

Where is it now? Assessing the presence of the granulate ambrosia beetle at a property in Kumeū, Auckland, New Zealand.

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Introduction

A native to tropical and subtropical east Asia, the granulate ambrosia beetle (GAB) (*Xylosandrus crassiusculus*) (Fig.1), a small (up to 3 mm) polyphagous multivoltine invasive ambrosia beetle, has invaded numerous regions and countries including North, Central and South America, Europe, some Pacific Islands and Australia^{1,2}. This species poses a significant threat to New Zealand, due to its large host range (200+ tree and shrub species over 60 families) and the potential significant impacts of physical damage as a boring insect and/or the pathogenic effects of its associated fungus³.

First detected in Kumeū, Auckland in 2019, other locations were identified in Blockhouse Bay, Riverhead and Titirangi. The evidence of beetle activity at the single Kumeū property had previously been attributed to the death of several trees; including a red oak (*Quercus* sp.), a ginkgo (*Ginkgo biloba*) and a horoeka/lancewood (*Pseudopanax crassifolius*).



Figure 1. Granulate ambrosia beetle (GAB) (*Xylosandrus crassiusculus*) (MPI Plant Health & Environment Laboratory)

Aim: To monitor the presence/absence of GAB at a single property in Kumeū, Auckland in the summer and spring of 2022.

Method: Summer 2022 (January – March)

- All woody plants on the property underwent an intensive hand search for GAB activity.
- Activity signs under investigation were i) sawdust “noodles”(Fig. 2) & frass (active beetle presence) and ii) 1mm bore holes (entry holes with washed-out noodles or exit holes - previous activity).

Method Spring 2022 (October – November)

- Flight intercept traps baited with ethanol lures were installed across the property (seven in summer 2022 and ten in spring 2022).

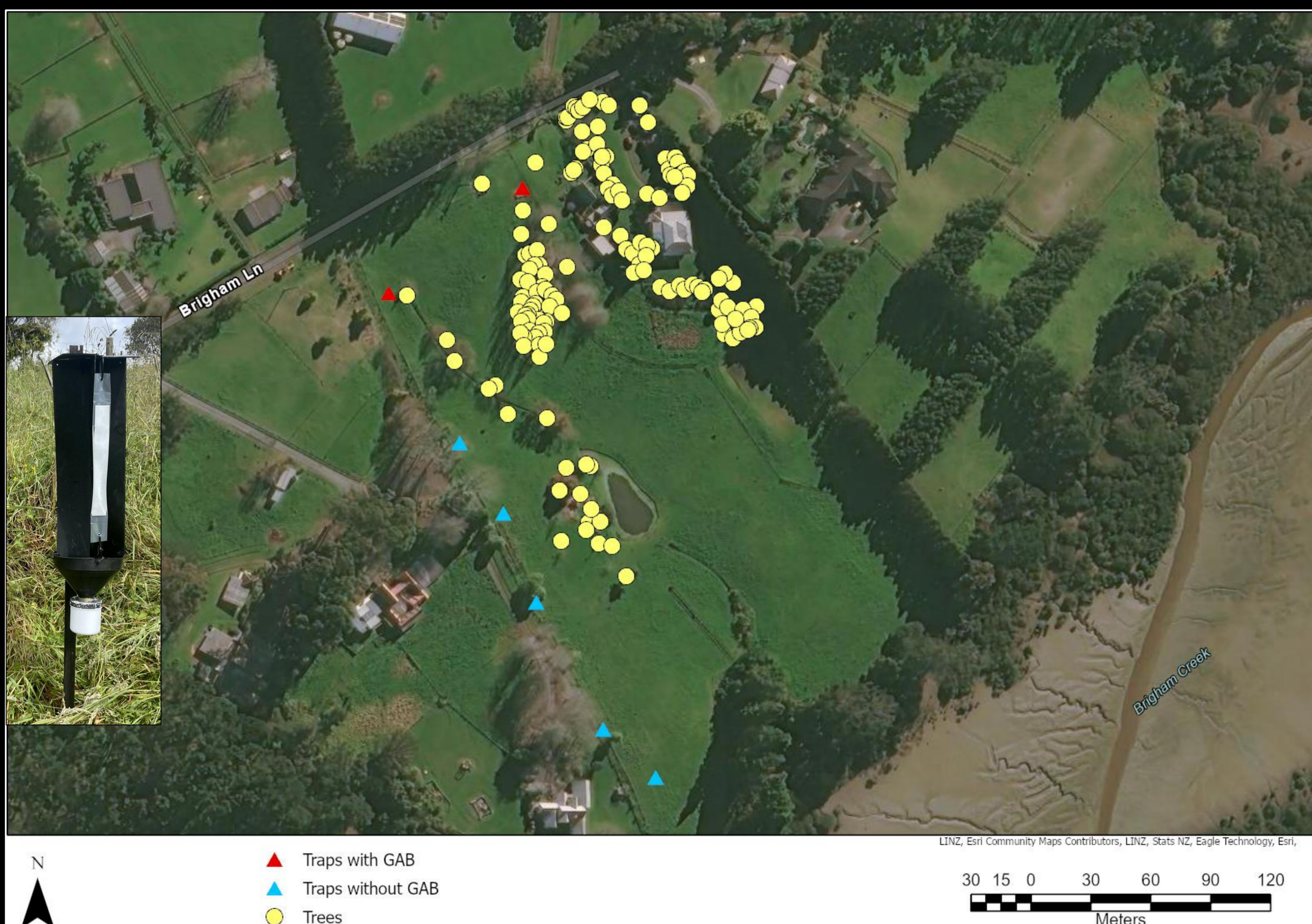


Figure 2. Characteristic sawdust “noodles” showing active granulate ambrosia beetle. Image: Roanne Sutherland(Scion)

Results

- **Summer 2022:** No active GAB was detected on any woody plant species in the Kumeū property, although three beetles were caught in two flight intercept traps (Fig.3).
- **Spring 2022:** A total of 53 beetles were detected across the ten flight intercept traps, however, no further active GAB was detected on the property.

Figure 3. Woody tree species showing absence of active granulate ambrosia beetle (yellow circles), live catches in ethanol baited traps (red triangles) and empty traps (blue triangles) at Kumeū property, Auckland, summer 2022. Inset: an ethanol lured flight intercept trap.



Discussion

Although no current active GAB was found on the Kumeū property in either summer or spring of 2022, the substantial increased detection of beetles from the summer to spring periods is concerning and proof of continued GAB breeding presence. Why the attacks on specific individual trees caused mortality, while others of the same species showed minor borer damage but remained alive, is unknown.

The rapid increase in beetles detected highlights the urgent need to determine the area of infestation in Kumeū and the wider Auckland area and to assess the threat of this beetle to New Zealand native tree and plant species.

References

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