PHC2020/06: A preliminary investigation into the threat of Bronze Birch Borer (BBB - *Agrilus anxius*) to Scotland

Background: The risk of global movement of pests and pathogens is becoming increasingly well understood and is reflected in biosecurity policies and practices. The UK Pest Risk Register provides a valuable summary of many threats but specific responses depend upon detailed knowledge, which may often be lacking. The Bronze Birch Borer (BBB) and the Emerald Ash Borer (EAB) are two examples - neither beetle is present in the UK, but both are regarded as high risk (UK Pest Risk Register) and represent a serious threat to Scotland's broadleaved trees, woods and forests. Of the two, EAB has received more attention and greater effort to characterise the threat to UK and European trees.
BBB is currently confined to its native range in North America. However, European birch species seem vulnerable to attack and high mortality has been observed (e.g. of downy birch). The threat, surveillance and management methods for EAB and BBB have recently been considered by the EUPHRESCO project PREPSYS. An international conference was held in Vienna in October 2018, and a special issue of the OUP journal 'Forestry: An international journal of Forest Research' contains key papers from the project and meeting.

Birch is an important component of Scotland's broadleaved woodlands and as individual trees in Scottish landscapes – with high aesthetic and biodiversity associated values as well as a range of uses for the wood. Birch, because of pioneering qualities and rapid early growth, is often favoured by woodland managers in native woodland reforestation, and because it copes with exposure and poor site conditions, can provide shelter for domestic animals in many upland farming regions. The relative importance of birch to Scottish growers and landscapes suggests a stronger sensitivity to the threat of BBB than generally across the UK; characterization of the BBB threat is poor compared to EAB.

This project request is on behalf of the Plant Heath Centre, Scottish Forestry and NatureScot and invites proposals to contribute evidence to better characterise the threat of BBB to Scotland.

Impact: Better understanding of the likely threat of BBB to Scotland and especially in Scottish conditions, informing risk assessment, surveillance and contingency planning, and identifying whether further action needs to be taken to reduce the risks or plug the evidence gaps.

Objectives and research required for this call: To draw together available evidence and, where feasible, gather new evidence relating to the threat of Bronze Birch Borer, covering the following three topics identified in preliminary discussions to be key evidence gaps; and to provide information to inform contingency plans and make recommendations for further work to refine the evidence. It is anticipated that due to the preliminary nature of the work and the constraints of the current pandemic, the work will largely draw upon and summarise existing literature, expert knowledge and

existing biological collections but limited fieldwork to address gaps would be welcome. Collaborative bids are encouraged and can address 1, 2 or 3 of the proposed topics; studies solely proposing modelling are not encouraged. If multiple projects are awarded, the project partners from each sub-project would be expected to meet regularly to ensure cross-fertilisation of ideas and information.

1. Presence of other *Agrilus* species in Scotland and natural parasites. Likely response of *Agrilus* spp, and BBB in particular, to the changing Scottish climate, generation times, host species and host availability as well as implications for natural spread potential and regions of particular risk (indicative allocation £25,000).

2. An understanding of likely pathways of entry of BBB from North America (including possible impacts of EU exit on trade flows), and local movements of materials that would exacerbate spread within Scotland and from elsewhere in the UK should the border be breached (indicative allocation £15,000).

3. Surveillance methodologies– review of appropriateness, improvement of techniques and implications for surveillance in Scotland (indicative allocation £25,000).

Outputs required from individual or combined project:

- Interim (<5 pages) and Final Report (<30 pages) on investigations, the latter to contain recommendations for further work.
- Brief policy summary (1-2 pages) including a clearly defined contribution of relevant information for a BBB contingency plan.
- Attendance at briefing discussion with PHC Steering group to discuss findings and next steps.
- Presentation to stakeholders including at Scotland's Plant Health Conference.
- Popular article or blog.

Indicative key dates:

- Deadline for notes of interest: 12pm on 29th January 2021
- Project start: February 2021
- Overview of plans and project start-up meeting with PHC Directorate: by end February 2021
- Interim report: by end of March 2021
- Final report by end of November 2021
- Briefing meeting with PHC and Conference participation: to be confirmed

Detailed milestones to be confirmed by bidder.

Date all work needs to be completed by: 30th November 2021 [earlier preferred if no fieldwork is proposed].

Project type: Tender for 1 to 3 sub-projects relating to the objectives.

Maximum funding available (including overheads and VAT, where applicable): £65k for all 3 sub-projects.