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Conference Abstract

Testing emerging tools for the early detection of invasive alien species: the CamAlien and a cross-realm European alert system

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Abstract

Early detection of invasive alien species (IAS) is one of the major factors determining their management feasibility. As part of the EU Horizon project OneSTOP, several systems and tools for the early detection and monitoring of IAS are currently being developed and evaluated at different locations in Europe. Here, we focus on two specific systems: the CamAlien and a cross-realm European early alert system. The CamAlien is a vehicle-mounted camera that combines image capture with deep learning-based species identification to detect invasive plants along roads and waterways. It captures high-quality images at speeds of up to 130 km/h, allowing large-scale monitoring over short timeframes. We present preliminary results from CamAlien deployments in Flanders (Belgium), highlighting the system's performance and its current limitations. The second tool builds on the LIFE RIPARIAS early alert system, expanding its geographic scope to the European level as part of a joint effort between the OneSTOP and GuardIAS EU

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Horizon projects. It uses occurrence data from GBIF to generate automated notifications of new IAS records within selected regions of interest, thereby supporting rapid management responses. Both the early alert system and the CamAlien are currently being tested by stakeholders in Living Labs across Europe. By combining stakeholder feedback with detection results, we identify opportunities and challenges for including these emerging detection tools into IAS monitoring and management frameworks.

Keywords

Early detection tools, CamAlien, European early alert system, Living Labs, stakeholder engagement

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Conflicts of interest

The authors have declared that no competing interests exist.