

# A Researcher's Perspective: The Challenges of Controlling Zebra Mussels in Lakes

Daniel P. Molloy

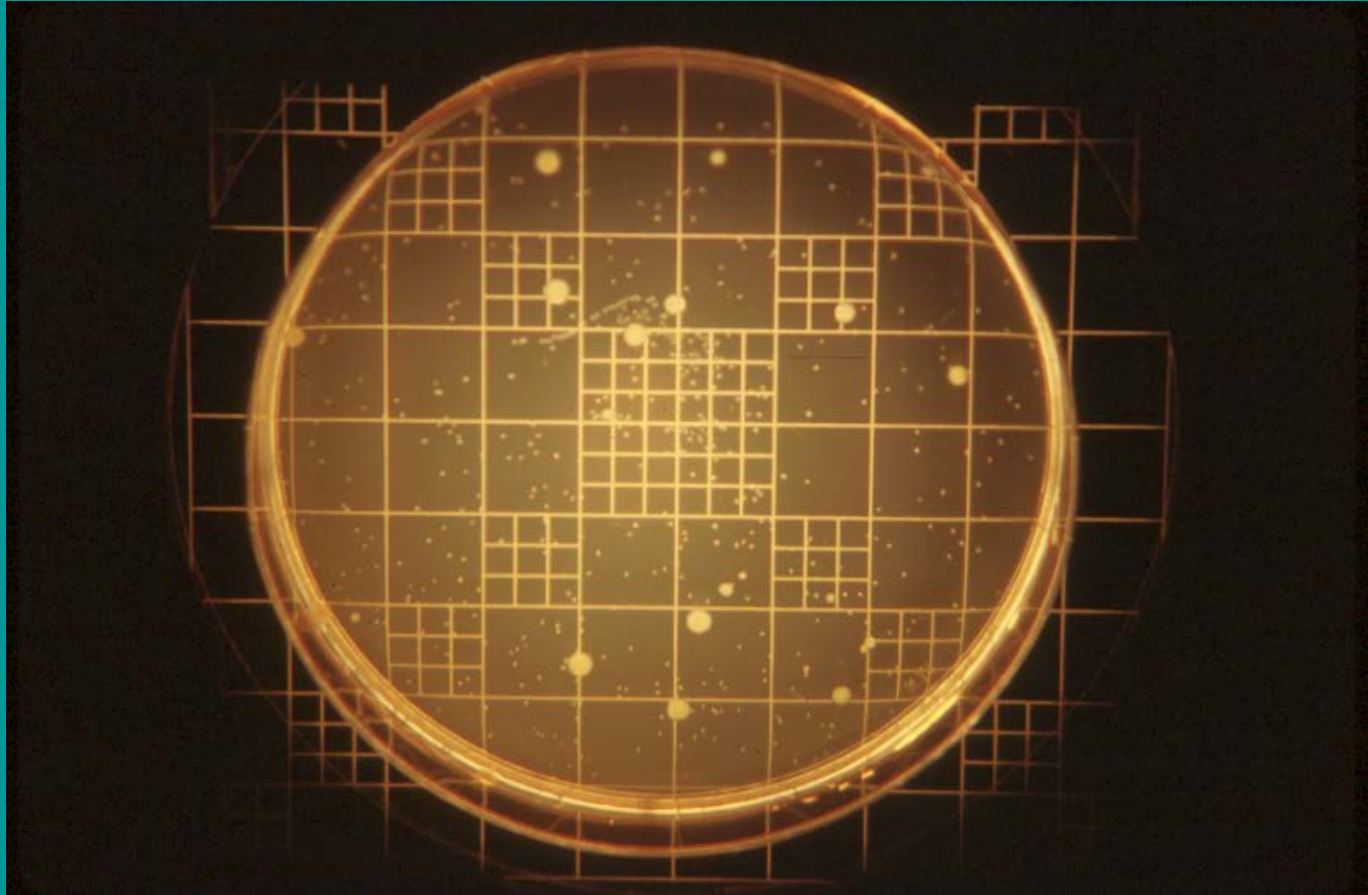
University at Albany/SUNY

Research focus of my entire professional career = developing green, effective biocontrol methods using parasites/pathogens for controlling aquatic invertebrate pests.

Black flies

Zebra mussels





*Bacillus thuringiensis israelensis*





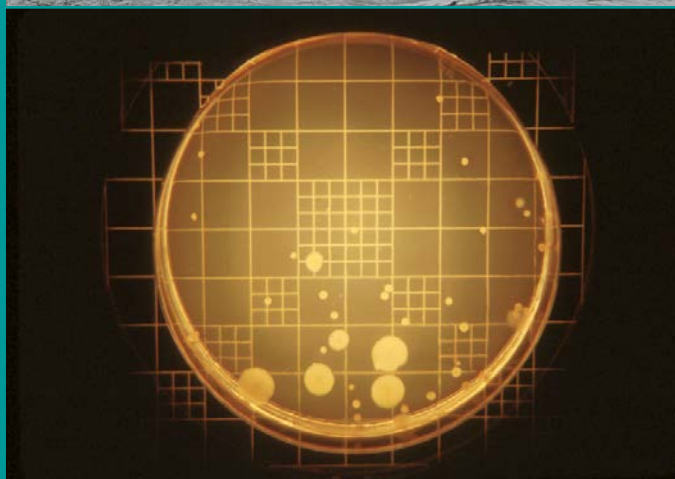
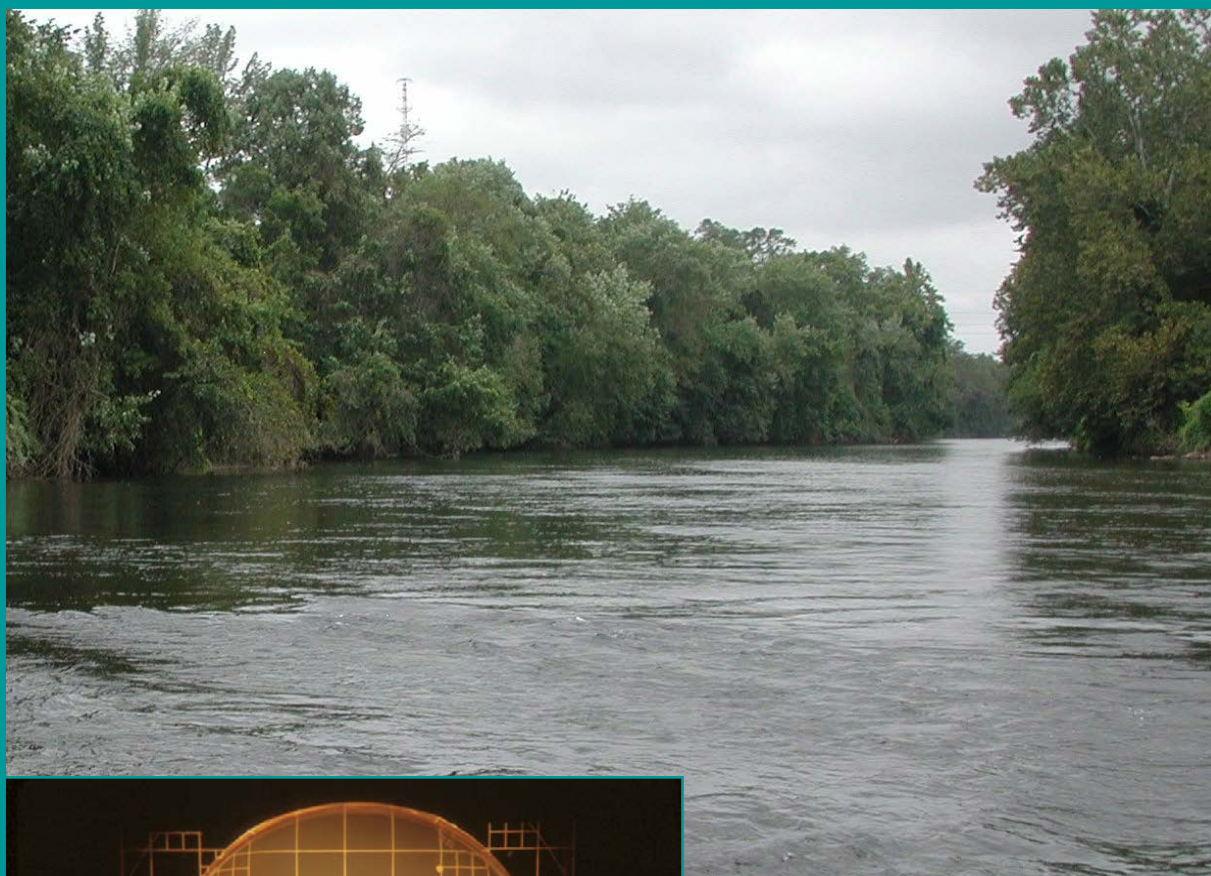


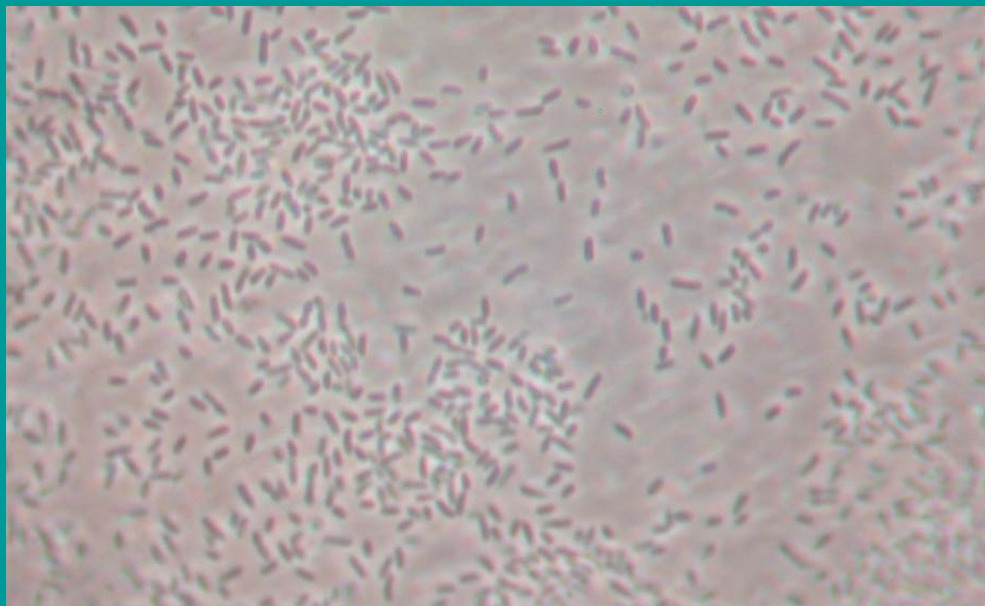


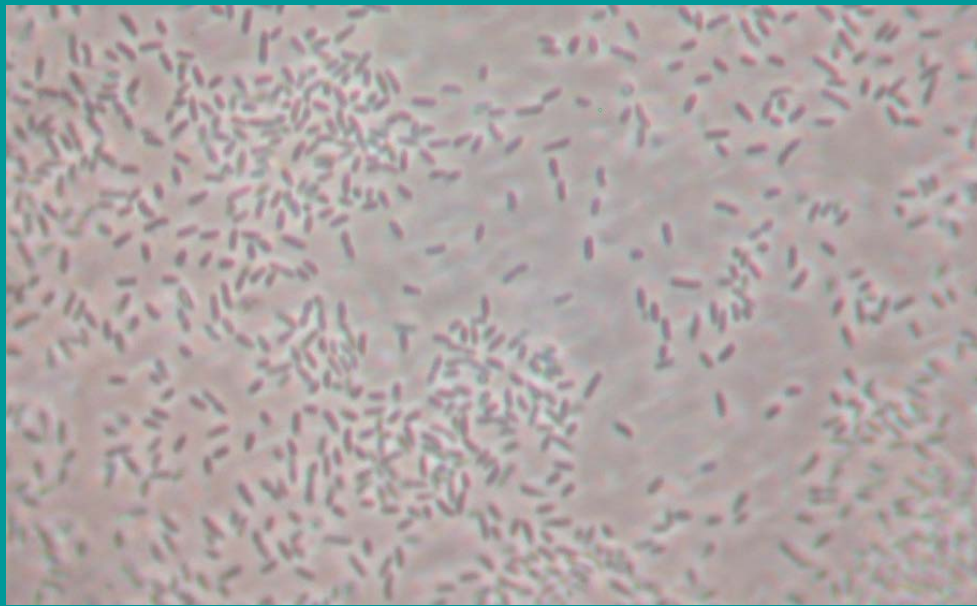






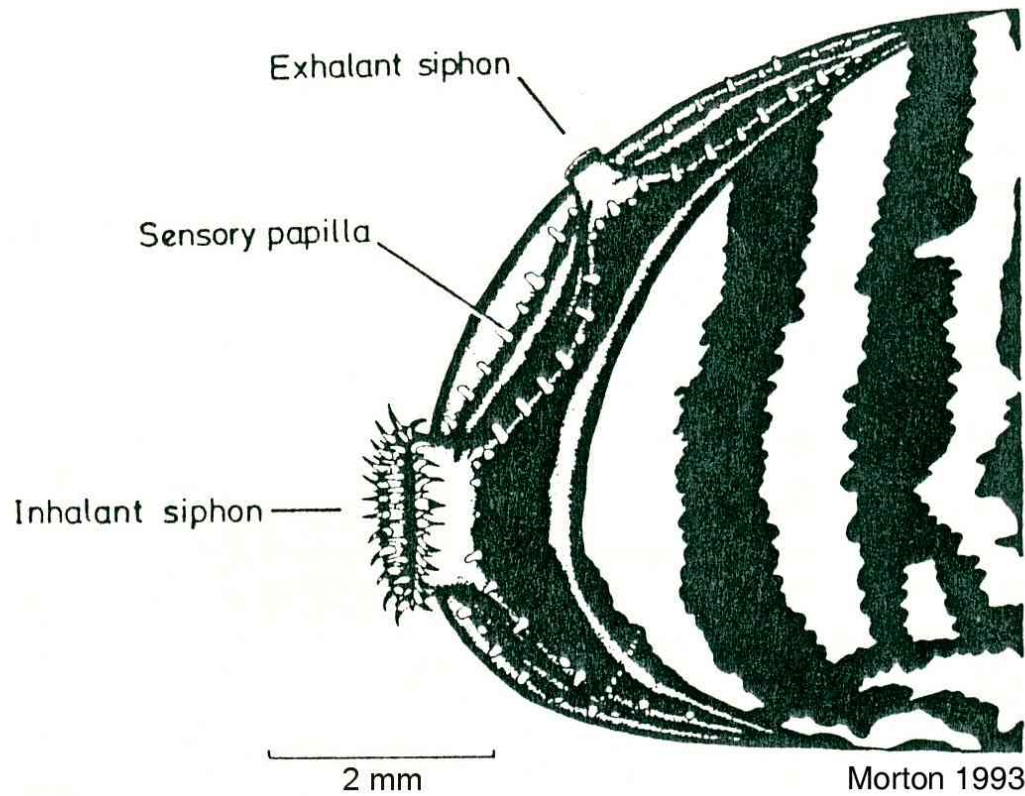






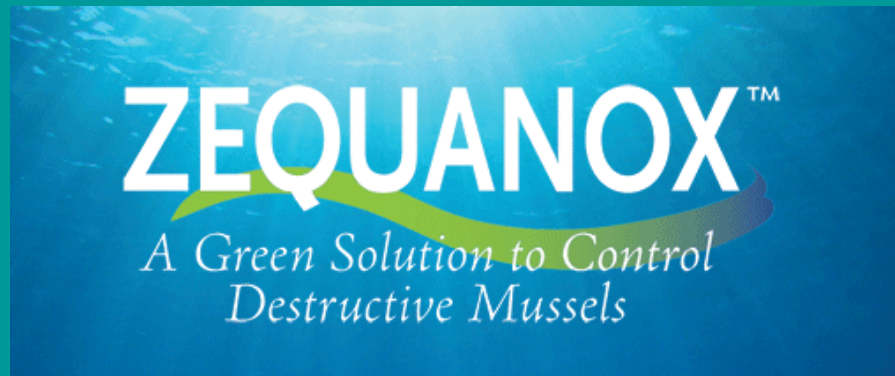
***Pseudomonas fluorescens***  
**Strain CL145A**







Marrone Bio Innovations is now using this bacterial strain as the active ingredient of the commercial product, Zequanox<sup>®</sup>



Now being used in power plants



Could it used in lakes too?



Could it used in lakes too?

YES....

.....but not treating entire lakes

Some comments on two chemical treatments have been tried to date:

Copper sulfate

Potassium chloride



**SO WHAT KIND OF ZEBRA MUSSEL CONTROL  
AGENT DO NYSFOLA MEMBERS NEED?**

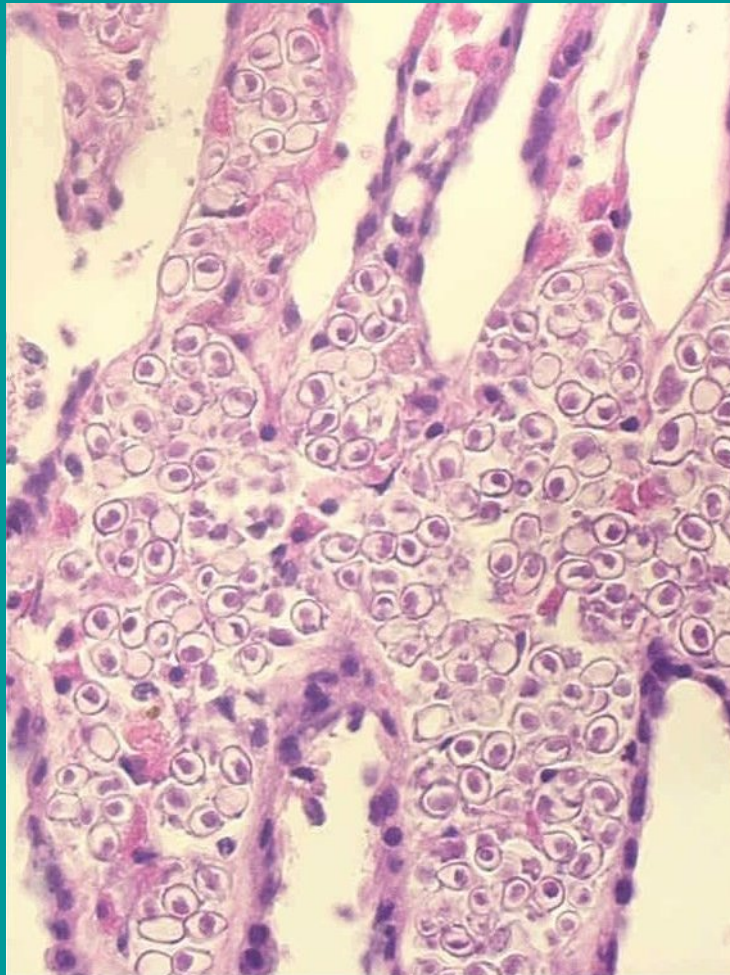
BE SELF-PERPETUATING

BE SELF-SPREADING

It must be alive

It must be a  
biocontrol agent

BE EXTREMELY SELECTIVE FOR INFECTING  
ZEBRA MUSSELS



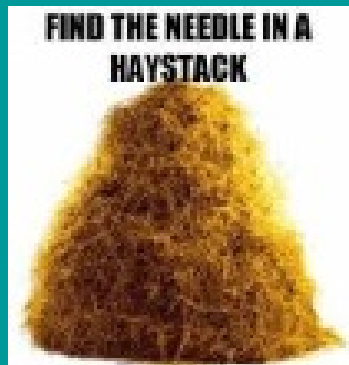
# Meuse River, France



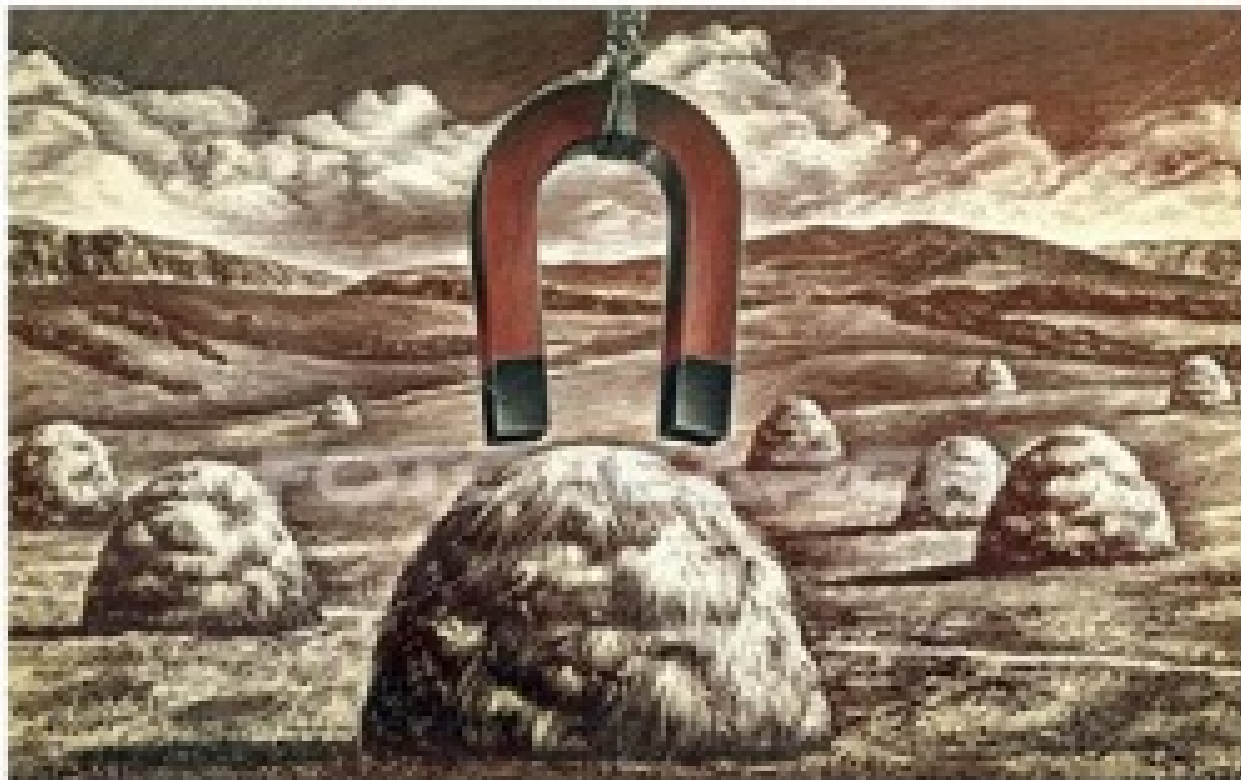


I'm a scientist who is attracted to pest biocontrol research problems that have been considered by many to be intractable, unsolvable.

I'm a scientist who picks pest biocontrol research projects that have been considered by many to have the same probability of success as finding a NEEDLE IN A HAYSTACK.







dayala0001c fotosearch.com

I want to finish by emphasizing the importance of  
two words that begin with the letter:

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two words that begin with the letter:

P



I want to finish by emphasizing the importance of  
two words that begin with the letter:

P

PERSISTENCE

I want to finish by emphasizing the importance of  
two words that begin with the letter:

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PERSISTENCE

PATIENCE

Will there ever be lake-wide biocontrol of dreissenids?

Don't give up on the use of parasites for this purpose, but in the best of circumstances .... a decade of more of research would be needed before that ever could ever be a reality!





S. van Mechelen

