

SnowNews

December 2011

Volume 1, Issue 2

Inside this issue:

| | |
|------------------------------|----|
| Spotlight on Julie Koeberle | 3 |
| Navajo Nation SNOTELs | 4 |
| "Fluidless" snow pillows | 5 |
| Operational river flow | 6 |
| High resolution climate data | 7 |
| Spotlight on Garry Schaefer | 7 |
| CR1000 tech note | 9 |
| Director's news | 14 |

Panel assesses response to Missouri River floods

Cara McCarthy
cara.s.mccarthy@por.usda.gov

The U.S. Army Corps of Engineers (Corps) convened an independent review panel in late September to assess the Corps' actions during the 2011 record flooding on the Missouri River.

Representatives from the NWCC, the National Weather Service's Arkansas Red-River Basin River Forecast Center, the USGS and Colorado State University participated.

The panel evaluated the Corps' pre-flood, during-flood and post-flood operations for the purpose of lessons learned and possible future recommendations.

The flooding along the Missouri River mainstem lasted almost six months, resulting in closed highways and damage



Last season's flooding in the Missouri River basin lasted nearly six months, affected seven states and caused an estimated \$1 billion in damages.

to cities, farms and public infrastructure.

Members of the panel had the opportunity to observe some of the flood damage and to listen to those who were affected by flood waters.

The panel studied infrastructure, communication, forecasting, weather and streamflow

observations, water-management decisions and guidance available from the Corps' "Master Manual," among other things.

The final report from the panel is due to the Corps on December 19, 2011.

[The Spring issue of SnowNews will have more on the final report.](#)

Drought Impact Reporter benefits farmers, resource managers

Drought is by far the most costly type of natural disaster, because it occurs over large geographical areas over long periods.



The creep factor of its accumulated effects are seldom

recorded (at least in near real-time).

An enhanced [Drought Impact Reporter](#) was released by the National Drought

Mitigation Center ([NDMC](#)) at the University of Nebraska/

Lincoln in October. As a companion tool to the [U.S. Drought Monitor](#), the Drought Impact Reporter will better assist resource managers and other decision-makers in offering relief to drought-stressed agricultural producers.

[... continued page 2](#)

Special points of interest:

- Boise River Watershed video on YouTube, see page 2
- Annual SnowPAC meeting, see page 8
- Tower climber and rescue training, see page 9
- New SCAN stations for California and Texas, see page 10
- 30-Year Normals software deployed, see page 10



Drought Impact Reporter/Monitor (cont from pg 1)

The updated Drought Impact Reporter has a new look and feel, provides more background and context on individual impacts, and distinguishes between impacts and reports, allowing a much greater range of information to be incorporated and extracted.

Information enters the Drought Impact Reporter as a report, and moderators decide whether it meets the tool's definition of an impact: An observable loss or change that occurred at a specific place and time because of drought.

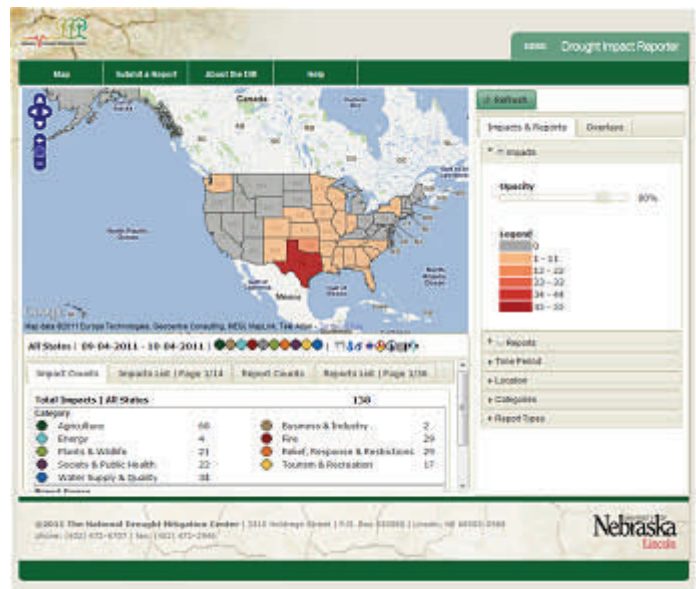
Reports come from media, users (i.e., anyone), Co-CoRaHS observers, National Weather Service Drought Information Statements, state-aggregated burn bans, state-aggregated water restrictions, and other summary reports compiled by agencies or organizations. The new system includes slight differences in how user-submitted reports are handled.

Reports and impacts are mapped separately. The de-

fault view of reports is to map them by point of origin – circles placed on the city or the county centroid – and the default view of impacts is to map them by affected area – shading – down to county level. This enables people to see whether drought-affected rural areas have local representation in the reporting process, or whether they are represented by media or agencies in urban areas.

The Drought Impact Reporter and U.S. Drought Monitor were developed with funding from the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture Risk Management Agency (RMA).

Contact the [NDMC](#) or refer to the Help page on the Drought Impact Reporter for more information.



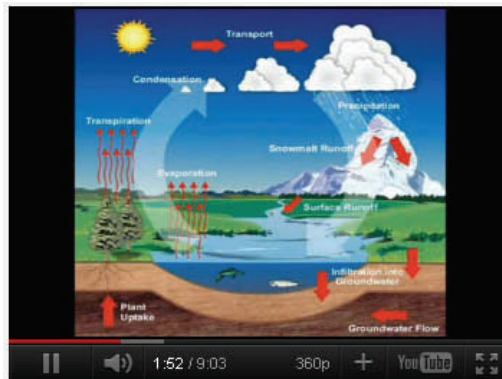
Example from the Drought Impact Reporter

Boise River watershed video on YouTube

Jeff Anderson, Idaho
jeff.anderson@id.usda.gov

“The Boise River – From Snow to River to You” is a 9-minute video designed to educate preteens about the Boise watershed, where their water comes from, and the many uses of that water in Idaho’s Treasure Valley.

The You-Tube video was produced in partnership with Idaho State University’s Boise



Boise WaterShed Environmental Education Center, and Bogus Basin Snow School.

The video features LiDAR, GIS data, Google Earth images, still photography, diagrams and narration.

Center Aerospace Lab (BCAL), NRCS Snow Survey,

Watch the video [here](#).



Spotlight On... Julie Koeberle



What's the perfect day in Julie Koeberle's eyes? That would be any day with snow in it.

Some of Julie's first memories growing up in South Carolina were those rare "snow days." Whether it was not going to school that day or the snow itself, she's not sure. But as a child, she remembers always being fascinated with the weather around her.

Julie attended the University of North Carolina, Asheville, gaining her Bachelor's degree in Meteorology. Although not considered a Mecca for winter recreation, Julie learned to ski while in North Carolina. For her graduate work, she headed west to Colorado State University, earning a Master's degree in Wood and Watershed Science.

Julie's first gig after college was as a weather forecaster. But there wasn't enough field work to satisfy her. So, she accepted a position with the National Weather Service

(NWS) in Seattle. It was in Seattle Julie got to spend off-hours hiking and skiing the Cascades. The biggest take-away, she met her husband, Justin, while in the great Northwest.

After two years with NWS, Julie moved to her current position with the NRCS Idaho Data Collection Office (DCO) in 2006. As a hydrologist with the agency, during the winter months Julie performs daily quality control checks on the data gathered from SNOTEL sites. She also prepares monthly outlook reports summarizing snowpack conditions for a diverse and ever-growing number of users.

Here, she also gets to fulfill her love for the outdoors, spending a significant amount of time in the field. During the summer, there's maintenance work on SNOTEL sites and snow courses. For instance, bears love to poke around and under snow pillows looking for ants. The winter months also

mean snowshoeing, skiing or helicopter flights into remote sites.

Julie recounts a 25-mile horse-pack trip into Yellowstone a few years ago. About 15 miles in, she and fellow DCO Jeff Anderson (neither avid riders), decided to walk the remainder of the way. The trail was narrow, and Julie walked to the rear with her head down. Suddenly, she heard "Bear!" She looked up, and about 100 feet ahead was an 18-month-old grizzly bear. The grizzly turned toward them and stood up on two legs, apparently trying to locate their scent. The bear then thought better of the idea, and exited back into the forest cover. Whew!

The Idaho wilderness is not lost on Julie and Justin. In addition to skiing in the winter, they enjoy mountain biking, hiking, and rafting in the summer. Julie also plays a mean guitar and is currently learning to play the fiddle (although that's still a little squeaky).



Julie hiking with best buddy, Legend.

80th Western Snow Conference to convene in Alaska

It was 1933 when Dr. James Church organized the first **Western Interstate Snow Survey Conference** in Reno, Nevada. That first conference was attended by a handful of snow surveyors from a few Western states. Later renamed the **Western Snow Conference**, this year marks the 80th anniversary of the gathering.

The 2012 Western Snow Conference is scheduled for May 21-24 in Anchorage, Alaska. The theme is "Bright lights and winter nights – working with extremes."

Jon Lea, snow survey supervisor, NRCS Oregon, is the general chair for the conference. In addition to the executive meeting and technical presentations, a short course on "Data Collection Communication Options" is planned, along with a tour of the Alaska wild game farm and Portage Lake.

Call for Papers: If you're interested in participating in the 2012 conference as a presenter, [you're invited to submit an abstract of 150-300 words by February 15.](#) Submit your abstract to Scott Pattee,

scott.pattee@wa.usda.gov.

Please indicate either "oral" or "poster" with your submission, and the lead author's name, address, phone, fax and email.

Some topics to consider for submission: climate impacts on snow and runoff, water management, water supply forecasting, runoff modeling, permafrost, data collection, arctic and subarctic research, and climatology of snow.

More details about the conference, including lodging, agendas, and tours are at www.westernsnowconference.org.





Navajo Nation SNOTEL sites span two states

Dino DiSimone
dino.disimone@az.usda.gov

The Natural Resources Conservation Service (NRCS) recently cooperated with the Navajo Nation Water Management Branch to install two new SNOTEL (Snow Telemetry) sites in the Chuska Mountains northeast of Window Rock, Arizona. One site, called Beaver Spring, is located at 9,200 feet elevation on the Arizona side of the

mountains, and the other site, Navajo Whiskey Creek, is situated at 9,050 feet in New Mexico.

The data from these sites are now used to monitor snow-pack and climate conditions throughout the winter and to help develop water supply forecasts for several streams and reservoirs on the Navajo Nation.

The sites were installed by a crew consisting of NRCS staff

from Arizona, Colorado and New Mexico with assistance from the Navajo Nation snow survey crew. In addition to these two new SNOTEL sites, the Navajo crew monitors nine snow courses. These sites were originally established in the early 1980s. The Navajo crew conducts snow surveys at these remote sites twice a month throughout the winter.

Richard Armijo, former NRCS snow surveyor, helped the Navajo Nation by establishing the first site at Navajo Whiskey Creek in 2009. Richard had been working with the Navajo Nation for many years to get everything in place for the site to become a reality. Richard passed away just a few months later. Thanks to his efforts, snow, precipitation and other critical climate data are now transmitted and posted hourly to the NRCS [National Water and Climate Center website](#).

Following installation of the new sites, **John Leeper**, manager of the Navajo Nation Water Management Branch, commented, "Thank you for the NRCS support for these SNOTEL sites."



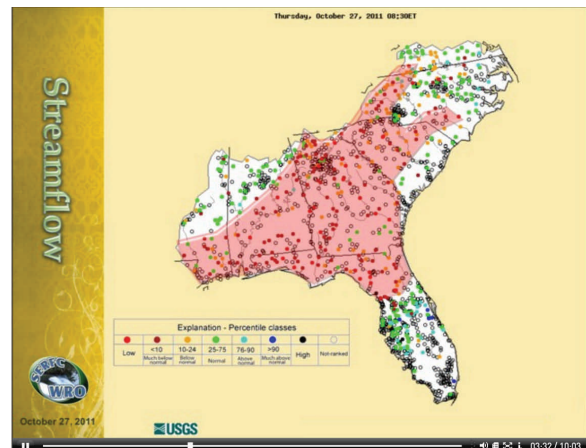
Installing the Beaver Spring, Arizona SNOTEL site

Water Resources Outlook: new videos available

The National Weather Service Southeast River Forecast Center (SERFC) Water Resource Team recently released several informative videos on their website.

Called [Water Resources Outlook](#), the videos offer summaries of water resources for seven southeastern states: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Virginia.

The photo at right shows a portion of the SERFC video for the state of Georgia.



“Fluidless” snow pillow testing underway

Garry Schaefer
garry.schaefer@por.usda.gov

Snow pillows measure the water equivalent of snowpack based on the weight of the overlying snow.

Traditional design — In use since the 1960s, snow pillows have traditionally consisted of sheets of stainless steel or polyethylene material which are joined to form an airtight pillow. Pillows are filled with an anti-freeze solution.

As snow settles on the surface of the pillow, the weight of the water in the snow displaces the antifreeze. A pressure transducer measures the displacement and then converts the data to a signal for transmission.

Functional, yes. Easy to maintain, no. Keeping the appropriate fluid level in remote SNOTEL stations can be challenging. Plus, fluid-filled pillows are susceptible to damage and leaks.

In addition, temperature can cause changes in the structure of the antifreeze, which can affect pressure readings.

New design — The new design replaces the fluid-filled pillows with “fluidless” pillows. Load cells, similar to those used in truck weigh stations, replace the pressure transducers.

Last September, members of the Water and Climate Monitoring team installed three fluidless snow pillows (4', 6' and 9' in diameter) at the Santiam Junction SNOTEL site in central Oregon.

The goal was to evaluate the accuracy and serviceability of the new design.

A first assessment revealed the fluidless snow pillows were easier and quicker to install than traditional snow pillows.

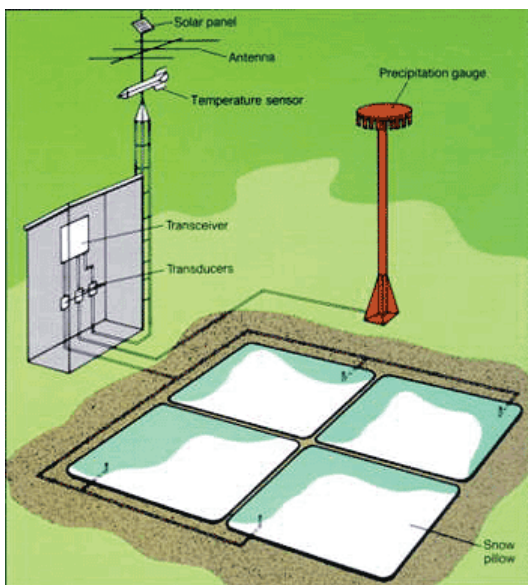
This winter's

snowfall at Santiam Junction and the performance of the fluidless pillows will be closely monitored and compared to the results from the standard snow pillows, which are also onsite.

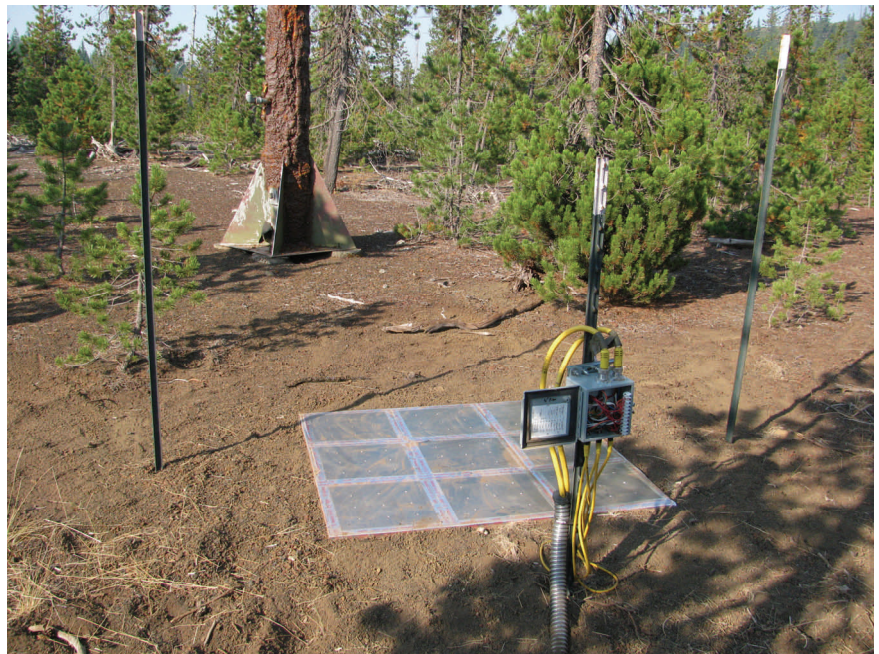
Watch the next issue of **SnowNews** for an update on the fluidless snow pillow evaluation.



“Fluidless snow pillows are easier to install, maintain, and more environmentally-friendly than today's snow pillows.”



The fluidless snow pillow design replaces pressure transducers with load cells to measure snow water equivalent.



6-foot diameter fluidless snow pillow and load cell electronics at Santiam Junction SNOTEL. Note “camouflaged” storage precipitation gage in background.



Workshop Report

Operational River Flow and Water Supply Forecasting

During the week of October 3, David Garen and Rashawn Tama traveled to Vancouver, BC to participate in a two-day workshop “Operational River Flow and Water Supply Forecasting.”

Sponsored jointly by BC Hydro and the Canadian Society for Hydrological Sciences, the workshop drew approximately 70 participants from Canada, the U.S. and Sweden, including both researchers and practitioners.

The subtitle of the workshop, “Wrong but Useful?” reflected the hosts’ desire to foster discussion about how to appropriately describe and communicate forecast uncertainty to users. However, it was also designed to form more effective partnerships between various operational forecasting organizations and share operational forecasting technologies.

Eighteen presentations were given over the two days, covering simulation modeling, ensemble forecasting, new methods and other topics in operational forecasting.

David and Rashawn’s presentation focused on how forecasters make decisions re-

garding the reasonableness of forecast model guidance.

When model guidance doesn’t seem reasonable, forecasters employ a variety of heuristics – rules-of-thumb – to make adjustments to the forecast values, with the intention of providing what they believe to be better forecast information to users. The results of their historical analysis indicate that, while subjective forecaster adjustments may sometimes improve forecast accuracy, they are equally likely to decrease forecast accuracy. This indicates that these heuristics (called “memes” in the presentation) need further examination and testing before assuming that they form a reliable basis in judging or adjusting forecast model output.

In addition to providing a unique perspective on the operational decision-making process used by NRCS forecasters, David also facilitated small group break-out discussions during the afternoon sessions of the workshop.

These small group discussions focused on three different aspects of the operational forecasting process: data collection and processing,

operational hydrologic modeling systems, and ensemble forecasting techniques.

Despite the wide variety of groups represented, there was considerable consensus about the issues and needs surrounding operational forecasting. The issues of accurately describing forecast uncertainty and post-processing ensemble forecasts to correct for bias were among the highest priority issues. Also near the top of the list were improvements in quality control of forcing data, expanding the network (at low cost) of reliably reporting weather stations, and advancing the science and operational use of remote sensing data.

By the end of the workshop it was clear that most operational forecasting organizations are struggling with the same modeling issues. With luck, greater collaboration between agencies and improved applied research will facilitate the advancement of river flow and water supply forecasting in the coming decade.

Questions? Please contact David Garen

david.garen@por.usda.gov

“The results of their historical analysis indicate that, while subjective forecaster adjustments may sometimes improve forecast accuracy, they are equally likely to decrease forecast accuracy.”

Planning outdoor fun this winter? Montana’s got you covered

Outdoor recreation in winter-time means planning for the elements. The National Weather Service (NWS) Western Region Headquarters introduced a new site as part of its [Montana All-Hazard Weather Monitor](#).

Outdoor enthusiasts can now link to a site specifically de-

signed to showcase the probability of snow and ice accumulations, as well as real-time weather conditions in Montana.

The [Outdoor Recreation](#) page features snow and ice accumulation forecasts for 3-day events, an interactive map of weather watches/advisories,

area forecasts and Doppler radar maps.



High-resolution Climate Extractor

The [High-resolution Climate Extractor](#) (HCE) is an easy-to-use climate locator and data extractor. The web-based tool lets you locate and preview climate data and then export that data in various formats.

HCE extracts 4km-resolution daily [PRISM](#) data (temperatures and total precipitation) from 1960-2006. The datasets were developed by Mauro Di Luzio at the Texas A&M University System (TAMUS).

HCE uses a straightforward approach to define the dataset. Users navigate to an Area of Interest (AOI) on a map of the contiguous United States. Once the AOI is defined, the tool automatically determines the mid-point of the selected

area and displays the latitude and longitude of the mid-point. Alternately, users can enter latitude and longitude coordinates directly or define the area by state, county, and weather station.

After selecting the location, HCE lets you specify how you want data displayed (for example, Fahrenheit vs. Celsius vs. Raw), the data resolution and the timestamp format .

Once the climate data format is defined, HCE lets you select the export format for the data. Data can be exported as text file or an Excel file in various file formats. You can include or exclude data elements or select from one of several predefined, custom formats.

HCE is an ongoing project from the West National Technology Support Center (WNTSC). For more information, contact Jan Curtis, jan.curtis@por.usda.gov.



The HCE Area of Interest tab lets you define the location for climate data export.



Spotlight on... Garry Schaefer

Garry Schaefer inherited his love of travel from his father, a Navy man. He grew up on the family farm near Aumsville, Oregon. Although a dairy farm, the 300 acres supported row crops, strawberries and other produce. By the time he was nine, Garry was driving the John Deere. Into his teens, he was responsible for a good deal of the farm's daily chores.

He aspired to be a doctor when he entered Oregon State University on a partial track scholarship. (Garry later joined the basketball team as a shooting guard and played under Ralph Miller.) However, several months into college Garry realized he didn't want to spend his career in a lab. He wanted to be outdoors and travel to new places.

So Garry changed his course of study and graduated with a degree in Soil Science with emphasis in Chemistry and Microbiology.

After graduation, Garry set his sites on entering the Soil Conservation Service (SCS, now NRCS). After almost a year of "hounding" soil scientists at the Portland office for a job, a position in Eugene opened. In 1974, Garry went to work mapping soils in Lane County from the Cascades to the coast. During the winter months, part of his duties were to do manual snow courses measurements of about six courses.

Following a move to Coos County, where he worked on several soil interpretation projects, Garry accepted the position of Assistant Snow Survey

Supervisor for the Nevada office. He moved to Reno in 1978 and began his work as a hydrologist. He fell in love with the Lake Tahoe area. Helicopter trips into remote areas often meant measuring 20-25 snow courses per day.

... continued page 8



Garry installed his last SCAN station in California in October.



SnowPAC annual meeting held December 5-8

Fourteen Data Collection Officers (DCOs) and Water Supply Specialists (WSSs) met in Portland December 5 - 8 for the annual SnowPAC (Snow Program Advisory Committee) meeting.

Representatives from Alaska, Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah and Wyoming attended.

Topics covered included: snow survey cooperative program and future directions, new tools and products under development, program status reports, data telemetry update, Missouri River Flood Task Force status, and status of the recent organizational assessment.

NWCC staff provided demonstration of several new tools

and gained valuable insight from discussions with field office participants.

Mike Strobel commented, "It was a very productive meeting. We got great input from the field. Their suggestions will be very useful for the program moving forward."



Seated: Dan Greenlee, Randy Julander, Rick McClure, Wayne Sleep, Dino DiSimone. **First row:** Mike Strobel, Mage Skordahl, Claudia Hoeft, Lee Hackleman, Jolyne Lea, Jacquie Workman, Laurel Grimsted, Del Gist, Garry Schaefer. **Back row:** Tom Perkins, Jim Marron, Bill Overman, Melissa Webb, Jan Curtis, Cara S. McCarthy, Rashawn Tama, Scott Oviatt, Phil Morrissey, Tony Tolsdorf, Jon Lea, Ron Abramovich, Gus Goodbody. Mike Gillespie participated via phone.

...continued from page 7

What will you miss when you leave NRCS?

"The people, and knowing we're doing something valuable for so many folks."

What won't you miss?

"Circular discussions."

In 1983, Garry transferred to the Colorado Data Collection Office. He was promoted to Snow Survey Supervisor in 1985.

Two years later, Garry made the move back to Oregon to become Data Resources Supervisor.

Garry has always been interested in the correlation between soil moisture content and spring runoff. In the 1990's he was instrumental in the development and growth

of the Soil Climate Analysis Network (SCAN) program.

When asked about some of his favorite memories, Garry notes a trip he and Don Huffman made to Maine in December 2004. They were helping the National Weather Service install soil-moisture sensors for a SCAN station.

At some time during the trip, both Garry and Dan realized that this trip to Maine marked an important milestone. They both had travelled to each of the 50 states as part of their work with NRCS!

Garry's travel schedule in the coming months is equally impressive: In February, he'll spend a month motoring his 40' trawler between Key West and the Dry Tortugas with Stan Fox. Spring break finds him and his wife in Cabo San Lucas. And, in July and August they'll travel to Alaska, fishing and camping with other NRCS friends.

Thanks for your 37 years service, Garry.

We'll expect pictures.

CR1000 datalogger at SNOTEL stations. Taking the leap.

Over the past fifteen years, our SNOTEL network has relied on the use of Campbell Scientific CR10X dataloggers. While this old friend has proven to be a reliable component for data collection, unfortunately its days are numbered for SNOTEL use, as the CR10x was taken out of production by Campbell several years ago.

To replace the CR10X, all SNOTEL sites will eventually need to use the CR1000 datalogger. However, this presents some challenges. One of the biggest challenges will be for field personnel to become familiar with the **CRBasic** programming protocol, which is considerably different than the **Edlog** protocol used to program the CR10X.

Another challenge is to gain familiarity with the CR1000 interface to the MCC 545B radio. Many 545B interface commands are similar to CR10X commands, but there are some differences.

There are a few glitches in the CR1000-545B interface, but certainly no big obstacles to preventing the use of the CR1000 at SNOTEL stations.

Here are things to consider when migrating from the CR10X to the CR1000:

- Currently only one version of the CR1000 Operating System (OS) works with the 545B. The OS in the CR1000 must be version 10. Any other version prevents the 545B from receiving table definitions required to transfer data from the logger to the radio. Version 10 of the OS is available from the National Water and

Climate Center (NWCC). MCC and Campbell have determined the cause of this issue and are working to correct it.

- Unfortunately, version 10 of the OS prevents the use of some more current programming code, for example code that allows 24-hour data to be transmitted in the same table as hourly data. It does not prevent the 24-hour data from being collected or transmitted, but it will require some DCOs to reconfigure their raw data output so that 24-hour data shows up in its own group.
- After the installation of any new program into the CR1000, or if a new CR1000 is connected to a 545B, the 545B must be rebooted. This allows the 545B to receive the table definitions required to transfer data from the logger to the radio.
- After the installation of a new program into the CR1000, it is necessary to run the logger past midnight before it will start transferring the 24-hour group to the 545B. This is not a problem on new installations as it means it will miss the first night's 24-hour summary (which would be incomplete for the most part anyway). However this may be critical if you are changing programs or dataloggers during an event.

NWCC has been working with the CR1000 datalogger for over five years and have more than 100 units installed at Soil Climate Analysis Network (SCAN) stations throughout the U.S. We have found them to be extremely reliable.

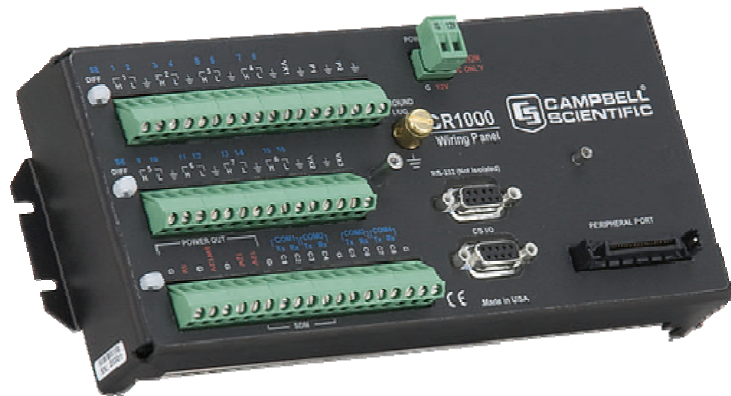
Many DCOs and states are getting familiar with the CR1000, but as our network continues to expand, eventually all sites will need to make the leap from the CR10X to the CR1000. We encourage you to start this conversion as soon as possible so that the transition can be gradual.

The NWCC would be happy to help those getting started with the CR1000 conversion.

Contact Tony Tolsdorf tony.tolsdorf@por.usda.gov (503) 414-3006 for questions or assistance.



According to the manufacturer, "The CR1000 builds on the foundation of CR10X dataloggers, and has already been put to use all over the world. Increased memory and more measurement channels make it a powerful core component for data-acquisition systems."



CR1000 datalogger



Basic vs. enhanced SNOTEL stations

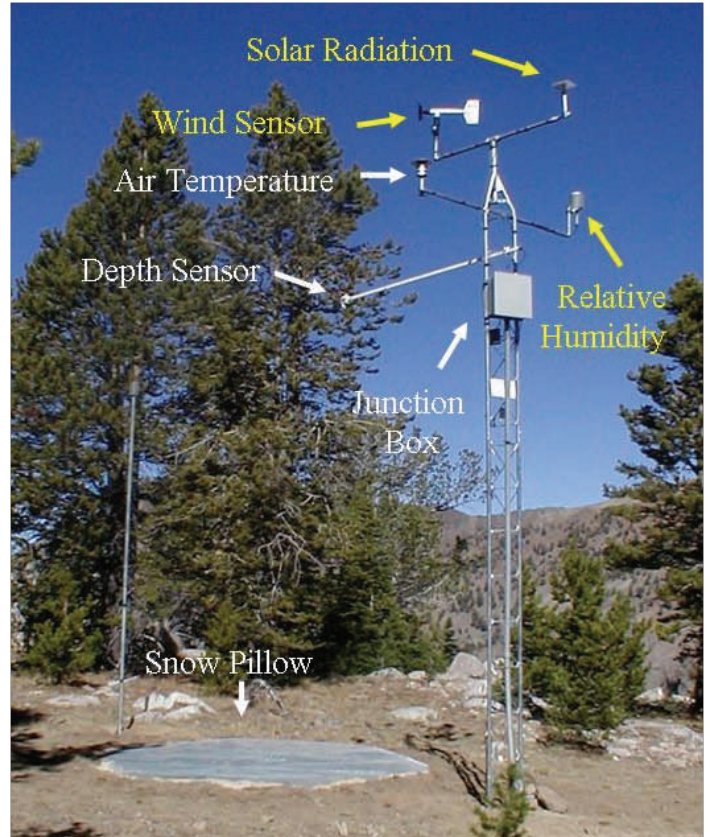
What's the difference between a "basic" Snow Telemetry (SNOTEL) station and an "enhanced" SNOTEL station?

The basic SNOTEL station provides snowpack water content data via a pressure-sensing snow pillow. It also collects data on snow depth, all-season precipitation accumulation, and air temperature with daily maximums, minimums, and averages.

However, a growing number of SNOTEL sites now include a combination of enhanced climate sensors (shown in yellow in the photo). These enhanced SNOTEL sites may include sensors to measure any or all of the following: wind speed/direction, solar radiation, relative humidity, precipitation (tipping bucket rain gage - not shown), or barometric pres-

sure (not shown). Enhanced sites generally also include

soil moisture and soil temperature sensors.



Enhanced SNOTEL site: Smiley Mountain, Big Lost River Basin, Idaho (9,520 feet)

Getting to ~~S~~ know you.

Win a gift certificate!

Everyone has interesting or unusual things that have happened in their lives. We decided to share some "fun facts" about us, and let you guess who they're about.

Here's how it works. You match the fact to the person, and submit your guess to jacquie.workman@por.usda.gov

All the correct guesses will go into a hat. Each issue Mike will award a \$20 restaurant gift certificate to the name drawn.

Good luck and have fun!

Match the fact to the person

- | | |
|--|--------------------|
| 1. Recently completed a sprint triathlon and did NOT finish last. | A. Lucas Zukiewicz |
| 2. Was once a city-wide ping pong champion. | B. Dino DiSimone |
| 3. Has a dog named Stella R. Dendrite. | C. Randy Julander |
| 4. Used to drive a school bus-RV that was painted like a giant shark | D. Don Huffman |
| 5. Went on first snow survey in mid-1960's with father. | E. Daniel Fisher |

Watch for the winner and more facts in the next issue of *SnowNews*.

Instructor certification - Tower climber and rescue

Tony Tolsdorf and **Rashawn Tama** recently attended a four-day instructor training course on tower climbing and rescue.

The course was a combination of in-class and field exercises. It also included instructor development content to help build an effective in-house training program.

Tony and Rashawn learned about improvements to tower climbing equipment and connecting devices as well as updated guidelines and recommendations from ANSI (American National Standards Institute). Implementation of these new ANSI standards will help reduce the risk of falls and injury while Snow Survey and Water Supply Forecasting (SSWSF) Program staff perform the tasks associated with SNOTEL and SCAN maintenance across the country.

In addition, Tony and Rashawn were trained in the use and deployment of new rescue systems designed for a range of deployment possibilities. If an accident were to occur while working on a

tower, these new systems and techniques offer safer, more flexible, and faster implementation, ensuring that fall victims spend less time hanging suspended in their harnesses.

Based on a block-and-tackle approach with auto-locking controlled descent devices, these new rescue techniques also ensure that relatively heavy individuals can be safely rescued by smaller co-workers. With one of the 5-to-1 pulley systems, the effective weight of a 300lb worker is reduced to just 60 pounds.

These types of rescue techniques and additional information will be presented at the annual tower climbing training, currently scheduled for Boise in the spring of 2012.

For questions or more information, contact Tony Tolsdorf Tony.Tolsdorf@por.usda.gov or Rashawn Tama Rashawn.Tama@por.usda.gov.



*Tower climber and rescue training exercises.
Photo provided by Gravitec Systems.*



“...these new systems and techniques offer safer, more flexible, and faster implementation...”

Upcoming events

Events of interest in the coming months.



What: Snow School

When: January 8-13, 2012

Where: Granlibakken Lodge, Tahoe City, CA

How: Register on AgLearn

Who: Tony Tolsdorf
tony.tolsdorf@por.usda.gov

What: Tower Climbing Training

When: May 2012

Where: Boise, ID

How: Contact Tony

Who: Tony Tolsdorf
tony.tolsdorf@por.usda.gov

Who: Jon Lea (general)

jon.lea@or.usda.gov

Scott Pattee (papers)

scott.pattee@wa.usda.gov

What: Western Snow Conference

When: May 21-23, 2012

Where: Anchorage, AK

How: Register at
www.westernsnowconference.org



New SCAN sites in California, Texas

The Soil Climate Analysis Network (SCAN) continues to grow.

California to add nine sites this season

In November, NWCC personnel assisted the California Bureau of Land Management (BLM) in building the first five of nine new SCAN sites.

These “reimbursable” sites are located throughout the extreme southeast portion of California.

According to Tony Tolsdorf, “The construction of these sites went very smoothly. We’ll be scheduling the work on the remaining four stations soon.”

SCAN sites will aid in drought forecasting

The State of Texas and several cooperators are working with NWCC to construct five SCAN stations in Texas.

Equipment for the stations is already procured, and the site

selection process is currently underway.

Contact Tony (tony.tolsdorf@por.usda.gov) for more information on the project.

A climatic “normal” is the arithmetic average of a climate element (such as temperature or precipitation) over a prescribed 30-year interval.

30-Year Normals software deployed

Maggie Dunklee (Information Systems Team Database Manager) and **Rose Loehr** (Information Systems Team Operations Specialist) deployed the NWCC 30-Year Normals software on November 17.

This software, completed by Team Vistrionix programmers, lets Snow Survey Program DCOs quickly develop 1981-2010 averages and medians for all climate and hydrologic data collected via automated SNOTEL transmissions, manual snow course measurements and gathered from co-

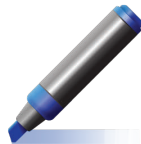
operators all over the West. This software will also identify missing data in the SNOTEL database and allow DCOs to input the correct values, if available.

Climatic and hydrologic data normals used by NWCC hydrologists are the standard by which the current year’s values compare to other reference years. The calculating period is set by the World Meteorological Organization (WMO) as the latest 30-year period. The current 30-year reference is the 1971 through 2000 period. The new set of

30-Year Normal values will reflect the 1981-2010 period. The WMO standard was adopted through a memorandum of understanding (MOU) between the National Weather Service (NWS) and NRCS.

Many people and organizations are eager to use these data values and 30-Year Normals for climate change studies.

More info? Contact Tom Perkins (tom.perkins@por.usda.gov)



NWCC highlights

Jolyne Lea, forecast hydrologist recently received her 25-year service award from Tom Perkins, Water and Climate Services team leader. Congratulations, Jolyne!

Curtis Charles, program manager, Team Vistrionix, became a PMP (Project Management Professional) in October. Curt has already

achieved an MBA degree and CSM (Certified SCRUM Master) certification.

Mike Strobel attended a Soil Moisture Active Passive (SMAP) workshop in October. Representatives from NASA and various USDA agencies met to discuss how USDA could take advantage of the

spatial soil-moisture data that will be available from the satellite NASA plans to deploy in 2013.

Garry Schaefer, Water and Climate Monitoring team leader, is retiring from government service at the end of December. We put the spotlight on Garry on page 7 of this issue.

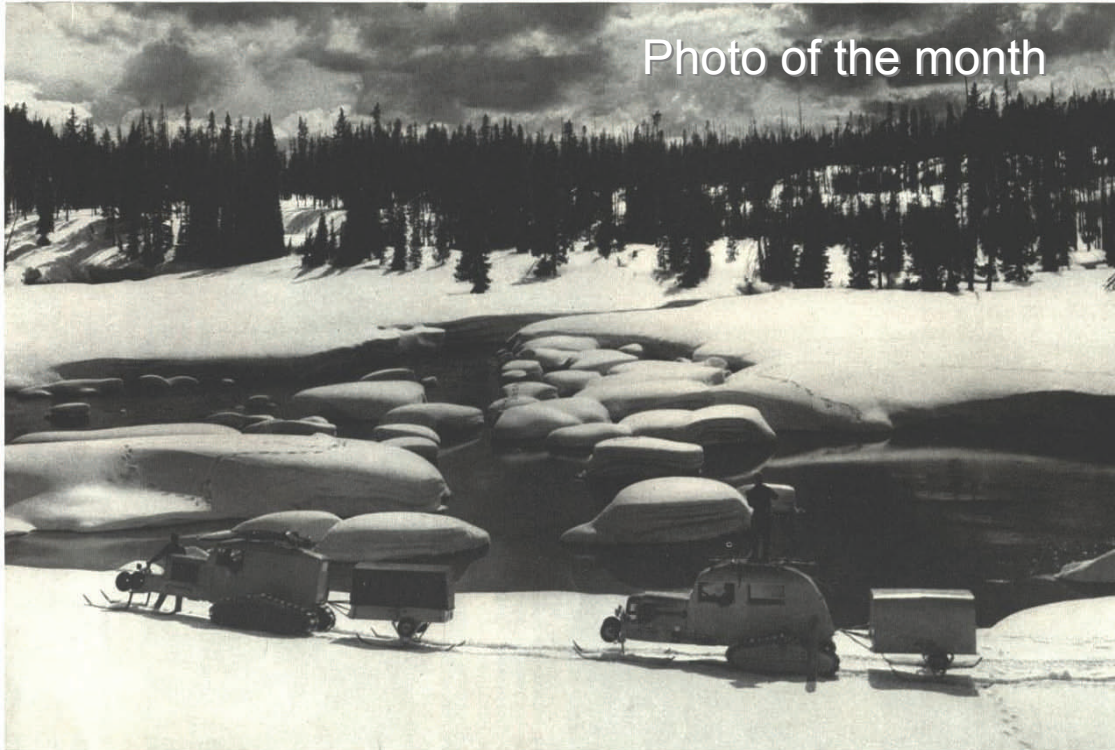


Photo of the month



Can you guess the year?

National Geographic chronicled a 23-day snow survey trip from the California-Oregon border along the crest of the Cascade range. This photo of Sno-Cats appeared in the article.

Swift Waters of Hell Creek, Knifing Through Deep Snow, Carve Tiny Islands Like Frosted Cakes

Operation Sno-Cat Cascade halted to let members of the expedition admire this winter phenomenon near Devils Pass. Dark streaks show how snowfalls added layers to the mounds built upon sandbars. Some islands rise eight feet above the stream's surface. Sno-Cat and trailer wheels drop down for travel on open ground.

Answer on page 10

Products and resources on the web

Web-based tools for monitoring the weather and climate change continue to evolve. Here are some of our top web picks:

[U.S. Records](#). This useful web resource archives the day, month, and all-time temperature, precipitation, and snowfall records (tied or broken). For example, check out the record precipitation that fell due to Hurricane Irene (August [27th](#) and [28th](#)).

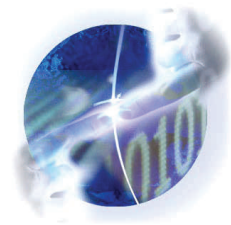
[Drought Indicator Blend and Component Percentiles](#). A new product issued monthly by the National Weather Service Climate Prediction Center. The report provides data on elements that determine drought. Information is displayed in a convenient matrix format.

Attention resource managers... The new 30-Year Normals (1981-2010) are available in table format for all National Weather Service COOP (Cooperative Observer Program) and First Order Stations at: <http://ggweather.com/normals/>. And, there's more data on the way from NOAA: <http://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/>.

Sometimes you have geographic data that consists only of latitudes and longitudes, but you want to know the altitudes as well. The [GPS Visualizer map](#), [profile](#), and [conversion](#) programs have the ability to instantly add elevation data – from a DEM (digital elevation model) database – to any type of GPS file.

The [Iowa Environmental Mesonet](#) offers wind rose climatology by month and by custom dates. This important weather parameter is often difficult to acquire. This web resource is highly recommended.

Extreme weather may be the new norm: It's easy to forget that short term **climate variability** can be more important than longer term **climate change** (trends) as this [article](#) from the *Los Angeles Times* illustrates.





National Water & Climate Center
 Natural Resources Conservation Service
 US Department of Agriculture

1201 NE Lloyd Blvd.
 Suite 802
 Portland, OR 97232

Phone: 503-414-3038
 E-mail:

jacque.workman@por.usda.gov

For issues of **SnowNews** go to:
www.wcc.nrcs.usda.gov/publications/

Helping People Help the Land.

Our mission is: *"To lead the development and transfer of water and climate information and technology which support natural resource conservation."*



With a vision of the future as:

"A globally-recognized source for a top quality spatial snow, water, climate, and hydrologic network of information and technology."

From the Director's desk



Welcome to the second issue of **SnowNews**. We had a large number of responses with very positive and supportive comments following our first issue. This second **SnowNews** is even better than the first one. I encourage those in our program to submit articles and stories to publish in future newsletters.

These are some difficult and turbulent times right now, with budget reductions, possible changes in the organization and operations of our program, and many people retiring. It is easy to feel concern and uncertainty. How-

ever, there are two things to keep in mind: One, we have been through difficult budget and organizational times in the past and have always come out ahead in the long run. And two, although change can be unnerving and often difficult, it also can make us a stronger and more efficient program. I hope you look on these times as both a challenge and an opportunity to head the snow survey program in new and better directions. I am confident we will emerge a strong and healthy program with clear goals and a bright future.

It is, in many ways, easier to deal with the budget and organizational issues of the program than it is to deal with retirements. From a strictly managerial view, there are concerns with losing so much institutional knowledge and experience, and with being able to hire and fill vacancies. But more important is the personal perspective as colleagues and friends move on

to new adventures and how this changes the dynamics and relationships in our work environments. Change in life is inevitable and I know we will miss both Mike Gillespie and Garry Schaefer very much, but I also hope they now can pursue the fun things retirees have time to pursue. We will see many more retirements in the next few years, and we will see many other people, both internal and from the outside, step up to fill the slots with new ideas, enthusiasm, energy and unique personalities.

Change can be scary, but it also brings many good things along with it. So, be happy for our colleagues who are retiring and look forward to how the next generation of leaders will move the program forward into the future.



USDA NRCS is an equal opportunity employer and provider

Trivia answer: The photo of Sno-Cat is from the November 1949 issue of National Geographic.