

Green River Trip Agenda:

Dates: July 18 - 28, 2012

5 graduate level semester hour credits through Colorado School of Mines

Cost: With tuition: \$1810. Without credit and tuition: \$1600.

Check out our website at: www.coloradorivertrip.com

Agenda:

· Day 1: Teachers will meet at the south entrance of Yellowstone Park and tour the eastern loop of Yellowstone, which includes the Yellowstone Lake, the Grand Canyon of the Yellowstone and a small geyser basin. We will study geology, flora, fauna, and history of the park. Travelers in Yellowstone are often treated to glimpses of buffalo, deer, elk, bald eagles, osprey, and occasionally even spot the newly introduced wolves, and grizzly bears. When early fur trappers came back to the east and described Yellowstone's geysers and bubbling hot mudpots, people thought they were telling tall tales. Yellowstone, caused by an underlying hot spot of magma, is one of the most geologically active areas in the world. We will sleep this night in little cabins at the foot of the incredible Mammoth Hot Springs terraces.

· Day 2: Journeying on the western loop of Yellowstone, teachers will hike around Old Faithful, the geyser basin, and the paint pots. You will see geysers erupting hundred of feet and smell the hot sulfur steam of the fumaroles and boiling mud. We will study the effects of the 1988 Yellowstone Forest Fires and see how plant succession is hard at work to reforest Yellowstone. The capriciousness of the fires is clearly visible as you see patchwork areas of living trees among the burned timber. This loop of Yellowstone includes the most famous geyser basins in the world. We will then leave Yellowstone Park and journey south to the Tetons. We will camp that evening in the Grand Teton National Park at the base of the Grand Teton, a sheer pinnacle of sharp spires and glaciated valleys. Hear the story of how four of us survived being hit by lightning on the summit of the Grand Teton, despite being temporarily paralyzed, suffering eye damage from the blast and being threatened with hypothermia.

· Day 3: We will begin the morning with a boat ride across Jenny Lake and a hike at the base of towering Tetons. Teachers will learn about how three major rivers have their headwaters within 50 miles of the Teton Range and end up in ocean basins thousands of miles apart. We will engage in activities about mountain orogeny and plate tectonics. After this boat ride and hike in the Tetons, we will drive to the Wind River Range and camp at the headwaters of the Green River. This is one of the most beautiful places that I have ever seen, with deeply cut glaciated valleys and cuerdas rising to the sky. At this site, we will begin our scientific study of the Green River. Our goal is to determine how the river biome and water quality change as the Green flows the glaciers at the headwaters, through towns, farmlands, and deserts. We will perform the water quality, water pollution, and soil tests as well as take a census of water macroinvertebrate, flora, and fauna. At the end of this class, your research will be compiled into a scientific paper for distribution to State Parks and several Division of Wildlife Offices.

· Day 4: We will spend a day hiking in the Wind River Wilderness Area to get closer to the actual headwaters of the Green River. This valley displays beautiful and dynamic glacial features, such as a flat top dome with glacially carved sides, lateral and terminal moraines, glacial lakes, and erratic boulders. During class sessions, teachers will learn about the geology and wildlife of the area. Wildlife is abundant with moose, deer, elk, bighorn sheep, osprey, eagles, Sandhill Cranes and many duck and heron species.

· Day 5: As we traveling along the Green River, we will see where a warm springs travertine layers rose slowly throughout time and isolated a small fish population, which eventually changed enough to be classified as a new species, separate from those found in the river 40 feet below. We will journey for about 150 miles to the town of Green River, Wyoming, we will again conduct water and soil tests and collect biome data at this last site before the Green River encounters its second major dam. This is the site where John Wesley Powell began his famous journey along the Green and Colorado Rivers and through the Grand Canyon. Journeying southward, we will follow the Green River to Flaming Gorge Reservoir, on the Utah, Wyoming border, where teachers will test water, and biome conditions within the lake. We will sleep that night in a motel at Manila, Utah.

· Day 6: After a science study of the water and conditions below Flaming Gorge Dam, we will raft the first seven miles of white water below the dam through a beautiful red sandstone canyon. This section is rated 2. "Class 2 rapids have bigger waves but no major obstacles in the channel." *Western Whitewater from the Rockies to the Pacific* by Jim Cassady, Bill Cross, and Fayar Calhoun. 1994. The river flows through the beautiful Red Canyon that has world class trout fishing and spectacular cliffs. We will then shuttle cars to Indian Crossing Campground in Brown's Park where we will spend the night.

· Days 7 & 8: We will canoe a 20 mile section of the Green River through Swallow Canyon, which is rate 1, "merely moving water with a few riffles small waves and no obstacles." Cassady, Cross & Calhoun. During this section, we will learn how the canyons were hideouts to several outlaw gangs in the early west. The river drifts through an incredible wildlife refuge that is one of the major waterfowl nesting points. This will be a wonderful opportunity for teachers to study flora and fauna species diversity as well as water, soils and the environment. Last year, as we rounded a corner in canoes, we startled a moose. Packing up the canoes in the late afternoon, we will drive to Vernal, Utah and sleep that night in a comfortable motel.

Day 9: Touring Dinosaur National Monument, teachers will learn about Mesozoic geologic history and see first hand a dinosaur dig where hundreds of bones are exposed. At Vernal we will explore Dinosaur National Monument, where thousands of dinosaur fossils have been discovered in the Jurassic Morrison Formation. At the Dinosaur Museum, you will see some of the most concentrated dinosaur fossils in the world, including 22 nearly perfectly complete skeletons, the largest concentration of skulls in the world, approximately 100 different skeletons and the only embryo of *Camptosaurus* found in the world. We will also explore several petroglyph sites created by the ancient Fremont Indians who inhabited this area hundreds of years ago. This area has some of

the most spectacular petroglyphs in the world, including many that are lifesized. The afternoon will be spent either hiking in Dinosaur Monument or touring the Dinosaur Museum in Vernal. We will camp this night in the beautiful Split Mountain Campground on the Green River in Dinosaur, where we will conduct more biome research.

· Day 10: Driving to Jensen, Utah, we will meet Hatch Expeditions, a whitewater rafting company who will take us on a one day rafting trip through Split Mountain. This section of the Green River was actually traded during political negotiations for Glen Canyon on the Colorado River. The Green River flows freely through Split Mountain and Gates of Lodore. Glen Canyon Dam blocks the Colorado River to form Lake Powell. Throughout the whole area of Flaming Gorge and Dinosaur National Monument, the geology is spectacular, with sheer, towering canyons and cliffs of sedimentary sandstones, shales, and limestones. The strata folds and contorts from the pressures of mountain building. Teachers will learn much about the natural history of the desert biomes, about the political history of the western water wars, and the anthropological history of the ancient people who lived and died along the shores of the Green River. Wildlife is abundant, including eagles, osprey, endangered river otter, beaver, and bighorn sheep. Class will end when we take the rafts out at Split Mountain Campground.

Cost: \$1600. total cost includes rafting, canoeing, motels, cabins, most food, entrance fees, science equipment. If you choose to take the class for credit through Colorado School of Mines, the additional cost will be \$210. for 5 hours of graduate level credit.

Additional expenses: Splitting the cost of carpools. Three dinners on your own during the evenings that are spent in motels. Souvenirs etc.

If you decide to join us, please email me back to let me know. Then send a deposit check for \$400.00 made out to The Colorado River Trips. Send the check to:

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