

USDA NRCS Conservation Outcomes Research Explorer (CORE)

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Services / Expertise

Data Management & Visualization
Web-Based Decision Support Tools
Scientific Literature & Research Data Systems
Interactive Dashboards & Data Exploration
Geospatial Application Development
Data Integration & Knowledge Management
AI-Assisted Data Extraction

Technology

Esri ArcGIS / React
PostgreSQL / PostGIS
Python/HTML/JS/CSS
ReTool
Anthropic API

Market

Federal Government
University Research Centers

Project Location

National (United States), Hosted for USDA
NRCS CEAP-Grazing Lands Program

Project Duration

2021–Present

Project Owner

University of Arizona

USDA Natural Resources Conservation
Service, Conservation Effects Assessment
Project – Grazing Lands (CEAP-GL)

Project Team

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Link to Application

<https://nracs-core-dev.stone-env.net/home>



The CORE platform includes an interactive dashboard for users to explore published information on the impacts of conservation practices.

THE Natural Resources Conservation Service (NRCS) Conservation Effects Assessment Project for Grazing Lands (CEAP-GL) uses published scientific literature to evaluate the effectiveness of conservation practices across diverse landscapes and resource concerns. However, conservation research is often distributed across numerous studies, making it difficult to efficiently locate, compare, and explore findings across projects and regions.

To help address this challenge, Stone partnered with CEAP-GL and the University of Arizona to develop the Conservation Outcomes Research Explorer (CORE), a custom web-based application and database that organizes published research into a searchable, interactive platform. Rather than requiring users to manually review individual studies, CORE provides tools for exploring conservation outcomes through maps, dashboards, and dynamic data visualizations.

The platform allows users to filter and analyze literature by land use, conservation practice, NRCS resource concern, and measured environmental outcomes. Users can explore study locations geographically, compare findings across multiple studies, examine relationships among conservation practices and resource concerns, and drill into detailed study-level information. Interactive visualizations help transform a large and complex body of research into a practical resource for researchers, conservation planners, land managers, and decision-makers.

Developed using ArcGIS Enterprise technologies, PostgreSQL/PostGIS, custom web development tools, and a data-entry platform developed with ReTool, CORE combines geospatial exploration, research synthesis, and data visualization within a single platform. Stone continues to support the evolution of the application and has developed an AI-assisted workflow that streamlines the extraction and entry of information from user-selected published studies into the database. The AI tool is integrated with the ReTool data entry interface and scrapes data from the text, tables



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and figures for insertion into the database for review by the user. This automated system has reduced the time for NRCS conservation scientist to enter data by approximately 50%.

