

ROCKY MOUNTAIN FIELD SEMINARS

LEARN ♦ EXPLORE ♦ ADVENTURE

CLIMATE CHANGE IN THE ROCKIES

AUGUST 31, 2013

COURSE LEVEL: III COURSE #: S3030

FEE: \$70

INSTRUCTOR: DR. TIMOTHY KITTEL



PAGE 1 OF 3

LOCATION: **Rocky Mountain Field Seminar & Conference Center**
1895 Fall River Road, Estes Park, CO 80517

TIME: SATURDAY: 8:30 a.m. – 4:30 p.m.

COURSE DESCRIPTION: Over the past few decades, climate has been changing in Rocky Mountain National Park and vicinity. The prospect for future rapid climate change should give us pause in thinking about the Park – we may very well ask what will its landscapes look like in the decades to come? We will spend a day in the field exploring how montane forests through alpine tundra are vulnerable to a shifting climate. We will consider the complex ecological-climate interactions that affect the plants, birds, mammals, and aquatic systems we currently associate with our visits to the Park. Our discussion will cover uncertainties in our understanding of natural systems and how these may be dealt with in management of park resources.

COURSE LEVEL: III (Moderate hikes of less than five miles per day with elevation gain of less than 1,000 feet)
Total elevation gain for this course for the day will be no more than 500 feet. September in the Park can be warm, but there's always a chance for snow and cold temperatures. Participants need to be in good health and physical condition, and aware of the stress of being out in snowy mountain environments, including cold conditions and lower oxygen levels than in The Plains. Those with respiratory or heart conditions are advised to consult their physician before enrolling.

BRIEF INSTRUCTOR BIOGRAPHY (additional information available at www.rmna.org):

Dr. Timothy Kittel (PhD Ecology) is a research ecologist and climatologist at the Institute of Arctic and Alpine Research, University of Colorado, Boulder. His work for the past 30 years has been on climate change, its ecological consequences, and what it means for conservation practice. Tim's approach to instruction emphasizes experiential learning. He teaches local and overseas ecology field courses for the University of Colorado and an overseas field course tailored to non-science majors for Columbia University.

INSTRUCTOR'S WEBSITE: <http://culter.colorado.edu/~kittel/>

EXPECTATIONS:

Professional conduct will be expected from participants at all times. Respect for individual ideas will be observed. Except during course breaks, cellular phones, pagers, and personal entertainment devices are strictly prohibited in the classroom and during field sessions.

ROCKY MOUNTAIN FIELD SEMINARS

LEARN ♦ EXPLORE ♦ ADVENTURE

CLIMATE CHANGE IN THE ROCKIES

CAR POOLING:

Rocky Mountain Field Seminars courses utilize car pooling to limit vehicles traveling into the Park. Car pooling makes it easier to keep the group together, reduces transit time, and allows courses greater access because fewer parking spaces are required at destinations. In addition, it provides an opportunity for participants to discuss course material in small groups during transit. Typically, a few participants from each course volunteer the use of their vehicles for car pooling to course locations.

TENTATIVE COURSE SCHEDULE:

Saturday:

- | | |
|---------------|---|
| 8:30 am | – Orientation: Goals & Safety, Introduction to Climate Change in the Park |
| 9:10-12:00 | – Field |
| 12 noon | – Lunch in the Field* |
| 12:30–3:00 pm | – Field |
| 3:00-3:15 | – Break |
| 3:15-4:00 | – Field |
| 4:00-4:30 | – Discussion, Re-cap of the day |

WHAT TO BRING:

Note: Rocky Mountain Field Seminars recommends that participants for all courses dress in layers and wear comfortable/sturdy hiking boots/shoes. Participants should be prepared for sudden changes in temperature and weather conditions in this late-summer course.

10 ESSENTIALS:

Rocky Mountain National Park recommends that hikers always carry the 10 essentials in their daypacks (with overlap with the previous list):

- Raingear
- Extra layers of clothing
- Hat, Sunglasses & Sunscreen
- Extra Food & **WATER**
- Flashlight or Headlamp
- Candles
- First Aid Kit
- Map & Compass (or GPS)
- Matches or Other Fire Starter
- Pocketknife

***Bring a Field Lunch and snacks for the day.**

Optional, But Recommended –

- Field journal
- Camera, Binoculars
- Field guides to birds, trees, mammal tracks, etc.

RECOMMENDED READING:

Climate Change in Rocky Mountain National Park. Preservation in the Face of Uncertainty. Tim Brown and others, 2008: National Park Service and Center of the American West. 18p.

<http://www.centerwest.org/publications/pdf/rmnpclimate.pdf>

Also of Interest –

National Parks In Peril: The Threats of Climate Disruption, Executive Summary. Stephen Saunders and others, 2009: Rocky Mountain Climate Organization and Natural Resources Defense Council. 6p.

<http://www.rockymountainclimate.org/website%20pictures/National-Parks-In-Peril-summary.pdf>

Colorado summary: http://www.rockymountainclimate.org/website%20pictures/ParksInPeril_COFacts.pdf

ROCKY MOUNTAIN FIELD SEMINARS

LEARN ♦ EXPLORE ♦ ADVENTURE

PAGE 3 OF 3

CLIMATE CHANGE IN THE ROCKIES

Kittel et al. 2011. A vulnerability-based strategy for incorporating climate change in regional conservation planning. *BC Journal of Ecosystems and Management* 12(1):7-35. Free journal access: <http://journals.sfu.ca/forrex/index.php/jem/article/view/89>

TEACHER RECERTIFICATION CREDIT:

Most seminars are eligible for teacher recertification credit through the Centennial Board of Cooperative Education Services (BOCES). The fee is \$25.00 per seminar (0.5 unit) or \$25.00 per series of threaded seminars (1.0 - 3.0 units). A list of threaded seminars can be found online at www.rmna.org. Participants must enroll in all seminars of a threaded series in order to qualify for the \$25.00 multi-unit fee. Please be prepared to pay for this credit with a check, made payable to BOCES, on the first day of a seminar or on the final day of a threaded series of seminars.