

A photograph of a stream bed. The water is shallow and clear, revealing a sandy and rocky substrate. Numerous freshwater mussels are scattered across the bottom, some partially buried. Green aquatic plants, including long-leaved grasses and smaller leafy species, are growing in the stream. The overall scene is a natural, somewhat cluttered habitat.

# Freshwater mussels: shaping the streams they live in

Celeste A. Searles Mazzacano, Ph.D.  
CASM Environmental, LLC  
[cmazzacano@gmail.com](mailto:cmazzacano@gmail.com)

# Bivalve Basics

- filter feeders
- limited vertical and horizontal movements
- very long life span
- biomass can exceed other aquatic macroinvertebrates by order of magnitude
- most imperiled group in North America

# Improve water quality & clarity



0 min

5 min



50 min

- visibility up to 20X greater near dense beds
- 1 mussel can filter 20-70 L/day

# Increase substrate complexity



Help stabilize substrate

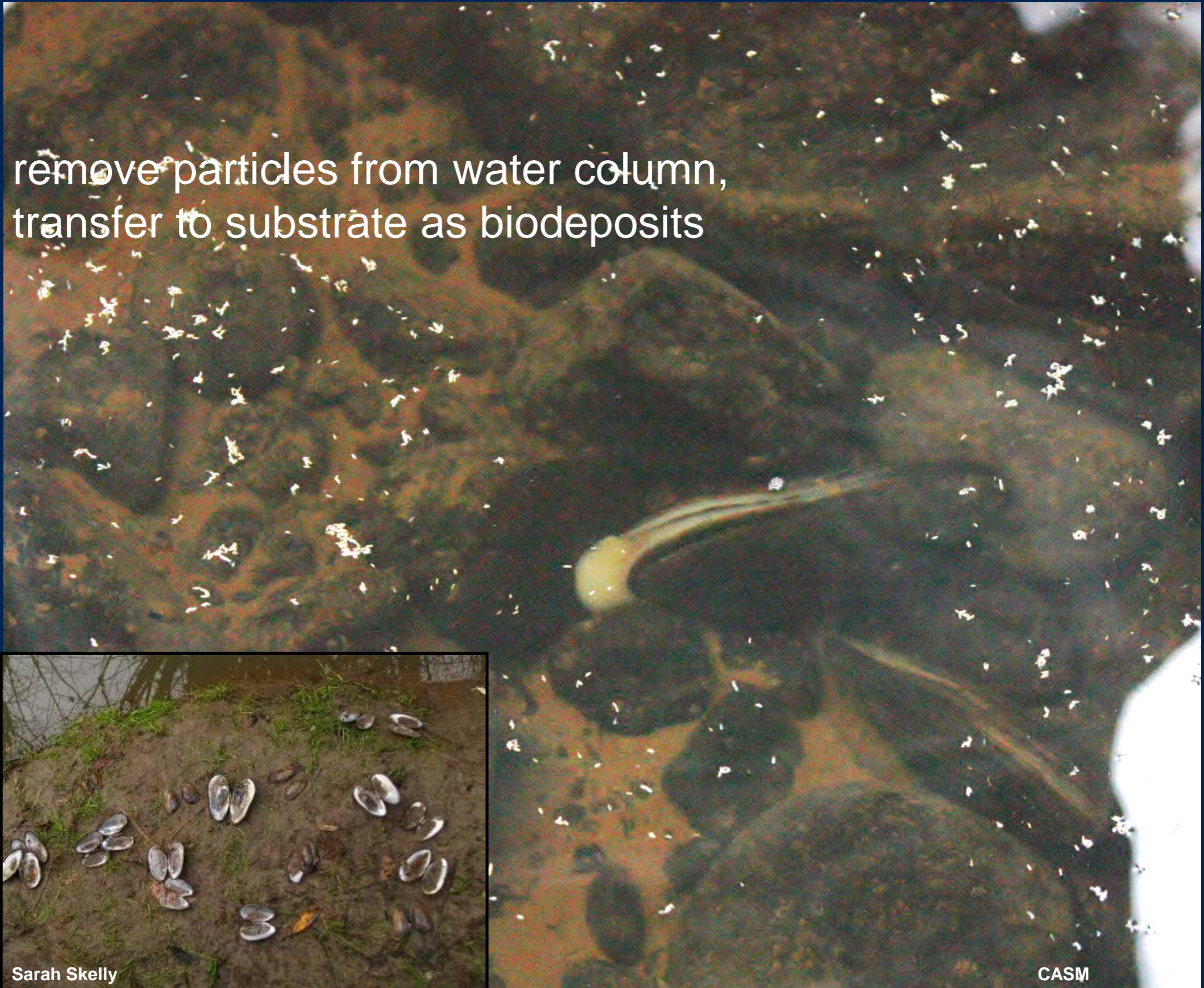


# Increase bioturbation



# nutrient processing & bioavailability

remove particles from water column,  
transfer to substrate as biodeposits



“...pearly mussels still hold secrets  
that await discovery...”

Strayer, 2004

