



**296-008 Te Karamu**  
**Walnut Tree Assessment**  
Karamu Stream, Havelock North, Hawkes Bay

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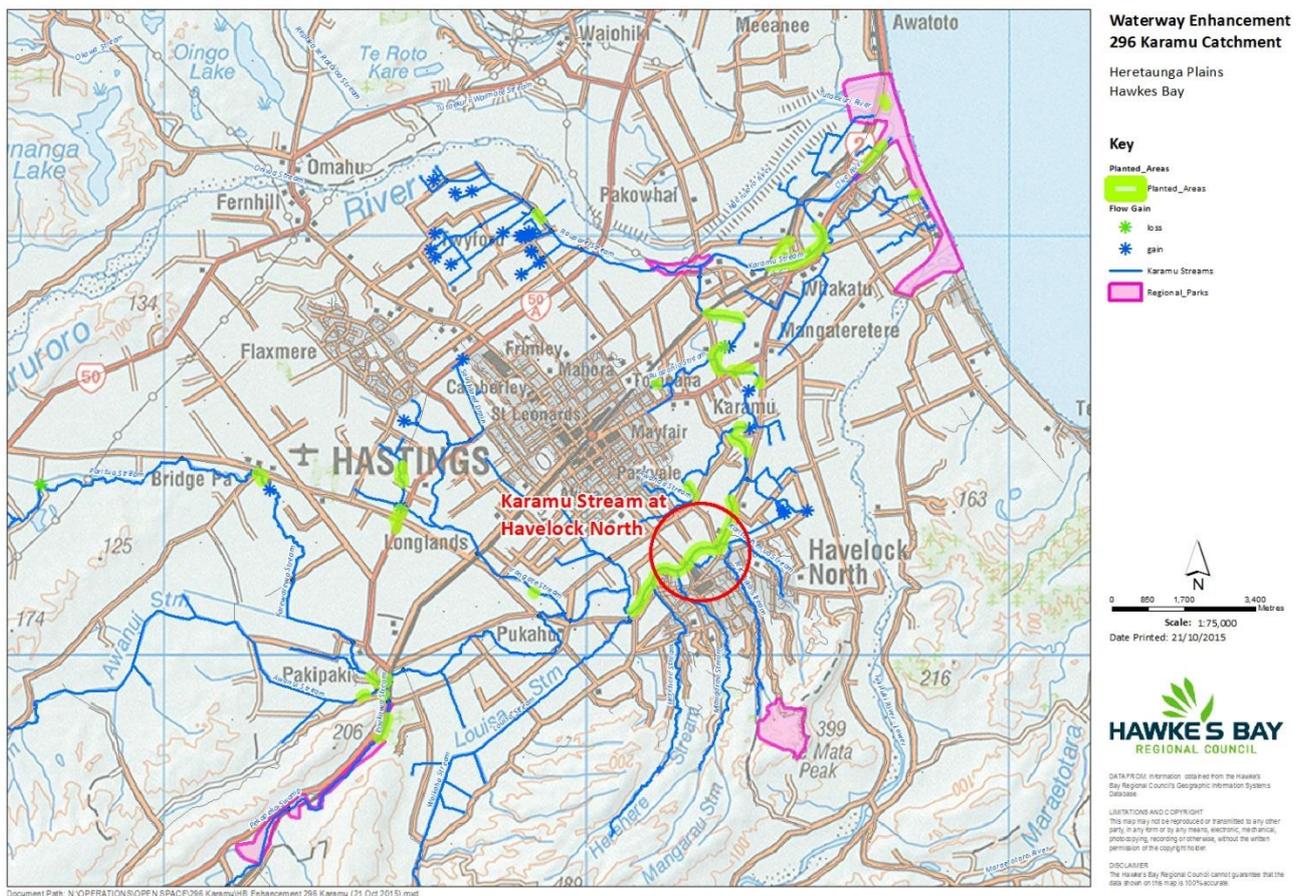
Cover photo: Walnut trees and native planting at Karamu Stream, looking downstream (4.24pm, 26 Aug 2015).

## 1 Introduction

This report has been prepared to review and reassess the 21 walnut trees (*Juglans regia*, Persian or English walnut) on the Karamu Stream at Havelock North, following continued requests from residents of Mary Doyle (the adjacent landowner to the south-east) for their removal. The trees are estimated to be approx. 80 to 100 years in age<sup>1</sup> (planted between 1915 and 1935).

## 2 Location & Site Description

The site is located on the right bank of the Karamu Stream, between Crosses Rd and Havelock bridges, Havelock North, and approximately 18kms upstream of the Waitangi Estuary. The site is adjacent to Mary Doyle Lifecare Complex, 3 Karanema Dr, Havelock North, and is part of the historic flood channel of the Ngaruroro River.



**Figure 1:** Topo Map showing lower Karamu Catchment

The site is part of the Karamu Enhancement project which, in this location, includes a mown grass area and native plantings used for public recreation.

## 3 Consultation

Regular informal meetings with individual residents have been held over the last year. Two formal meetings with Mary Doyle residents (attended by Regional Councillor Rex Graham, and Antony Rewcastle (Open Space Development Officer)), have been held:

<sup>1</sup> *Pers comm* Stephen Shaw, Arboricultural Consultant (Sep 2015).

- An initial Mary Doyle residents information meeting at 3.30pm on Thursday 3 September 2015, at Riverstones Cafe, Mary Doyle.
- Mary Doyle residents information meeting - Part 2 at 3.30pm on Tuesday 22 September 2015 (refer Attachment D - Notes of WALNUT TREES meeting at Mary Doyle (22 Sep 2015)).

Consultation with the **St Columba's Havelock North Environmental House Group** (SCHNEHG) through Jim Watt (one of the group that initiated 'Operation Karamu'), occurred through meetings and correspondence in August and September 2015, and this background information has been useful.

This assessment has been circulated in consultation with **Karamu Enhancement Group** (KEG) through Drew Broadley (KEG Chairperson), and KEG approves and supports the proposal.

Additional public consultation and media notification is proposed to be undertaken in December 2015.

## 4 Background & History

### 4.1 Statutory Background<sup>2</sup>

In summary, the Property Law Act 2007 provides for a responsibility on the tree owner against any nuisance or damage which their trees may cause to neighbours, if it is fair and reasonable and necessary to remove or prevent a risk..., undue obstruction... or interference..., however the Court would also balance any hardship to the owner and any other benefits (public amenity, recreation, soil conservation and river control).

Where tree roots or branches encroach adjoining land, the owner is entitled to cut them to the boundary line (and return them to the property where the tree is located) to abate the nuisance.

Where trees are grown on a common boundary they may constitute a 'live fence' under the provision of the Fencing Act 1978 and adjoining landowners would be required to contribute equally to the cost of maintaining this type of 'fence'.

Health and safety, maintenance issues, potential risks, and effects on neighbouring properties can be managed by Council through regular inspections (to be required as determined by the level of risk) and management plans.

### 4.2 Site History

The present channel of the Karamu Stream was left behind by the Ngaruroro River when it moved to its new channel in 1867. Prior to 1997 there was limited public access due to crack willow growth and the adjacent neighbour (DSIR orchard manager, Gordon Hoskins) used to make beer money from selling the walnuts<sup>3</sup>.

In 1997 a native revegetation programme (Operation Karamu) began at a section of the Karamu where it passes through Havelock North (see **Figure 3: Plan of Operation Karamu (staged revegetation of the Karamu Stream, HNth), July 1997.**). Native planting was carried out around the walnut trees over 3 years, from 1998 to 2000. St Columba's Havelock North Environmental House Group (SCHNEHG) led by Hettie and Cyril Park initiated the 'Operation Karamu' ecological project. HBRC Councillor Eileen von Dadelsen was



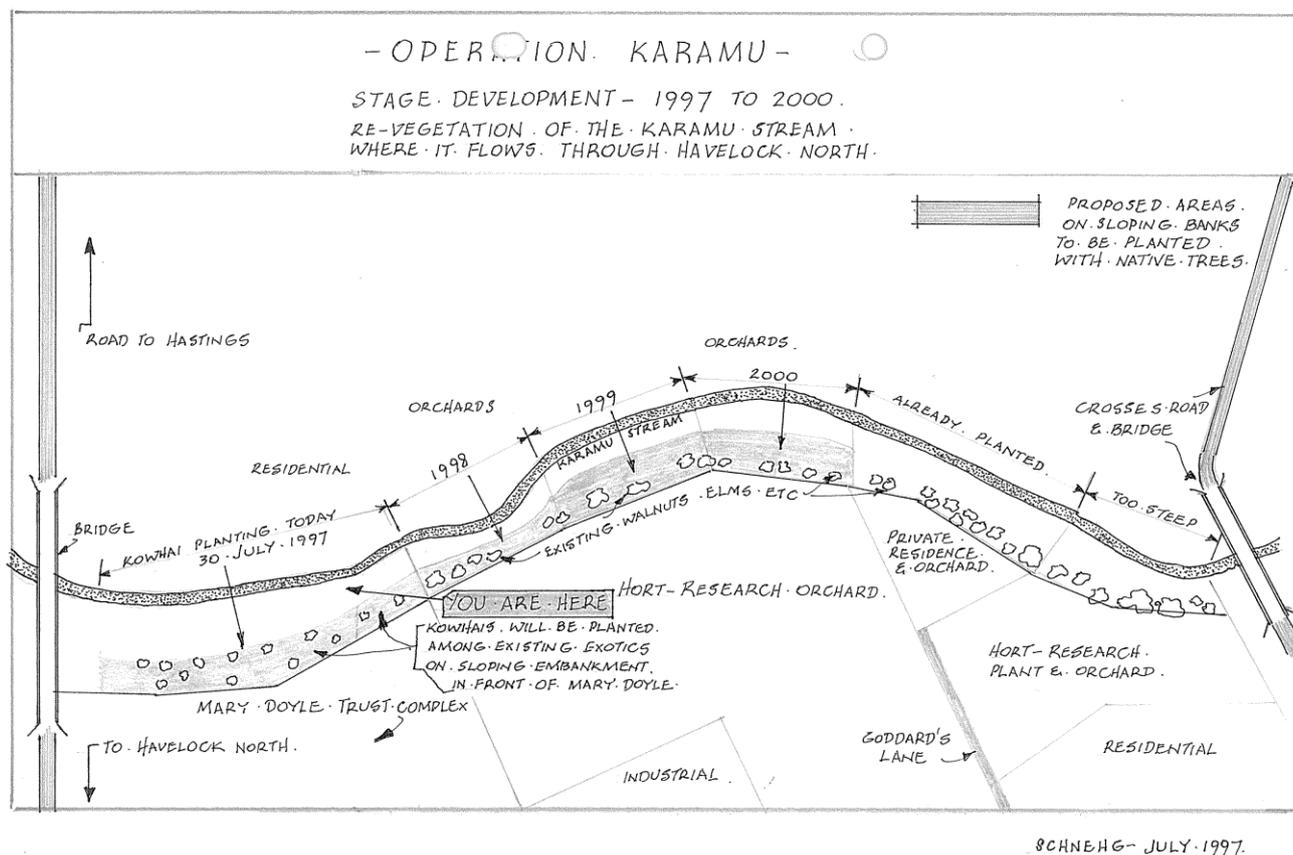
**Figure 2:** View of Karamu Stream upstream from Crosses Rd Bridge to HNth Bridge. Photo taken by T.B. Waugh, Apr 1988.

<sup>2</sup> The Property Group (9 Mar 2015). **Trees and Neighbours Advice 712864 - Ltr to HBRC.**

<sup>3</sup> Jim Watt (31 Aug 2015). **'Park's Reach'** background information (Draft).

also involved with the development of the wider Karamu Enhancement project, which involved a corridor of planting from Paki Paki to Clive.

As part of the 'Operation Karamu' native revegetation programme, it was anticipated that the walnut trees (and other exotics) would be phased out (removed) as the natives became established<sup>4</sup>. Further information on the 'Karamu Stream Walkway (Heritage Trail)' is available online on page 20 to 21 of the Heritage Trail brochure<sup>5</sup>.



**Figure 3:** Plan of Operation Karamu (staged revegetation of the Karamu Stream, HNth), July 1997.

On 20 February 2003 a tree assessment<sup>6</sup> recommended the removal of a small (DBH 350mm, 10m high) *Juglans regia*, which was a distance of 2m from the boundary to Mary Doyle Trust, to "...avoid future problems and continued maintenance costs", and the pruning of two other *Juglans regia* (at a cost of \$850+GST).

In October 2011 a Karamu Stream Walnut Trees - Condition Review<sup>7</sup> provided an assessment of 26 walnut trees, recommending the removal of four trees, for reasons including severe decline, partial uprooting and boundary encroachment. In November 2012 another tree was removed due to boundary encroachment and developing stability problems.

In April 2014 a Karamu Stream Walnut Trees - Condition Review<sup>8</sup> was carried out for the purpose of managing risk from tree failures and any canopy encroachment issues to the general public and adjacent property owners, and recommended (as a high priority) that several trees were pruned to address the deadwood dieback and lateral branch issues, and boundary encroachment issues (at a cost of \$6,300+GST).

<sup>4</sup> Jim Watt (31 Aug 2015). 'Park's Reach' (Draft).

<sup>5</sup> Heritage Trail brochure (Nov 2003). Hastings District Heritage Trail Society Inc.  
<https://www.hastingsdc.govt.nz/files/all/documents/heritagetrails/hnkaratrain.pdf>

<sup>6</sup> Stephen Shaw, HB Tree Surgeons (20 Feb 2003). Tree Assessment on a *Juglans regia*, Karamu Stream, HN.

<sup>7</sup> Stephen Shaw, Arboricultural Consultant (October 2011). HBRC – Karamu Stream Walnut Trees, Condition Review.

<sup>8</sup> Stephen Shaw, Arboricultural Consultant (April 2014). HBRC Karamu Stream Walnut Trees, Condition Review.

### 4.3 Te Karamu Enhancement Strategy

The 'Te Karamu - Catchment Review and Options for Enhancement' showed "...that there are many opportunities to provide increased flood protection, to improve water quality and enhance the habitat, while also improving amenity and recreation opportunities"<sup>9</sup>. The 'values and management objectives' of the Review<sup>10</sup> (Drainage and flood control; Ecology and ecosystem; Amenity; and Recreation) are consistent with the Hawke's Bay Regional Park Network values<sup>11</sup>.

The relevant general objectives of the Draft 'Te Karamu Enhancement – Management Strategy'<sup>12</sup> include the following:

**Objective 2: Protect and Preserve Existing Animals and Plants that are Desirable**

*Identify, protect and preserve existing animals and plants that are present and desirable, particularly any endangered, rare, and uncommon species.*

**Objective 3: Re-establish Indigenous Vegetation**

*Re-establish a framework of indigenous vegetation, based on that which may have occurred before humans arrived in Hawke's Bay.*

**Objective 4: Maintain the integrity of important cultural sites and scenic landmarks**

*Identify, protect and preserve cultural sites and scenic landmarks.*



**Figure 4:** View downstream of Karamu Stream with 'zigzag' path, walnut trees and native planting on right bank. The pathway and 2014 school planting is on the left bank. Drone photo taken by Te Kaha Hawaikirangi, 10.26am, **29 Sep 2015**.

<sup>9</sup> **Te Karamu Catchment Review & Options for Enhancement** (15 June 2004). Asset management / Engineering Section, Environmental Management Group, Hawke's Bay Regional Council. Part 19, Pg 363.

<sup>10</sup> **Te Karamu Catchment Review & Options for Enhancement** (15 June 2004). Asset management / Engineering Section, Environmental Management Group, Hawke's Bay Regional Council. Part 15.3, Pg 8.

<sup>11</sup> **Hawke's Bay Regional Park Network Plan** (2014). ISBN: 1-877405-81-7. Hawke's Bay Regional Council (HBRC Plan 4552). Part 4.0, Pg 6.

<sup>12</sup> HBRC 296-081 **Te Karamu Enhancement – Draft Management Strategy** (Sep 2015). Part 8, Pg 13.

#### 4.4 *Juglans regia* (Persian or English walnut)

*Juglans regia* is a large, deciduous tree from Central Asia<sup>13</sup>, which can reach heights of 25–35m, and with a trunk up to 2m diameter, commonly with a short trunk and broad crown, though taller and narrower in dense forest competition. It is a light-demanding species, requiring full sun to grow well.<sup>14</sup> The fallen leaves, husks, and root system of walnut trees can produce juglone, a chemical which suppresses the growth of other plants.<sup>15</sup> Based on observation, the Karamu walnut trees appear to lose leaves in late May and come into leaf again in late October.

## 5 Assessment & Discussion

Given the position of the trees, within a wide section and high on the outside of the flood berm channel, any effect (positive or adverse) on drainage; flood control, or provision for channel flow capacity is not considered to be significant.

The area is a popular recreation area for local residents and visitors, and the walnuts provide a dominant visual backdrop from both sides of this wide, manicured, and sheltered section of the Karamu Stream. Many local residents also anticipate the autumn season as an opportunity to harvest walnuts.

Unlike the underplanted native trees, the walnut trees are not considered to be an important, threatened, or sensitive species. Whilst walnut trees generally have some recognised (mostly European and Asian) cultural value, they are reasonably common on the Karamu Stream, and there are other walnut trees within 2kms of the site that are accessible by the public. Retaining 5 of the 21 walnuts subject to this assessment would assist in recognising the historical association of the walnuts and would retain opportunities for the public to harvest. Walnut tree #18 and its associated bench seat and sign has some specific cultural value, and it is proposed to retain this tree.

The Havelock North section of the Karamu is an important component of the Karamu Enhancement Strategy given it is a substantial and relatively mature area of native planting, with a central position within the catchment, in close proximity to the urban population of Havelock North, and the walnuts are visible and accessible to the public. An important factor of the Draft 'Te Karamu Enhancement – Management Strategy'<sup>16</sup> is the creation of a node/corridor model (framework) for native habitat re-establishment along the Karamu Stream, incorporating habitat restoration, in-stream habitat, and connectivity. The Havelock North section is one of the first significant stages of the enhancement programme, and is an important 'node' in the proposed model. Given that the native vegetation is likely to respond positively to removal of the walnut trees that are currently shading them, the removal of the walnut trees identified would be consistent with the strategy.

Another factor considered in the Draft 'Te Karamu Enhancement – Management Strategy'<sup>17</sup> is the benefit of planting (or retaining vegetation) on the northern sides of waterways to provide shade, thereby reducing water temperature, weed growth, and fluctuations in oxygen levels. The walnut trees are on the south-eastern side of the stream and therefore removal would not affect shading.

The value of the walnuts is somewhat superseded by the value of the native vegetation which (at 15 to 18 years since planting) has become well established. Many of the species have passed their juvenile growth phase and are reaching maturity. Although the walnuts have potentially suppressed growth, they may also have assisted the native plants by acting as a 'nurse' crop<sup>18</sup>. Given the density of planting and the crowded nature of the vegetation, it appears the walnuts have fulfilled their useful role as a nurse crop and, in most cases, the natives would benefit from their removal and the reduction in competition.

Whilst the walnuts are valued by members of the community for visual amenity, as a backdrop to the Karamu Stream reserve (including some of those living within Mary Doyle), they cause a significant nuisance in terms of shading to the

<sup>13</sup> Sandy Scarrow. 'Citrus, berries, exotic fruit and nuts - Nuts and olives', Te Ara - the Encyclopaedia of New Zealand, updated 13-Jul-12  
URL: <http://www.TeAra.govt.nz/en/citrus-berries-exotic-fruit-and-nuts/page-6>.

<sup>14</sup> From Wikipedia, the free encyclopaedia. [https://en.wikipedia.org/wiki/Juglans\\_regia](https://en.wikipedia.org/wiki/Juglans_regia).

<sup>15</sup> Stephen Shaw, HB Tree Surgeons (20 Feb 2003). **Tree Assessment on a *Juglans regia***, Karamu Stream, HN.

<sup>16</sup> HBRC 296-081 **Te Karamu Enhancement** – Draft Management Strategy (Sep 2015). Part 8, Pg 13.

<sup>17</sup> HBRC 296-081 **Te Karamu Enhancement** – Draft Management Strategy (Sep 2015). Part 8, Pg 13.

<sup>18</sup> A crop of trees or shrubs that fosters the development of another tree species, usually by protecting the second species, during its youth, from frost, insolation, or wind (Ford-Robertson 1971) – from <http://www.treeseearch.fs.fed.us/pubs/27793>.

adjacent residential units (built in the last 5 to 15 years), immediately south of the property boundary. The **Attachment C: Mary Doyle sun path series** indicates that the existing walnuts screen direct sunlight to Units 86 through to 52 for large parts of the day, particularly from the March equinox through winter to the September equinox, as well as late afternoon sun throughout summer. Mary Doyle residents have also identified leaf fall and increases in the rat population as a nuisance caused by the walnut trees adjacent to their units.

Whilst priority work has been undertaken to remove and prune trees, the walnuts will continue to create ongoing maintenance costs, for reasons potentially including: deadwood dieback, decline and lateral branch issues; boundary encroachment; and stability problems and uprooting. Based on recent maintenance, depending on the level of service (and response to requests from Mary Doyle residents), the annual cost of this maintenance can be estimated at approx. \$3,000.

## 6 Cost Estimate

HBRC Works Group have estimated the cost to remove **17** of the remaining **21** walnut trees at approximately **\$30,000**. This work would include:

- Site establishment and management.
- Extraction of walnut trees using a crane and chainsaw operator.
- Removal of large material from site and disposal.
- Chipping of slash material to remain on site.
- Reinstatement of site.

To be carried out when trees are not in leaf, in late May 2016 (over approximately 4 working days), as ground and weather conditions allow.

## 7 Summary & Recommendations

Given the benefits to the establishing native trees and their role as an important component of the wider Karamu Enhancement Strategy; as well as the likelihood of ongoing adverse (nuisance) effects on neighbouring residents (and associated costs in maintaining the walnut trees in this location), staff recommend that **17** of the remaining **21** walnut trees (as indicated on **Attachment A: Map of HN Walnuts** and **Attachment B: Walnut Tree Inventory**) should be removed.

## 8 References, Related Links & Further Information

Hawke's Bay Regional Council (June 2004). **Te Karamu Catchment Review & Options for Enhancement**. Asset management / Engineering Section, Environmental Management Group.

Hawke's Bay Regional Council (June 2015). **Hawke's Bay Biodiversity Strategy: 2015-2050**. Web link [here](#).

Hawke's Bay Regional Council (2014). **Hawke's Bay Regional Park Network Plan**. ISBN: 1-877405-81-7. HBRC Plan 4552. Web link [here](#).

Hawke's Bay Regional Council – **Strategic Plan** (October 2011). ISBN 1-877405-58-2. HBRC Plan No. 4282. Web link [here](#).

Hashiba, K., Wade, O., and Hesketh, W. (August 2014) **Hawke's Bay Biodiversity Inventory: Current state of knowledge**. HBRC Report No. RM13/23 – 4554. Web link [here](#).

## **9 List of Attachments**

**9.1 Attachment A: Map of HN Walnuts**

**9.2 Attachment B: Walnut Tree Inventory**

**9.3 Attachment C: Mary Doyle sun path series**

**9.4 Attachment D - Notes of WALNUT TREES meeting at Mary Doyle (22 Sep 2015)**

**9.5 Attach E - Mary Doyle Walnut Assessment Support**