United States Department of Agriculture
Natural Resources Conservation Service

Helping People Help the Land

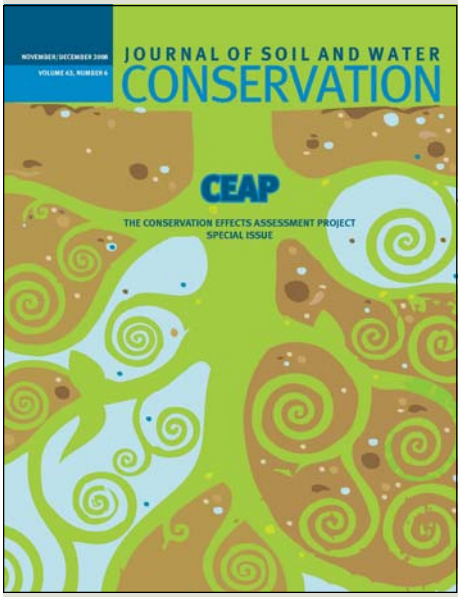
October 2008

Conservation Effects Assessment Project

CEAP Highlights

JSWC—Special CEAP Issue

The November/December 2008 issue (Volume 63, Number 6) of the Journal of Soil and Water Conservation, published by the Soil and Water Conservation Society, is a special issue dedicated to CEAP. The 316-page issue includes 22 research papers detailing ARS watershed assessment studies and model development, plus a synthesis of the scientific results to date. The front section of the journal includes 12 articles on conservation policy, practice, and technology transfer related to CEAP. Features include a special status report on the first five years of CEAP and an article by NRCS, ARS, and CSREES leadership outlining a new direction for CEAP.



CEAP Promotes Precision Conservation

Arlen L. Lancaster, Chief,
Natural Resources Conservation Service

I have long believed that conservationists needed a "conservation accounting system" to better report how participation in conservation programs affects natural resources. My experience working in Congress made clear that you need both sound data and compelling anecdotes to successfully craft policy and gain support.

I believed then, as I do now, that it is important to quantify the gains and losses resulting from the nation's ongoing investment in conservation on working lands—to be able to say definitively, "this is what certain practices do, and if you take them away, this is what will happen." In other words, to show the public how it benefits from a conservationist's actions.

In 2001, the senator I served at the time shared this conviction and advocated the concept as part of the 2002 Farm Bill debate. In 2003, the Conservation Effects Assessment Project, or CEAP, began. We recently finished a vision statement to guide the project over the next five years. We will soon also have in hand measurable results that show where, when and how citizens benefit from the diverse programs we provide. We will be able to demonstrate taxpayers' return on investment—data we can leverage when fighting for increased support in future farm bills. In an era of tight budgets and fierce competition for every federal dollar, I am confident this will be a huge advantage for conservation on working lands.

It is a source of pride to me that the "conservation accounting system" I have continued to champion as Chief is already paying dividends, thanks to groundbreaking work by NRCS employees, the Agricultural Research Service, the Cooperative State Research, Education, and Extension Service and dozens of equally committed partners nationwide.

Ultimately, CEAP will make it possible for us to practice precision conservation in the same way producers practice precision farming, by targeting inputs to maximize outcomes. Just as a farmer places seeds, fertilizer and pesticide where he has learned they do the most good, we will place technical and financial assistance where we have proven they provide the most benefit. By any measure, that's a win for producers, taxpayers and the environment.

Wetlands National Assessment

First Annual CEAP-Wetlands Science Team Meeting Held

Scientists leading CEAP-Wetlands studies met with the NRCS CEAP-Wetlands Science Coordinator in Ft. Collins, CO, August 12 and 13 for the first annual CEAP-Wetlands Science Team meeting. A variety of topics were discussed, with a list of action items developed to guide CEAP-Wetlands' activities over the next five years, including:

- Work with the other CEAP component coordinators to develop a workshop on models being used among CEAP components and those under development or refinement. Explore potential linkages among CEAP components to facilitate integrative analyses and studies.
- Support development of a map that shows the geographic distribution of all CEAP studies to help improve communication and coordination among the CEAP components.
- Initiate integrative studies with other CEAP components to better account for "cumulative" landscape effects of practices, programs, climate change, and other drivers on ecosystem services and goods provided by agriculture.
- Schedule a meeting in early December 2008 for CEAP-Wetlands scientists to reach agreement on the regional algorithm interface structure for the Integrated Landscape Model (ILM). Identify the modeling and remote sensing technology requirements for model input across the different CEAP-Wetlands regions.
- Develop an ILM regional algorithm and remote sensing data collection "guidance" document to help ensure appropriate consistency across regional efforts.

New Studies Initiated

Four new studies were initiated in FY08 as part of CEAP-Wetlands:

- Quantifying Ecosystem Service Derived from Conservation Practices in the Glaciated Interior Plain: Provisioning of Water Quality Benefits.
- Phosphorus Speciation as an Indicator of Land Use and Conservation Practices on Wetland Condition (initially to be undertaken within the Prairie Pothole Region).
- Assessing Wetland Restoration and Creation Practices on Southern Agricultural Lands (focused in the southern portion of the Gulf-Atlantic Rolling Plain and Coastal Flats regions).
- Assessment of the Effects of Conservation Practices on Pesticide Deposition in High Plains Wetlands.

The four studies either augment ongoing regional studies and analyses (i.e.,the High Plains and Prairie Pothole Region studies) or expand studies into other CEAP-Wetlands regions (i.e., the Glaciated Interior Plains, the Gulf-Atlantic Rolling Plain/Coastal Flats). The studies will also contribute to Integrated ILM regional algorithms either currently under development or that will be developed in the new future. The ILM is being developed to provide simulation/ forecasting capability as part of a National Wetlands Monitoring Process under development by CEAP-Wetlands. A status report with preliminary findings from each study will be available beginning late 2009, with final results and deliverables scheduled between 2010 and 2011.

Cropland National Assessment

Blue Ribbon Panel Subset to Review UMRB Draft Report

The Soil and Water Conservation Society (SWCS) will organize and facilitate an independent review of the forthcoming Upper Mississippi River Basin (UMRB) cropland report by a subset of the SWCS Blue Ribbon Panel. The panel will provide recommendations to NRCS on how to improve the report for use as a technical document in support of policy-making and decision-making for design and management of conservation programs.

The panel will meet with NRCS staff in early December for an initial briefing on the report, and then again near the end of the peer review period to provide feedback to the agency. Panel recommendations are expected no later than the end of February.

Confirmed panelists are Sandra Batie, Michigan State University; Craig Cox, Environmental Working Group; Otto Doering, Purdue University; Krysta Harden, National Association of Conservation Districts; Pete Nowak, University of Wisconsin-Madison; Bob Stewart, West Texas A&M University; Mary Watzin, University of Vermont; and Jeff Zinn, formerly with the Congressional Research Service (now retired). Jeff Zinn has agreed to take on the leadership role for SWCS on the project.

SWCS, USGS, NRCS Collaborate to Plan Water Quality Conference

SWCS has agreed to coordinate a joint NRCS-USGS workshop, "**Science to Solutions—Reducing Nutrient Export to the Gulf of Mexico.**"

The purpose of the workshop is to explore science-based solutions for reducing sources of nutrient loads exported from the Midwest portion of the Mississippi River drainage system to the Gulf of Mexico. The focus is on four basins: the Missouri, Upper Mississippi, Ohio, and Tennessee Rivers. The workshop will explore three themes: (1) potential solutions indicated by regional modeling, watershed and field-scale research, and socio-economic studies; (2) data and information gaps that limit scientific analyses and assessments; and, (3) science-based information needs of managers and policy makers to implement solutions and nutrient reduction strategies. The workshop consists of five sessions with invited speakers, a facilitated discussion, and contributed posters.

The two-day workshop will be held at a yet-to-be-determined location in the upper Midwest in November 2009.

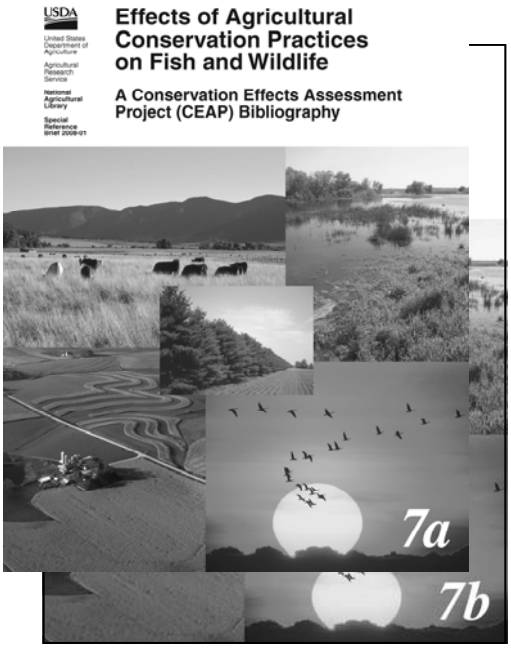
CEAP Fish and Wildlife Bibliography Published

The Water Quality Information Center at the USDA National Agricultural Library (NAL) has announced the publication of a bibliography of recent scientific literature on the effects of agricultural conservation practices on fish and wildlife. The bibliography, *Effects of Agricultural Conservation Practices on Fish and Wildlife*, is the seventh in a series in support of the Conservation Effects Assessment Project (CEAP).

The 2,285 citations in the two-volume bibliography cover publications from North America primarily between 2000 and 2006. They provide the most complete description available of the state of knowledge of the effects of conservation on fish and wildlife.

Volume 7a covers the terrestrial habitats of cropland, grazing lands, and forest. Volume 7b covers aquatic habitats in sections focused on lotic (streams, rivers) and lentic (estuaries, lakes, ponds, wetlands) habitats. Volume 7b also contains a third grouping of citations covering mixed habitats. Within sections, citations are arranged alphabetically by title.

NAL has made the publication available in PDF and HTML formats at http://www.nal.usda.gov/ceap. Printed copies will be available soon.



CEAP-Wildlife *Conservation Insight* Released

The latest *CEAP Conservation Insight,* "The Wetlands Reserve Program Supports Migrating Waterfowl in Nebraska's Rainwater Basin Region," has been released. The publication is available on my.NRCS under the Technology tab, and on the public CEAP Web site at http://www.nrcs.usda.gov/technical/nri/ceap/library.html.

Summary Findings

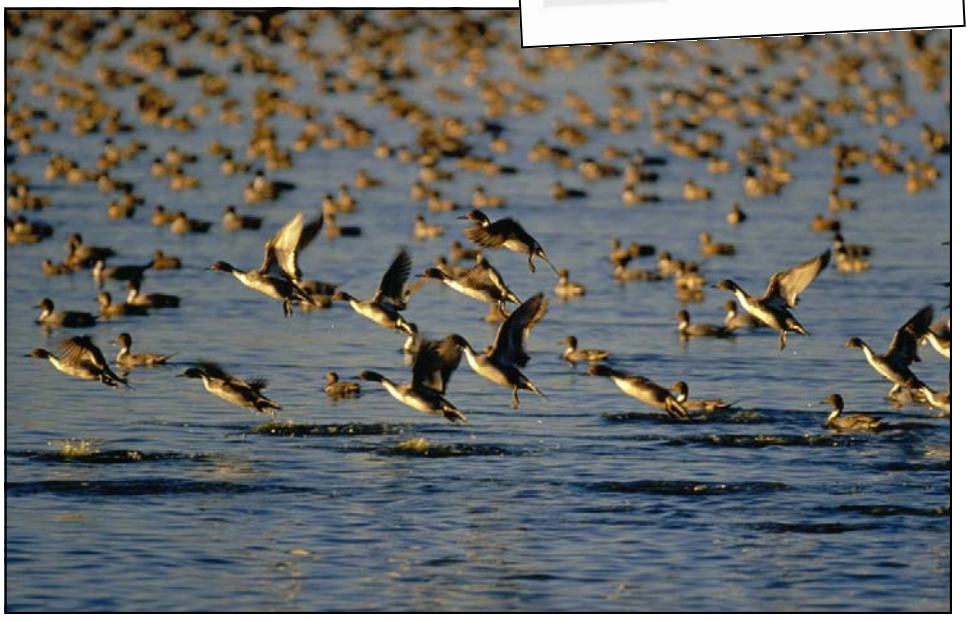
- Wetland habitats of the Rainwater Basin (RWB) region of south-central Nebraska provide critical food resources to mid-continental migrating waterfowl.
- Less than 20 percent of historic RWB wetland habitat remains in this highly agricultural region.
- Over 3,000 acres of wetland habitat have been restored in the RWB through the Wetlands Reserve Program (WRP).
- Bio-energetic modeling reveals that nearly 12 percent of the wetland-derived food available to waterfowl migrating through the RWB is provided by WRP wetlands.
- Despite the presence of WRP wetlands, approximately 44 percent more wetland-derived waterfowl food energy is needed in the RWB to meet all energy requirements of the estimated 12.4 million waterfowl that migrate through this area (2.6 million in fall; 9.8 million in spring).

Recommendations

- Continued management of WRP wetlands in early successional habitat can maximize production of food resources for migrating waterfowl in the RWB.
- As irrigation practices in the RWB shift from gravity systems to center-pivot systems, irrigation tailwater pits can be eliminated to restore and enhance the hydrology of down-slope wetlands.
- Decision support tools developed by the Rainwater Basin Joint Venture can maximize the value of future WRP enrollments for migrating waterfowl habitat.


NRCS
CEAP Conservation Insight
The Wetlands Reserve Program Supports Migrating Waterfowl in Nebraska's Rainwater Basin Region
September 2008

PHOTO: W. MEINZER, USFWS



CSREES Announces CEAP-Grazing Lands Study Grants

USDA has announced the award of more than $1.8 million in grants for research, education, and extension to evaluate the effects of conservation practices on the health of grazing land watersheds. As part of the CEAP partnership between NRCS and CSREES, the awards address key issues of conservation practice effectiveness, timing, and appropriate landscape position on grazing lands. The grants will support the creation of new knowledge, models, and evaluation techniques that could significantly improve grazing land management, and will improve the ability of NRCS field conservationists to work with landowners in development of effective conservation plans on rangeland.

These integrated projects will support CEAP through the joint work of CSREES' National Integrated Water Quality Program and Rangeland and Grassland Ecosystem Programs, and NRCS' Resources Inventory and Assessment Division.

Gale Buchanan, USDA chief scientist and Under Secretary for Research, Education and Economics, noted that "grazing land watersheds are critical to the sustainability of the livestock industry, wildlife habitat and clean, available water." USDA Under Secretary for Natural Resources and Environment Mark Rey added that "CEAP is helping us translate science into policies and practices that support attainment of our natural resource objectives."

Fiscal Year 2008 CEAP grants were awarded to—

- University of Arizona, $598,000, to develop tools for estimating the combined effect of grazing land conservation practices and drought on watershed health, and to develop tools for watershed health assessment. Researchers will analyze long-term vegetation and erosion data to understand the simple and combined effects of prescribed grazing, fire, and brush control on how rangeland responds to and recovers from drought.
- Texas A&M University, $647,000, to improve our understanding of how conservation practices and suites of those practices affect overall health at the watershed/landscape scale. Study goals are (1) to describe the influence of grazing land conservation practices on watershed health in central Texas, (2) to understand the socioeconomic drivers of and constraints to grazing land conservation, and (3) to develop and implement an extension and outreach program that encourages implementation of the most beneficial conservation practices.
- Washington State University, $621,000, to contribute to restoration and conservation of watershed health in Asotin Creek and provide a framework that can be applied to other grazing land watersheds in the United States. Researchers will (1) develop site-specific socioeconomic and biophysical criteria for watershed health, (2) evaluate the influence of existing and proposed conservation practices on runoff, erosion, and sediment delivery, (3) examine perceptions of conservation options, and (4) develop an optimal set of grazing land conservation practices.

CEAP-Grazing Lands Literature Syntheses

The CEAP pastureland literature synthesis remains on track for release in early 2010. Some 20 pastureland scientists are working to consolidate what is known and not known about the science of pastureland management. Project manager is Dr. C. Jerry Nelson of the University of Missouri at Columbia. Dr. Nelson is co-editor and co-author of the definitive book on pastureland, *Forages: The Science of Grassland Agriculture*, in two volumes—books that involved more than 90 authors. Matt Sanderson of ARS at Penn State University is ARS's pastureland CEAP leader and ARS liaison to the project.

The schedule for the CEAP rangeland literature synthesis calls for release of this publication in 2009.

The Conservation Effects Assessment Project
Translating Science into Practice

Conservation Effects Assessment Project (CEAP) is a multi-agency effort to quantify the environmental benefits of conservation practices and develop the science base for managing the agricultural landscape for environmental quality. Project findings will guide USDA conservation policy and program development and help farmers and ranchers make informed conservation choices.

The three principal constituents of CEAP—the national assessments, the watershed assessment studies, and the bibliographies and literature reviews—contribute to the evolving process of building the science base for conservation. That process includes research, monitoring and data collection, modeling, assessment, and outreach.

NRCS CEAP Contacts

Executive Leader—Tommie Parham
tommie.parham@wdc.usda.gov

CEAP Coordinator—Lisa Duriancik
lisa.duriancik@wdc.usda.gov

Cropland National Assessment—Bob Kellogg
robert.kellogg@wdc.usda.gov

Grazing Lands National Assessment—Leonard Jolley
leonard.jolley@wdc.usda.gov

Wetlands National Assessment—Diane Eckles
diane.eckles@wdc.usda.gov

Wildlife National Assessment—Charlie Rewa
charles.rewa@wdc.usda.gov

Communications—Jim Benson
james.benson@wdc.usda.gov