Bonanza Creek LTER
Education and Outreach

Elena B. Sparrow
Andrea Deutsch, Katie V. Spellman
K-12 Teachers and Students

- Coordinating a local Science Fair and judging science fair/symposium projects
- Mentoring Students on their Science Fair or High School Symposium projects
K-12 Teachers and Students

- Mentoring/ Collaborating with Teachers
Bonanza Creek LTER
Ecologist in the Classroom

Andrea Deutsch and Karina Selby,
North Pole Middle School
&
Katie Spellman, BNZ LTER
GOALS

- Enrich 7th grade Life Science and Extended Learning Program curriculum
- Build BNZ and North Pole Middle partnership to produce meaningful ecological data
- Generate student excitement about science careers
PROFESSIONAL DEVELOPMENT

- ED 595 Invasive Plants of Alaska for Educators
- July 2011
- Instructors:
  Katie Spellman
  Christine Villano
  Christa Mulder

Invasive Plants of Alaska for Educators Course at Bonanza Creek LTER’s Caribou Poker Creeks Research Watershed
ACTIVITIES

- GLOBE Stream Monitoring

Field titrations to measure dissolved oxygen levels.

Recording temperature and conductivity

Measuring stream turbidity
ACTIVITIES

• Adapting current LTER research to middle school classrooms

Pollinator interactions between invasive and native plants

- Observing pollinators on native and invasive plants.
- Identifying and counting pollen grains.
- Making stigma squashes on slides.
ACTIVITIES

• Adapting current LTER research to middle school classrooms

Stream Invertebrates and European Bird Cherry Invasion

Making native and invasive leaf packs to put in stream.

Pulling leaf packs to count stream invertebrates.
ACTIVITIES

• Planning a field ecology trip to Kachemak Bay to compare interior and coastal ecosystems
Thank you LTER!
K-12 Teachers and Students

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- Mentoring/ Collaborating with Teachers
- Workshops/Courses for Teachers
K-12 Teachers and Students

- Workshops/Courses for Teachers
Invasive Plants of Alaska for Educators

- **Instructors:**
  Katie Spellman, Chris Villano and Christa Mulder

- the ecological and societal impacts of invasive species
- identification of problematic invasive species of Alaska
- methods for invasive plant control
Explaining the experimental design of our field sites

Learning how to do vegetation transects at CPCRW
Observing Vaccinium phenology at one of our CPCRW field sites as a training for our citizen science monitoring project.
Attacking the CPCRW vetch population!

Pulling the vetch infestation near the CPCRW bridge
The teachers and course instructors after a successful lunchtime CPCRW service project.
Acting out the timeline of succession near burned and unburned stands at CPCRW
Counting pollen grains on invaded and uninvaded stigmas

Pollinator observations in an invaded site
Acting out the timeline of succession near burned and unburned stands at CPCRW
Pedagogical training in scientific journaling with primary students
Observing invasive plant infestation sites on the UAF campus

21 educators from Valdez, Fairbanks, North Pole, Takotna, Healy, Homer, Shageluk, Wasilla participated
Citizen Science Invasive Plants and Pollinators Project

- enables educators to incorporate real world data into classroom activities

http://www.youtube.com/watch?v=6xt-A08H8wM
Other Workshops/Courses for Teachers

GLOBE Seasons and Biomes Workshops:

- June 2011 - one week workshop, 3 credits
- March 2011 - Voru, Estonia
- October 2011 - Baska, Croatia
- November, 2011 - Eupen, Belgium
Other Workshops/Courses for Teachers

GLOBE Seasons and Biomes Workshops held at professional conferences

- GLOBE Annual Meeting, July 2011
- Alaska Math and Science Conference, Oct 2011
2-day class and field trip to BNZ LTER
by Glenn Juday

Ecology and People of the Arctic

- 10 Mexican undergraduate students
- 10 North Slope Inuit & Interior Athabascan high school students
Osher Lifelong Learning program

- Science of climate change
- Role of humans in ecological change
- Energy and economics
- Predator Prey Relationships
Bringing BNZ Research to Faith Based Groups

- One People, One Earth -- Faith and Stewardship Conference – Terry Chapin & Katie V. Spellman
- Spellman initiated an ecologist speakers bureau program in Fairbanks
- Juday is Lead Scientist and Trainer for the Catholic Coalition on Climate Change
Other Presentations by LTER Scientists

• Local Knowledge for the Study of Sustainability and resilience in indigenous villages
Science, arts and humanities outreach program.