



“Currents” June 2024

Livers of the River

The hot news in the river this summer involves seven freshwater mussels from Central Texas being listed under the Endangered Species Act. The listing goes into effect on July 5th and two of the species can be found in our very own stretch of the Guadalupe River: the Guadalupe Fatmucket and the Guadalupe Orb. While mussels are rarely the first animals that come to mind when we think of the river, they inhabit an important niche in riverine ecosystems and provide invaluable services.

The Guadalupe Fatmucket and Guadalupe Orb grow up to 4” and 2.5” respectively with yellowish colorings and distinct shapes and markings. Mussels move very little during their adult life and feed by filtering organic matter, like bits of algae, and small organisms out of the water. The most unique feature of many freshwater mussels, including our two here, is their reproductive life history.

Fertilized Guadalupe Orb eggs remain inside the mussel until they develop into a larval stage called glochidia. The mussel then releases the glochidia into the waterway where they must attach to the gills of catfish in order to continue growing. If they don’t encounter a host fish within a certain amount of time, they will die. At this point in their development the glochidia are very small; a third of the size of a grain of salt. They feed off the water being filtered through the host fish’s lungs and use the free ride to spread their species further than the mussels could ever move themselves. As the glochidia mature they become juvenile mussels and fall off their host fish into the sediment where they burrow down and continue developing.

Guadalupe Fatmuckets follow a very similar reproductive process except they have a special tool to attract their host fish. They have flaps called mantles that when deployed, look like small fish to lure in their ideal hosts of sunfish or bass. The rest of their lives are very similar to the Guadalupe Orb and many other freshwater mussels, including their feeding process.

Freshwater mussels feed by filtering the surrounding water which allows them to gain nourishment while remaining in one place and earns them their nickname of “livers of the river.” They filter out contaminants like bacteria, algae, and chemical pollutants. Their presence helps to naturally clean the river and is vital to the ecosystem, but it also puts them at risk of being impacted by environmental changes.

Mussels are referred to as indicator species because they are often the first species to vanish when there are changes to the ecosystem like increased pollution, decreased river flow, or interruption of habitat by development and structures like dams. The direct impacts of drought were evident during the last couple of summers when many shells of deceased clams and mussels were observed throughout the Guadalupe.

The protections afforded by the Endangered Species Act should help preserve and increase our current populations of native mussels. The Endangered Species Act is enforced by the U.S. Fish & Wildlife Service, but with the impending listing, the Guadalupe-Blanco River Authority with participation from UGRA and local entities, are developing a Habitat Conservation Plan that will address future water management and conservation of endangered species.

Let’s Keep Our River Clean

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