

# Ecogeomorphology of the Tuolumne River

## Spring Quarter, 2014

*Lecturers Peter Moyle (Wildlife, Fish and Conservation Biology)  
Sarah Yarnell and Carson Jeffres (Center for Watershed Sciences)*



The Department of Wildlife, Fish and Conservation Biology and the Center for Watershed Sciences are offering a unique Spring quarter course in **Applied Watershed Science**. Similar to the Shlemon Courses taught in previous years through the Geology department (see <http://watershed.ucdavis.edu/education/classes/ecogeomorphology>), this course is a multidisciplinary study of the ecology, geomorphology and management of rivers in the Sierra Nevada mountains of California. Open to upper-division undergraduate students, the course brings together students from a range of biological and physical sciences and engineering backgrounds to address conservation and management issues in selected watersheds.

The course involves classroom/laboratory training during the spring quarter and weekend fieldtrips to various river locations in the Sierras. The course will culminate with a ten-day camping and rafting trip in the Tuolumne River watershed the week after finals during which students will collect and analyze field data. Following the trip, students will produce short videos and written reports using the field data that address management issues within the watershed such as: what are the impacts of regulated flow regimes on aquatic biota in the Tuolumne River watershed, what are the impacts from the recent Rim Fire on physical and ecological processes, and what long-term monitoring data are needed to address on-going conservation strategies in the face of climate change?

## Course Logistics

Students admitted to this course will work in cooperative interdisciplinary research teams to collect and analyze field data from the Tuolumne River system. During the spring quarter, teams will work to compile and analyze existing data, and develop their skills in field data collection. At the end of the quarter, students will travel to the Tuolumne River watershed to conduct field studies on the river. The ten-day field trip will be held during the third week in June, and will include camping in Tuolumne Meadows in Yosemite National Park, rafting several class IV-V whitewater stretches of the river, and floating the lower developed reaches of the river. Following the Tuolumne field trip, teams will present the collection and results of the field data in the form of short 5-minute videos due 4 days following the trip. This will involve a commitment of up to 2 weeks following the end of spring quarter for travel, data gathering and final video production and write-up. All materials will be due by June 30 and will be posted on the Center for Watershed Sciences website.

The course is worth seven units of upper division credit in WFCB (WFCB 102/102L). During the spring quarter, class will meet weekly for four hours (2 hours lecture, 2 hours lab) on Thursdays (1-3p) and Fridays (1-3p). There will be one Friday field trip and one Saturday field trip during the quarter in addition to the ten-day Tuolumne River trip after the quarter is over.

## Applying

This course is not for everyone. The course is primarily intended for senior undergraduates students in the fields of ecology, biology, geology, hydrology and engineering. **Enrollment is by instructor consent only.** The demands of the class are high. Students must be able to work well in teams, they need to be good writers able to meet deadlines, and they must be very durable in the field. In addition to camping at high elevations for several days, the course will study more than 15 miles of wilderness river with stout class IV whitewater. We will live out of rafts for 3 days with primitive camping conditions. The weather can be changeable and field conditions can range from cold and rainy to hot and dry within a day.

If interested, please contact Sarah Yarnell ([smyarnell@ucdavis.edu](mailto:smyarnell@ucdavis.edu)) or Carson Jeffres ([cajeffres@ucdavis.edu](mailto:cajeffres@ucdavis.edu)) for more information. To apply, send an email with the following information to both instructors by February 28:

- Name
- Major and expected graduation date
- Current GPA
- Specialized expertise (that is, what role might you play in our research teams?)
- Background coursework relevant to the class
- Experience in working in remote, rugged field conditions
- Long-range career or academic goals