



August 2, 2017

Marrone Bio Innovations, Partner Organizations Celebrate Major Milestone in Testing Invasive Zebra and Quagga Mussel Treatment under Large-Scale Open Water Conditions

Project to Restore Habitat for Native Species Features Zequanox® Molluscicide Applications and Potentially Aid in Water Quality Improvement Supported by the U.S. Great Lakes Restoration Initiative

PETOSKEY, Mich., Aug. 02, 2017 (GLOBE NEWSWIRE) -- Marrone Bio Innovations, Inc. (NASDAQ:MBII) (MBI) a leading provider of bio-based pest management and plant health products for agriculture, turf, ornamental and water treatment markets, in conjunction with several other organizations, hosted the Great Lakes Restoration Information Fair today at North Central Michigan College in Petoskey, MI. The focus of the event was to bring awareness to the organizations that work to restore habitats for native species of plants, fish and animals in the Great Lakes and other invaluable water resources.

The event highlighted the recent completion of the Round Lake Native Mussel Restoration Research Project, which included applications of Zequanox[®], a reduced-risk biocontrol developed by Marrone Bio Innovations. Zequanox was developed to specifically target invasive zebra and quagga mussels. The objective of the Round Lake Native Mussel Restoration Research Project is to evaluate Zequanox as a restoration tool for the Great Lakes region.

About the Round Lake Restoration Project

As part of the the Round Lake Restoration Project, Zequanox was applied in open water to evaluate its effectiveness against zebra and quagga mussels, as well as its ability to protect native freshwater mussels and other native aquatic species against the invasive mussels with large scale, uncontained applications in lakes.

This project was undertaken in collaboration with the U.S. Geological Survey, the State of Michigan Natural Features Inventory, the Tip of the Mitt Watershed Council, Columbus State University, Bowling Green State University, the University of Wisconsin-Oshkosh and MBI. Funding for the Round Lake Restoration Project was provided by the Great Lakes Restoration Initiative (GLRI), which is administered through the U.S. Environmental Protection Agency (USEPA).

"Although dreissenid zebra and quagga mussels have been pervasive and problematic since the late 1980's, control tools for use in open waters that are not harmful to other aquatic species did not exist until recently," explained Matt Claucherty, project leader and the monitoring and research coordinator with the Tip of the Mitt Watershed Council. "This has left zebra or quagga mussel populations unchecked in Great Lakes surface waters and surrounding inland lakes and waterways. With Zequanox now approved by the U.S. EPA and key state governments for open water use, we have an opportunity to deploy a product that has demonstrated efficacy against invasive mussels without harming native aquatic species, including threatened and endangered native freshwater mussels."

"In the Round Lake Project, dreissenid control efforts are being directed towards establishment and maintenance of refugia for native unionid mussels within Round Lake," explained James (Jim) Luoma, a research fisheries biologist with the U.S. Geological Survey. "As a Federal agency tasked with developing tools to control and mitigate the impacts of aquatic invasive species, the USGS is committed to research that will aid in protecting and restoring native freshwater mussel species that are threatened on multiple fronts, most significantly by zebra and quagga mussels. USGS has been evaluating Zequanox for several years as a counterbalance to the threat invasive dreissenids pose to native unionid mussels and other native aquatic species. This project is a step forward in the evaluation of Zequanox as a selective, open-water a tool for mitigation of the harmful impacts dreissenids have had on the Great Lakes and the communities that call the Great Lakes regions home."

"Little Traverse Bay Bands of Odawa Indians is involved in active efforts by educating the public and working together within our communities and partnering with organizations to demonstrate that peaceful, empowering educational and political activities can lead to positive, rights-protection of our water," said Regina Gasco Bentley, Tribal Chairperson of the Little Traverse Bay Bands of Odawa Indians. "Water is life and we must protect it for our future generations. We look forward to revealing many other strategies for sustainable water use and protection that can safeguard the right to water of all people for generations to come."

"When first developing Zequanox for commercialization, MBI was focused on creating a safer alternative to chlorine and

other broad spectrum biocides used to clear clogged infrastructure of zebra and quagga mussel infestations," said Dr. Pamela Marrone, Founder and CEO of MBI. "We appreciate the early efforts by the U.S. Geological Survey, the State of Michigan and other federal and state government collaborators to explore the potential of using Zequanox as a large-scale habitat restoration tool. The Round Lake Restoration Project, being led by the Tip of the Mitt Watershed Council, is an important milestone in realizing the full potential of Zequanox as a response to the environmental and economic threats posed by invasive zebra and quagga mussels. We look forward to further collaboration with the U.S. Geological Survey, the Tip of the Mitt Watershed Council and other partners in advancing the restoration and health of the Great Lakes."

Economic & Ecological Impact of Invasive Species

- | Invasive zebra and quagga mussels, *Dreissena polymorpha* and *D. rostriformis bugensis*, respectively, have had severe economic and ecological impacts throughout the Great Lakes region.
- | In terms of economic impacts, the dreissenid invasion has created an estimated total economic impact of more than \$5 billion (Jenkins 2001; Pimental et al. 1999; IMO 2001), as a result of compromised infrastructure by clogged water intake pipes, damaged mechanical parts and increased corrosion rates of steel and concrete.
- | Ecological effects of the enormous changes in nutrient cycles and food webs brought on by these invasive mussels include:
 - Crashes of top predator fish populations;
 - Nuisance periphytic algae growth;
 - Conditions that support the growth and proliferation of blooms of *Microcystis*, which can, and have, shut down drinking water facilities in the Great Lakes area;
 - Recent Type E botulism outbreaks affecting migratory waterfowl populations.
- | One of the most significant and immediate effects of dreissenid invasion has been the decimation of native unionid mussel populations, particularly in the Great Lakes region (Ricciardi et al. 1996), placing many on the brink of extinction.

Facts About Zequanox

- | Zequanox is composed of dead cells from a naturally occurring strain of the bacteria *Pseudomonas fluorescens*. Zebra and quagga mussels perceive Zequanox as a non-threatening food source and consume it readily, along with their normal diet. Once ingested, Zequanox causes their digestive lining to deteriorate, resulting in death.
- | Mussel mortality begins within a couple of days after treatment and continues for several weeks following exposure to the product.
- | *Pseudomonas fluorescens* (*pf*) as a species have a long history of use in the production of food and pharmaceuticals. It is a species commonly used in the production of fermented food products, such as yogurt.
- | The particular *pf* strain used to make Zequanox was isolated from river mud in New York on a body of water that had notably lower Zebra and quagga mussel populations when compared to surrounding bodies of water.
- | Extensive research, both in the laboratory and the field, have demonstrated Zequanox's efficacy against invasive mussels, little risk to non-target species—including native unionid mussels and important game fish—and no lasting impacts to water quality.
- | These studies have been completed by a number of institutions including the U.S. Geological Survey, the New York State Museum, the U.S. Bureau of Reclamation, Missouri State University, Southern Illinois University, as well as a variety of independent laboratories, among others.

For details about the project, the impact of invasive species or Zequanox, please see the handout entitled, "Furthering Great Lakes Native Freshwater Mussel Habitat Restoration Via a New Approach to Invasive Mussel Control," in the hard copy media kit, or download it from <https://www.dropbox.com/sh/poyfvm0j8zhr34c/AAClqgmzXHB0m27OR4O0n4yRa?dl=0>

The link will also provide access to photos and video footage of the Round Lake Restoration Project.

About the Information Fair

Today's Information Fair featured speakers from the organizations responsible for the Round Lake Native Mussel Restoration Research Project. Speakers at today's event included:

- | Dr. Peter Olson, Vice President of Academic Affairs and Student Success, North Central Michigan College
- | The Honorable Larry Romanelli, Ogema (Chairman), Little River Band of Ottawa Indians
- | The Honorable Regina Gasco Bentley, Chairman, Little Traverse Bay Band of Odawa Indians
- | Mr. Jon W. Allan, Director, Office of the Great Lakes, Michigan Department of Environmental Quality
- | Dr. Seth Herbst, Aquatic Invasive Species Coordinator, Michigan Department of Natural Resources
- | Erika Jensen, Great Lakes Commission
- | Matt Clautcherty, Tip of the Mitt Watershed Council
- | Dr. Cindy Kolar, U.S. Geological Survey
- | Dr. Pamela Marrone, Founder and CEO of Marrone Bio Innovations

Today's event was emceed by Mr. Dennis Muchmore, who served as Chief of Staff to Michigan Governor Rick Snyder.

In addition to today's speakers, attendees visited information tables to learn more about the various organizations working to preserve the Great Lakes and surrounding natural resources. These organizations hosted displays at the Info Fair event:

- | U.S. Geological Survey
- | Tip of the Mitt Watershed Council
- | Loyola College
- | Little River Band of Ottawa Indians
- | Little Traverse Bay Band of Odawa Indians
- | Great Lakes Commission
- | State of Michigan Department of Environmental Quality
- | Marrone Bio Innovations

A key highlight of today's event was the display of the barge that was used to make the Zequanox applications for the Round Lake Restoration Project. Representatives from the U.S. Geological Survey explained how the application process works and why this barge was used for the applications. For photos, video and more details about the Information Fair, please visit <https://marronebioinnovations.com/greatlakesrestoration-infofair>.

About Marrone Bio Innovations

Smart. Natural. Solutions.

Marrone Bio Innovations, Inc. (NASDAQ:MBII) strives to lead the movement to a more sustainable world through the discovery, development and promotion of biological products for pest management and plant health. MBI's effective and environmentally responsible pest management solutions help customers operate more sustainably while uniquely improving plant health and increasing crop yields. MBI currently has six commercially available products (Regalia[®], Grandevo[®], Venerate[®], Majestene[®], Haven™ and Zequanox[®]) as well as eight product candidates in various stages of the company's rapid development pipeline. MBI also distributes Bio-tam 2.0[®] for Isagro USA in the western U.S. and Jet-Ag[®] for Jet Harvest in most regions of the U.S.

Marrone Bio Innovations is dedicated to pioneering smart biopesticide solutions that support a better tomorrow for both farmers and consumers around the globe. For more information, please visit www.marronebio.com.

Marrone Bio Innovations Forward Looking Statements

This press release contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations and plans, including assumptions underlying such statements, are forward-looking statements, and should not be relied upon as representing MBI's views as of any subsequent date. Examples of such statements include statements regarding sales of the Company's products, the potential benefits of the Company's products, such as Zequanox and MBI's efforts with respect to product expansion. Such forward-looking statements are based on information available to the Company as of the date of this release and involve a number of risks and uncertainties, some beyond the Company's control, that could cause actual results to differ materially from those anticipated by these forward-looking statements, including consumer, regulatory and other factors affecting demand for the Company's products, any difficulty in marketing MBI's products in global markets, competition in the market for pest management products, lack of understanding of bio-based pest management products by customers and growers, and adverse decisions by regulatory agencies and other relevant third parties. Additional information that could lead to material changes in MBI's performance is contained in its filings with the SEC. MBI is under no obligation to, and expressly disclaims any responsibility to, update or alter forward-looking statements contained in this release, whether as a result of new information, future events or otherwise.

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Source: Marrone Bio Innovations

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