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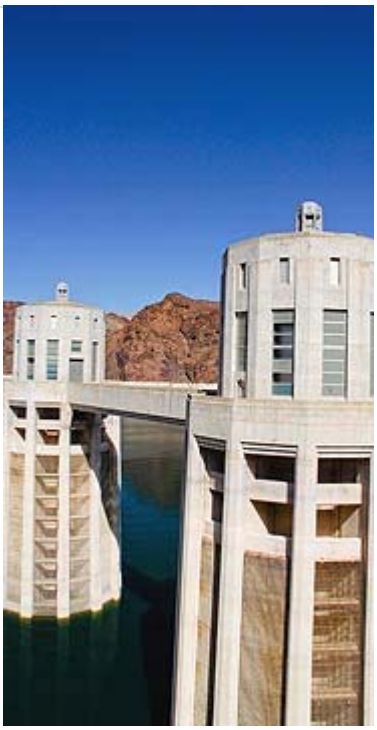
How tiny striped molluscs are muscling in on America's water supply

Chris Ayres in Los Angeles



The greatest threat to America's fragile drinking-water system is not terrorism or climate change, according to scientists, but an invasion of tiny, zebra-striped molluscs, each one barely the size of a thumbnail.

The quagga mussels first came to America in the ballast of ships from Ukraine and other parts of Eastern Europe in the 1980s. It was not until recently, however, when the molluscs turned up in Lake Mead, which supplies drinking water to Las Vegas and other large desert cities, that the catastrophic scale of the invasion became clear.

It is thought that the mussels reached the West by attaching themselves to the hulls of boats transported from the Great Lakes to Nevada.

There are now believed to be at least three trillion of them in Lake Mead, and scientists say it is only a matter of time before they spread throughout the West's vast network of reservoirs and aqueducts, causing damage estimated at billions of dollars.

At the Hoover Dam there are sometimes 55,000 mussels per square foot in the intake towers, hampering the facility's electricity-generating equipment.

Things are likely to get worse. "Over time, I would think eventually they'll be almost around the [entire] country," predicts Amy Benson, a fishery biologist with the US Geological Survey in Florida.

A study published this week showed that the quagga mussels's next target could be Lake Tahoe, near several prime skiing resorts on the California-Nevada border. Officials warned that its pristine shoreline could soon be blighted by mounds of reeking shells.

The cost to the local economy could be more than $22 million a year, according to one estimate.

Ric DeLeon, a mussel control coordinator for the Metropolitan Water District of Southern California, says that the cost of containing and cleaning up the mussels will almost certainly be "in ten figures".

Mussels have also colonised the lower Colorado River, used by 27 million people for drinking water and crop irrigation.

Apart from their ability to reproduce at an astonishing rate — a female quagga mussel can produce as many as one million eggs a year — the molluscs can attach themselves to almost anything, clogging drains and pipes and ruining boat engines.

They also feast on phytoplankton, which is an important food source for zooplankton, and so can radically change the ecosystem within a lake.

The mucus-wrapped excretion of the mussels can eventually turn a lake more acidic. Emergency measures already in place include the decontamination or quarantine of boats travelling in infested areas, and the use of sniffer dogs that can identify mussels.

At Lake Tahoe, meanwhile, officials insist they are ahead of the problem. All around the shoreline, signposts have been erected to warn of the dangers. "Don't move a mussel!" they say.

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