



United States
Department of
Agriculture

Natural Resources Conservation Service

NRCS Ag BMP Crediting

NEIEN Appendix BMP Crosswalk Proposal

Watershed Technical Workgroup

Leon Tillman

USDA/ NRCS Chesapeake Bay Coordinator

August 4, 2022



United States
Department of
Agriculture

Natural Resources Conservation Service

Crediting Proposal Objectives

- Communicating historical and current level of NRCS agricultural practices crediting in CAST
- Recommend NEIEN Appendix crediting adjustments for NRCS agricultural practices, based on resources effected
 - Recommended changes are one step in a larger and longer process
- Communicate practice importance related to measuring sediment and nutrient reductions and co-benefits



United States
Department of
Agriculture

Hurdles to Load Reduction in the Ag Sector

Natural Resources Conservation Service

- Presented via other committees/ GIT/ WG
 - Lag time between BMP implementation and water quality response
 - County scale BMP effectiveness reduced due to data aggregation
 - Loss of BMPs through credit duration/ not verified
- Additional Considerations:
 - Full counting/ crediting for agriculture practices/ BMPs
 - i.e., Conservation Stewardship Program (CSP) activities
 - NRCS Practices or enhancements in “Draft” status are not credited for sediment or nutrient reduction in CAST
 - Lacking NEIEN Appendix “Released” status

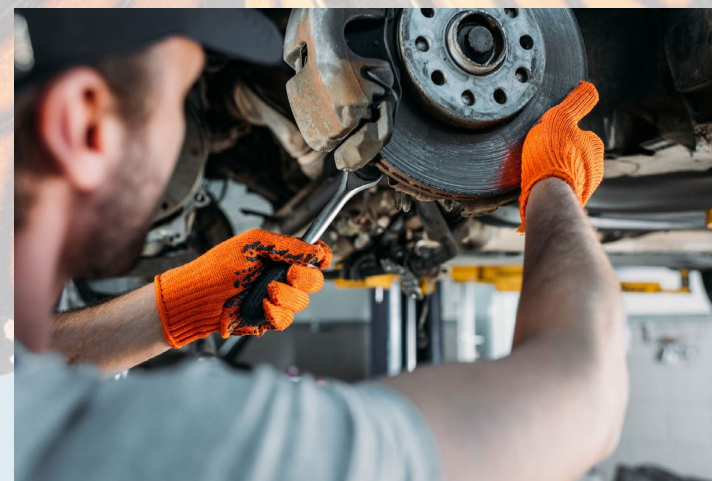
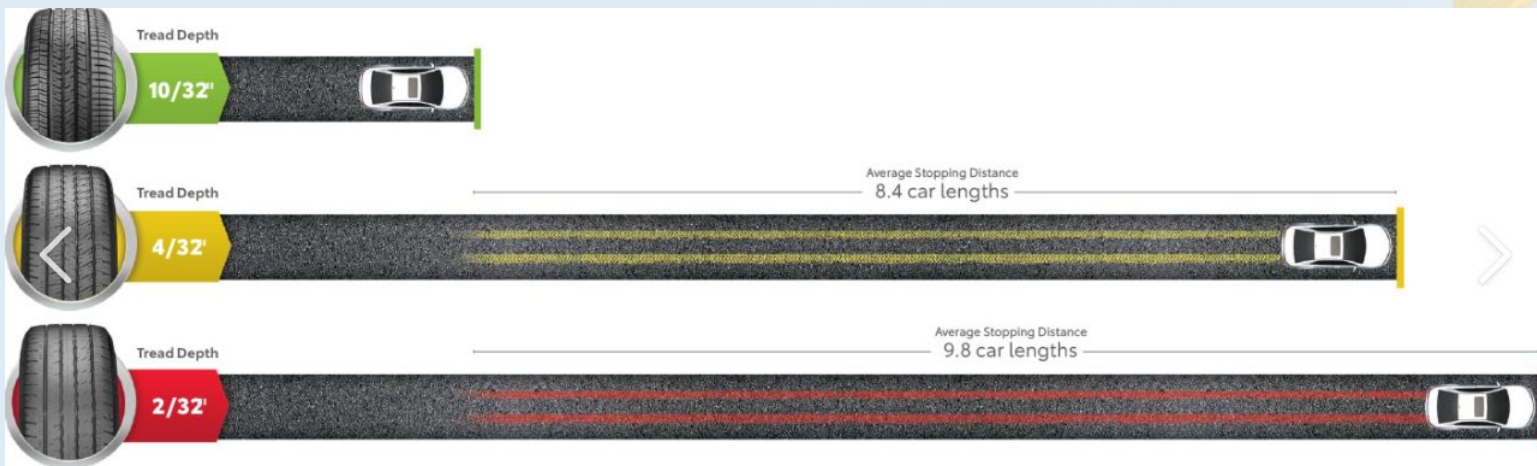




Conservation BMPs function as SYSTEMS

Natural Resources Conservation Service

- It's like a car repair to improve stopping distance
 - Need new rotors, brake pads, brake fluid, and tires
 - Cannot only account for one component and expect a safe stopping distance (improvement)
 - BMP components can also improve the efficiency, performance, and lifespan of others
- Management and structural practices (BMPs) yield compound improvements
 - Cover crops implemented on acres with a water and sediment control basin
 - A diversion directing water through a grassed waterway or structure for water control



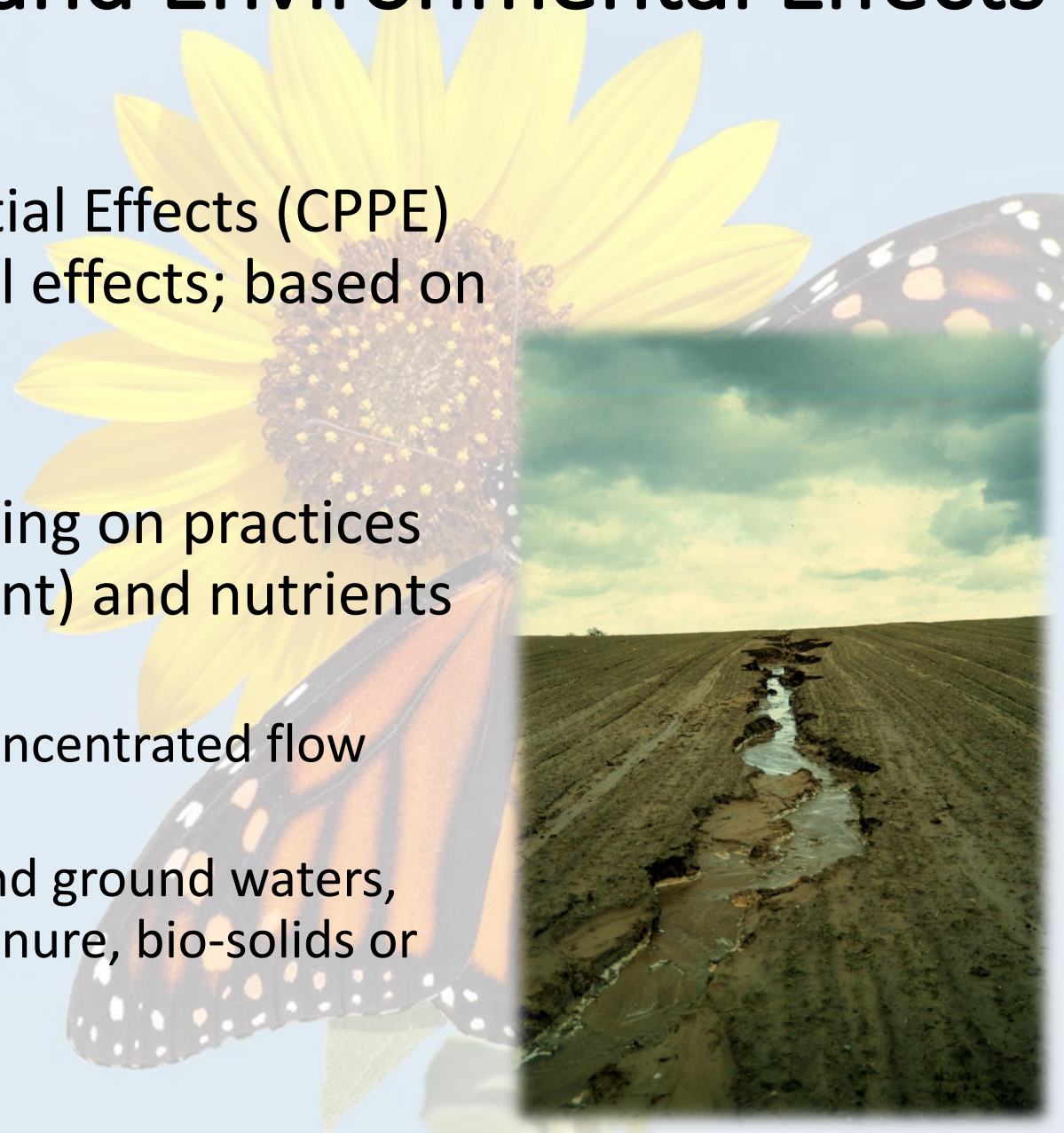


United States
Department of
Agriculture

NRCS Practices and Environmental Effects

Natural Resources Conservation Service

- NRCS used Conservation Practices Potential Effects (CPPE) to quantify each practices' environmental effects; based on research and science
 - Evaluates 170 Practices
- For Ches Bay Program CAST Model, focusing on practices that positively effect soil erosion (sediment) and nutrients in surface and ground water
 - Soil Erosion: Sheet, rill, and wind erosion; concentrated flow erosion, excessive bank erosion
 - Water Quality: Excess nutrients in surface and ground waters, excessive pathogens and chemicals from manure, bio-solids or compost applications





United States
Department of
Agriculture

Federal BMP Inclusion Process

Natural Resources Conservation Service

- USGS requests federal implementation data from NRCS & FSA
- USGS receives and aggregates data from NRCS & FSA
- USGS provides aggregated data sets to jurisdictions with data separated into categories.
 - NRCS: Land BMPs, Animal BMPs, Land BMPs CTA, Animal BMPs CTA
 - FSA: Aggregated together
- Jurisdictions review data for duplication and inclusion in NEIEN
 - Check for unit conversion issues, etc.
 - Only cross walked BMPs will receive reduction credit in NEIEN
- BMPs submitted by the jurisdiction, and that have a released equivalent NEIEN BMP, receive credit in CAST Model.





United States
Department of
Agriculture

Section 1619 & Data Aggregation

Natural Resources Conservation Service

Affects to NRCS Data:

- Where five or more producers reported a practice in a county, then the data are provided at the county scale.
- Where less than five producers reported a practice in a county, then the data are provided at the state scale. You may see some data aggregated at both the county and state scale, but not duplicated.
- Where less than five producers reported that practice in the state. The data cannot be shared in unaggregated form and are not included.





United States
Department of
Agriculture

History of NEIEN Appendix- Crosswalk

Natural Resources Conservation Service

- Establishment date of NEIEN Appendix-Crosswalk: Phase 5 in 2011
- Change of select NRCS practices from “released” to “draft” in CAST: Phase 6 in 2018
 - Some of these practices were part of the Soil Conservation and Water Quality Plans BMP Category
- Appendix- Crosswalk Implementation: Phase 6 in 2018 – Present (updated annually)
- NEIEN Appendix BMP Statuses: Release, Draft, Retired, No Status/ Blank

A photograph of a wooden bookshelf filled with books. A large, semi-transparent sign with the word "History" in a gold, serif font is overlaid on the top part of the bookshelf. The bookshelf has two labels: "United States" and "Europe". The books are arranged in rows, and the background is a light blue sky with a large yellow sunflower and a monarch butterfly.

History



Rational for Past NEIEN Changes

- All BMPs other than conservation plans that map to “ConPlan” were changed to a “Draft” status. These BMPs were changed as part of calibration in the Phase 5 Model to account for reporting a plan versus individual BMPs within a plan.
- Many combinations of BMP/Measurement Name/Unit Name that were not previously submitted to NEIEN were removed. Some newer records were left to accommodate recently approved BMPs.
- Any records with no associated ScenarioBuilder name were removed with the exception of many cover crop BMPs that currently do not receive credit but have been traditionally reported. There may now be a CAST name equivalent for reported practices.
- All BMPs other than conservation plans that map to “ConPlan” were changed to a “Draft” status. These BMPs were over-reported in the Phase 5 Model calibration as multiple BMPs treat the same acre of land. In reality these multiple BMPs are part of one holistic BMP: Soil and Water Quality Conservation Plans.
- Changes to the appendices between phase 5 and phase 6 were presented at the 9/3/2015 WTWG meeting and approved.



CAST Phases & NEIEN Appendix

Natural Resources Conservation Service

- The NEIEN Appendix status must be marked as “released” to get credit in the Model
- The practices included in the NEIEN Appendix is not an exhaustive list
 - There may be other practices or activities that benefit sediment and nutrients reductions

Today’s Issue:
Some practices that were “release” in Phase 5 are “draft” in Phase 6

| Reporting BMPs (NEIEN) | Assessing TMDL Progress (CBP BMP Names) in the CBP Watershed Model |
|---|--|
| Phase 5: <ul style="list-style-type: none"> • All known fed & state names for BMPs available • NRCS Practice Codes included | Phase 5: Scenario Builder (SB) BMP Name |
| Phase 6: <ul style="list-style-type: none"> • All known fed & state names for BMPs available • NRCS Practice Codes excluded (use “USDA Practices, NEIEN, and CAST BMPs” guide as cross-reference) | Phase 6: CAST BMP Name |
| “Release” status | “Official” status → progress towards TMDL |
| “Draft” status | N/A → not available for progress |



United States
Department of
Agriculture

CAST Phase 6: NRCS to NEIEN Appendix- Crosswalk

- During the change to CAST Phase 6, 38 BMPs were changed from “Released” to “Draft” status
- These practices are implemented as part of a conservation plan (system) that addresses resource concerns beyond soil loss.
- Some of the removed practices include:
 - Conservation crop rotation, contour buffer strips, diversion, grade stabilization structure, lined waterway or outlet, water and sediment control basin and others.



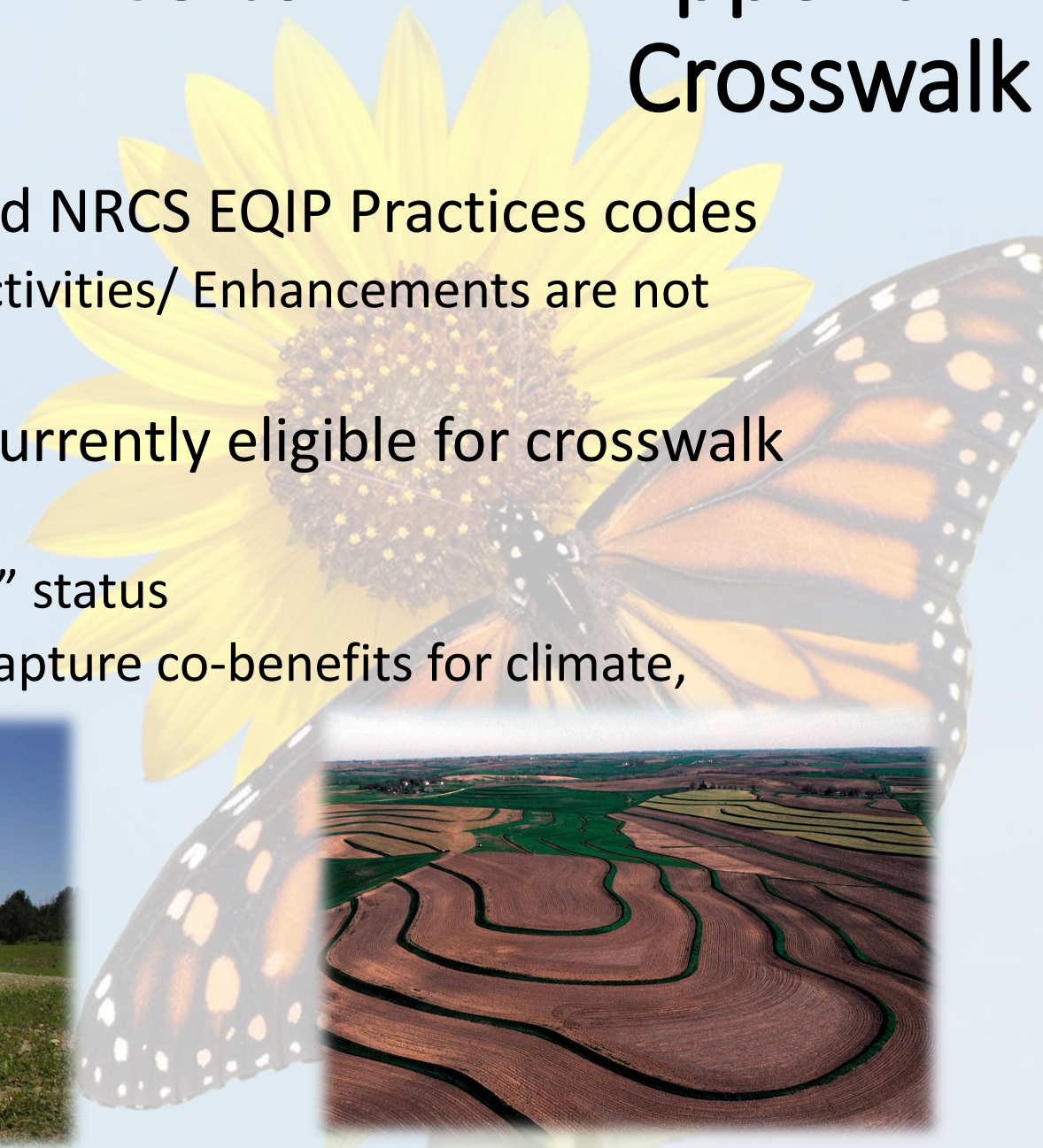


United States
Department of
Agriculture

CAST Phase 6: NRCS to NEIEN Appendix- Crosswalk

Natural Resources Conservation Service

- CAST/ NEIEN currently only counts limited NRCS EQIP Practices codes
 - Conservation Stewardship Program (CSP) Activities/ Enhancements are not captured in CAST Model
- 556 NRCS practices and enhancements currently eligible for crosswalk (includes CSP Enhancements)
 - Only 28 practices are currently in “Released” status
 - Need for additional practice crosswalks to capture co-benefits for climate, PFAS, and others.



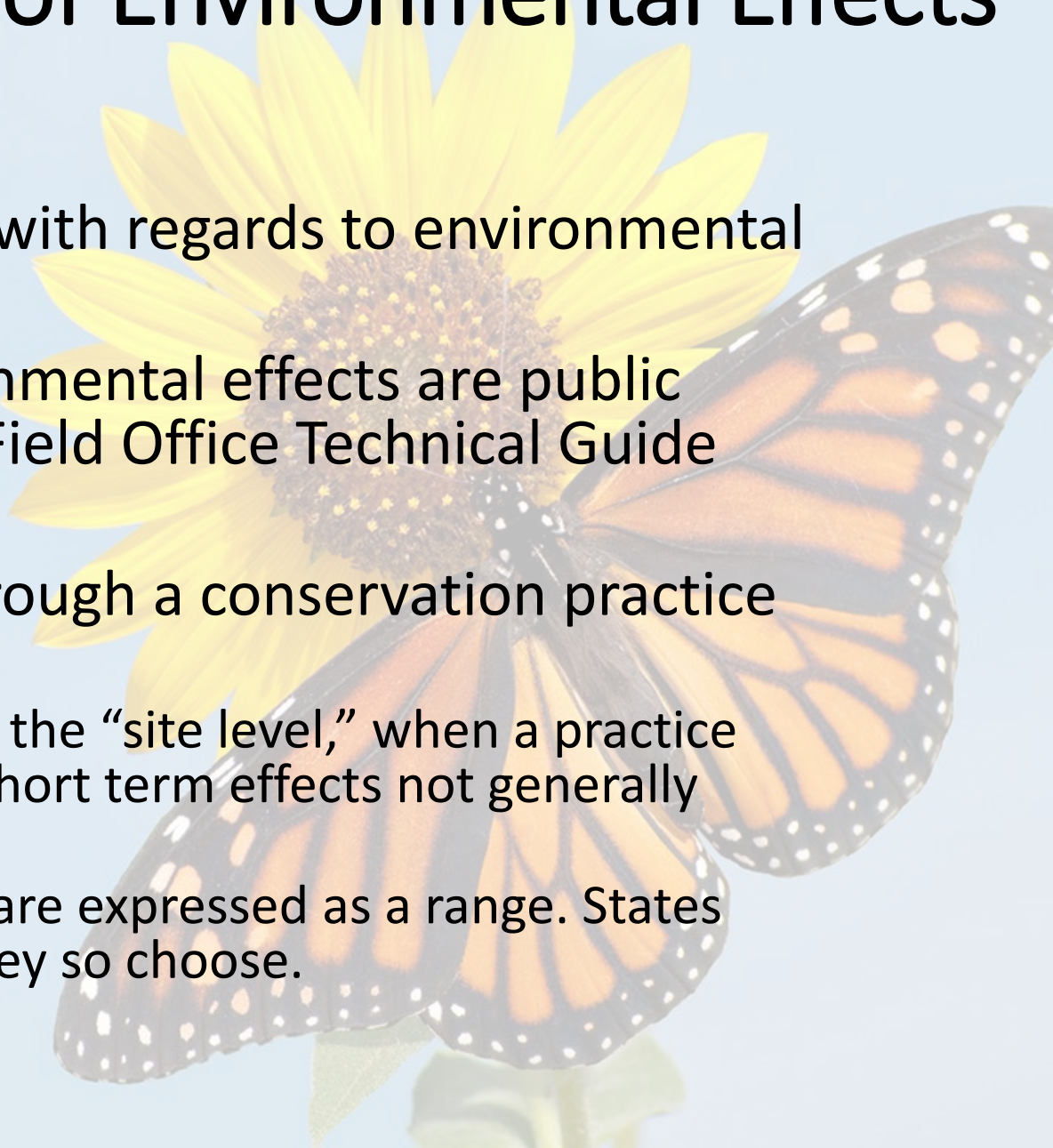


United States
Department of
Agriculture

Documentation of Environmental Effects

Natural Resources Conservation Service

- USDA/ NRCS uses science and research with regards to environmental benefit of conservation practices.
- Conservation practices and their environmental effects are public record and can be found via the NRCS- Field Office Technical Guide (eFOTG).
- Environmental effects are quantified through a conservation practice physical effects matrix.
 - Provide effects for an individual practice at the “site level,” when a practice has reached a designed, functional state. Short term effects not generally rated.
 - Due to national applicability, some ratings are expressed as a range. States can refine ratings to improve accuracy if they so choose.



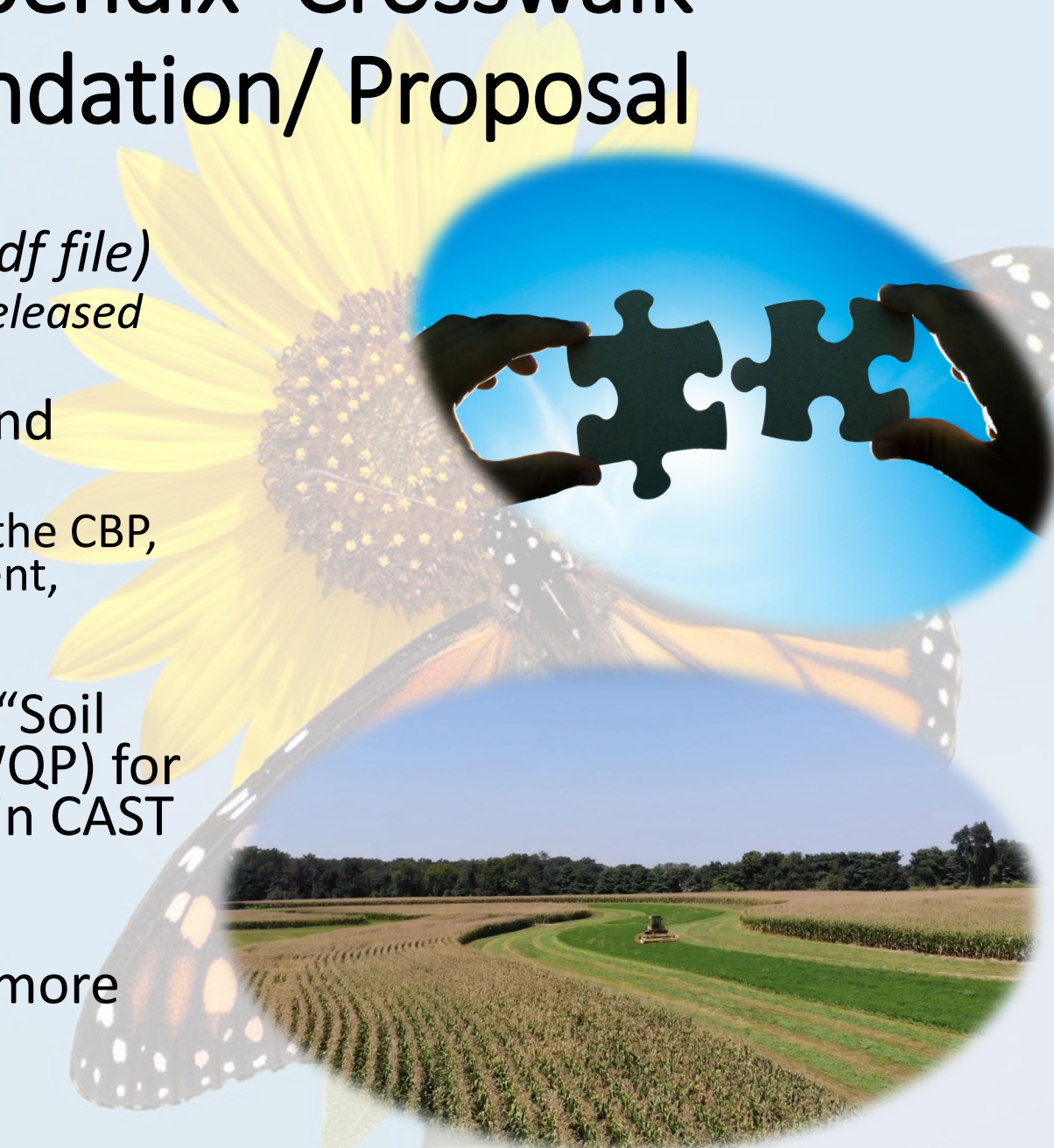


United States
Department of
Agriculture

NEIEN Appendix- Crosswalk Recommendation/ Proposal

Natural Resources Conservation Service

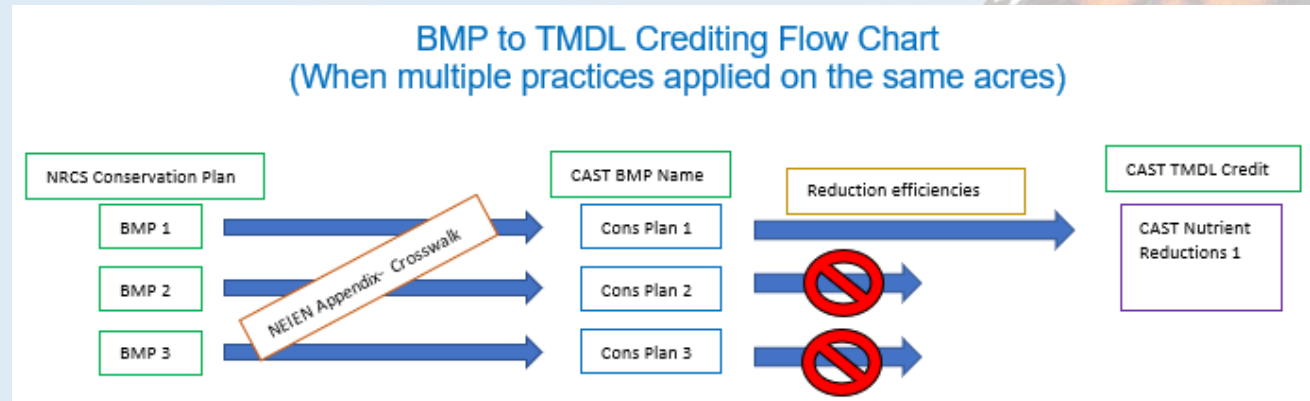
- See “NRCS - NEIEN Appendix Status Update Proposal May 2022- Amended” document (pdf file)
 - 15 practices proposed for change from draft to released
- These practices have a benefit in sediment and nutrient reduction.
 - Many also provide co-benefits of importance to the CBP, i.e. climate resiliency, wildlife habitat improvement, reducing pesticides, reducing water use, etc.
- These practices use the CAST BMP Category “Soil Conservation and Water Quality Plans” (SCWQP) for lack of a more accurate reduction efficiency in CAST
 - Catch all category based on current research
- Proposed change is a step on a path toward more fully crediting voluntary conservation implementation.





NEIEN Appendix- Crosswalk Recommendation/ Proposal

- The change would result in BMPs being eligible for Phase 6 Soil Conservation and Water Quality Plan (SCWQP) Nitrogen, Phosphorus, and Sediment reductions
 - Nitrogen: 3%, 5%, or 8%
 - Phosphorus: 5%, 10%, or 15%
 - Sediment: 8%, 14%, or 25%
- These practices would only receive credit when not applied on same acres already receiving reduction credit as a SCWQP.





United States
Department of
Agriculture

USDA – An Equal Opportunity Provider & Employer

Natural Resources Conservation Service

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers. If you believe you experienced discrimination when obtaining services from USDA, participating in a USDA program, or participating in a program that receives financial assistance from USDA, you may file a complaint with USDA. Information about how to file a discrimination complaint is available from the Office of the Assistant Secretary for Civil Rights.

USDA prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex (including gender identity and expression), marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.)

To file a complaint of discrimination, complete, sign and mail a program discrimination complaint form, available at any USDA office location or online at www.ascr.usda.gov, or write to:

USDA

Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, S.W.
Washington, D.C. 20250-9410

Or call toll free at (866) 632-9992 (voice) to obtain additional information, the appropriate office or to request documents. Individuals who are deaf, hard of hearing or have speech disabilities may contact USDA through the Federal Relay service at (800) 877-8339 or (800) 845-6136 (in Spanish). USDA is an equal opportunity provider, employer and lender.

Persons with disabilities who require alternative means for communication of program information (e.g., Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).