

Field trip to Piggott Wetland, Buckland, 16 November 2019

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Participants: Jenny Andrew, Paul Asquith, Rieke Behren, Jan Butcher (co-leader), Ewen Cameron, Bev & Geoff Davidson, Yanbin Deng (WBS), John Dyer (Fish & Game), Ben Goodwin, Leslie Haines, Sam Heggie-Gracie, Shelley Heiss-Dunlop (co-leader), Trent Hicks, Peter Hutton, Peter Moosberger, Aimee O'Sullivan (WBS), Helen Preston Jones, Juliet Richmond, Daniel Tait (WBS), Liz Walker, Ian Whitehouse.

Eighteen members of ABS, three visitors from Waikato Bot Soc (WBS) and John Dyer, Northern Region manager for Fish & Game NZ, met together on a fine day to explore the Piggott Wetland Fish & Game block (Fig. 1) that forms part of one of the largest remnant lowland kahikatea (*Dacrycarpus dacrydioides*) forests remaining in the Waikato Region.

The 53.9 ha Piggott Wetland at Parkers Lane, Buckland, (midway between Pukekohe and Tuakau), was purchased in 1978 from the Piggott family by the Franklin Branch of the Auckland Acclimatization Society (since 1990 the Auckland-Waikato Fish & Game Council). Ernest Piggott and Sons were sawmillers, having a timber mill beside Parker Lane bridge. Their intention was to cut down the kahikatea bush on this block until Ernest Piggott suffered a serious accident at the mill in 1939 that resulted in its eventual closure. The block's purchase price, however, still included "cutting rights". Ironically the Acclimatization Society purchased it to save this magnificent stand of increasingly

scarce kahikatea and also the wetlands within the block. This wetland stands out as a rare gem for flora and fauna in the Lower Waikato as it is not flood-protected. That means fish can come and go without being munched up by flood pumps, halted by flap-valves, stop banks and other mechanical contrivances – as occurs on almost any other section of the lower Waikato River's riparian area. The Piggott Wetland has become the very last remaining significant remnant of what was once a large flax (*Phormium tenax*) -dominated wetland, located off Parker Lane in Buckland, south of Pukekohe (Fig. 1)

In anticipation of future urban growth around Pukekohe, a major upgrade of the Pukekohe Wastewater Treatment plant, located adjacent to the Fish & Game block, is well underway. The river levels have changed over the years, due to sand dredging and hydro dams, and there have been ongoing issues with wastewater discharge. Hopefully the present upgrade will rectify these.

At the northern end of the property, where we gathered for an introduction by John Dyer (Fig. 2), the pasture is planted up with exotic fruit-producing tree species. A semi-circle of large swamp cypress trees (*Taxodium distichum*), of which some seedlings were found naturalising, borders the pasture and the modified wetland. This area is predominantly willows (*Salix cinerea* & *S. × fragilis*) with an understorey of sedges and ferns which also borders the edge of the canal/weir system. This



Fig. 1. Location of Piggott Wetland, between Parker Lane and the Waikato River, Buckland, adjacent to the Wastewater Treatment Plant (WWTP) for Pukekohe. Google map modified by Joshua Salter.

enables the six ponds to be kept to a height suitable for recreational shooting. The more common aquatic plants seen were both the native red azolla (*Azolla rubra*) and the introduced ferny azolla (*A. pinnata*), the invasive hornwort (*Ceratophyllum demersum*), parrot's feather (*Myriophyllum aquaticum*) and the yellow-flowering water primrose (*Ludwigia peploides* subsp. *montevidensis*).

The southern half of the property which borders the Waikato River is still covered with native trees. Two long corridors, extending the width of the property, dissect the forest into three blocks, providing open space and a water course (Figs. 3, 4).

Dominant species include the kahikatea with collars of tank lily (*Astelia hastata*) (Figs. 5, 6) and tall nikau (*Rhopalostylis sapida*). Also six good-sized puriri trees (*Vitex lucens*) remain. Small-leaved milk tree, turepo (*Streblus heterophyllus*), swamp mahoe (*Melicytus micranthus*) and thin-leaved coprosma (*Coprosma areolata*) dominate the understorey, along with the widespread common weeds Chinese privet (*Ligustrum sinense*) and Jerusalem cherry (*Solanum pseudocapsicum*), with an impenetrable ground-cover of tradescantia (*Tradescantia fluminensis*) suppressing any regeneration where it occurs (Fig. 7). A small number of biocontrol beetles (*Neolema oglobini*) were released last year, with a plan to release more this year. Coincidentally another biocontrol beetle (*Lema basicostata*) has made its way to Piggott Wetland from a release site 10km away. A rust fungus (*Kordyana brasiliensis*) released last year has established with the hope it will provide control in wetter cooler conditions, whereas the beetles appear to prefer warmer drier conditions. Hopefully the establishment of both bioagents will provide year-round control (Chris McGrannachan, Landcare Research, pers. comm.).

A small number of native tree seedlings that are distributed by birds (karaka, taraire, titoki) were seen growing on the mounds created by the growth of the kahikatea. Some of the mature puriri had a number of seedlings near them. Fluted buttress roots and their associated long arms with 'elbows' were a walker's hazard under the deep carpets of tradescantia (Figs. 8, 9). Kiekie (*Freycinetia banksii*) is common and one clump of approx. 5 m in diameter has been found. A few specimens of the giant hypolepis (*Hypolepis dicksonioides*) (Fig. 10) were examined and a single specimen of the fork fern (*Tmesipteris elongata*) was spotted amongst the epiphytic tank lilies; these are often seen with sickle spleenwort (*Asplenium polyodon*) (Fig. 11).

There is also a good number of clumps of the exotic Royal fern (*Osmunda regalis*) in places (Fig. 12). On the forest edges of the corridors grow tall clumps of the giant gahnia (*Gahnia*

xanthocarpa) (Fig. 13) and flax, along with some pukatea (*Laurelia novae-zelandiae*), kowhai (*Sophora microphylla*) and pigeonwood (*Hedycarya arborea*). And on the fringes of the forest common alder (*Alnus glutinosa*), Chinese privet, Japanese honeysuckle (*Lonicera japonica*) and exotic grasses are plentiful. Reed sweet grass (*Glyceria maxima*) takes every opportunity to fill a space in the waterways.

After lunch the group split in two. Jan led a group to the edge of the river, viewing Kaiwaka No 2 Island (Fig. 1) and, coming back across the exotic North American broom sedge (*Carex scoparia*) field (Figs. 14, 15), returned to the western side. Shelley took her group into another block of bush and found interesting plants. On her return she followed the eastern drain which is densely fringed with pampas grass (*Cortaderia selloana*) and Chinese privet. The block nearest the Waikato River is less extensive with an open area dominated by the bright lime green exotic broom sedge (Fig. 14), standing out amongst exotic grasses and herbs, creeping buttercup (*Ranunculus repens*), the common swamp sedge (*Carex virgata*), and trailing native bindweed (*Calystegia sepium* subsp. *roseata*) with scattered clumps of mingimingi (*Coprosma propinqua*) (Fig. 15).

A patch of the invasive Japanese walnut (*Juglans ailanthera*) was found by the river along with some yucca (*Yucca gigantea*), most likely planted, near a whitebaiting station. A single 3 m tall box alder (*Acer negundo*) was seen within the forest. Of interest to our group was flowering gypsywort (*Lycopus europaeus*) and water plantain (*Alisma plantago-aquatica*), weeds not commonly found in the Auckland region. New to many of us was the rough-edged bordered panic grass (*Entolasia marginata*) that formed extensive carpets in a few places.

John Dyer has been controlling the yellow flag iris (*Iris pseudacorus*) and alligator weed (*Alternanthera philoxeroides*). Also, some of the invasive common alder (*Alnus glutinosa*) have purposefully been left because long-tailed bats have been recorded in the forest. There is a colony of black shags (*Phalacrocorax carbo*) that have been part of the forest for many years (Fig. 7) – we admired their skill in perching/nesting near the tops of the tall, swaying kahikatea.

This extensive wetland, fortunately purchased by Fish & Game, has preserved an outstanding area close to Auckland. It is a hidden gem and with limited access should retain its features. The future of this magnificent kahikatea forest will be interesting to follow, with the potential for natural regeneration occurring from controlling the tradescantia and the ongoing management of



Figs. 2–8: 2. Introduction by Fish & Game Northern Regional Manager, John Dyer. All photos by SHD, in the Piggott Wetland, 13–16 Nov 2019. 3. Open grassy corridors between kahikatea forest blocks, trees estimated to be up to 25–30 m tall. 4. Water corridors dividing sections of the kahikatea forest. 5. Kahikatea supporting large *Astelia hastata* are common throughout the forest. 6. Numerous epiphytes on tall kahikatea. 7. Guano-fed tradescantia under a roosting/nesting black shag colony. 8. Wonderful fluted trunk bases and buttress roots of the kahikatea.



Figs. 9– 5: **9.** Exposed kahikatea roots forming unusual 1 m-tall 'elbows', possibly a result of past flooding. **10.** Ben inspecting the giant hypolepis fern (*Hypolepis dicksonioides*) that created much interest. **11.** Pendant ferns *Tmesipteris elongata* and *Asplenium polyodon* amongst epiphytic *Astelia hastata*. **12.** The invasive Royal fern (*Osmunda regalis*) with fertile fronds, scattered throughout. **13.** Giant gahnia (*Gahnia xanthocarpa*) forming large thickets on the edges of the kahikatea forest. **14.** Locally common exotic broom sedge (*Carex scoparia*). **15.** Open area dominated by the exotic broom sedge with clumps of *Coprosma propinqua*.

invasive weed species (and the movement of new weeds), as well as the effects of the changing Waikato River levels over time; all of which will influence its ongoing long-term existence.

Acknowledgements

We thank John Dyer, Fish & Game manager, for allowing access on to the property. And thanks to both Ewen Cameron and Rhys Gardner for their assistance with some identifications.