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The family Trombidiidae (subclass Acari), commonly known as red velvet mites, exhibits dietary habit shifts throughout their development. Larvae are parasitic, while nymphs and adults transition to a free-living, soil-dwelling predator stage. Predation by these mites is usually done in rocks, tree stumps, plants, leaf litter, and moss, with other arthropods and their eggs being their prey. These hunting environments fit the habitat created by constructed wetlands (CWs) biological wastewater treatment systems, mimicking the processes and conditions that occur in natural wetlands. Trombidiidae are recognized for their potential as bioindicators due to their sensitivity to a range of environmental factors. The presence of Trombidiidae was confirmed in all seasons in a 15-year-old CW located at a rural tourism house, implying that this CW maintains favorable environmental conditions year round. The simultaneous occurrence of spiders within the same system indicates that their life cycle is likely sustained within this system. As both parasites and predators of the biodiversity presented in the CW, Trombidiidae may contribute to a deeper understanding of the food web within these systems, and provide proof as bioindicators of the ecological and habitat benefits CWs can provide.

This work involved seasonal sampling of macrofauna at multiple collection spots within and around the CW, complemented by substrate core sampling to assess belowground communities. The collected specimens were sorted, identified, and quantified, with statistical analysis currently underway. Preliminary results indicate a robust and well-structured ecosystem, with the consistent presence of Trombidiidae across all seasons, suggesting a stable population.