

GE 4930 (1 credit)
Field Excursion to the Rio Sonora Basin, Mexico
April 29 – May 7, 2005 (tentative)

The Rio Sonora is situated in Sonora state in northwest Mexico. The main branch of the river is approximately 300 km long and the river's watershed covers a total area of 29,000 km². The average precipitation in the watershed is 412 mm/year, with a maximum of 552 mm/year in the northern, mountainous region and a minimum of 268 mm/year in the terminus of the watershed, where the state's largest city, Hermosillo, is located. Flows in the river near Hermosillo range from near zero in the late spring/early summer, to 16 m³/s on the "wet" months.

The Rio Sonora watershed, along with the entire state of Sonora, has experienced drought conditions for a decade. One of the consequences of the drought is that the only surface water reservoir for the city of Hermosillo has been empty for four years.

We will tour the length of the Rio Sonora, from its terminus in the city of Hermosillo to its source near Cananea, where the largest copper mine in Mexico is located. We will learn from experts how flows in the river are managed and what the sources of the water quality problems are in the basin. We will also learn about the difficulties of managing a watershed under intensive pressures from growing municipal populations and expanding industry. We will also visit the Coste de Hermosillo region, which is a coastal basin that has experienced intensive groundwater pumping for irrigation, resulting in severe saltwater intrusion problems

No Spanish language proficiency is required, there are no prerequisites, and the course is open to all majors, undergraduate and graduate students. In addition to the week-long field trip, students registering for the course will be responsible for weekly readings and discussions (time to be arranged). The course fee will likely be around \$100, but students will be responsible for airfare. To indicate your interest in the course, please send an email to Alex Mayer, Department of Geological & Mining Engineering & Sciences (asmayer@mtu.edu). To register, sign up for Special Topics in Geological Engineering, GE4930, Spring 2006, 1 credit, CRN# 13824 .

