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EDITORIAL

Special issue on invasive pests of forests and urban trees: pathways, early detection, and management

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Invasive insects cause significant economic and ecological damage to urban and natural forests worldwide (Aukema et al. 2011; Bradshaw et al. 2016). Species such as the emerald ash borer and the red bay ambrosia beetle (vector of laurel wilt disease), for example, threaten to extirpate North American ash (Herms and McCullough 2014) and species in the Lauraceae family (Kendra et al. 2013), respectively, with cascading negative impacts on ecosystem function and services (Gandhi and Herms 2009; Riggins et al. 2018). Adopted preventive measures have reduced but not eliminated the international movement of live insects (Haack et al. 2014; Ormsby and Brenton-Rule 2017), and the rate of new exotic insect introductions shows no or little sign of slowing in the face of expanding global trade (Brockerhoff and Liebhold 2017; Seebens et al. 2017). Therefore, the need for improved tools, strategies, and policies for prevention, early detection, and management of invasive forest insects is critical.

This special issue on pathways, early detection, and management of invasive pests of forests and urban trees was spawned in a symposium entitled "Invasive species surveillance: new methods and tools for survey and early detection," held at the International Union of Forestry Research Organizations (IUFRO) 125th Anniversary Congress in Freiburg, Germany, September 19–22, 2017. The issue contains eleven reviews on topics ranging from the use of sentinel plantings to predict the impact of an exotic species before potential introduction (Eschen et al. 2018) and the pathways by which forest insects are commonly transported internationally (Meurisse et al. 2018), to current methods of biosurveillance (Poland and Rassati 2018) and how these could be enhanced using genomics (Bilodeau et al. 2018; Roe et al. 2018), to historical attempts to eradicate or contain invasive forest insects and the factors associated with their failure or success (Liebhold and Kean 2018). Several reviews focus on the management of particular invasive insect pests of urban and forest tree species (e.g., Avtzis et al. 2018; Corley et al. 2018; Hérard and Maspero 2018; Kirichenko et al. 2018; Milosavljević et al. 2018). The special issue also contains sixteen original papers and a rapid communication that advance our knowledge of phytosanitary treatments (Pawson et al. 2018), ways invasive species spread in new habitats (Javal et al. 2017; Lesieur et al. 2018; Lo et al. 2018), and improved tools and strategies for their early detection (e.g., Fan et al. 2018; Rassati et al. 2018) and management (e.g., Ferracini et al. 2018).

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Special issue on "Invasive insect pests of forests and urban trees: pathways, early detection and management."

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capacity to manage invasive pests of urban and forest trees more effectively.

Compliance with ethical standards

Conflict of interest Authors Jon Sweeney, Davide Rassati, Nicolas Meurisse, Brett Hurley, Jian Duan, Christian Stauffer, and Andrea Battisti declare that they have no conflict of interest..

Ethical approval All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.

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