

Lake and Stream Ecology/Water Quality Workshop

Outlaw Ranch – Custer, SD

June 6-8, 2012

The workshop will consist of three options for attendees. The first option is for agency personnel, lake association members and the general public who want to better understand the resources they work with or live by. Those in this group can attend the two day workshop to learn about basic limnology or the three day workshop if interested in learning about basic limnology and bio-assessment of lakes and streams. For teachers and college students there are two options to earn Continuing Education Unit Credits (CEU) and/or under-graduate graduate credit hours. The two day workshop (Thursday and Friday) will earn teachers 1.2 Continuing Education Units. The three day workshop (Wednesday through Friday) will earn teachers 2.0 Continuing Education Units and/or 1 Credit Hour for students and teachers needing under-graduate or graduate credit. Lodging and meals are provided at no cost to workshop participants. Those interested in receiving CEUs and under-graduate/graduate credit however must pay a fee of \$40 for 1 credit hour and \$5 for the CEUs.

The three day workshop will begin on Wednesday June 6th with a unit on stream and lake bio-assessment. Participants in this unit will be provided with invertebrate keys and a set of preserved reference specimens to take home that will include as many taxa as possible. The stream ecology unit of the workshop will include travel to three sites for collection of stream invertebrates, demonstrations of sampling equipment, and simple stream assessment techniques and water quality measurements. The lake ecology unit will be conducted at a nearby lake and will include collection of invertebrates from several types of shoreline habitats. Following collection of stream and lake invertebrates, the group will return to Outlaw Ranch to sort, identify, and classify the organisms according to their pollution tolerance utilizing identification keys and references. Participants will use the collected invertebrates to assess the ecological health of the sampled streams and lakes using bio-assessment forms. The goal of the bio-assessment is to provide the participants with the knowledge and tools necessary to teach a unit on stream or lake ecology.

On Thursday and Friday (June 7-8), two day and three day attendees will partake in classroom lectures and demonstrations on basic limnology at Outlaw Ranch. Several hands-on demonstrations will be taught that participants can use to demonstrate to others limnology principles such as aquatic photosynthesis, stratification, aquatic food chains, bio-magnification, and the “Lake Game”. Workshop participants will receive two workshop workbooks, a “Healthy Water, Healthy People” curriculum guide, and construct a Secchi disk or collecting sieve to take home.

The workshop will be limited to 25 people. Participants must make their own travel arrangements to the ranch. Travel to and from sampling sites will be provided by the workshop. Please forward the completed registration form to the Day Conservation District by **May 15, 2012**. A separate health and participation form for Outlaw Ranch must be completed and turned in when you arrive at camp.

Participants will need to bring the following items;

Sleeping bag or bedding and pillow

Towels and wash clothes

Personal hygiene items (sun block and insect repellent recommended)

Closed toe sandals, water socks, hip boots or waders for wading in streams and lakes

Shorts or swim suits for wading

Raingear

Water bottle

Optional Items

Camera

Notebook

Hiking boots

Entertainment for after hours at camp - I-pods, DVDs (no inappropriate material please)

Laptop Computer (Wi-Fi available)

Note: camp buildings are smoke free, no alcohol allowed anywhere on campus!