Technology Offer CSIC/AP/016

SIMZEBRA: a software for zebra mussels detection in pressurized networks

Advanced tool designed to assess and manage zebra mussel (*Dreissena polymorpha*) invasions in collective pressurized networks through hydraulic monitoring and simulation of the network.

Intellectual Property

Registered software

Stage of development

TRL 8

Intended Collaboration

Licensing and/or co-development

Contact

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Market need

Over the past 20 years, the zebra mussel has colonized 4.7% of rivers, 1.5% of lakes, and 19% of reservoirs across the country, showing a clear preference for artificially still waters. These reservoirs serve as a continuous source of larvae, which reach irrigated areas where problems become more severe. The colonization of pressurized networks by zebra mussels is becoming a real concern for irrigation communities using collective pressurized networks. If the invasion is not properly managed, the network's flow capacity decreases, and the service is compromised

Proposed solution

The tool offers a clear visualization of infestation levels through customizable maps, generated for user-defined time intervals. Operating remotely on a cloud server, SIMZEBRA makes it easy to use without the need for advanced local computing resources.

Unlike other traditional methods, which require costly physical inspections and continuous manual analysis, SIMZEBRA automates the infestation detection process. It is an efficient, scalable and easy-to-implement tool.

Competitive advantages

- It allows for early detection of infestations and in specific segments of the network.
- Maintenance optimization: Facilitates the planning of corrective and preventive actions.
- It enables the analysis of the effectiveness treatments for zebra mussel control.
- Applicable to other invasive species.