

The Magazine of the Friends of Pukekura Park

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Tui feeding at *Puya berteroniana* flowers. Brooklands October 2009.

Photo David Medway

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Bark Beauty

Elise Smith

Pukekura Park is known for the large trees which provide a striking range of form and foliage. Closer inspection shows fascinating bark textures as mature woody plants increase in girth annually and split the outer protective layer of bark, producing patterns of expansion cracks and flaking characteristic of each species. On some, patterns of speckles or slits are seen where lenticels break the surface, allowing air to reach the deeper stem tissues. Since bark is first line of plant defence, the appearance tells something about the type of threats each plant faces - fire, animal teeth, or insects. Our uses of bark for medicinal purposes and dyes depend upon the toxins and preservatives designed to repel invaders.

The Rose She-Oak or Forest Oak (*Allocasuarina torulosa*) is on the Eastern Hillside (#1). This small tree comes from the sub-forest areas of Queensland and New South Wales, Australia, where having corky bark helps to protect against fire. The trunk is fluted with vertical ridges that look like the pages of an opening book.

This Cherry (*Prunus*) seedling in Ambush Gully (#2) is noticeable for its russet trunk with pale stripes of lenticels. It is a young tree, high up on a bank. Nearby is a Common Quince (*Cydonia oblonga*) (#3) from southwest Asia. There are a few specimens of Quince in this part of the Park. This tree has pale bark that is boldly blotched with darker spots. Quince is a multi-purpose medicinal plant, with the bark reputedly useful in treating ulcers.

A large London Plane (*Platanus acerifolia*) on Mason Drive near the Racecourse Walk entrance (#4) has striking patterns of colour where the bark exfoliates. Other Planes in the Park may show coloured patches on only the limbs, or have a knobbly bark as seen on the specimen near Kaimata Street (#5). The London Plane is supposedly a hybrid of cultivated origin.

This European Black Pine (*Pinus nigra*), located amongst the large trees bounding the Eastern Hillside (#6), has a striking pattern of flakes and furrows with an attractive blue-green lichen growth. The towering Monterey (Radiata) Pine (*Pinus radiata*) above the Sportsground (#7) is patterned with bright yellow lichen.

Near the bridge in List's Garden, a native Tree Fuchsia (*Fuchsia excorticata*) (#8) is noticeable with its distinctive rich orange colour and flaking papery bark which was reputedly a traditional source of purple dye and ink.



If you would like an entertaining read about bark see “Trees and their Bark” by John and Bunny Mortimer (Taitua Books, 2004).

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#1 *Allocasuarina torulosa*
Eastern Hillside



#2 *Prunus*
Ambush Gully



#3 *Cydonia oblonga*
Ambush Gully



#4 *Platanus acerifolia*
Mason Drive
near Racecourse Walk entrance



#5 *Platanus acerifolia*
near Kaimata Street



#8 *Fuchsia excorticata*
List's Garden



#7 *Pinus radiata*
above the Sportsground



#6 *Pinus nigra*
Eastern Hillside

Photos Elise Smith

The planting of Kauri Grove

David Medway

At its monthly meeting on 13/8/1935, the Pukekura Park Board was presented with the following report by Thomas Horton, Superintendent, on the area of the Park he considered to be the most suitable for establishing a tree plantation consisting of New Zealand forest timber trees (*Taranaki Herald* 14/8/1935).

“There is a very large area (from 30 to 40 acres) of native bush in Pukekura Park, comprising mostly all those dwarf and medium growing varieties such as are common in the native bush of this coast, and growing amongst them are only a few of the principal timber trees. We have practically every variety of timber tree, but only in small numbers, and there are more kohekohe than any other variety. The idea of planting an area in all our best timber trees is an excellent one in my opinion, and I strongly urge that it be done, especially in view of the fact that every variety does well in the park and no experimental planting will be necessary. There is no doubt that a plantation such as this would be of intense interest to generations to come. I do not know of any area embracing these varieties ever having been planted in any part of the Dominion before. You will notice that in my list of trees given below I have suggested more than double the number of kauris than any other variety. My reason for this is that, although this tree does not grow naturally south of the Auckland province, those that have been planted here have done remarkably well Considering all the facts, I have no hesitation in recommending that kauris be made the special feature of the new plantation if the scheme is adopted. After a careful survey of all the park lands, I find that an area fronting Brooklands Road would be the most suitable site. This area is eminently suitable for such a project and could be prepared for planting in 1936. The matter of cost would be a considerable one, and the minimum cost of the trees would not be less than £150 if purchased from a nurseryman in the ordinary way. To overcome this difficulty I would suggest either the purchase or collection of one or two-year seedling plants, and growing them in our own nursery. In one or two years they would be ready to plant in their permanent position and would probably cost only about half of the aforementioned sum. If the scheme is adopted, I would suggest that we receive what trees we can now and plant them in our nursery this spring. The area suggested can be extended to about double the size if necessary”. Horton advised the Board of the trees he proposed – “250 each of white pine, totara, rimu, matai, puriri; 125 each of birch, hinau, maire, pukatea, kohekohe, yellow pine, miro; 625 of kauri; also 200 Lawsoniana for shelter”. We learn from Horton’s work diary for 19/12/1932 – 11/8/1937 (Puke Ariki ARC 2003-860, Box 3) that, as at 15/6/1935, he planned to plant the 2750 native trees in 22 rows each of 125 trees.

Board members expressed approval of the comprehensiveness of Horton’s report. The Chairman considered the proposed scheme to be one of the soundest the Board could embark upon. The Board was advised that some of its bequest money would be available for the work if it was carried out. The Board decided to hold a field day as soon as possible to go over the work and glean some idea of its extent. Horton told the Board at its next meeting on 10/9/1935 that he was anxious to make a start by the end of the month to obtain the necessary trees so that they might be put in the nursery for planting out the next year (*Taranaki Herald* 11/9/1935). Members of the Board and New Plymouth Borough Council inspected the site of the proposed planting at Brooklands on 23/9/1935 (Horton’s work diary).

Horton informed the Park Board on 21/4/1936 that fencing and other preparatory work for the new planting scheme would be commenced that week (*Taranaki Herald* 22/4/1936). An engineer visited the site on

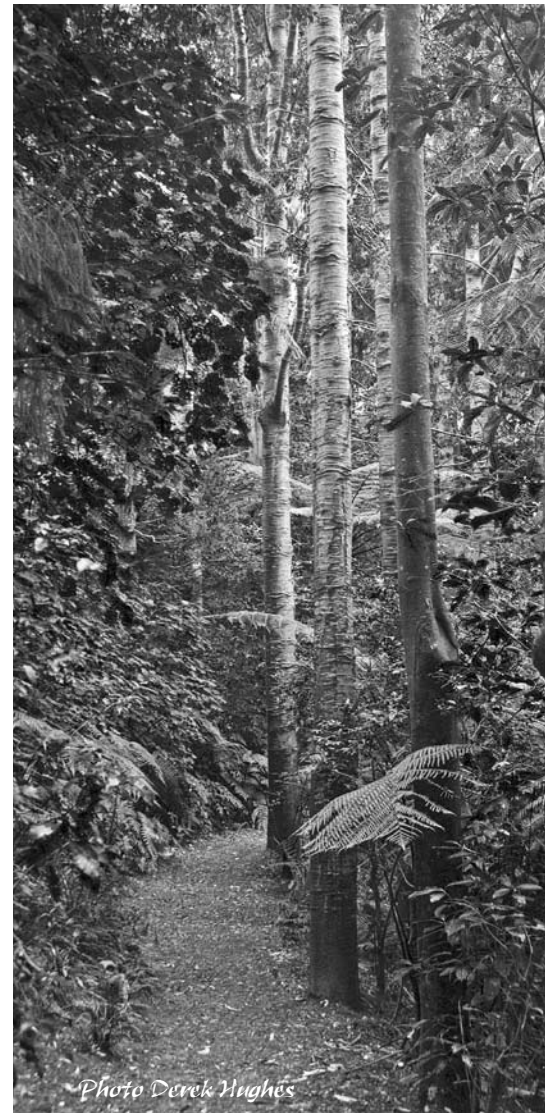


Photo Derek Hughes



28/5/1936 to survey and put in pegs showing boundary lines on Brooklands Road and private properties adjoining the area to be planted (Horton's work diary). Preparation for planting the new forest reserve was the principal work being done when the Board met on 9/6/1936. Horton reported that a good deal of draining had been required to get water off low-lying portions, and there was still much grubbing, digging, and fencing to be done (*Taranaki Herald* 10/6/1936). Again, when the Board next met on 14/7/1936, the principal work had been the continued preparation of the ground for the new forest reserve. Horton advised that most of the first section of the scheme would be ready for planting the following week. Part of the boundary fence between Brooklands and adjoining private properties had been erected through the centre of a very wet, swampy area which it had been necessary to drain (*Taranaki Herald* 15/7/1936).



Left & above: Inside Kauri Grove today.

Kauri Grove from Brooklands Road today.

The first trees were planted in the new forest plantation on 5/8/1936, which was Arbor Day. Further plantings took place there throughout August (Horton's work diary). Horton reported to the Park Board at its meeting on 8/9/1936 that planting of the new native forest area had been completed (*Taranaki Herald* 9/9/1936). We learn from his afore-mentioned work diary, under 9/9/1936, that the following 2245 trees had been planted – "350 Kauri; 50 Titoki; 50 Taraire; 100 Rimu; 25 Hinau; 25 Porokaiwhiri; 25 Rewarewa; 25 Pukatea; 50 Mangaeho; 200 Pohutukawa; 200 Ngaio; 100 Red Beech; 50 Silver Beech; 25 Maire; 10 Toru; 50 Tanekaha; 200 White Pine; 100 Matai; 150 Totara; 50 Tawapou; 200 Kowhai; 10 Puriri; 25 Towai; 100 Lawsoniana; 75 Thuja plicata".

The work completed at the new forest area in 1936 received favourable review in the *Taranaki Herald* of 15/9/1936 - "The past five months have seen a transformation effected to an area of rough wasteland in Brooklands Park. A wild area, partly swamp and partly a hill slope covered with fern, gorse, blackberry and broom has been developed into a plantation of practically every variety of New Zealand native timber trees. The unsightly area at Brooklands had for some time detracted from the general beauty of the park, and rather than leave the area in its dilapidated condition it was decided to clear up the whole section, drain the swamp, thoroughly cultivate the whole area and plant it with New Zealand native trees, few of which are left growing in the immediate vicinity of New Plymouth. Nearly all the old timber trees that were growing in the forests here were removed years ago for timber. The scheme was suggested by Mr. T. Horton, F.R.H.S., superintendent of Pukekura Park, received the approval of the Park committee and was then confirmed by the New Plymouth Borough Council. The Borough Council was so pleased with the project that it voted £500 towards the expense, to be spread over four years. A gift of £250 towards the carrying out of the work was made by the Bruce Trust. The work was put in hand early in April and all of the operations planned for this year have now been completed. Trees to the value of £106/15/- were planted, of which the park nursery supplied plants to the value of £43/5/-.

The total cost of labour, trees and fencing was approximately £300. All the swamp area which was drained early in the winter months was dug and planted in white pines. The principal trees planted on the main area were kauris, of which 300 were planted in two blocks. Also planted were quite large numbers of matai, rimu, taraire, tawapou, red and silver beech, puriri, maire, rewarewa, and, in fact, practically every variety of native timber tree. On the high range above the plantation a row of pohutukawa trees was planted to make the eastern shelter belt. Lawsoniana trees have also been planted on the southern side for shelter. Mr. Horton is confident of the success of the planting scheme. Next year a similar adjoining area is to be planted".



Photos Derek Hughes

Horton advised the Park Committee in April 1937 that the native forest plantation was in good order. About 50 trees needed to be replaced, but this was only a small proportion of those planted (*Taranaki Herald* 14/4/1937). In mid-June 1937, a fence at the corner of Brooklands Road was removed in readiness to extend the planting of the plantation, digging for trees on the extension area was finished on 30/6/1937, and planting took place there on 9-11/8/1937 (Horton's work diary). Horton advised the Park Committee at its meeting on 10/8/1937 that 360 native timber trees had been planted in the extension area. The Committee expressed its appreciation of the generosity of the Bruce Trust in making the native forest plantation possible. It decided to erect a notice board in recognition of this.

Planting of the forest extension area was continued in 1938. Horton started two men on that work on 11/5/1938. On 27-29/7/1938, "trees arrived from D(uncan) & D(avies) for forest planting. Put in the Kauri and heeled others". Further planting in the extension area took place on 3, 4 and 8/8/1938 (Horton's work diary for 13/8/1937-9/11/1943 – Puke Ariki ARC 2003-860, Box 1). Horton advised the meeting of the Park Committee on 9/8/1938 that fences, no longer required for protection purposes, were being taken down and all good posts, battens, and wire carefully stored (*Taranaki Herald* 10/8/1938). Horton and a staff member completed the planting of the forest extension scheme on 16 and 17/8/1938 (Horton's work diary).

We learn from Horton's notations in his afore-mentioned work diary, under 9/9/1936, that the following 1570 trees were planted in the extension area in 1937 and 1938 – "150 Kauri; 100 Rimu; 25 Hinau; 100 Rewarewa; 25 Pukatea; 200 Pohutukawa; 100 Maire; 50 Tanekaha; 100 White Pine; 150 Totara; 500 Kowhai; 20 Puriri; 50 Lawsoniana". The Park Committee, at its meeting on 13/9/1938, gave Horton authority to cut some small native growth in the newly-planted forest area. Horton told the Committee that the trees were very diseased and the disease was spreading to the young trees recently planted (*Taranaki Herald* 14/9/1938).

On 13/5/1940, Horton wrote a "Brief report on trees planted in the Brooklands native forest reserve" for the annual meeting of the Park Committee the next day. Fortunately, his original report still survives (Puke Ariki ARC 2003-860, Box 4, Folder 41) – "The area is approximately 10 acres. The total number of trees planted is 3815. The varieties include all the principal native timber trees a list of which is attached. After a careful inspection of these trees not more than 2 per cent are not doing well. The Matai are not doing as well as most of the kinds. They require shelter. The shelter planted will be effective after this season. The Totara, Rimu, Hinau, Rewa-rewa and Kauri are making particularly good growth, as also are the White Pines planted in the swamp areas. In the first area planted the height of the trees ranges from three to nine feet, the average being about four feet six inches. I think it is definitely established that the Kauri can be grown successfully here, for out of 500 in this reserve we have had scarcely a failure, and though only planted three years, many are six feet high and are very strong and healthy. Since planting, these trees have been dug around each winter, and the ground hoed in the summer. This cultivation has ensured success. From now on this work will not be necessary, except on the small area planted last. Grass and rubbish will grow abundantly and this will require scything about twice a year. The cost of this work and other essential maintenance will be approximately £75 per annum for the next three years, after which the cost of maintenance should be very light. Trees planted are as follows – 500 Kauri; 50 Titoki; 50 Taraire; 200 Rimu; 50 Hinau; 25 Porokaiwhiri; 125 Rewa-rewa; 50 Pukatea; 50 Mangaeho; 400 Pohutukawa; 200 Ngaio; 100 Red Beech; 50 Silver Beech; 125 Maire; 10 Toru; 100 Tanekaha; 300 White Pine; 100 Matai; 300 Totara; 50 Tawapou; 700 Kowhai; 30 Puriri; 25 Towhai; 150 Lawsoniana; 75 Thuja plicata. Total 3815." On 1/8/1940, about 50 trees were planted to replace the failures mentioned in the report (Horton's work diary).



Facing page and right: Inside Kauri Grove today.

Photo David Medway



Goodwin Dell revamp above

Showing a few of the colourful azaleas above mass hostas



A view of the Bowl showing some of the new plantings



Photos Derek Hughes

Spring update

**Ian Hutchinson
Technical Officer Pukekura Park**

Over the last few months the Park team has worked on a number of garden and border renovation projects in Pukekura Park and Brooklands.

The herbaceous border in Brooklands Park has undergone renovation work which involved lifting groups of plants, composting the soil, and then resetting. Some of the existing plants have been put back as smaller groups in order to make space for a range of new perennials that include varieties of some old favorites like *Achillea*, *Artemisia*, *Brachyscome*, *Crococsmia*, *Geranium*, *Heliopsis*, *Kniphofia*, *Monarda*, *Penstemon*, and *Phlox*. We have rearranged the colour groups along the border starting at the north end with reds and oranges, then purples, pink and silver, yellows and creams, finishing up with another small pink section near the compound gate. The plants are now starting to respond to the warmth and slowly lengthening days, finally showing positive growth. The finishing touch to this renovation will be mulching the border with composted bark to further feed the soil and to help keep the weeds down. In the Four Seasons border we have planted some new Asiatic and *auratum* lilies to add to the summer flowering features in this border - they should smell nice too.

In the Bowl of Brooklands, the gardens either side of the stage have been tidied and replanted as also have some areas around the lake margins. In the stage gardens, we have planted a selection of South African rushes *Chondropetalum (Elegia) tectorum*, *Rhodocoma capensis*, and *Cannomois grandis* as a collection feature. On the north side of the Sound Shell we have planted some Tasmanian Tree Ferns *Dicksonia antarctica* which are similar to our Golden Wheki-ponga *Dicksonia fibrosa*. We also have on order a collection of various taro species which will be planted under the trees on the Racecourse side of the Lily Pond as a bold textural foliage feature.

The Gables garden development has continued this year with the creation of a new garden at the back of The Gables, which we have named the Studio Garden, to complement the grapevines and to further disguise the fence. We have created a small orchard in and around the existing grapefruit and lemon trees. In the orchard, we have planted a new Meyer lemon, three mandarins, pomegranates, and a cranberry hedge. The citrus trees were some left-overs from another Council orchard project which needed a good home so it seemed that The Gables garden would be as good a home as any. The cranberry's came from Adrienne Tatham who is a member of The Friends gardening group that helps look after the garden. The new garden and orchard will add to the interest in this area behind The Gables and provide visitors with something to look at if they venture around there. We have also planted some more autumn and spring flowering bulbs, as well as liliiums for the summer and the old fashioned rose varieties 'Souvenir de la Malmaison', 'Charles de Mills', 'Felicia', 'William Lobb', and 'Greensleeves'.

In Pukekura Park, we have added to the plantings of clivias along the sides of the track on the lower section of Smith Walk between the Waterwheel and Palm Lawn. They are a selection of the various colour forms, reds, orange, yellow, and peach shades which are created by crossing orange and yellow flowered forms. The Goodwin Dell revamp project which was started in the autumn has involved opening up the center to create a new larger almost oval to circular lawn area. The work is progressing slowly because it has been hampered by the very wet weather we have had lately. However, it will be worth waiting for. This new lawn will make the dell seem more spacious and give a better view of the gardens. It is hoped that it will become a space in which one can linger rather than being purely a transition area that is walked through without stopping. We have added some new deciduous azaleas to the gardens so there are some younger plants to carry the garden into the future, and we intend to propagate from the existing collection of deciduous azaleas to have replacement plants for the future also.

Give us a sign

**Donna Christiansen
Technical Officer Fernery and Display Houses**



Photos Derek Hughes

We have been installing a number of new signs over the winter. The most impressive are the informative and colourful signs at both entrances which catch the visitors attention as they walk past and give a glimpse of what is in store for them as they wander through the Display Houses. On the same theme, we have two small signs for each Display House which name the houses and have been strategically placed to let visitors know where they are situated. This is aided by a map that is available from a brochure dispenser at the Fred Parker Lawn entrance and by the visitor's book. We also replaced the information signs around the Tea House as they had become battered over the years. We now have two colourful new signs, one by the cutting near the Tea House and the other at the bottom of Horton Walk.



A new stone cascade water feature and pump has been installed in the fish pond in the Tropical House. Not only does it provide the wonderful sound of running water - our goldfish have a new lease of life and are performing well, earning their keep with many donations!

Our next big event is the Rhododendron and Garden Festival. Since the end of September we have been busy getting things ready. We are constructing a Japanese-themed display in The Annex, and over the Festival we will be hosting the New Plymouth Bonsai Club who will be displaying their Bonsai plants. The Club will have members present at the Fernery to answer questions about this wonderful artistic form of gardening. They will also have a workshop on Bonsai after the Festival, details of which will be available when a date has been finalised.



The Brooklands Puriri

David Medway

The earliest published description I have found of the notable Puriri (*Vitex lucens*) which grows near the Kaimata Street entrance to Brooklands Park was by W. W. Smith, Curator of Pukekura Park from 1908-1920. It appeared in the *Taranaki Herald* of 2 September 1933 under the heading “Famous tree. Puriri at Brooklands. Monarch of the bush” as follows:

“A feature of the bush at Brooklands is a large puriri tree which has a circumference of 26ft 6in (8ft 2in diameter), a height of 70 feet, and a length of trunk to first tier of branches of 31 feet. The trunk was formerly the centre one of three. The large scars on each side of the tree show that the two basal limbs were also of large size when they were blown down at a former period, but they have since decayed and disappeared. The top branches have been somewhat shorn by the strong west winds, and are contracted by the top growth of the adjacent trees. The tree is a magnificent specimen of its species, and gives the largest and longest trunk measurement of all specimens of puriri that I have measured. Its approximate age may be ascertained by the growth of young puriri trees planted since the settlement of Taranaki. Puriri trees grown from seed sown nineteen years ago and planted the following year, have stems twelve inches in diameter four feet from the ground. Like other native trees, the puriri varies much in vigour of growth and robustness, according to the soil and situation in which they are growing. It has been said that the giant Brooklands puriri was long tabooed by the Maoris, but I cannot find any records of such in Taranaki Native history or traditions. They tabooed areas of forests for bird-protection and food-production purposes, but they were not tree worshippers. They loved and preserved glorious native scenery and loved Tane, the god of the forest”.

Two days later, on 4 September 1933, the *Taranaki Daily News* published articles about Brooklands based on information provided by Thomas Boulton who had been Newton King’s head gardener for nearly 40 years. In one of those articles it was stated that near the outer edge of the bush at Brooklands “is an ancient puriri, claimed to be one of the finest specimens in New Zealand. It is said to be 2000 years oldIt is hollow, yet life appears to exist in the outer covering of bark which is now steadily growing over triangular scars believed to have been inflicted by the fires of hunting parties of old Maories. High up its smooth trunk is a gap below a small branch and here can be seen the yellow of honeycomb and the black specks of bees”.

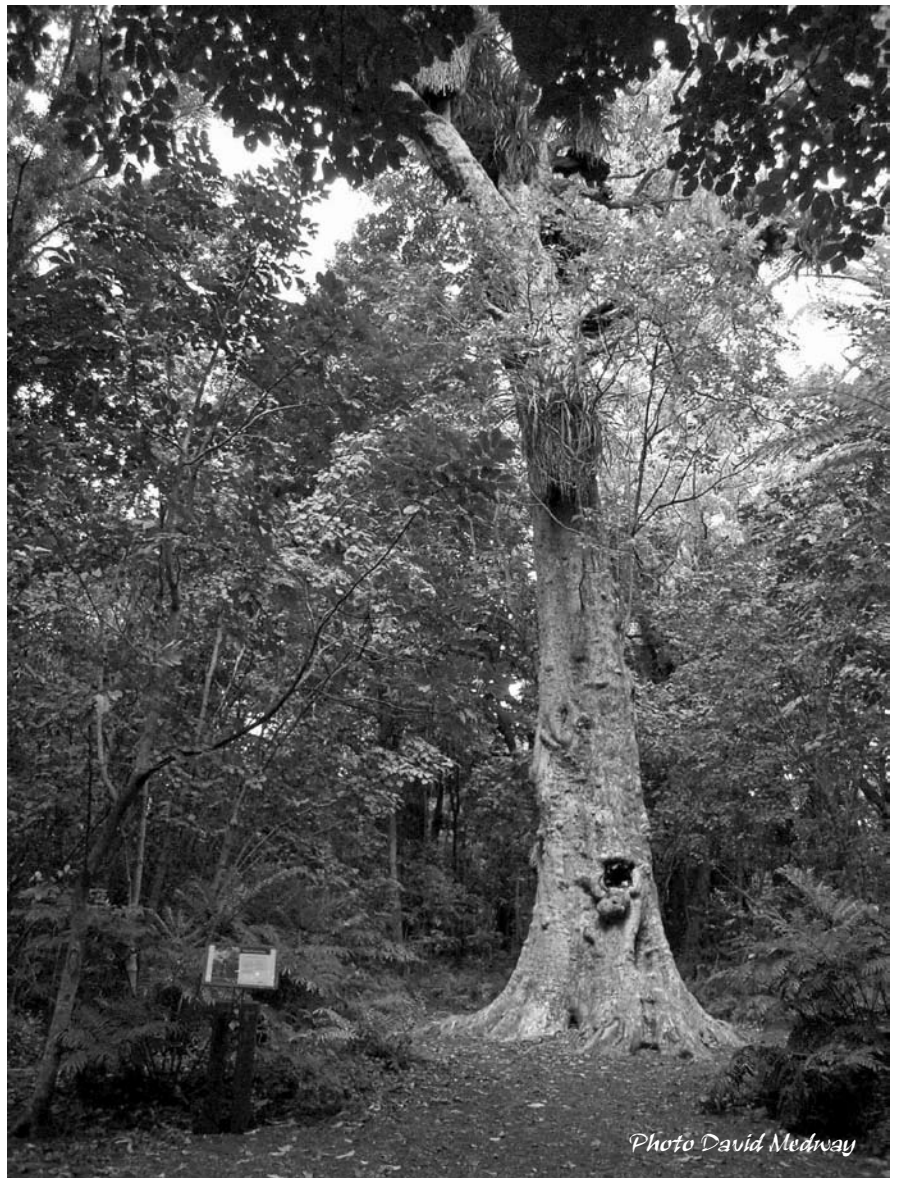


Photo David Medway

Karaka fruits as a source of food for birds in Pukekura Park and Brooklands

David Medway

In my article “Karaka fruits and Tui in Pukekura Park and Brooklands”, which appeared in the last issue (June 2010) of this *Magazine*, I mentioned that I spent a total of about 26 hours throughout the 2010 Karaka (*Corynocarpus laevigatus*) fruiting season specifically observing birds feeding at Karaka fruits in the Park. I recorded my observations of Tui (*Prosthemadera novaeseelandiae*) feeding on the flesh of those fruits in the Park, and concluded that my few records of them doing so suggest that Karaka fruits are not a prime source of food for Tui there.

During my study, I saw several other bird species feed at ripe Karaka fruits much more often than did Tui. They were the Silvereye (*Zosterops lateralis*), Myna (*Acridotheres tristis*), Starling (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*), Blackbird (*Turdus merula*), and New Zealand Pigeon (*Hemiphaga novaeseelandiae*). Of these species, apparently only the Blackbird and New Zealand Pigeon are recorded in the published literature as feeding on Karaka fruits (*New Zealand Journal of Ecology* 34(1)(2010): 66-85).

All of the species I observed fed at fruits on the trees, but the Mynas, House Sparrows, and Blackbirds also fed at fallen fruits on the ground. With the exception of the pigeons, they all pecked at and ate the flesh of the fruits. I never saw any of them attempt to swallow a whole fruit. The pigeons swallowed whole fruits, but even they sometimes found a fruit too large to swallow and ejected it after unsuccessfully attempting to get it down.

I recorded the number of birds of each species that I saw feeding at Karaka fruits both on and under the trees I observed. I obtained a total of 225 feeding records apportioned between the species as follows - Silvereye (79), Myna (52), Starling (36), House Sparrow (23), Blackbird (22), New Zealand Pigeon (11), and Tui (2). On two occasions I saw an adult House Sparrow repeatedly pick flesh from Karaka fruits and feed it to an accompanying well-grown immature, and on one occasion I saw an adult Blackbird doing likewise. My many feeding observations suggest that, with the exception of the Tui, ripe Karaka fruits in the Park are an important source of food for these birds when they are available.

New Zealand Pigeons are well-known dispersers of Karaka seeds. I believe that Blackbirds must also effectively disperse them. Blackbirds are widely distributed and abundant throughout New Zealand. They feed mostly on the ground, including very commonly on the forest floor. I have never seen a Blackbird attempt to swallow a whole Karaka fruit, but I have often seen them in the Park on the forest floor under a Karaka tree pecking at and eating the flesh of fallen fruit and sometimes, when they are disturbed, I have seen them carry the whole fruit off further into the under-story. During my recent study I saw a Blackbird fly out of a Karaka tree carrying a large fruit in its bill over an open grassed area and into a patch of forest about 60 metres away. No doubt Blackbirds transport Karaka fruits varying distances in this manner much more often than is noticed.



Photo David Medway

Silvereye eating flesh of Karaka fruit.