

# SnowNews

June 2012

Volume 1, Issue 4

## Western Snow Conference celebrates 80 years

**Jolyne Lea**

**NWCC Forecast Hydrologist**

The Western Snow Conference held its 80<sup>th</sup> annual meeting, May 21–24 in Anchorage, Alaska.

The conference theme was “Bright Lights and Winter Nights – Working with Extremes.”

### Conference highlights

The conference offers an opportunity for professionals and researchers to learn about new information, models and tools that could benefit our users.

One of the highlights of this year’s conference was a short course on “Remote Data Collection Communication Options.” Several experts on the panel discussed the merits of

meteor burst, GOES, iridium modems and cell phones to transmit remote climate and SNOTEL station data.

A technical tour included DOT avalanche control techniques on the major roads around the city and a visit to Portage Glacier.

Oral and poster papers represented the latest snow research, with several papers from the University of Alaska, and speakers from other universities, NRCS, Federal, state, municipalities and utilities.

There was good attendance from international groups, mainly Canadian colleagues from British Columbia, Alberta and the Yukon. Several student papers were presented, and students were encouraged to participate and network with researchers and professionals.

### Conference organizers

Jon Lea, Oregon Program Manager and DCO Supervisor, completed his two-year term

as conference general chair. Jolyne Lea, National Water and Climate Center (NWCC), assisted Jon in presenting two poster papers, with meeting arrangements and as awards committee chair.

The North Pacific area hosted the conference. Scott Pattee, Washington Water Supply Specialist was conference organizing committee chair. Rick McClure, Alaska DCO Supervisor, Daniel Fisher and Dan Kenney provided local conference arrangements and presented two posters. Randy Julander presented two oral papers.

### 2013 conference

Ron Abramovich, Idaho Water Supply Specialist and chair of the North Continental Area will host the 2013 Western Snow Conference in Jackson, Wyoming.



*In keeping with this year’s theme, “Bright Lights and Winter Nights,” sunset at 11PM from the conference venue.*



*The technical tour included a trip to Portage Glacier on the Kenai Peninsula.*

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Special points of interest:

- Tower climbing, safety training
- SCAN in the news
- Products and resources on the web
- Quick resource locator



Aerial markers “come of age”

## Automated aerial marker pilot project

**Randy Julander**  
Utah Data Collection Office

In the good ol’ days of snow survey, when travel to a snow course involved the Model A or T, then some horseback riding, and then some hiking on skis or snowshoes – getting that all-important measurement could take several days.

As time and technology moved on, one of the first advances from snow courses were aerial markers. Using aerial markers, one could fly over a painted stick in the ground and see how deep the snow was. Admittedly, this did not give as accurate a depth because one was measuring in 6-inch increments from a long way up while going very

fast. But, it allowed for measurements in distant locations and places difficult to get to on the ground at a reasonable cost.

Thus, aerial markers became fixtures in the Snow Survey Program and were summarily forgotten. Not forgotten in terms of measurement – we very merrily went about our tried-and-true methods of squinting outside the aircraft window at the blaze orange scarecrow with many arms year after year – dutifully filling out that data note as we left one and travelled to the next. Aerial markers were forgotten in terms of technological advancements.

Fast forward through all the developments in SNOTEL

with many different sensors being added to our repertoire over time, to a problem recently faced by the SNOTEL system in Alaska.

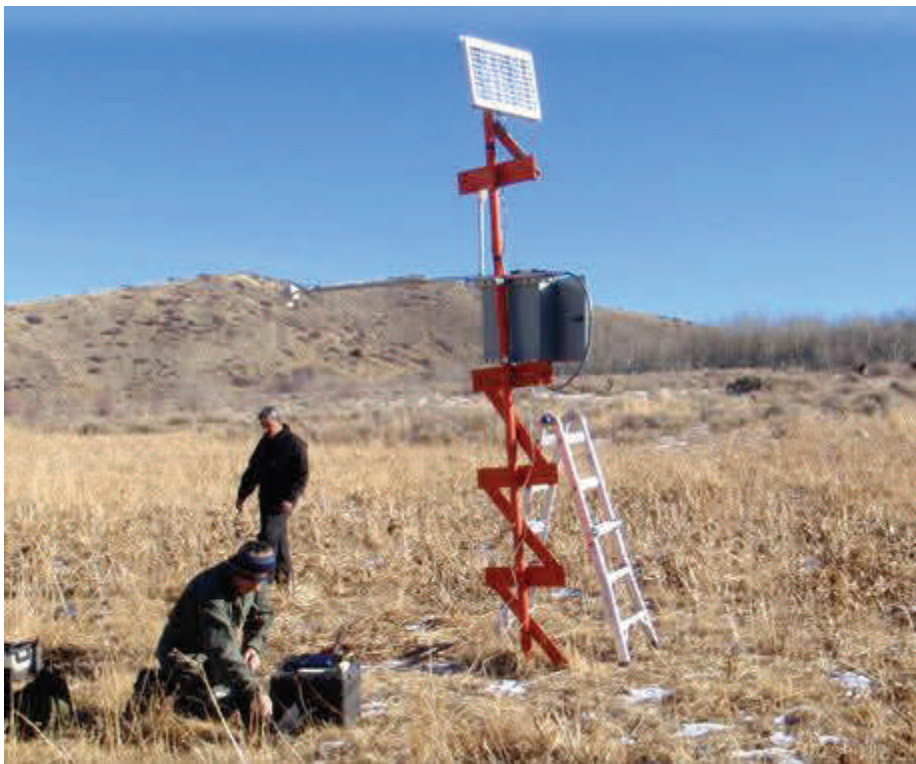
The program in Alaska was confronted with making a move from the meteor burst radio system synonymous with SNOTEL to a new transmission system using iridium satellite telemetry.

The new iridium technology was very compact compared to our existing sites – just right for a small-footprint aerial marker. This meant we could add a suite of sensors to an existing aerial marker, get daily data instead of just monthly data, and keep the same footprint for a cost much less than a full blown SNOTEL site.

The Utah DCO staff installed the first automated aerial markers this past fall and winter as a pilot project. The site installations went smoothly and the sites have been working extremely well. They are currently set up to provide four observations per day of snow depth and temperature.

In the future, a standard temperature sensor, soil moisture/temperature sensor and potentially a precipitation gage will be added, giving these sites all the capabilities of a standard SNOTEL, with the exception of a snow pillow.

“The iridium technology was very compact compared to our existing sites – just right for a small-footprint aerial marker.”



*An iridium-telemetered “automated” aerial marker installation. Merritt Mountain site, in Nevada. The marker provides four observations per day of snow depth and temperature.*



# Create custom wind rose plots

Wind rose plots are informative diagrams that provide frequencies of wind direction and wind speed. A wind rose can quickly indicate the dominant wind directions and the direction of strongest wind speeds.

Presented in a circular format, the wind rose shows the frequency of winds blowing from particular directions. The length of each "spoke" around the circle is related to the frequency of time that the wind

blows from a particular direction.

Each concentric circle represents a different frequency, emanating from zero at the center to increasing frequencies at the outer circles.

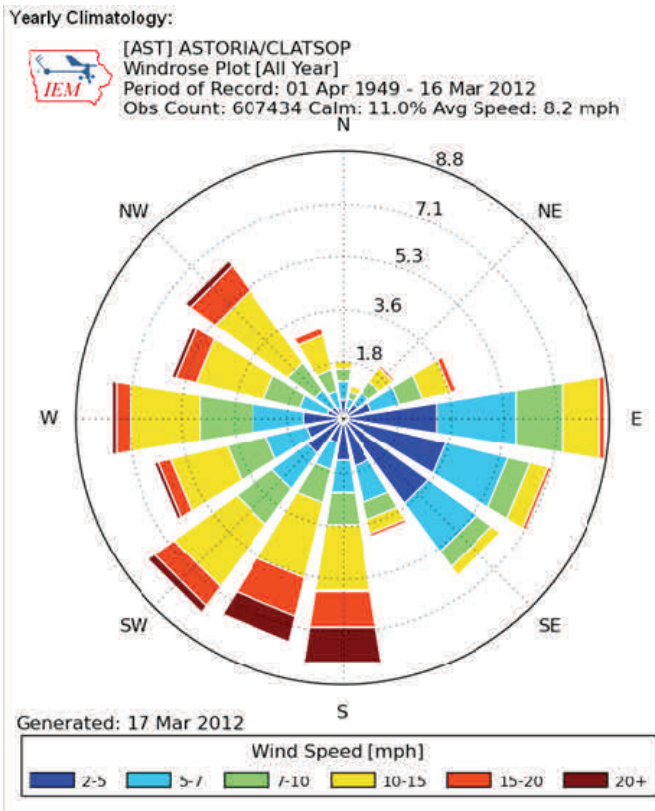


The Iowa Environmental Mesonet (IEM), part of the Iowa State University Department of Agronomy, has designed an application that generates a [series of wind rose plots](#) based on their archives.

You select the network and site, and the application creates a Yearly Climatology wind rose for the site's period of record. Monthly Climatology wind rose plots are also created for each of the previous 12 months.

In addition to the standard plots, you can also create [custom wind rose plots](#), by selecting the network, the site within the network, and the timeframe/duration from which to generate the plot.

For more information, contact Daryl Herzmann (515-294-5978) [akrherz@iastate.edu](mailto:akrherz@iastate.edu).



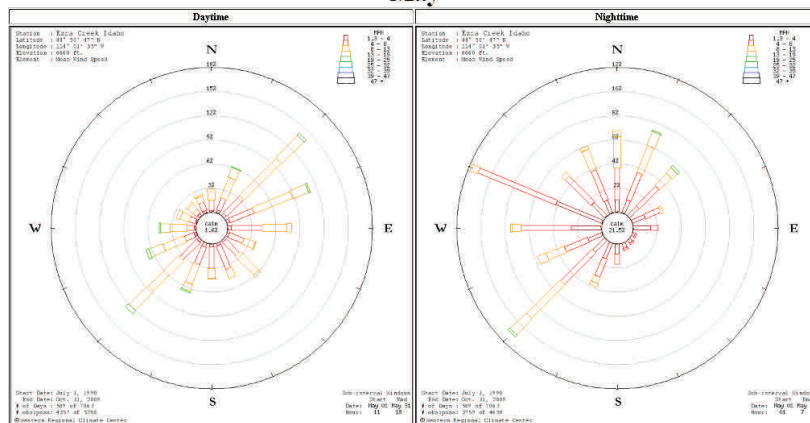
Wind rose plot from the Astoria/Clatsop site at the mouth of the Columbia River.

## New wind rose resource

The Western Region Climate Center's Remote Automatic Weather Station (RAWS) network now provides wind rose plots.

To use this new feature, click [here](#). First, select a state from the map, then select a site. Select the **Wind Rose Climatology** link from left menu. Monthly wind rose plots are displayed for daytime and nighttime for the selected site.

### Ezra Creek Idaho May





# Reference Evapotranspiration resources

Evapotranspiration (ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues).

Many factors affect ET, including:

- **Weather parameters** such as solar radiation, air temperature, relative humidity and wind speed
- **Soil factors** such as soil texture, structure, density and chemistry
- **Plant factors** such as plant type, root depth and foliar density, height and stage of growth

## Estimating ET

Although ET can be measured using devices such as lysimeters, estimating ET using analytical and empirical equations is a common practice, because measurement methods are expensive and time-consuming.

Most ET equations were developed by correlating measured ET to measured weather parameters that directly or indirectly affect ET. Since there are so many factors affecting ET, it is extremely difficult to formulate an equation that can produce estimates of ET under different sets of conditions. Therefore, the idea of *Reference Crop Evapotranspiration* (also known as *Reference ET*) was developed by researchers.

Reference ET is the evapotranspiration rate of a reference crop (such as grass or alfalfa) expressed in inches or millimeters.

## Reference ET equation standard

In 2005, a task committee of the American Society of Civil Engineers (ASCE) Environmental and Water Resources Institute developed a standardized Reference ET equation. The purpose of the standardized equation and calculation procedures was to bring commonality to the calculation of Reference ET and to provide a common basis for determining or transferring crop coefficients for agricultural and landscape use.

The current [ASCE Standardized Reference Evapotranspiration Equation](#) and its associated [Appendices](#) are available on the University of Idaho Kimberly Research and Extension Center website.

## California Irrigation Management Information System

The California Irrigation Management Information System (CIMIS) is an excellent resource for Reference ET data in the state. As an example, their [full-color map](#) (shown in the figure) illustrates the Reference ET zones in California.

The CIMIS Info Center also contains [background information](#) on the Reference ET equation. [CIMIS data registration](#) is free.

“Reference ET is the evapotranspiration rate of a reference crop (such as grass or alfalfa) expressed in inches or millimeters.”



CIMIS Reference ET map for California



# Tower climbing and rescue training a success

**Rashawn Tama**  
**NWCC Forecast Hydrologist**

During the week of May 14<sup>th</sup>, NWCC hosted the annual Tower Climbing and Rescue training course in Boise, ID.

The two-day course, led by Tony Tolsdorf, consisted of both classroom and field exercises. After a day of classroom work students were required to pass a written exam before heading to the field to demonstrate their climbing technique and rescue abilities during a supervised rescue scenario.

Each student had the opportunity to practice their skills as both a rescuer and a patient.

The field exercises took place at the Boise meteor burst master station receive site. The 40-foot receive towers provided an ideal training ground by allowing ample height for rescuers to descend to their awaiting patients.

The actual simulated rescue is performed at a height of around 20 feet – the same height as most SNOTEL tower installations.

Seven students from Oregon, Idaho and Montana attended

this year's training. All students successfully passed the written and field portions of the training.

For questions or additional information requests, please contact Tony Tolsdorf ([Tony.Tolsdorf@por.usda.gov](mailto:Tony.Tolsdorf@por.usda.gov))



*Students Jeff Anderson (Boise, ID) and Dan Fries (Portland, OR) perform a simulated rescue under instructor supervision.*

## SCAN in the news ...

[Southwest Farm Press](#) recently reported on the 2011 drought in the Southern High Plains of Texas and New Mexico.

The report highlighted the use of Soil Climate Analysis Network (SCAN) data to gather rainfall, temperature and soil moisture data at six sites in the area. Data collected at the sites verified that rainfall deficits, coupled with record-

## USDA-NRCS research verifies record setting drought

breaking high temperatures and excessive winds contributed to the severity of the 2011 drought.

According to the report, "While scientists have determined that 2011 was the driest year on record, economists estimate it was also the costliest drought ever recorded."

Click [here](#) to view the full report.

For more information about the NRCS Soil Survey program in Texas, visit <http://www.tx.nrcs.usda.gov/soil/>.

For more information on SCAN, click [here](#).





## Download the Snow Survey Sampling Guide

First published in 1959, the **Snow Survey Sampling Guide** (Agriculture Handbook 169) is a field guide to snow sampling techniques and data gathering.

The Guide was originally written by the Water Supply Forecasting Unit, West National Technical Center, and state snow survey supervisors in consultation with other snow surveyors and equipment manufacturers. The Guide was slightly revised in 1984 and remained in print until 2008.

To help meet the needs of customers, the NWCC placed

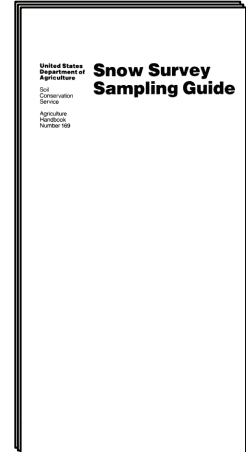
the [contents of the Guide](#) onto its web site in 2009. However, the booklet itself remained out of print. Since that time, the NWCC has received requests from users asking to make the Guide available in booklet form.

To address user needs, NWCC created a downloadable file that allows users to create their own Snow Survey Sampling Guide in booklet form. The only requirement is a printer capable of two-sided printing.

To download the Guide in booklet form, click [here](#). Instructions for printing and

binding the booklet are included in the file.

If you're interested in seeing the original Guide (1959), click [here](#).



## Simplified irrigation scheduling tool

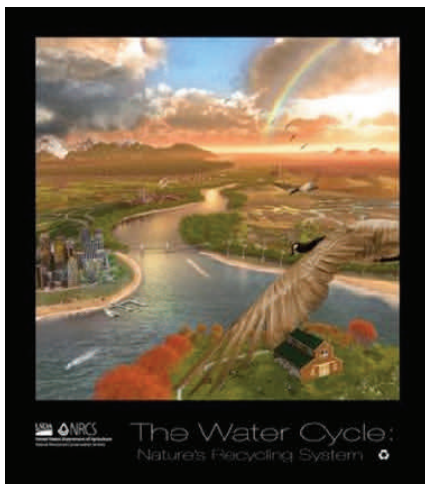
Washington State University College of Agriculture, Human & Natural Resource Sciences and Extension has released a new, simplified irrigation scheduling tool. It is optimized for use on any smart phone, but it also works well on any desktop web browser.

The tool was developed by Troy Peters, WSU Extension irrigation specialist and Sean Hill, AgWeatherNet web de-

veloper in cooperation with Gerrit Hoogenboom, director of AgWeatherNet. It has been integrated into AgWeatherNet to automatically bring in rainfall and daily crop water use estimates to model the soil water content of a field during the growing season. This will help growers know when to water, and how much to water. It is useful for scheduling lawn watering as well as large agricultural operations. Alt-

hough it is simple to set up and use, it is also flexible enough for more educated growers to adjust soil and crop parameters.

The irrigation scheduling tool is available at <http://weather.wsu.edu/is/>. It will help irrigators save water, money and time, and it will decrease fertilizer leaching. But most importantly it will help growers to get better yields at a lower cost.



## Water cycle poster back by popular demand

The newly-designed [poster](#), entitled **The Water Cycle: Nature's Recycling System**, shows the elements of the water cycle through a diverse landscape. The back of the 3' x 4' full-color poster includes a variety of information and activities that educators and others can use to get engaged in water conservation.

To order a copy, visit the [NRCS Distribution Center website](#).

## Products and resources on the web

### Interactive Data Viewer

The Soil and Water Resources Conservation Act (RCA) authorizes USDA to report on the condition of natural resources, and to analyze conservation programs and opportunities. The purpose of the RCA is to ensure that USDA programs for the conservation of soil, water, and related resources are responsive to the long-term needs of the Nation.

The [RCA Interactive Data Viewer site](#) supports the charter by providing data from a variety of sources, including data on the status and trends of natural resources, conservation efforts (funding and conservation practices applied), and the agricultural sector. Data reports can be viewed and downloaded from the site in four simple steps.



Click [here](#) to launch RCA

For questions or more information about RCA, contact **Dan Mullarkey**, NRCS RCA Coordinator (301) 504-2344, [RCA@wdc.usda.gov](mailto:RCA@wdc.usda.gov)

### New SNOTEL video

OnTheSnow ([www.onthesnow.com](http://www.onthesnow.com)) has produced a short video featuring the SNOTEL network. **Joel Gratz**, meteorologist at OnTheSnow, worked with **Mike Gillespie**, retired Colorado DCO supervisor, to cre-

ate the 3-minute video, which is part of a series of videos relating the snow science.

Calling the SNOTEL network “the backbone for water management in the Western US,” the video features a brief introduction to meteor burst telemetry, a discussion of measuring snow water equivalent using a snow pillow, and a look at how snow is manually-measured with a snow tube.

[Link to Video](#). Select SNOTEL, Video 5.

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### Water Resources Data System

The [Water Resources Data System](#) (WRDS) is a clearing-house of hydrological and climatological data for the State of Wyoming.

WRDS is funded by the [Wyoming Water Development Commission](#) (WWDC) and is housed within the Department of Civil and Architectural Engineering at the University of Wyoming. The Wyoming State Climate Office (SCO) is a branch of WRDS.

Together, WRDS and SCO provide a variety of services, ranging from development of enhanced drought-monitoring products to online dissemination of water resources publications. They also support stakeholder groups by assisting in the development of the State Water Plan and helping to coordinate long-term monitoring efforts throughout the region.

Products and services of the Water Resources Data System include:

- WWDC reports, publications and river basin reports
- Wyoming Water and Climate Map Server
- An extensive water library
- Precipitation and temperature data
- GIS data



*Snow Science video featuring SNOTEL*



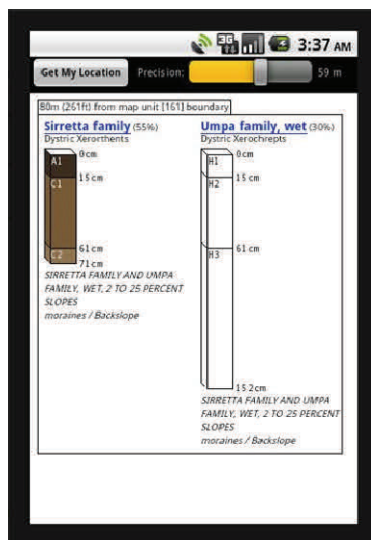


# Snow Survey and Water Supply Forecasting Program

## Resource Locator

Here's a handy reference for finding resources in the Snow Survey and Water Supply Forecasting Program.

Where	What	Who	How
Alaska	Forecast Hydrologist	Jolyne Lea	503-414-3040 <a href="mailto:jolyne.lea@por.usda.gov">jolyne.lea@por.usda.gov</a>
	Snow Survey Supervisor	Rick McClure	907-271-2424 <a href="mailto:richard.mcclure@ak.usda.gov">richard.mcclure@ak.usda.gov</a>
Arizona	Forecast Hydrologist	Gus Goodbody	503-414-3033 <a href="mailto:angus.goodbody@por.usda.gov">angus.goodbody@por.usda.gov</a>
	Water Supply Specialist	Dino DeSimone	602-280-8786 <a href="mailto:dino.desimone@az.usda.gov">dino.desimone@az.usda.gov</a>
California	Forecast Hydrologist	Jolyne Lea	503-414-3040 <a href="mailto:jolyne.lea@por.usda.gov">jolyne.lea@por.usda.gov</a>
	Water Supply Specialist	Marianne Hallet	530-792-5624 <a href="mailto:marianne.hallett@ca.usda.gov">marianne.hallett@ca.usda.gov</a>
Colorado	Forecast Hydrologist	Cara McCarthy	503-414-3088 <a href="mailto:cara.s.mccarthy@por.usda.gov">cara.s.mccarthy@por.usda.gov</a>
	Snow Survey Supervisor (acting)	Mage Skordahl	720-544-2855 <a href="mailto:mage.skordahl@co.usda.gov">mage.skordahl@co.usda.gov</a>
Idaho	Data Collection Officer	Phil Morrissey	208-685-6983 <a href="mailto:phil.morrissey@id.usda.gov">phil.morrissey@id.usda.gov</a>
	Forecast Hydrologist	Rashawn Tama	503-414-3010 <a href="mailto:rashawn.tama@por.usda.gov">rashawn.tama@por.usda.gov</a>
Montana	Water Supply Specialist	Ron Abramovich	208-378-5741 <a href="mailto:ron.abramovich@id.usda.gov">ron.abramovich@id.usda.gov</a>
	Data Collection Office Leader	Scott Oviatt	406-587-6844 <a href="mailto:scott.oviatt@mt.usda.gov">scott.oviatt@mt.usda.gov</a>
Nevada	Forecast Hydrologist	Cara McCarthy	503-414-3088 <a href="mailto:cara.s.mccarthy@por.usda.gov">cara.s.mccarthy@por.usda.gov</a>
	Water Supply Specialist	Brian Domonkos	406-587-6991 <a href="mailto:brian.domonkos@mt.usda.gov">brian.domonkos@mt.usda.gov</a>
New Mexico	Forecast Hydrologist	Jolyne Lea	503-414-3040 <a href="mailto:jolyne.lea@por.usda.gov">jolyne.lea@por.usda.gov</a>
	Water Supply Specialist	Dan Greenlee	775-857-8500 <a href="mailto:dan.greenlee@nv.usda.gov">dan.greenlee@nv.usda.gov</a>
Oregon	Forecast Hydrologist	Gus Goodbody	503-414-3033 <a href="mailto:angus.goodbody@por.usda.gov">angus.goodbody@por.usda.gov</a>
	Water Supply Specialist	Wayne Sleep	505-761-4431 <a href="mailto:wayne.sleep@nm.usda.gov">wayne.sleep@nm.usda.gov</a>
Utah	Forecast Hydrologist	Rashawn Tama	503-414-3010 <a href="mailto:rashawn.tama@por.usda.gov">rashawn.tama@por.usda.gov</a>
	Snow Survey Supervisor	Jon Lea	503-414-3267 <a href="mailto:jon.lea@or.usda.gov">jon.lea@or.usda.gov</a>
Washington	Forecast Hydrologist	Gus Goodbody	503-414-3033 <a href="mailto:angus.goodbody@por.usda.gov">angus.goodbody@por.usda.gov</a>
	Program Manager	Randy Julander	801-524-5213 <a href="mailto:randy.julander@ut.usda.gov">randy.julander@ut.usda.gov</a>
Wyoming	Forecast Hydrologist	Rashawn Tama	503-414-3010 <a href="mailto:rashawn.tama@por.usda.gov">rashawn.tama@por.usda.gov</a>
	Water Supply Specialist	Larry Johnson	509-323-2955 <a href="mailto:larry.a.johnson@wa.usda.gov">larry.a.johnson@wa.usda.gov</a>
All States	Snow Survey Supervisor	Jon Lea	503-414-3267 <a href="mailto:jon.lea@or.usda.gov">jon.lea@or.usda.gov</a>
	Water Supply Specialist	Scott Pattee	360-428-7684 <a href="mailto:scott.pattee@wa.usda.gov">scott.pattee@wa.usda.gov</a>
	Forecast Hydrologist	Cara McCarthy	503-414-3088 <a href="mailto:cara.s.mccarthy@por.usda.gov">cara.s.mccarthy@por.usda.gov</a>
	Water Supply Specialist	Lee Hackleman	307-233-6744 <a href="mailto:lee.hackleman@wy.usda.gov">lee.hackleman@wy.usda.gov</a>
	Center Director/Program Manager	Mike Strobel	503-414-3055 <a href="mailto:michael.strobel@por.usda.gov">michael.strobel@por.usda.gov</a>
	Database Manager	Del Gist	503-414-3007 <a href="mailto:del.gist@por.usda.gov">del.gist@por.usda.gov</a>
	Information Systems Team Lead	Laurel Grimsted	503-414-3053 <a href="mailto:laurel.grimsted@por.usda.gov">laurel.grimsted@por.usda.gov</a>
	Meteorologist	Jan Curtis	503-414-3017 <a href="mailto:jan.curtis@por.usda.gov">jan.curtis@por.usda.gov</a>
	Modeling Hydrologist	Dave Garen	503-414-3021 <a href="mailto:david.garen@por.usda.gov">david.garen@por.usda.gov</a>
	Operations Specialist (SNOTEL/SCAN)	Rose Loehr	503-414-3042 <a href="mailto:rose.loehr@por.usda.gov">rose.loehr@por.usda.gov</a>
	Resource Conservationist	Jim Marron	503-414-3047 <a href="mailto:jim.marron@por.usda.gov">jim.marron@por.usda.gov</a>
	SNOTEL Database Manager	Maggie Dunklee	503-414-3049 <a href="mailto:maggie.dunklee@por.usda.gov">maggie.dunklee@por.usda.gov</a>
Statistical Assistant/SCAN QC	Denice Schilling	406-727-7580 <a href="mailto:denice.schilling@mt.usda.gov">denice.schilling@mt.usda.gov</a>	
Water & Climate Monitoring Team Lead	Tony Tolsdorf	503-414-3006 <a href="mailto:tony.tolsdorf@por.usda.gov">tony.tolsdorf@por.usda.gov</a>	
Water & Climate Services Team Lead	Tom Perkins	503-414-3059 <a href="mailto:tom.perkins@pos.usda.gov">tom.perkins@pos.usda.gov</a>	



### Free app delivers soil data to your smartphone

Unearth data about soils near you, right from your smartphone!

Hailed as “an excellent tool for anyone who wants to know what soils are underfoot” and “a must for soil scientists, horticulturists and home gardeners” the GPS-based **Soil-Web** application delivers real-time NRCS Soil Survey data directly to your smartphone.

SoilWeb is a portable version of the UC Davis California Soil

Resource Lab's [Web-based interface](#) to digital soil survey data. Because the app provides soil survey information in a mobile form, it is particularly useful for those working in the field.

[Read more](#) about SoilWeb.

**Download SoilWeb:**

[SoilWeb for iPhone](#)  
[SoilWeb for Android](#)



# 2012 Photo Contest Winners

We had nearly 300 photos submitted to this year's photo contest. Thank you to all who participated and voted. Your votes picked the winning photos in each category...



**Category: Equipment**

**1st Place:  
Daniel Fisher**

*Mt. Eyak SNOTEL site, above the coastal town of Cordova, Alaska. Snow depth about 10.5 feet, 45% density. April 2012.*



**2nd Place:  
Melissa Webb**

*Spirit Lake SNOTEL site, Washington with Mt. St. Helens in the background. The snow surveyor is Bill Overman, field staff leader for the Oregon Data Collection Office. February 2000.*

**3rd Place:  
Melissa Webb**

*Brown Top SNOTEL site in North Cascades National Park. The extremely remote site, near the Canadian border, is only accessible by helicopter. September 2009.*



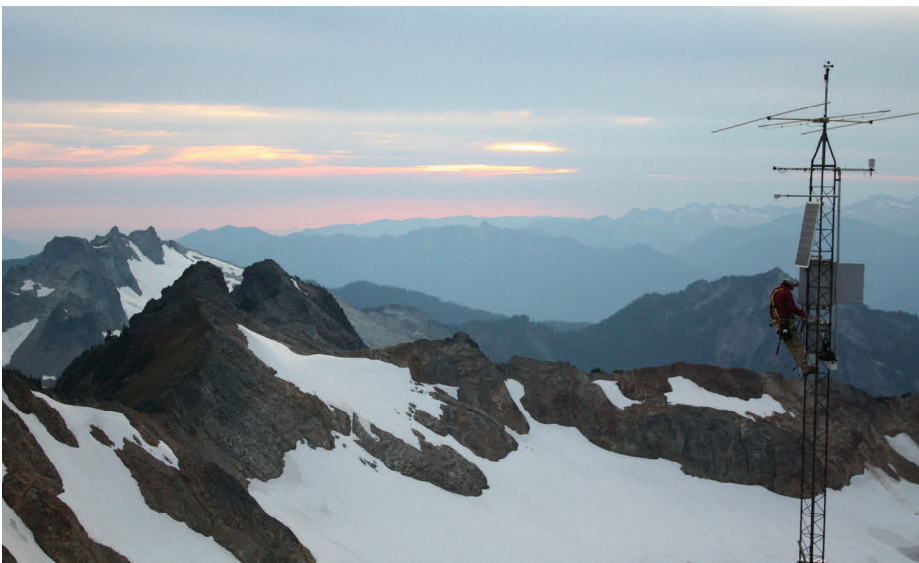


## 2012 Photo Contest Winners

### Category: Field Work

1st Place: Randy Julander

*Ray Wilson, Mt. Baldy, Utah.  
March 2007.*



2nd Place: Melissa Webb

*Scott Pattee, Washington Water Supply Specialist, working on the tower at Noisy Pass Glacier monitoring site in North Cascades National Park, Washington. Scott was taking advantage of the last rays of sunlight to complete the site installation. The site, in very rugged and remote terrain near Mt. Baker, is only accessible by helicopter. October 2008.*



3rd Place: Randy Julander

*Kendall Dastrup, GBRC Meadows snow course, Utah.  
May 2005.*



## 2012 Photo Contest Winners



### Category: People

1st Place:  
Phil Morrisey

*Hydrologist Julie Koeberle replaces the snow depth sensor at the Cool Creek, Idaho, SNOTEL site in the high mountains of the North Fork Clearwater River basin near Kelly Forks, Idaho. April 2011.*



2nd Place: Rick McClure

*Hydrologic Technician Dan Kenney taking snow notes at the Skwentna snow course. February 2009.*



3rd Place: Randy Julander

*Randy Julander, Lakefork Basin, Utah. August 2006.  
Photo by Rodney Julander.*



## 2012 Photo Contest Winners

### Category: Scenery

1st Place:  
Tom Perkins

*Mt. McKinley highlighted in the Reflection Pond, Denali National Park, Alaska. Taken during the installation of the Kantishna SNOTEL site. July 2005.*



2nd Place: Melissa Webb

*Pink monkey flower (Mimulus lewisii) growing by a mountain stream in the Goat Rocks Wilderness, Washington. August 2004.*



3rd Place:  
Chad Gipson

*Sunset, Grand Teton National Park, Wyoming. 2006.*



## 2012 Photo Contest Winners



**Category:**  
**Transportation**

**1st Place:**  
**Daniel Fisher**

*Turnagain Pass SNOTEL site, Alaska. Hydrologic Technician Dan Kenney en route to Turnagain Pass SNOTEL. Winter 2010.*



**2nd Place: Jeff Anderson**

*Riding toward the Two Ocean Plateau SNOTEL with Heart Lake in the distance. Yellowstone National Park, Wyoming. October 2007.*



**3rd Place: Ken Von Buettner**

*"Custom" snow tube carrier. February 2011.*





## Helping People Help the Land.

National Water & Climate Center  
Natural Resources Conservation Service  
US Department of Agriculture  
[www.wcc.nrcs.usda.gov](http://www.wcc.nrcs.usda.gov)

1201 NE Lloyd Blvd.  
Suite 802  
Portland, OR 97232

Phone: 503-414-3038

E-mail:

[jacquie.workman@por.usda.gov](mailto:jacquie.workman@por.usda.gov)

For issues of **SnowNews** go to:  
[www.wcc.nrcs.usda.gov/publications/](http://www.wcc.nrcs.usda.gov/publications/)

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



**T**ough act to follow, having my column situated after all the winning photos from our contest. We had a great time with the contest and plan to make this an annual event. For those who participated in the voting, you know that the hardest part was picking the winners. All the photos were spectacular and each told a story. In some categories, the top one or two photos were far ahead of the others, but in most cases, the winning photos came down to just one point. We plan to select many of them and place them in a

book about the program that will illustrate all the beauty we enjoy, challenges we face, and adventures we encounter.

Looking through the photos made me reflect on just how lucky we are to work in our jobs. Think about it; most people would travel far distances and pay big money to go into the mountains, ride horseback or snowmobile or helicopter, get to see scenery few have seen and come home with stories about adventures such as nearly-close encounters with bears or rattlesnakes, steep cliffs, waterfalls, avalanches, and other dangers that can be both scary and thrilling. Yes, the work we do is hard, the weather usually in the extremes (cold or hot), the air thin, and the trail either dusty or littered with windfall trees or difficult due to soft snow. In reality, my greatest memories of all my trips are those that included hardships. If it was easy, anyone could do it. Most people can't begin

to do what you folks get to do as part of your jobs. We are all so lucky to be part of this incredible program.

I bring all this up to remind each of us that, in spite of the issues we face with budget cuts, unfilled vacancies, increased workloads, increased paperwork requirements, and other struggles, we need to focus on why our jobs are so great. What we do, when it comes to working with people, collecting data, providing forecasts, modeling the snowpack, and providing many other services, are all mission-critical to our agency and highly valued by those we serve, the public. But it also is a heck of a lot of fun and quite an adventure in some of the most beautiful places on earth. I recommend that the next time you feel discouraged about something at work, take some time and go through the photos again. This puts it all into perspective.



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