

FIELD TRIALS EVALUATE CARBON LEVELS

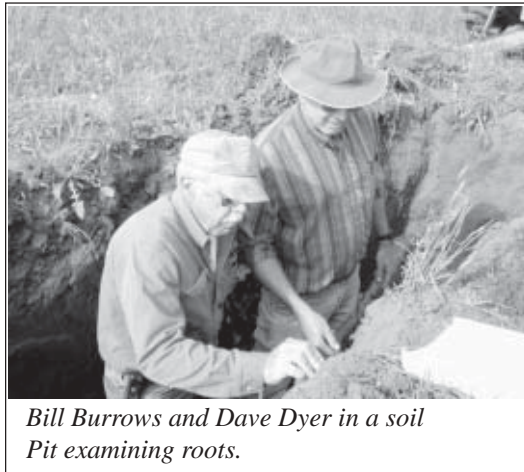
By Dave Sanden, Area Public Affairs Specialist, Red Bluff AO

The NRCS Conservation Field Trail (CFT) program was used to translate visionary local leaders' ideas into action. Partnerships were built to assess the potential of perennial grasses and conservation practices on grazing land to sequester carbon in the soil.

At the request of **Mark Steffek**, North Cal-Neva R C&D Coordinator (Alturas), **Erik Beardsley**, Area Resource Conservationist (Red Bluff) conducted a literature review on soil carbon sequestration. Beardsley's presentation to the RC&D council revealed that much United States range-land is considered disturbed due to domination by Mediterranean annual grasses and erosion. Scientific studies indicated restoration of deep rooting native perennial grasses and well planned grazing or prescribed burning can lead to long term (20–25 years) storage of atmospheric carbon in the soil.

Information shared at the meeting soon reached ranchers **Bill** (Tehama County RCD Associate Director) & **Kay Burrows**, **Frank** (TCRCD Associate Director), **Vicky** (TCRCD Program Manager) and **Tyler Dawley**, **Scott Stone** (Yolo County RCD President) and **Rich Stewart** (YCRCD Director). Requests for technical assistance from the conservation districts via District Conservationists **Larry Branham** (Red Bluff), and **Phil Hogan** (Woodland) and Soil Conservationist **John Weatherford** (Woodland) to evaluate perennial grass plantings on four ranches found their way back to Beardsley.

Beardsley launched coordination of the CFTs at the Lockford, CA Plant Materials Center (PMC), where during the past 15 years Director **Dave Dyer** collected soil, root and bio-mass data on 'Perla' koleagrass (CA cultivar) for its soil carbon sequestration and bio-mass conversion to ethanol potential. Dyer and Beardsley sought guidance from NRCS Soil Quality Institute (SQI) Director **Craig Ditzler** and Soil Scientist **M. Lee Norfleet**. The SQI provided them with the soil sampling protocol developed for quantifying soil carbon sequestration on Conservation Reserve Program



Bill Burrows and Dave Dyer in a soil Pit examining roots.

(CRP) perennial grass plantings for use by Clinton Administration envoys to the Kyoto, Japan global greenhouse gas mitigation negotiations.

As the two three-year projects came together, multi-disciplinary teams were formed. The field teams were comprised of Area Resource Soil Scientist **James Komar**, (Red Bluff), Range Management Specialists **Wade Anderson** (Red Bluff) and

Stephen Jaouen (Woodland), Agricultural Research Service (ARS) Soil Science Technician **Machelle Nelson**, (Corvallis, OR), as well as Dyer, Beardsley, Weatherford, Branham, and landowners.

NRCS Global Climate Change Program Director **Joel Brown**, Ph.D., ARS Soil Scientist, **Stephen Griffith**, Ph.D., University of California Cooperative Extension Livestock Advisor **Marc Horney**, Ph.D., UC Davis Plant Physiologist **William Horwath**, Ph.D., Soil Scientist **Randy Dahlgren**, Ph.D. and Statistician **Neil Willits**, Ph.D. shared insights toward developing a sampling design to account for spatial variability of perennial grass growth patterns. **Judy Boshoven** and **Jeanne Wirka** with California Audubon provided expertise on native perennial grass establishment and management, as well as prescribed burning. NRCS State Resource Conservationist **Diane Holcomb** played the instrumental role of budget process guide.

The first 200 soil samples analyzed at UC Davis are en route to NASA/Los Alamos Laboratories where Norfleet is assisting with development and testing of a battery powered Laser Induced Burn Spectrometer (LIBS) for the Mars probe. Field trial laboratory data will be used to help develop analogs for analysis of LIBS readings. The ARS/University of NM Experiment Station in Las Cruces is working on development of tractor mounted version of LIBS for use in precision farming and soil carbon sequestration field verification. Norfleet plans to bring the LIBS to California to take in situ soil carbon readings in conjunction with the field trials.