**From:** Amy Defreese
**To:** Betsy Herrmann
**Subject:** RE: GNLCC Webinar: Quantifying the benefits of watershed restoration in the face of climate change
**Date:** Tuesday, March 12, 2013 12:52:18 PM

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I'm going to register for this. It looks good and I am available.

Thanks,
Amy

*Amy Defreese, Ecologist*
*Utah Field Office*
*U.S. Fish and Wildlife Service*
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*West Valley City, Utah 84119*

*Email: amy_defreese@fws.gov*
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**From:** Betsy Herrmann [mailto:betsy_herrmann@fws.gov]
**Sent:** Thursday, March 07, 2013 1:43 PM
**To:** Amy Defreese
**Subject:** FW: GNLCC Webinar: Quantifying the benefits of watershed restoration in the face of climate change

FYI.

**From:** Romin, Laura [mailto:laura_romin@fws.gov]
**Sent:** Thursday, March 07, 2013 1:24 PM
**To:** Larry Crist; Betsy Herrmann; Melissa Burns
**Subject:** Fwd: GNLCC Webinar: Quantifying the benefits of watershed restoration in the face of climate change

scroll to the bottom of the March 13 webinar announcement and you'll see the one for wind energy development and sage grouse.

---------- Forwarded message ----------
From: **Larry Dalton** <larrydalton@utah.gov>
Date: Thu, Mar 7, 2013 at 11:50 AM
Subject: Fwd: GNLCC Webinar: Quantifying the benefits of watershed restoration in the face of climate change
To: Laura Romin <laura_romin@fws.gov>

Look at the Sage Grouse Webinar.

---------- Forwarded message ----------
From: **Great Northern LCC** <info@greatnorthernlcc.org>
Date: Wed, Mar 6, 2013 at 10:45 AM
Subject: GNLCC Webinar: Quantifying the benefits of watershed restoration in the face of

climate change
To: larrydalton@utah.gov

View this email in your browser

# March 13 Webinar

## A new model of watershed-scale aquatic monitoring from the Crown of the Continent: Quantifying the benefits of watershed restoration in the face of climate change

**Tom Black - U.S. Forest Service, Rocky Mountain Research Station and other project authors**
**Wednesday, March 13, 2013, 12:00–1:00 pm Mountain Time**
**Registration:** https://www3.gotomeeting.com/register/407021566

With support from the Forest Service, the Great Northern LCC, the University of Montana, and several local, regional, and national NGOs, the Southwestern Crown of the Continent Collaborative aquatic monitoring group has married two proven monitoring approaches to establish clear road restoration priorities for both managers and the general public, while simultaneously developing new tools to quantify the effectiveness of restoration treatments on aquatic systems. The results and approach are broadly applicable across multiple LCC's in the nation, particularly as the need for effective aquatic management strategies becomes increasingly urgent in a changing climate.

First, we have applied an empirical methodology known as GRAIP (Geomorphic Roads Analysis and Inventory Package) to monitor hillslope road and stream interactions. GRAIP both locates and estimates fine sediment generation produced on road surfaces and delivered to the stream. This tool has been combined with channel monitoring strategy known as PIBO (monitoring for the PacFish InFish Biological Opinion) that was originally developed to monitor sub-watershed changes over time in the Columbia Basin. The use of PIBO data to describe effectiveness based on sampling a single sub-watershed is inappropriate. Therefore, the sampling protocol was modified by simplifying data collection at a single site, while increasing the number of sites sampled within sub-watersheds to achieve an adequate sample size. Modified PIBO results are used to analyze relationships between in-stream channel conditions (including substrate condition) and road sediment delivery from GRAIP.

**Authors:**

- Tom Black, U.S. Forest Service, Rocky Mountain Research Station, Boise, Idaho
- Robert al-Chokhachy, U.S. Geological Service, Bozeman, Montana
- Eric Archer, U.S. Forest Service, Logan, Utah

Brett Roper, U.S. Forest Service, Logan, Utah
- Shane Hendrickson, U.S. Forest Service, Missoula, Montana
- Cameron Thomas, U.S. Forest Service, Missoula, Montana
- Bruce Rieman, U.S. Forest Service and the Clearwater Resource Council, Seeley Lake, Montana
- Jeff Kershner, U.S. Geological Service, Bozeman, Montana
- Travis Belote, The Wilderness Society, Bozeman, Montana
- Charlie Luce, U.S. Forest Service, Rocky Mountain Research Station, Boise, Idaho
- Clint Muhlfeld, U.S. Geological Service – Northern Rocky Mountain Science Center, Glacier National Park, Montana
- Anne Carlson, The Wilderness Society, Bozeman, Montana

**Register today for other upcoming webinars!**

- March 20: Understanding Greater Sage-grouse Response to Wind Energy Development at a Landscape Scale

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