

Biological Control of Giant Willow Aphid

Report prepared for Terra Preta Truffles, re: project co-funding



Diane Playle and Peter Marshal at Hackfalls Arboretum, 21 May 2021



Giant willow aphid biological control agent, *Pauesia nigrovaria*, being release near Whakatane, February 2020

Author:	Stephanie sopow
Version No:	1
Version Date:	30 June 2021

Project Identification

Project Name:	Biological control of giant willow aphid (Ministry for Primary Industries' Sustainable Food & Fibre Futures project #19046)
Business Owner:	Stephanie Sopow, Scion
Project Sponsors:	NZ Honey Industry Trust, Bay of Plenty Regional Council (River Managers' Forum), Zespri International, Neil Barr Farm Forestry Foundation, Tera Preta Truffles, Roderick Cameron, plus various in-kind supporters
Project Chair:	Barry Foster, Apiculture New Zealand
Project Lead:	Stephanie Sopow, Scion

Associated Documents

Critical documents that should be read alongside the End Project Report are shown below:

Document Name	Link / Location
ApiNZ conference poster June 2021	Attached

Achievement of Project Objectives

A summary of the achievement of this project's objective(s) is detailed in the table below:

Funding from Terra Preta Truffles was provided in support of continued maintenance of the GWA biological control agent colony, thus making a second field release season possible in 2021.

This has been hugely beneficial to the success of the biological control programme, since 2020 release efforts were hampered by Covid-19 restrictions on staffing and movement. Releases were conducted at 15 locations in 2020, however some obvious geographical gaps remained at the end of the release season.

The extended rearing efforts allowed us to conduct further releases between December 2020 and June 2021. This second season of releases enabled us to broadly cover the New Zealand landscape and fill in the gaps (see Map 1 below).

Surveys for spread of the parasitoid from 2020 release sites have yielded results that exceeded expectations. The parasitoid has been found at distances of up to 98 km from release sites, and in very high numbers (see Map 2 below).

Monitoring for GWA abundance one-year post release has been completed with no clear results to date, which is as expected this early in a biocontrol programme. More extensive monitoring is planned for 2022.

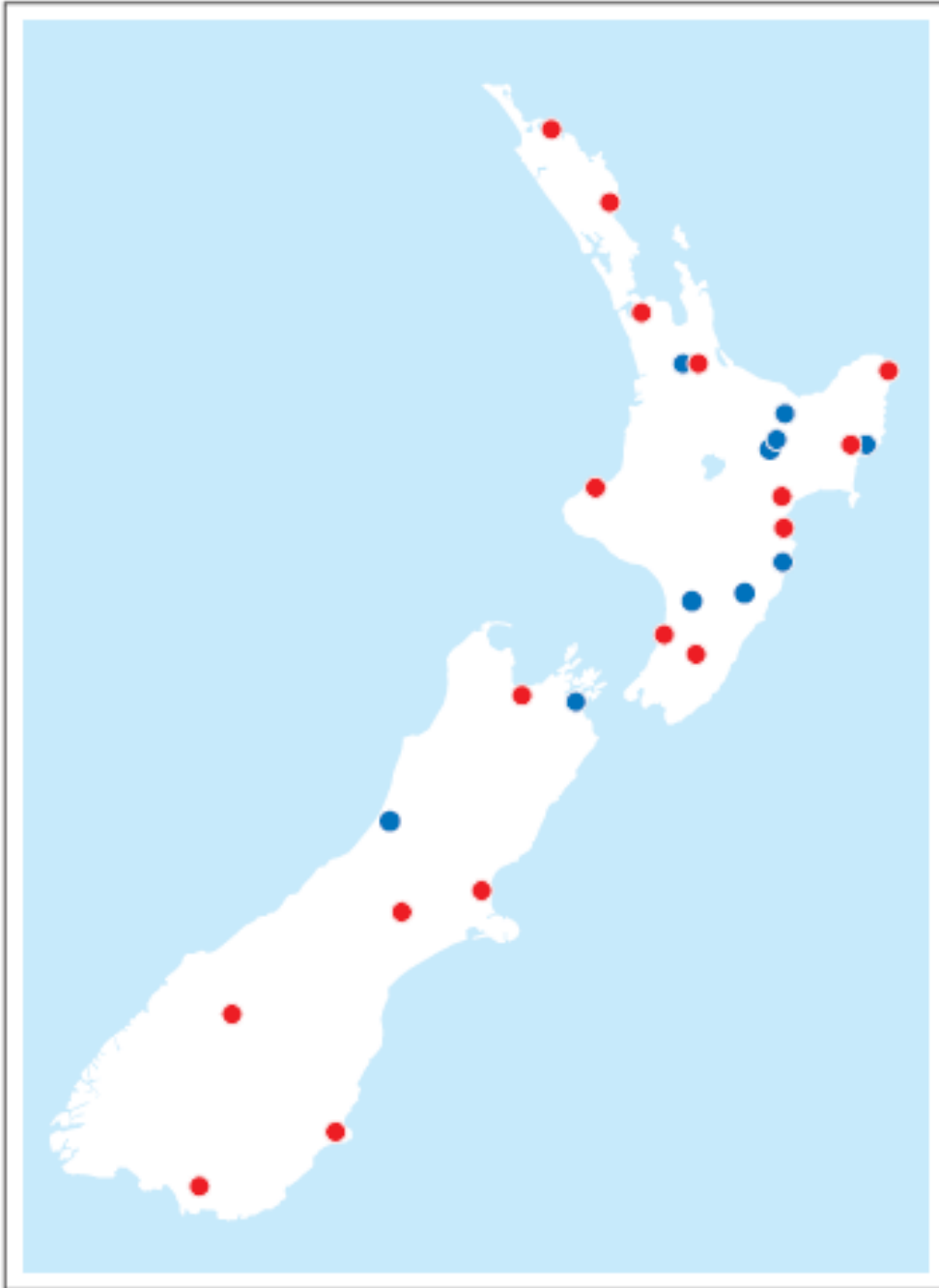
The laboratory work associated with parasitoid rearing is labour-intensive and could not have been accomplished without the support of the Terra Preta Truffles. A project update was presented at the Honeybee Research Symposium as part of Apiculture New Zealand's Annual Conference & Trade Exhibition on 23 June 2021. Terra Preta Truffles will be acknowledged there (see acknowledgment slide below) as well as in the 2021 and 2022 annual newsletters.

Summary

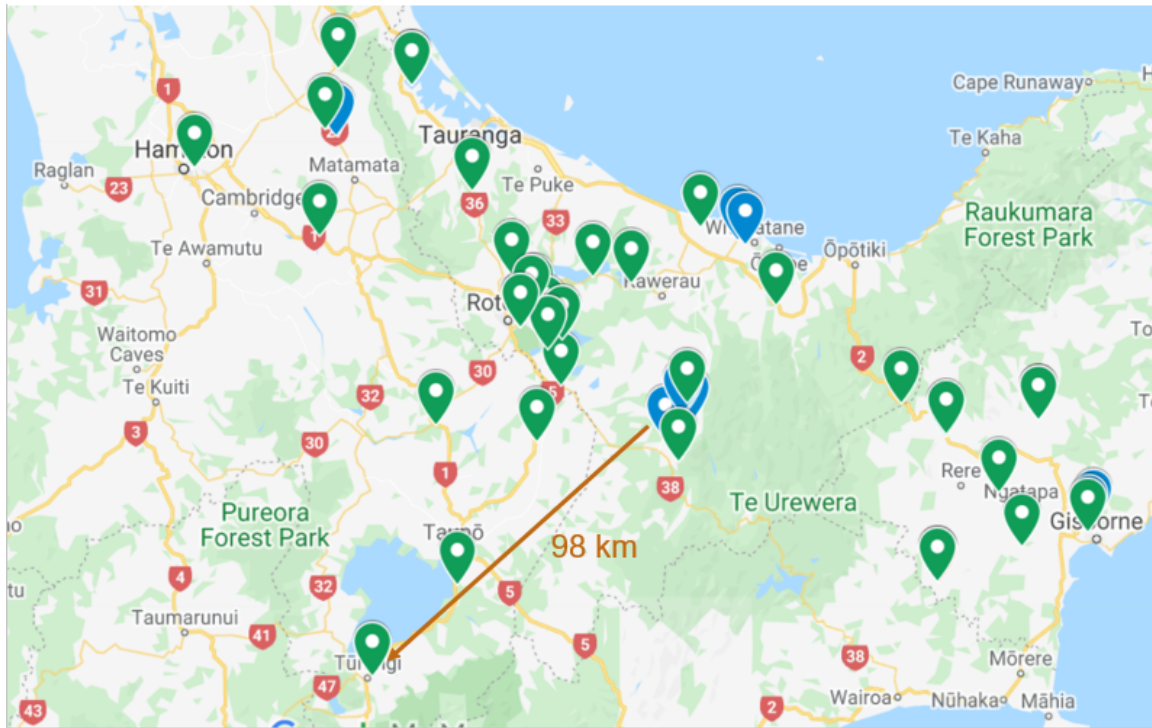
A summary of the Project's performance is detailed below with recommendations for project closure outlined.

Continued maintenance of the *Pauesia nigrovaria* colony, biological control agent for giant willow aphid, was achieved. This has made it possible to conduct releases for an additional season, which is expected to significantly boost the success of the programme.

Scion, and all other project sponsors, wish to express appreciation to Peter Marshall and Terra Preta Truffles for supporting this biological control programme.



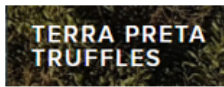
Map 1. New Zealand *Pauesia nigrovaria* release sites, as at 30 June 2021.
2020 releases are shown in blue; 2021 releases are shown in red.



Map 2. Spread of *Pauesia nigrovaria* in New Zealand's central North Island one year after releases conducted in 2020 (4 release areas show in blue, including Gisborne which is slightly obscured). Green dots represent sites where the parasitoid was found in 2021.

Acknowledgements

Ministry for Primary Industries
Manatū Ahu Matua



Roderick Cameron



NEIL BARR FARM FORESTRY FOUNDATION



INGLEBY
FARMS & FORESTS



WASP TACTICAL GROUP

