell 1991; Spencer, Hawker & Lumley 1991; Spencer 1997), but there has been nothing comprehensive available on the elms occurring in New Zealand. Accordingly, we have here tried to sort out what elms occur in Auckland by collecting foliage specimens from trees as we came across them, and by observing various crown and phenological features. This is what we have come up with.

## Conspectus of *Ulmus* represented in Auckland

### *Ulmus glabra* Hudson

wych elm. The leaves have a short petiole and are harsh on the upper surface, and the tree does not sucker. This species occurs in four main forms.

- Firstly, the typical species, grows into a large tree wide-crowned with big, obovate leaves. Pollarded examples can be found in Sarsfield Street and adjoining Point Erin Park, Herne Bay, and there are two specimens in the Manukau Cemetery, Papatoetoe. Two big specimens were removed from Waikumete Cemetery in January 2003, with confirmed Dutch elm disease. It is not a common tree in Auckland, but Christchurch Botanic Gardens boasts a magnificent specimen.
- Secondly, the cultivar 'Camperdown' or weeping wych elm with very large, harsh broad leaves and weeping branches, which is generally grafted on to rootstock of Dutch elm or English elm (suckering). It does not grow very big, and is rather common in parks and gardens, with good examples in Albert Park, the Zoo, 97 Remuera Road, and David Nathan Homestead (Manurewa).
- Thirdly, the cultivar 'Lutescens' or golden wych elm, again propagated by grafting (often on to *U. parvifolia* rootstock), and characterised by its dense, rounded crown of yellow foliage throughout the summer, and growing into a medium-sized spreading tree. It is perhaps the commonest elm to have been planted in recent years, with most streets in Auckland having gardens with some specimens. There is a concentrated planting at Elmwood Presbyterian Village, Hill Road, Manurewa, and several in Massey Park, Mangere East. They form a magnificent avenue for the whole length of Gossamer Drive in Pakuranga.
- Fourthly, the very distinctive old cultivar 'Horizontalis' or 'Pendula' – the horizontal wych elm – in which the leaves are comparatively narrow and the trees can be large, with a wide, drooping crown. The form is distinctive with a horizontally flattened framework from which the slender pendulous branches droop often 2 m or more. Three of these occur at 9-13 Arney Road, Remuera, and other examples are at 6 Glade Place, Birkenhead, and at 118 Ladies Mile, Ellerslie. The leaves on this cultivar are much narrower than in the other cultivars, and the tree can grow to an impressive size, though Auckland's trees are no match for the wonderful old specimens in the Christchurch Botanic Gardens. Again, they are often grafted on to suckering

rootstock, and sometimes the rootstock has its own separate crown, forming a compound tree of two species, good examples of which occurs at 113 Scott Avenue, Mangere Bridge and in Greenlane Road outside the Novotel Hotel.

#### ***Ulmus x hollandica* Miller**

Dutch elm. This is also a hybrid elm, generally considered to *Ulmus glabra* x *U. minor*, and is alternatively known as *Ulmus x hollandica* 'Hollandica'. The leaves are fairly large, broad, crowded, and smooth on the upper surface. In autumn, the leaves develop a characteristic brownish-red colour, starting from the top. It suckers readily, sometimes forming thickets, and commonly has corky wings on the young shoots. The leaves of the sucker shoots are harsh. Dutch elm is common throughout Auckland, and can grow to a very large size. It is a coarse, and rather untidy tree. Some good examples can be seen in Symonds Street near the University; Symonds Street Cemetery; Point Erin Park, Herne Bay; Three Kings School, Mt Eden Road/St Andrews Road; Mt Hobson, Remuera; Western Park, Ponsonby; in Albert Park; at Ascot Hospital and Ellerslie Racecourse; Pah Farm Park, Hillsborough; Coombes Road, Remuera; Waimea Lane, Remuera; and Mt Victoria, Devonport. Perhaps the finest individual Dutch elm in Auckland is the magnificent specimen at the rear of the main stand, Ellerslie Racecourse. There are two other particularly big ones side-by-side at 14 & 16 Korau Road, Greenlane (both protected trees in Auckland city), and a well-known one in Wellesley Street near the Art Gallery. A variant, *U. x hollandica* 'Wredei' has smaller, more deeply incised leaves, and an example can be seen in Long Drive, St Heliers opposite the Caltex service station.

#### ***Ulmus x vegeta* (Loudon) Lindl.**

Huntingdon elm. This is also considered to be a hybrid between *Ulmus glabra* and *Ulmus minor*, and has been called *Ulmus x hollandica* var. *vegeta* (Loudon), Rehder or simply *U. x hollandica* 'Vegeta'. It is non-suckering, lacks corky outgrowths, and has leaves very similar to those of *U. glabra* 'Horizontalis' except the upper surface is smooth. We consider it to be the finest of all the elms in Auckland, with several big handsome trees, notably two near the band rotunda in the Auckland Domain, one at Mt Richmond (Otahuhu), one in Atherton Road, Epsom, one in Greenlane Road outside the Ascot Hotel, two in Point Erin Park, Herne Bay, and nine magnificent specimens forming a circle around the rotunda at the Auckland Zoo. All these trees are large, old, and with stately crowns and spreading, somewhat drooping branches.

#### ***Ulmus procera* Salisb.**

English elm (syn. *Ulmus minor* var. *vulgaris* (Ait.) Richens). This species is characterised by its tall, billowing crown, and the rather small oval leaves which turn yellow in autumn (cf. reddish brown in Dutch elm). It suckers rather strongly, and the bark is

deeply, vertically grooved. Some of Auckland's finest elms are of this species, our favourites being the massive individual at 36 Mt Albert Road, a huge tree in Victoria Park (Freemans Bay), and a magnificent tree in Seaview Road, Remuera. It is seen at its best as a street tree, notably in Epsom, in Empire Road, Kimberley Road, Bracken Avenue, and Inverary Avenue. These must rate as Auckland's very finest tree streets. Other examples of English elm can be seen in Pt Erin Park; Cornwall Park; Mt Richmond; 89 Wallace Road, Mangere Bridge; Toso Way, Otara; McCown Sports Centre, Buckland Road, Papatoetoe; 210 St Andrews Road; and Western Park, Ponsonby. Several supposedly English elms were removed from Myers Park in 1990, following the first detection of Dutch elm disease (Gadgil *et al.* 2000) Interestingly, there are two in the rotunda elm circle at the Zoo, mixed in with Huntingdon elms. There is a yellow-leaved cultivar known as 'Louis van Houtte' which we know of only from the Manukau Cemetery, Papatoetoe.

#### ***Ulmus minor* Miller**

smooth elm, field elm (syn. *Ulmus carpinifolia* Rupp ex Suckow). The only Auckland specimen we have found of the typical species is in the Manukau Cemetery, Papatoetoe. Another has been recorded from Primrose Hill, Paeroa. It suckers vigorously, and the straight leaf edge is distinctive. The variegated cultivar 'Variegata' or silver elm, however, is not uncommon in Auckland, fine examples of which can be seen at 169 St Andrews Road, Epsom, and another at 16 Liverpool St in the central city.

#### ***Ulmus parvifolia* Jacq.**

lacebark elm. This Chinese species is widespread in Auckland, and very popular. It has small symmetrical leaves which are retained until mid winter, and has curious pinkish-brown peeling bark. It flowers in summer, and the fruit ripen in autumn. Its tidy appearance, semi-evergreen habit, and comparatively small size make it a suitable street tree, and there is no better example than Normans Hill Road in Onehunga. The greatest concentrated planting of lacebark elms in Auckland is in Hayman Park, Manukau City. A cultivar called 'Frosty' in which the teeth on the leaves are white, is sometimes seen.

#### **Other elms**

So far we have not come across in Auckland any trees of American elm (*Ulmus americana* L.) or slippery elm (*Ulmus rubra* Muhl.). The only elms from North America we have found in Auckland are cedar elm (*Ulmus crassifolia* Nuttall), a tree with distinctive thick, dark green leaves, and winged elm (*Ulmus alata* Michx.), both of which occur in the Manukau Cemetery and Crematorium. American elm seems to be rare indeed in New Zealand. The best known are two trees in Grey Street, Hamilton- one beside the St Johns Methodist Church (pl. 1910, DBH 144 cm, Ht 29 m), and the other at 191 Grey Street. In addition there is a young tree in the Hamilton Cemetery near Ruakura.



st trees felled



Manurewa.



Golden wych elm (*Ulmus glabra* 'Lutescens'), Mahunga Drive, Mangere Bridge. This cultivar has golden yellow leaves throughout the year. 28 May 2003.



Dutch elm (*Ulmus x hollandica*), Ellerslie Racecourse. Note the brownish-red colour of the autumn leaves. 6 May 2003.



Dutch elms (*Ulmus x hollandica*), Three Kings School, Mt Eden Rd. In autumn the leaves are a brownish-red colour. 6 May 2003.



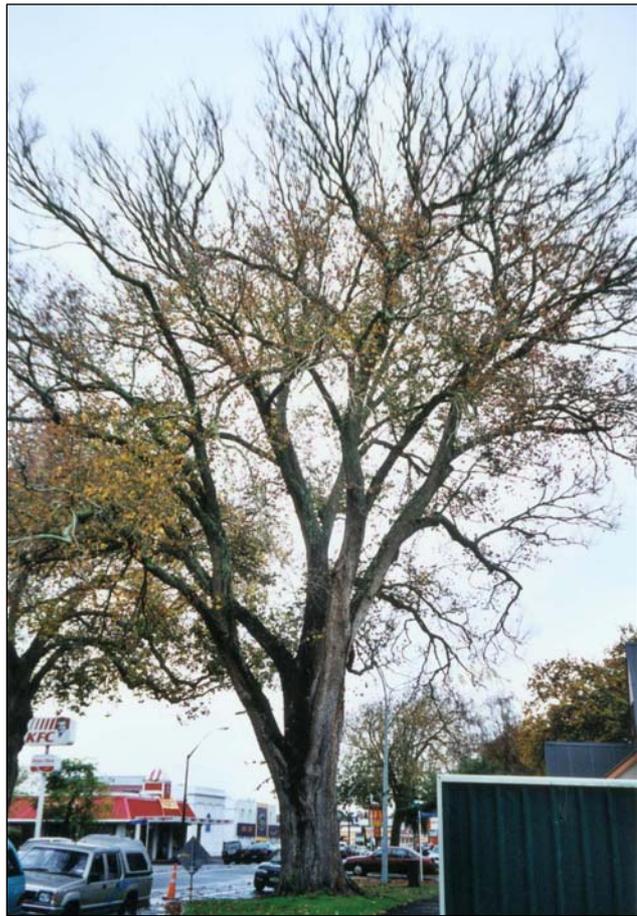
Huntingdon elm (*Ulmus x vegeta*), Point Erin Park, Herne Bay. 15 May 2003.



English elm (*Ulmus procera*), 36 Mt Albert Rd. The yellow autumn leaves are distinctive. 15 May 2003.



English elms (*Ulmus procera*), Empire Rd, Epsom, Auckland. 22 March 2003.



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The only slippery elm we know of is in the Christchurch Botanic Gardens. Siberian white elm (*Ulmus pumila*), the common drought-resistant, cold-hardy elm of north-western China and western Asia, has been recorded in Christchurch, Alexandra, Queenstown, Tiniroto (Hackfalls Arboretum), and Te Pohue (Hawkes Bay), but the only ones so far recorded in Auckland are 4 m-tall, rather unprepossessing street trees in Empire Rd, Devonport. Like *U. parvifolia*, the leaves of *U. pumila* have symmetrical leaf bases.

### Other Ulmaceae in Auckland

Of other trees of the Ulmaceae, *Celtis* is represented in Auckland by three species, and *Zelkova* by one. All are healthy, and unaffected by Dutch elm disease.

#### *Celtis australis* L.

nettle tree. Southern Europe, Turkey. It has large, broad, fully serrated leaves, and smooth grey bark. There are two trees at Monte Cecilia, Hillsborough; one at the Pacific Islands Presbyterian Church in Point England Road, Glendowie; one at the Manukau Institute of Technology, Otara Road; and a magnificent tree in Outhwaite Park, Grafton.

#### *Celtis sinensis* Pers.

Chinese nettle tree, Chinese hackberry. This is a large deciduous tree from China, Korea, and Japan. The leaves are generally smaller than in *C. australis*, and

only partly serrated. There is a large tree in the Auckland Domain beside the duck pond, two big trees in West Tamaki Road, Glendowie (Auckland School of Philosophy), one at 47 Roberta Avenue, Glendowie, two in Cornwall Park, and a concentration of them at and near 47 Benson Road, Remuera at the old T. F. Cheeseman property.

#### *Celtis africana* Burm.f.

white or camdebo stinkwood (syn. *Celtis kraussiana* Bernh.) This is native to South Africa, Lesotho, and East Africa. There is one at the Auckland Regional Botanic Gardens.

We have not found any North American hackberry (*Celtis occidentalis* L.) in Auckland, but know of one in Woodham Park, Christchurch.

Finally, *Zelkova serrata* (Thunberg) Makino occurs occasionally in Auckland, some examples being the tree in the Sumatran tiger's compound at the Auckland Zoo (we have not yet been able to collect a specimen!), a very fine tree in the Symonds Street Cemetery, and others in Western Park, Ponsonby, at 7 Church Street Devonport, in the Auckland Domain, in Cornwall Park, two in Komaru Street at Whenuapai air base, and perhaps Auckland's finest – at Three Kings School. None of these is nearly as big as the truly monumental specimen, 3 m in diameter, at Ruakura, Hamilton.

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