NRCS
Natural Resources
Conservation Service

1201 NE Lloyd Blvd. Suite 1000
Portland, OR 97232

West National Technology Support Center

FY2010 Report

A Message from the Director

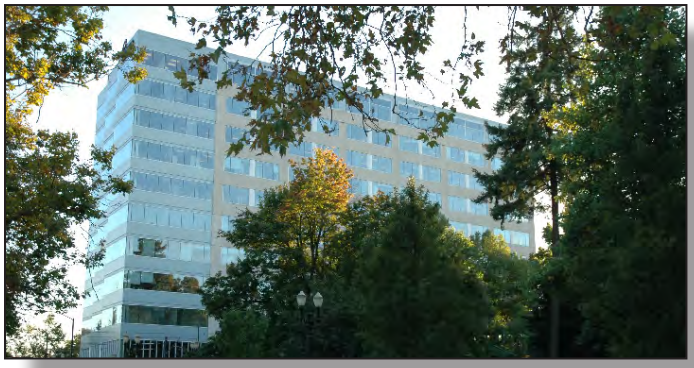
I am pleased to provide this report on FY10 activities. I think you will agree that it was an exciting year for technology support. All of our specialists were very busy with direct assistance projects and we made significant progress in many areas of conservation technology development and transfer.

Based on the positive comments we received last year, we are continuing the approach of providing in-depth articles by discipline area describing some of the more significant accomplishments and looking ahead to what we anticipate for next year. I want to draw your attention to a few particularly significant areas:

In the first such effort of its kind, the WNTSC and the States successfully developed and delivered a two and one-half day training course on Sage Grouse conservation to over 500 field employees and partners. The training was delivered simultaneously through a combination of webinar presentations, local presentations, and field exercises at 10 training locations throughout the eleven-State range of the Sage Grouse. This effort, which was led by Wendell Gilgert and Pat Shaver of our staff, was possible through the efforts of State specialists.

In a major expansion of the agency's Ecological Site Description (ESD) development effort, the WNTSC provided key support for various workgroups charged to help organize staffing, databases, and workflow processes. In addition, tremendous progress was made to develop guidance and complete model examples of ESD's for riparian systems, a new and very challenging ecosystem type for ESD's.

The WNTSC provided policy support to NHQ in the area of energy conservation and worked closely with the



Conservation Delivery Streamlining Team. That work led to the Chief signing a Decision Memorandum in July establishing official Resource Concerns for energy.

Our partnership to develop technology for the conservation of pollinators continued to expand. Over the last two years, more than 80 workshops have been held in 21 States reaching more than 1,000 NRCS employees. State-specific technical documents or direct planning assistance have been provided for 26 States. With additional foundations support to our partner, The Xerces Society for Invertebrate Conservation, they now have six technical specialists working with NRCS to provide the States with additional support.

Staffing changes occurred this year with the hiring of four outstanding specialists to fill vacancies resulting from retirements or departures – Steve Campbell, Soil Scientist; Craig Ziegler, Forester; Adam Chambers, Greenhouse Gas Specialist; and Kip Pheil, Energy Conservation Specialist.

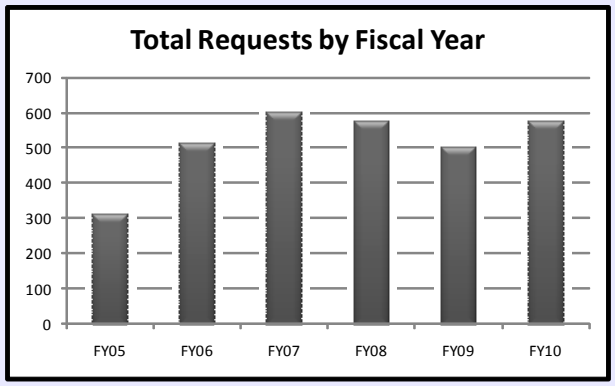
This year we also started a new partnership effort to develop technology and provide support in the area of organic agriculture. Sarah Brown, an employee of Oregon Tilth, is working at the WNTSC and has already made significant contributions.

As always, we greatly appreciate the opportunity to provide technology assistance to you, our customers. Please don't hesitate to contact our specialists. And please let me know how we can better serve you.

- Bruce Newton

Helping People Help the Land

FY10 WNTSC Assistance Analysis

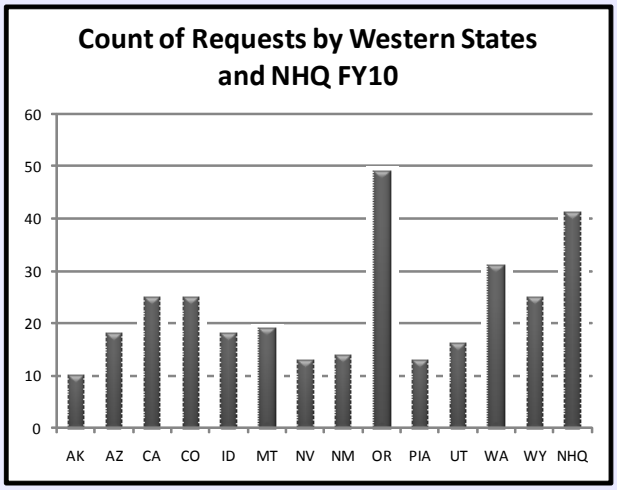


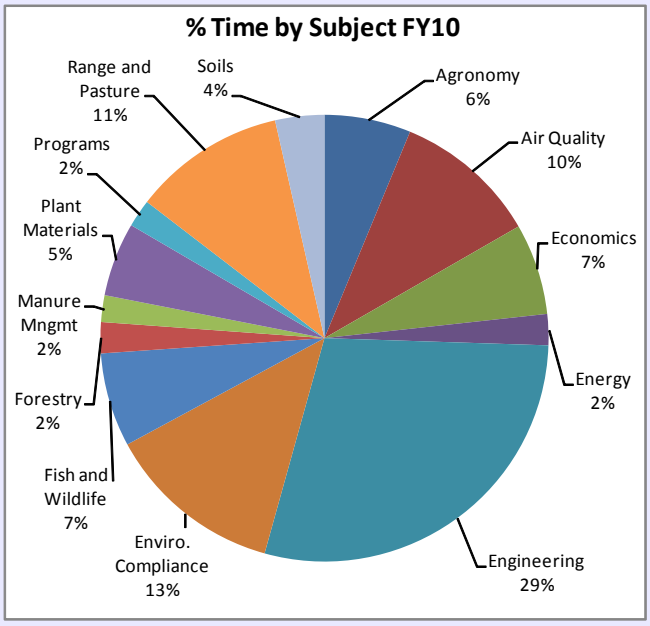
Training Provided by West, Central, and East National Technology Support Centers

Subject	# of Sessions Nationwide	# Provided to West States
Eco Sciences/ Economics	148*	58
Engineering	49*	20
Pollinators	27	10
Organic Ag	5	2
Energy/Air	12	12
Sage Grouse	12	12
Hoop Houses	1	

* WNTSC specialists provided 68 and 31 of these training sessions respectively.

Count of Requests by Western States FY05-FY10						
	FY05	FY06	FY07	FY08	FY09	FY10
AK	2	12	8	3	11	10
AZ	1	6	16	15	24	18
CA	15	17	31	33	32	25
CO	5	16	19	23	23	25
ID	5	16	15	24	27	18
MT	7	10	12	14	27	19
NV	5	11	16	16	26	13
NM	3	17	15	17	23	14
OR	31	49	56	58	60	49
PIA	9	18	26	16	17	13
UT	2	15	25	23	25	16
WA	11	26	27	17	36	31
WY	2	11	20	14	12	25
W Region	38	60	63	85	77	88
Totals	136	284	349	358	420	364





Requests are those assistance projects that require more than 2 days of staff time and are recorded in the Assistance Tracker database. Team Members track and record the time spent on projects. For more information on projects, contact your West NTSC specialist or Russ Hatz, National Technology Specialist, at 503-273-2428 for further assistance.

12/1/10

WNTSC FY2010 Activities

The following information is the result of interviews with members of the West National Technology Support Center (WNTSC) in which they talked about their work in FY10 and what they see coming in the near future.

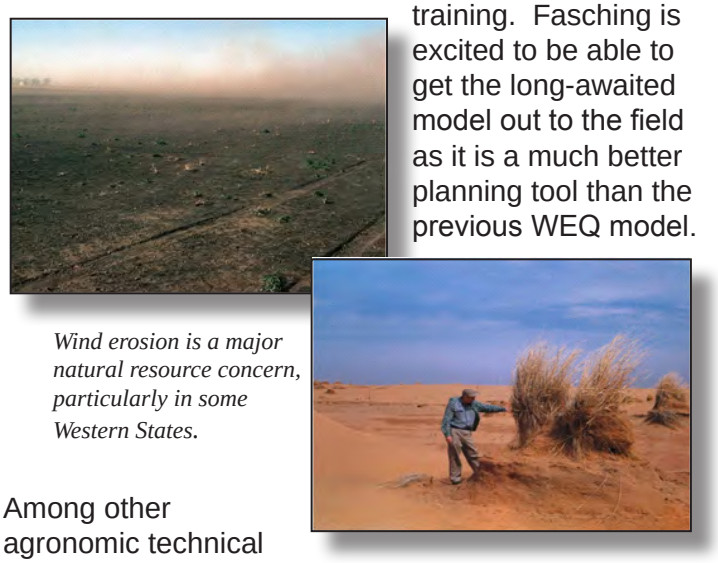
The WNTSC Core Team consists of seventeen specialists whose primary function is providing direct assistance and technology transfer to the Western States. Three National Technology Development Teams (Air Quality and Atmospheric Change, Energy, and Water Quality and Quantity) are also part of the WNTSC. Their staff may also provide direct assistance to States or work with a specific State in the process of developing new conservation applications; however, their primary function is developing new technology and tools for the Agency as a whole.

Highlighting key discipline areas, the stories start with the Center's Core Team. Following the activities of the Core Team, you will find reports from the Center's three Technology Development Teams.

If you are interested in more details on the activities mentioned here or other efforts of the WNTSC staff, feel free to contact them directly. For more information on or from our staff, please visit our website at: http://www.nrcs.usda.gov/about/ntsc/west/index.html.

Agronomy

Completing last minute model details and providing Wind Erosion Prediction System (WEPS) training to states and field offices has been the primary endeavor of WNTSC agronomist **Richard Fasching** in FY10. WEPS Train-the-Trainer was hosted in Tucson, Arizona, during the West Region Agronomy Consortium meeting where all 13 West region states were represented. Since then, Rick has travelled to 7 additional states to complete state-wide WEPS training. Fasching is excited to be able to get the long-awaited model out to the field as it is a much better planning tool than the previous WEQ model.



Wind erosion is a major natural resource concern, particularly in some Western States.

Among other agronomic technical assistance provided by Fasching, the item that stands out most is nutrient management. In the midst of the update of the National 590 Nutrient Management Standard, coupled with the new CNMP policy, Fasching has provided several states with nutrient management assistance either through training or direct technical assistance. The revised nutrient management standard will include an ag waste application which has prompted review of states' phosphorus index. There is considerable effort by NRCS and its partners to revise the nutrient management standard and to review and develop a new generation of phosphorus indices that better reflect the conditions where phosphorus application (from manure or commercial sources) is too risky to warrant application in any form.

Fasching predicts that 2011 will be the year for nutrient management technical assistance and training, including nutrient management certification training, CNMP training, and utilizing the APEX model to design state-specific phosphorus index risk assessment worksheets. Several states have already scheduled nutrient management or Manure Management Planner training for the next fiscal year.

Giulio Ferruzzi, also an agronomist with the WNTSC, focused his FY10 activities on Pest Management Training. One major effort involved providing training to the entire staff of the Pacific Islands Area--Hawaii, Guam, and the other islands of the Pacific Rim. A specific level of information is necessary to allow the Pest Management tool to work effectively for some of the more common agronomic crops in the islands of Hawaii.

Ferruzzi also spent time working on organic training issues for the Western States. The differences in organic and non-organic conservation systems and

the costs associated with each have been part of existing discussions. Ferruzzi is also working with Sarah Brown, an employee of Oregon Tilth, a national organic certifying organization. Brown is working with NRCS under a Contribution Agreement to help her provide assistance to the States.

Additional time was spent developing a Pest Management Technical Note that is expected to be released in the first part of FY11. States using the Tech Note will need to develop a table of specific practices and techniques, including ranking criteria, for their State. Ferruzzi will be available to assist the states in developing their individual tables.

Rangeland Management

This has been an interesting and diverse year for **Gene Fults**, GLCI Rangeland Management Specialist. Technical issues ranged from determining animal unit equivalents of chickens, pigs, and large-framed cattle to organic dairy grazing rules and food safety concerns with E. coli O157:H7. Fultz also worked with ARS scientists to connect Landscape Science with Conservation Planning in the CEAP effort. He updated his knowledge of Terminus Lakes, Horse and Burros, and NUTritional BALancer. Fultz was interviewed for the SRM production 'Hope On The Range' and recorded an interview with Brownfield Ag regarding wild horse issues as they effect private grazing lands.

Jeff Repp, GLCI Rangeland Management Specialist, and several other staff from the WNTSC have been very involved in the development of technical guidance for describing complex riparian Ecological Site Descriptions including the development of a Riparian ESD template. These descriptions may include more than one soil type with multiple plant communities on different surfaces affected by stream dynamics, ground, and surface water. The plant communities, soils, fish and wildlife habitat, and water quality and quantity values are all integrated in the description. The site descriptions will help landowners/managers and others identify the stream type and phase of channel evolution, determine stability, assess the stream, water, soil, plant, and animal communities for desired values, and provide information on the probability and trajectory of change as affected by differences in management.

To date, the riparian complex ESD team (Repp, Gilgert, Boyer, Southerland, Fults) have provided assistance and technical materials to riparian ESD development efforts in Colorado (2 sites), Montana, Utah, Oregon, California, New Mexico, North Dakota, Kansas, and Pennsylvania. In each of the states, the assistance provided is resulting in completed draft documents and trained local experts who can continue the efforts in their areas. Interdisciplinary teams are used to work on the difficult task of determining fluvial and ecological processes on these sites. They are usually composed of state and field staff with expertise in plants, wildlife, fish, hydrology, and soils. Requests for assistance continue to come in and several new efforts are being planned for 2011. Additionally, a formal training course may be developed for 2011.

There are three draft riparian complex ESDs available as examples and a draft guideline document is being tested across the country. (It will be reviewed in early 2011.) A Stream visual Assessment Protocol version 2 reference worksheet will be included in each ESD (similar to rangeland health reference sheets currently in rangeland ESDs) to describe the best potential conditions on the site and to aid in accurate assessment. A Proper Functioning Condition reference worksheet is also included showing potential PFC scores for each of the phases of the site.

Pat Shaver, WNTSC Rangeland Specialist, has been heavily involved in the expansion and reorganization of the Ecological Site Description effort under the Agency's ESD Acceleration Initiative. He worked on various teams to develop options and help implement the Chief's decision and served on the Work Flow Development Team to identify and describe the process of ecological site development. Shaver also served on an interagency team to develop SRM-

sponsored training on ecological site concepts and uses. That training will be offered in FY11 for all agencies.

Training on ESDs continued in FY10 with sessions in Hawaii, North Dakota, and Montana. An ESD correlation workshop was held for Multiple Land Resource Area (MLRA) 30 which encompasses CA, NV, AR, UT, WY, and CO. ESD direct assistance was also provided to Colorado, Nevada, and North Dakota.

Other assistance and training provided by Shaver included Interpreting & Measuring Indicators of Rangeland Health -- formal workshops in New Mexico, California, Arizona and Wyoming; Sagebrush ID, Ecology, and Management Workshop with Gilgert in Wyoming; the West-Wide Sage-Grouse Training effort; NRI Training (in Nevada and Montana); and Prescribed Burning Workshops and assistance in Oregon and Colorado. Shaver anticipates more of the same in FY11 with continued efforts on establishing ESDs.

Environmental Compliance

This has been a busy year for **Meg Bishop**, Ecologist and Environmental Compliance Specialist at the WNTSC. Bishop's efforts continue to strive towards the effective integration of environmental compliance requirements with NRCS conservation planning activities. Although the consideration of these requirements may require extra thought, coordination with other agencies and entities, and maybe an extra review of planned actions, they help avoid delays or legal challenges by indentifying and addressing associated environmental concerns during the planning process.

Completion of the pilot workshop, "Development of Combined Watershed Plan/NEPA Documents," held in UT in May, was just one of the year's highlights for Bishop. The goal of the workshop was to ensure that states improved their understanding of the various requirements of NEPA, NRCS Watershed Planning policy, and other requirements associated with environmental and administrative compliance. This was the first time that the National Water Management Center, the WNTSC, and National Headquarters collaborated on this kind of training. It provided an opportunity to reach an important audience of State-level engineers, watershed planning coordinators, economists, and other watershed planners.

Bishop was also a key member in a National collaboration with the U.S. Fish and Wildlife Service (USFWS) to develop the Sage Grouse Conference Report. She continues to assist western states with the development of agreements with USFWS and State wildlife agencies to facilitate consultation efforts and expedite NRCS conservation efforts.

This was also a productive year for providing accurate and clear guidance to the field on NRCS policies and protocols relevant to environmental compliance. Bishop led the effort to complete the final draft of the National Environmental Compliance Handbook (NECH) which includes the final revision of the Environmental Evaluation (CPA-52) protocol and all of the Guide Sheets covering NRCS Special Environmental Concerns.

Working with individual States on specific issues and projects continues to be an important aspect of Bishop's efforts. FY2011 will include efforts to assist the West and National Headquarters in creating efficient protocols to address compliance issues such as programmatic agreements, consultations, and NEPA analyses. A SharePoint site is available for NRCS employees to access various instructional materials, presentations and other information regarding compliance requirements for NEPA and other NRCS Special Environmental Concerns at https://nrcs.sc.egov.usda.gov/st/wntsc/coreteam/Environmental%20Compliance/default.aspx

Wildlife Biology

For WNTSC Wildlife Biologist **Wendell Gilgert**, much of FY10 was dedicated to assuring that West Region NRCS field and partner conservationists were provided with the training, technical support, and technical tools that allow them to more clearly understand the relationship between the iconic sage grouse and its

Sage Grouse Training includes learning about the type of sagebrush found in the area and it's growing/habitat needs.

Sage-Steppe habitats. Led by Gilgert and Rangeland Management Specialist Pat Shaver, and supported by GLCI Rangeland Management Specialists Jeff Repp and Gene Fults, and Ecologist Meg Bishop (all members of the WNTSC), focus was placed not only on providing the states and field staff with training on sage-grouse life history, but on essential and appropriate management and restoration of their sage-steppe habitats.

The NRCS Sage Grouse Initiative (SGI) necessitated the training of field conservationists in the range of the Greater and Gunnison's Sage-Grouse in order to more effectively provide planning and contracting for $22 million EQIP and WHIP dollars dedicated to the SGI on western working lands. Given the need to complete the training quickly to be ready for the sign-up deadlines, Gilgert and the team worked closely with state specialists to successfully plan and deliver the two and a half-day training sessions simultaneously to over 500 NRCS and Partner Conservationists in 10 locations. Since it is important to know that there are 22 species of sagebrush in the range of the sage-grouse, additional focus was placed on spending time in the field to be able to identify the plants, understand life history requirements, and understand the management and restoration of those sagebrush species.

Sagebrush is an important factor in sage grouse habitat.

Additional workshops were planned on Sagebrush Identification and Ecology to further support the SGI. Two workshops were completed and 5 additional requests have been received. Timing is critical for teaching these workshops because sagebrush has ephemeral leaves that make identification nearly impossible until the time when the leaves drop in early August and before the snow flies in the fall.

Gilgert's efforts for FY11 will continue to support the SGI through the development of technical tools and informational publications, monitoring techniques and protocols, ecological site description refinements, conservation practice standard/specification updates and modifications, and ways to assure compliance with Endangered Species Act considerations.

Forestry

Craig Ziegler, former Oregon NRCS State Forester, came on board as the WNTSC forester in late March of 2010. His main emphasis was getting to know each state forester in the West and their specific forestry needs, and providing each of them with direct technical assistance.

Students counting tree rings from a core

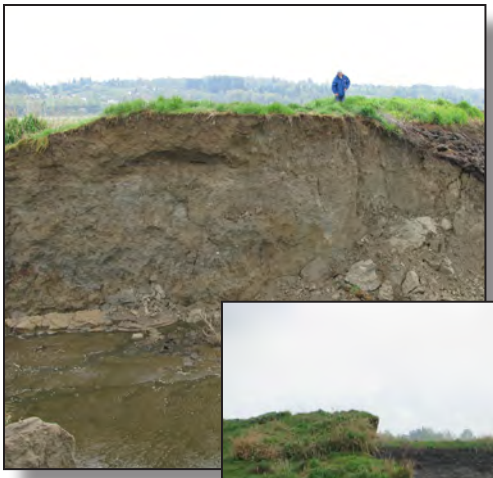
In the first six months on the job, Ziegler provided technical support to the state of Oregon by assisting with field evaluations of Healthy Forest Reserve Program applicants, forest-soil site data collection, and ESD identification and data collection. He also provided technical assistance on forest road treatment evaluations and ecological sites to Washington state.

A real highlight for Ziegler was assisting the NRCS state forester in New Mexico with a forestry training session for NRCS and State forestry staff. The group looked at and evaluated several forest types: Pinyon-Juniper, Ponderosa Pine, Douglas-fir, and White fir.

For the coming year, Ziegler sees a greater emphasis on working with state staff foresters to develop forest Ecological Site Descriptions. "We are way behind the range discipline in ecological site development," Ziegler said, "so we will need to be working smarter and more efficiently to get more site descriptions written."

Civil Engineering

Forensic engineering of a failed 30-million gallon manure pond in Washington State was cited by **Kip Yasumiishi**, WNTC civil engineer, as his primary accomplishment in FY10. Yasumiishi was requested to chair a team to investigate a possible engineering deficiency and develop an engineering report. The failure of the pond, which occurred in April of this year, was due to the siting of the pond over a wooden box drain, estimated to have been constructed in the 1940's.



Basic engineering training is critical in avoiding dike breaches that damage the land and the resources.

The investigation was time intensive and sensitive due to the transparency needed in dealing with public, state and federal agencies, and a consulting engineering firm conducting an independent investigation. The project received much public scrutiny via media outlets.

Additional efforts by Yasumiishi centered on training including workshops on river restoration, surveying, soil mechanics, and engineering software use. Yasumiishi feels that while training needs are increasing commensurate with the exponential advancement of new technologies, education on engineering fundamentals is often overlooked and should take priority over “the next new technology”.

Environmental Engineering

Water quality, as well as alternative energy production and usage, are still challenges for NRCS, farmers, and ranchers. **Charles Zuller**, WNTSC Environmental Engineer, has been working with several states presenting manure management training courses. Using a multi-disciplinary approach, states are seeking to improve their efficiency in developing comprehensive nutrient management plans. Zuller focuses on utilizing the software planning models of AWM and SPAW to allow the development of several scenarios which will increase alternative options.

In addition, Zuller has worked on developing a design guide for agri-chemical handling facilities. A complete design guide should improve the information flow between the planner and engineer and more closely match the landowner’s desires.

Zuller’s work on alternative energy production and utilization has resulted in web seminar presentations on solar and wind energy usage on the farm. He is currently working on a design guide for matching solar energy availability to stocking rates for cattle watering facilities. A successful effort should improve efficiency of the water usage and allow better development of watering systems.

Irrigation Engineering

The release of the Irrigation ToolBox was WNTSC Irrigation Engineer **Peter Robinson’**s most significant activity in FY2010. In addition to containing all NRCS-produced documentation on irrigation, the ToolBox holds hundreds of technical papers and Cooperative Extension documents, ready-to-deliver PowerPoint presentations, photographs for do-it-yourself presentations, as well as 30 hours of irrigation videos.

The Irrigation Tool Box includes documents from other agencies. It can be used for training or developing presentations for customers.

Robinson states, “The best part of the ToolBox is the search tool. Type in a word or phrase and you get a hit wherever that word or phrase appears in the thousands of irrigation-related documents. It makes finding information a breeze.”

The Irrigation Toolbox was produced in three digital formats: DVD, flash drive, and SD Card. “I prefer the SD card, because that slot on my laptop typically goes unused,” said Robinson, “but everyone can make their own choice. My advice: Don’t leave home without it.” Each State was provided with all three formats and additional items were made available.

Training was another major activity for Robinson in FY2010. Micro irrigation and center pivot training

were the most requested by the states, and training sessions on energy and irrigation pumps were also held. Attendees know that when the training sessions are complete, Robinson posts training and reference materials on the WNTSC SharePoint site. “I want to have training material available for any NRCS employee at the time they need it.” says Robinson. “Effective training is always a challenge, but I find it rewarding when I hear back from engineers and technicians that our training session helped them in their jobs.”

Fisheries Biology

Kathryn Boyer, WNTSC Fisheries Biologist spent time assisting states with the development of technical documentation for interim practice standards (Fish and Wildlife Structure and Fish Screens); project consultations for bull trout, Pacific lamprey, and desert fish species; and working with national fish habitat partnerships in the West to get habitat projects implemented in Nevada, Utah, New Mexico, and Arizona.

A good portion of her time was spent in the field assisting states modify the Stream Visual Assessment Protocol Version 2 for applicability over the enormous diversity of ecological settings in the West. She also continued to provide aquatic ecological expertise for the development of Riparian Ecological Site Descriptions (ESDs).

Stream Visual Assessment Protocol Site

Collecting Data for a Stream Visual Assessment

The NRCS Stream Visual Assessment Protocol, Version 2 (SVAP2) was completed and incorporated into the National Biology Handbook in 2009. In 2010, Boyer, with WNTSC members Jeff Repp and Wendell Gilgert, incorporated the revised tool for use in the development of riparian Complex Ecological Site Descriptions. SVAP2 was used to evaluate stream and riparian habitat conditions during field reconnaissance for the development of fish and wildlife interpretations in support of state and transition models for the following sites:

1. Central Rocky Mountains Mid-Elevation Riparian Complex--Brackett Creek, MT;
2. Warm Central Desertic Basin-Southwestern Foothills Riparian Complex--Uncompahgre River, CO;
3. Central High Plains and Tableland Riparian Complex--Arikaree River, CO;
4. Colorado Plateau/Basin and Range Complex--White Canyon, UT;
5. Valles Caldera, NM, and
6. Great Basin Desert, John Day River, OR.

Riparian Complex Ecological Site Descriptions provide the most comprehensive planning and management tool for stream corridors. They help conservation planners assure management prescriptions proposed for improving site conditions are appropriate for sustaining the land’s ecological and economic functions over the long term.

Boyer also assisted state biologists in MT, CO, UT, NM, OR, AK, TX, and AZ in validating the national SVAP2 protocol for use in their states. A couple of states needed modifications to best meet the ecological conditions within that State. Boyer provided training to all of the states and some State agency partners on the use of the SVAP2 tool and in modifying the protocol when necessary.

In FY2011, Boyer anticipates continued direct assistance and training for States on using SVAP2, designing fish screens and fish passageways, and developing riparian complex ESDs.

Economics

When **Hal Gordon**, WNTSC Economist, started FY10, he knew what he would be working on – providing assistance and training to improve the quality of payment schedule worksheets. Writing better practice scenarios and developing higher quality cost data have been his major focus. “We’ve made a lot of progress this last year,” Gordon states. “NRCS has nationally consistent cost data for all conservation practices in all states and territories for use in conservation planning and financial assistance programs.” Gordon also developed the cost data and practice/activity payments for the last two national

CSP signups and is developing additional material for the next CSP signup.

In addition to having standardized cost data to work with, Gordon has begun work on the "benefits side" of payment schedule worksheets. He is developing scientifically defensible methodology that land users, field planners, technical specialists, program managers, and agency leadership can use to make decisions and portray the positive results of NRCS conservation efforts on the land. Gordon believes that "having practice costs is only half the solution, practice benefits are necessary to complete the equation."

Gordon also provided training to new and seasoned employees this year. Working through the National Employee Development Center (NEDC), he taught the 'Economics of Conservation Planning' course which he helped develop. "Training is important. We would be the same people we were a decade ago except for two things--the books we read and the people we meet," Gordon added.

Plant Materials

For WNTSC Plant Materials Specialist **Jim Briggs,** FY10 was focused on training and enhancing the skills of plant material staff throughout the West. Training efforts were highlighted by webinars covering numerous topics. The first was a 1.5-day webinar on developing appropriate seed and plant transfer zones to maximize the success of conservation plantings. This effort was followed by a short session on "How to Conduct Microsoft Live Meetings" to encourage a greater transfer of technology to users, and another session on the use of statistical models to effectively analyze PMC studies.

The culminating effort was the development and hosting of a 3-day workshop at Utah State University in Logan, Utah. The workshop involved close collaboration with our ARS partners located at the Forage and Range Research Lab, Bee Lab, and Poisonous Plant Lab. Based on responses, the meeting was a great success. Initial results from the workshop were the development and approval of a joint ARS-NRCS PMC symposium at the 2011 National SRM meeting, the development of a national Plant Materials Program effort to create short PM training videos (Montana, Colorado, and Idaho use video clips to demonstrate technology effectively), the creation of 2 ad hoc committees to improve work processes, and collaboration between PMC and ARS scientists which will improve product quality and reduce the redundancy of efforts.

Briggs is involved in a multi-PMC project in coordination with ARS in Temple, Texas, to obtain plant measurements to populate the Almanac model which was identified as important to conducting

Plant Materials Centers received training on using a ceptometer to obtain below-plant light measurements.

grazing lands CEAP analysis. The work and the technology used was new to participating PMCs. The principal tool used is a ceptometer which measures below-plant canopy light--a quick and non-destructive way to measure biomass. Training on how to establish plots, collect data, operate the ceptometer, and handle data was coordinated by Briggs and was done solely through live meetings, teleconferences, and the exchange of written information. WA, ID, CO, AZ, CA, and MT PMCs are involved, as well as the NY PMC who completed the wet chemistry work. It is anticipated that this project will continue and the ceptometer will be a valuable tool for other studies as well.

Soils

Steve Campbell, Soil Scientist, joined the WNTSC Core Team in January 2010. Campbell hit the ground running with the development of a training session on the use of soil survey tabular and spatial data in combination with other spatial data for the development and correlation of Ecological Site Descriptions. The pilot session was held in Colorado in April 2010. Campbell also served as an instructor in a session of the "Application of Soil Data Viewer and ArcGIS for Technical Soil Services," a course

sponsored by the National Employee Development Center.

Campbell has been assisting the West Region states with training on the new National Soil Information System (NASIS 6.0) software. A West Region net conference was held along with training sessions in California, Idaho, Oregon, and Washington. With the release of the NASIS 6.0 software, nearly all previously developed queries and reports need to be modified in order to work correctly. Campbell has been assisting the west region states with modifying and updating their NASIS queries and reports.

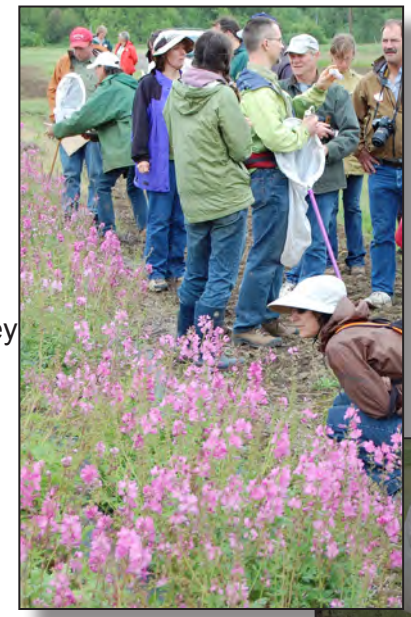
Additional assistance was provided to the West Region states in extracting and packaging soil survey data for various Farm Program efforts such as the Wetland Reserve Program, Conservation Compliance (highly erodible land lists), Farm and Ranch Lands Protection Program, and Conservation Reserve program signups. In Idaho, Campbell assisted in the development of NASIS soil interpretations that provide an index of potential productivity for a variety of crops including small grains, alfalfa, grass hay, and potatoes. These interpretations will be available from Web Soil Survey and new published soil survey reports.

Campbell also serves on the national Ecological Site Description Inventory Team which is working on developing the business requirements for integrating the Ecological Site Information System (ESIS) with NASIS soils data. For FY11, Cambell expects to continue providing soil-related training and assistance to all the West Region states, especially in the areas of ecological site development, conservation planning, and resource assessments.

Pollinators

Mace Vaughn, Entomologist, working with the WNTSC through a cooperative agreement with the Xerces Society, continues to provide great training and technical assistance to our clients working in collaboration with the Xerces Society's Pollinator Conservation Program. In the past fiscal year, Vaughan and his colleagues at Xerces' provided over forty presentations and short courses to seventeen states to help NRCS conservation professionals understand the diverse habitat needs of pollinators, especially crop-pollinating bees, and how NRCS programs can help incorporate that habitat into working landscapes. They also provided direct technical support to twenty-two states (six in the West), and helped develop thirteen state-specific guidance documents, mostly plant lists and planting criteria for pollinators.

Two highlights from the past year really stand out to Vaughan. The first is a significant increase in what he sees as the usefulness of the presentations. "Until the last year, our outreach efforts have primarily focused on making sure NRCS conservation planners and their partners knew of the importance and biology of native bees and other pollinators," said Vaughan. "This year, we have dramatically increased the amount of our technical information on the creation of pollinator habitat."



Vaughan was also pleased with support from the USDA's Sustainable Agriculture Research and Extension program (SARE) in providing outreach to NRCS. Three SARE regions were so excited about the collaboration between the Xerces Society and NRCS that they funded full-day pollinator conservation short courses in 36 states over the next three years. This financial support, in combination with our contribution agreement with the WNTSC and the growing support of private foundations nationwide, is allowing Xerces to hire additional staff and conduct trainings all across the country.

Xerces continues to work closely with the NRCS Plant Materials Program and Western state offices. Vaughan is excited about a growing collaboration with the Washington state NRCS. "Washington State is fully engaged," says Vaughan. "The Pullman Plant Material Center is conducting field trials of many pollinator plants, the western area NRCS staff are soliciting pollinator projects, and the State Office is

Core Team continued

implementing beneficial insect demonstration projects close to Spokane. We look forward to continuing to support Washington's efforts, and are excited about discussions with other states to hold additional trainings and help develop demonstration projects and contracts with landowners!"

National Technology Support

Russ Hatz, WNTSC National Technology Specialist, is responsible for supporting the Agency's technology infrastructure from an overall perspective. He works directly with the States' technology leadership and with NHQ to develop and implement new policies and maintain the quality of our technology. One of Hatz' priorities this year was working with the Conservation Delivery Streamlining Initiative Team to redesign the field business processes. He also worked to re-design the Assistance Tracker system for the NTSC's in order to facilitate an improved and more consistent methodology to define and track the activities of the Center's staff.

Top activities that Hatz sees for the next fiscal year include: coordinating a regional workshop on conservation buffers, continuing work with the Streamlining Team as they begin software development, assisting in the development of technical material related to ecosystem service marketing, facilitating the adoption of technology resulting from CIG projects, facilitating support for organic agriculture, and continuing support to the West Region Technology Workgroup and Consortia.

From wildlife to water, speciality crops to grains, livestock to producers, NRCS is helping people help the land.

NATIONAL TECHNOLOGY DEVELOPMENT TEAM ACTIVITIES

Air Quality and Atmospheric Change Team:

The Air Quality and Atmospheric Change Team was successful in developing five new NRCS practice standards in FY2010. The five new standards were developed after lengthy and productive coordination discussions with numerous state offices and headquarters staff. All five were adopted as official NRCS practice standards and are available for field use. They were announced in the National Handbook of Conservation Practices (NHCP), Notices 150 and 152. With the release of these standards, there was no longer a need for the overarching Atmospheric Resource Quality Management (CPS 370) which was revoked. The five new standards are:

Air Filtration and Scrubbing (Conservation Practice Standard (CPS) 371) -- This practice standard includes technologies for removing air contaminants, including particulate matter and various gases, from structures by interception and/or collection, wet scrubber/bioscrubbers, adsorption, and biofilters.

Combustion System Improvement (CPS 372) -- This standard can be used to improve air quality and energy efficiency through the installation, replacement, or retrofit of agricultural combustion systems such as engines, heaters, dryers, or other devices.

Dust Control on Unpaved Roads and Surfaces (CPS 373) -- A practice for reducing particulate matter emissions (dust) caused by vehicle and machinery traffic or wind erosion on unpaved areas through the application of dust control palliatives/amendments such as water, adhesives, salts, emulsions, etc.

On-Farm Equipment Efficiency Improvements (CPS 374) -- This standard is used to implement energy audit recommendations by installing, replacing, or retrofitting agricultural equipment systems and/or related components or devices that result in greenhouse gas emission reductions.

Dust control from Animal Activity on Open Lot surfaces (CPS 375) -- This standard is for applying technologies such as manure harvesting and water sprinkling that will reduce or prevent particulate matter emissions from animal activity on open lot surfaces at animal feeding operations.

For any questions about implementing these standards, please contact Greg Johnson, AQAC Team Leader at greg.johnson@por.usda.gov, or 503-273-2424.

Additional Team efforts resulted in a new version of the CarbOn Management Evaluation Tool (COMET-VR), featuring expanded capabilities for estimating carbon storage changes in agroforestry applications, orchards, and vineyards, as well as estimating nitrous oxide emissions, was completed in FY10. NRCS conservation planners have received the updated version of COMET-VR. Other conservation partners or interested parties can download the tool at: www.comet2.colostate.edu

Controlling Dust on Unpaved Roads in Alaska Improves Air Quality for Humans and Plant Life.

Teamwork was definitely required in the delivery of five comprehensive, multi-day Air Quality and Atmospheric Change training sessions. They were completed in FY10 in California, Louisiana, New Mexico/Arizona, Wisconsin, and Texas, reaching more than 200 NRCS staff and partners.

Energy Team:

FY-10 has been a busy year for the Energy Technology Development Team. Secretary Vilsak identified energy development as one of his priorities for USDA. The Agricultural Energy Management Plan, which was piloted in FY09, was elevated in importance when the NRCS Energy Initiative was kicked off in April 2010. The USDA Energy Council Coordinating Committee began a series of interagency activities to boost the awareness of, and commitment to renewable energy development and energy efficiency within USDA and the agricultural community. In July, Chief White signed a Decision Memorandum which established two official Resource Concerns addressing energy conservation and renewable energy production. The Team was involved in working behind the scenes to help make that happen.

The Team is also involved in training development and delivery. They provided a training session in Hawaii and, in conjunction with the Air Quality and Atmospheric Change Team; delivered 3-day training workshops to employees in New Mexico (including staff from Arizona), Louisiana, California, and Texas. The Team has begun development of the next Ag Learn energy course -- "Energy in Agriculture." The course will be a practical guide for field office personnel interested in helping producers with their energy concerns.

The Energy Team was understaffed through most of FY10. They welcomed Kip Pheil to the Team on October 25. Pheil comes to NRCS from the Oregon Department of Energy. His experience will be a great resource for the Team.

Fiscal Year 2011 promises to be a busy one. The adoption of energy Resource Concerns will require a number of activities, including the revision of many practice standards and the development of new ones, revision of the CPPE, and the development of measurement tools. The Energy Technology Development Team looks forward to the challenge.

A 75 kW photovoltaic system offsets grid-purchased electricity for a small hog farm with additional beef and tobacco operations.

Water Quality And Quantity Team:

The Water Quality and Quantity Team (WQQT) was busy in FY 2010 providing over 45 Training sessions across the county, developing and coordinating new technical software for the Streamlining Initiative, and providing thousands of hours of direct assistance to states in stream restoration, irrigation and drainage management, as well as hydraulic engineering.

One of our focus areas this year has been Irrigation Management. Eleven training sessions were delivered covering the topics of drip, surface, center pivot design and irrigation conservation. Technical notes and manuals the Team worked on include the Variable Frequency Drive Tech Note, the Chapter on Agricultural Pump Stations, and the interagency guide on Planning and Layout of Small Stream Diversions. Multiple computer applications were developed and maintained including work on spreadsheets for Center Pivot and Micro-irrigation Design as well as a web-enabled

Center Pivot and Drip Irrigation systems reduce water loss through evaporation.

Irrigation Management Program. We worked with States on direct assistance for irrigation design in Arizona, Nebraska, California, Idaho, Colorado, Pennsylvania, and Oklahoma. We also assisted with a number of salinity assessments including the development of policies and procedures for salinity management.

The Water Quality and Quantity Team continues to make progress in the area of Ecosystem Services with the Nutrient Trading Tool (NTT), an application designed to model nitrogen and phosphorus savings in response to conservation practices. We have partnered with ITS to provide a testing ground within NTT for the new and upcoming Computer Desktop Streamlining Initiative (CDSI) technology. The graphical user tool that was developed by the Team for use in NTT will be the same component used for the Streamlining Initiative. Additionally, the NTT interface will connect to the COMET-VR application to deliver carbon calculations as well as water quality calculations for ecosystem services credit trading.

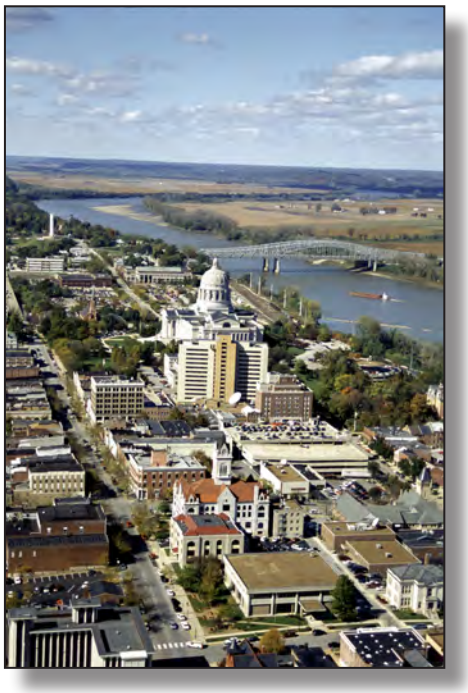
Stream restoration sites often have significant erosion taking place.

Stream restoration also continues to be an emphasis for the WQQT. Seven training sessions were delivered as well as active review or assistance on five stream restoration projects in the West. Staff provided basic training, design, review, and on-site implementation for these restorations. Field work was completed this year for an upcoming technical note on the implementation of engineered log jams. This guidance document will provide a basis for technical transfer in this expanding area of ecological restoration.

Fiscal year 2010 was busy for the Pest and Environmental Risk segment of the Team as well. Major activities include finishing up a Tech Note on Integrated Pest Management complete with reviews of both the Pest and Nutrient Management Policy and associated Practice Standards. Staff members were also involved in providing expertise on chemical residues associated with absorbent boom construction materials for the Agency's Deepwater response effort to the major oil spill in the Gulf.

Finally, the Water Quality and Quantity Team played a major role in the Mississippi River Basin Initiative by providing water quality, statistical, and sampling expertise to the effort. These activities were coordinated with NHQ and the States in the Mississippi River Basin.

The Mississippi River Watershed includes agricultural and urban areas such as Jefferson City, MO.



This farmer is calibrating his sprayer before applying pesticide. That action can reduce the amount of chemical used and insure that excess pesticide does not damage plants or affect surface or groundwater.