Conservation Reserve Enhancement Program (CREP)

Technical Assistance
September 29, 2020

USDA United States Department of Agriculture

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USDA NRCS

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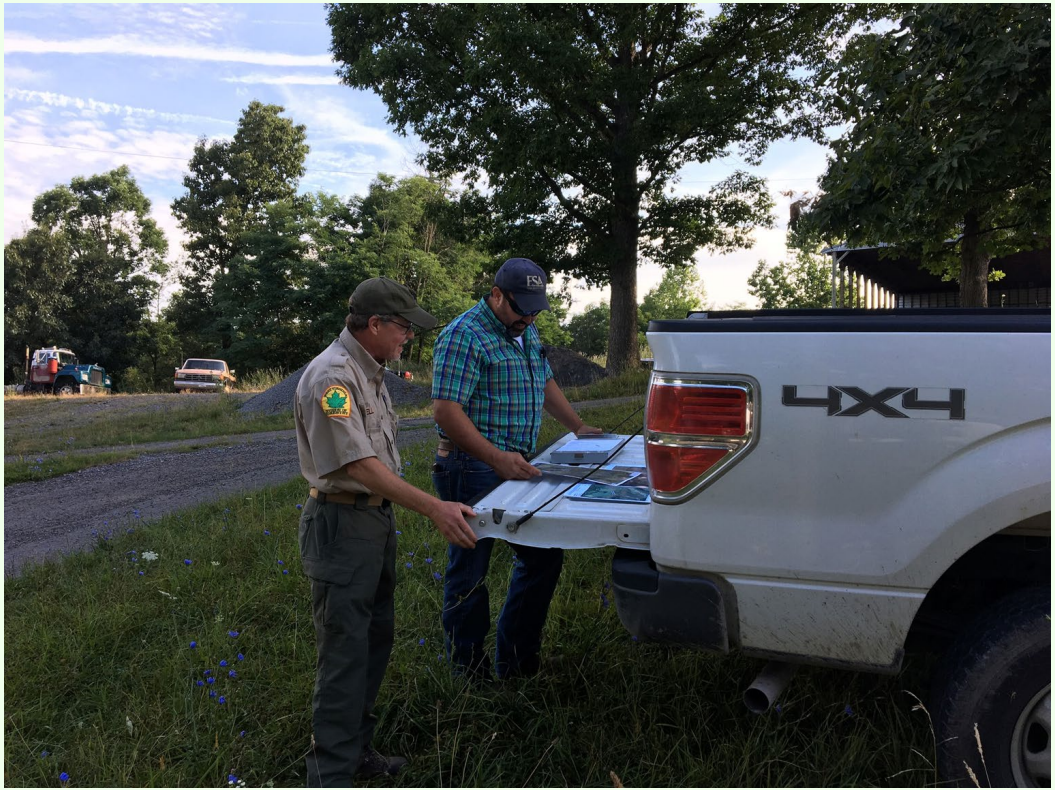
WV Division of Forestry

Farm visits

- Technical eligibility determination
- Installation of CREP CP
- Establishment of CREP CP
- Management activities
- Contract maintenance

Farm Visit 1: Initial Visit and Technical Eligibility Determination

Partners Visit



NRCS coordinates site visit with partners

Agency	Local Point of Contact	Back-up Point of Contact
FSA	County Executive Director	Kevin Hinkle (304-284-4800, kevin.hinkle@usda.gov)
NRCS	District Conservationist	Kyle Aldinger (304-284-7595, kyle.aldinger@usda.gov)
USFWS	Nick Millett (304-679-1623, nicholas_millett@fws.gov)	
WVCA	Conservation District	Cindy Shreve (304-538-7581, cshreve@wvca.us)
WVDEP	Regional Office	Teresa Koon (304-414-3828, teresa.m.koon@wv.gov)
WVDA	Matt Monroe (304-538-2397, mmonroe@wvda.us)	
WVDNR	Anne Wakeford (304-642-8724, anne.m.wakeford@wv.gov)	
WVDOF	County Service Forester	Todd Carnell (304-703-5546, todd.p.carnell@wv.gov)

Video #1

https://drive.google.com/file/d/1K1rhjs37URM8X-GeluVT3hk6btc-d0PU/view?usp=sharing

Technical Eligibility Determination

- For an offer to be eligible, CRP policy requires a technical determination that
  - existing cover is not functioning as the practice offered
  - acreage offered is suitable for the practice offered
  - practice offered is needed and feasible to solve the resource concern
  - Practice offered meets the purpose of the practice according to Exhibit 11 (i.e., the CP requirements in 2-CRP)

Technical Eligibility Determination

WEST VIRGINIA
CONSERVATION RESERVE ENHANCEMENT PROGRAM SITE VISIT DOCUMENTATION WORKSHEET

A. PRODUCER INFORMATION

Landowner Name _____

Date_____

County_____

Farm No._____Tract No._____

Address_____

_____

City_____State_____

Zip Code_____ Phone (___)_____

USDA

U.S. Department of Agriculture

West Virginia Conservation Reserve Program CP22 Riparian Buffer

Documentation of Suitability and Feasibility Worksheet (Version 2.0 June 2018)

Name of Client:		Client Phone Number: Client email:	
Farm Number: Tract Number:	Field Number(s):	Location Description:	State: County:

***Refer to the *Worksheet Instructions* for guidance on completing a Suitability and Feasibility Determination.**

West Virginia CP22, Riparian Buffer Practice Purpose: Remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other processes, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the water body. Create shade to lower water temperature to improve habitat for aquatic organisms. Provide a source of detritus and large woody debris for aquatic organisms and habitat for wildlife.

Element #1 Site Conditions/Program Requirements

Identify if offer area meets West Virginia CP22 site condition criteria by checking the following:

☐ Offer is in an eligible watershed in West Virginia:

☐ Cheat ☐ Kanawha ☐ Little Kanawha ☐ Monongahela ☐ Ohio ☐ Potomac

Suitability and Feasibility Worksheet

- Required to be completed and returned to FSA for…
  - New CREP offers
  - Contracts re-enrolling into a different CREP CP
- Ensures we meet technical determination requirements, but additional documentation is needed depending on...
  - 2-CRP policy for each CRP CP
  - NRCS CPS
  - NRCS Planning Criteria

NRCS Conservation Planning Process

I. Collection and Analysis
    1. Identify Problems and Opportunities
    2. Determine Objectives
    3. Inventory Resources
    4. Analyze Resource Data
II. Decision Support
    5. Formulate Alternatives
    6. Evaluate Alternatives
    7. Make Decisions
III. Application and Evaluation
    8. Implement the Plan
    9. Evaluate the Plan

Suitability and Feasibility Determination process fall within Phases 1 and 2, Steps 1 through 7 of the NRCS Conservation Planning Process

Suitability and Feasibility Worksheet

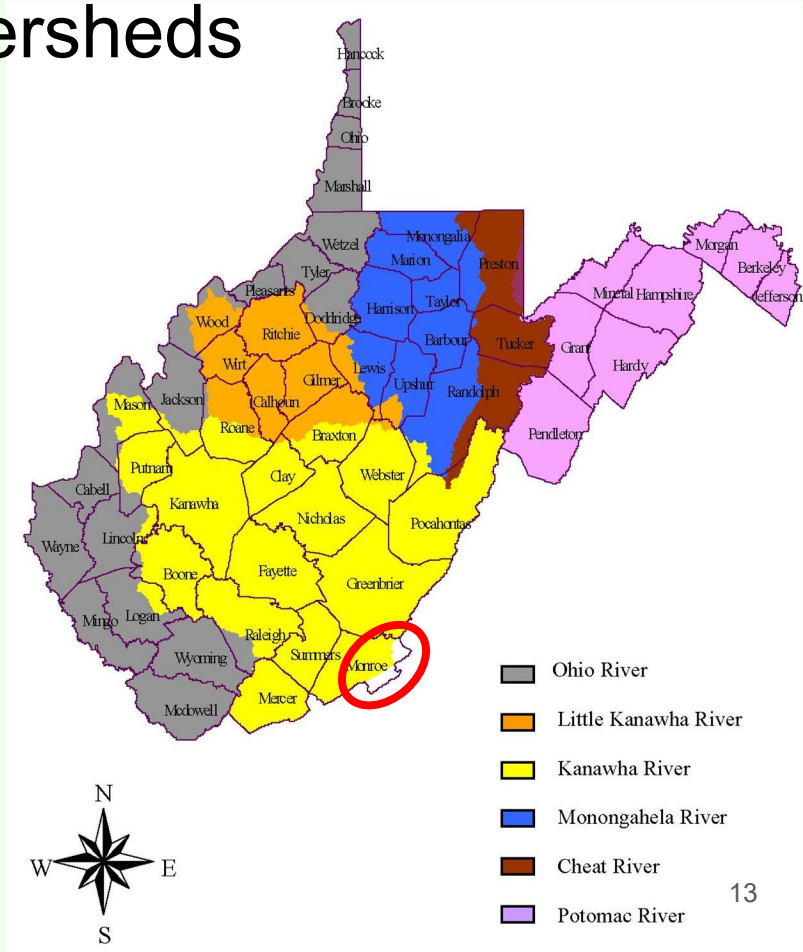
- Four elements
  - Site Conditions / Program Requirements
  - Practice Needs
  - Practice Feasibility
  - Practice Suitability

Element 1: Site Conditions / Program Requirements

- Do site conditions meet CREP CP program requirements?
  - Narrow scope of field inventory
  - Document field observations related to current land use, cover type, and CP program requirements
  - Use fillable fields on S&F worksheet and spatially referenced and dated photos/documentation to indicate which site condition(s) are being met
  - **ALL** site conditions must be met to determine that an offer meets this element.

CP22: Element 1 - Eligible watersheds

- Cheat
- Kanawha
- Little Kanawha
- Monongahela
- Ohio
- Potomac



CP22: Element 1 - Qualifying water bodies

- Cropland and marginal pastureland
  - Perennial, seasonal, or intermittent streams
  - Permanent water bodies
  - Sinkholes or karst areas
- Cropland
  - Permanently flooded, intermittently exposed, semi-permanently flooded, and seasonally flooded wetlands

Streams

- Linear drainage
- Confined surface flow
- Defined channel
- Contains water more than just during/after rainfall or snowmelt events

**Do not rely solely on maps to determine eligibility

Stream having perennial flow

Stream having seasonal or intermittent flow

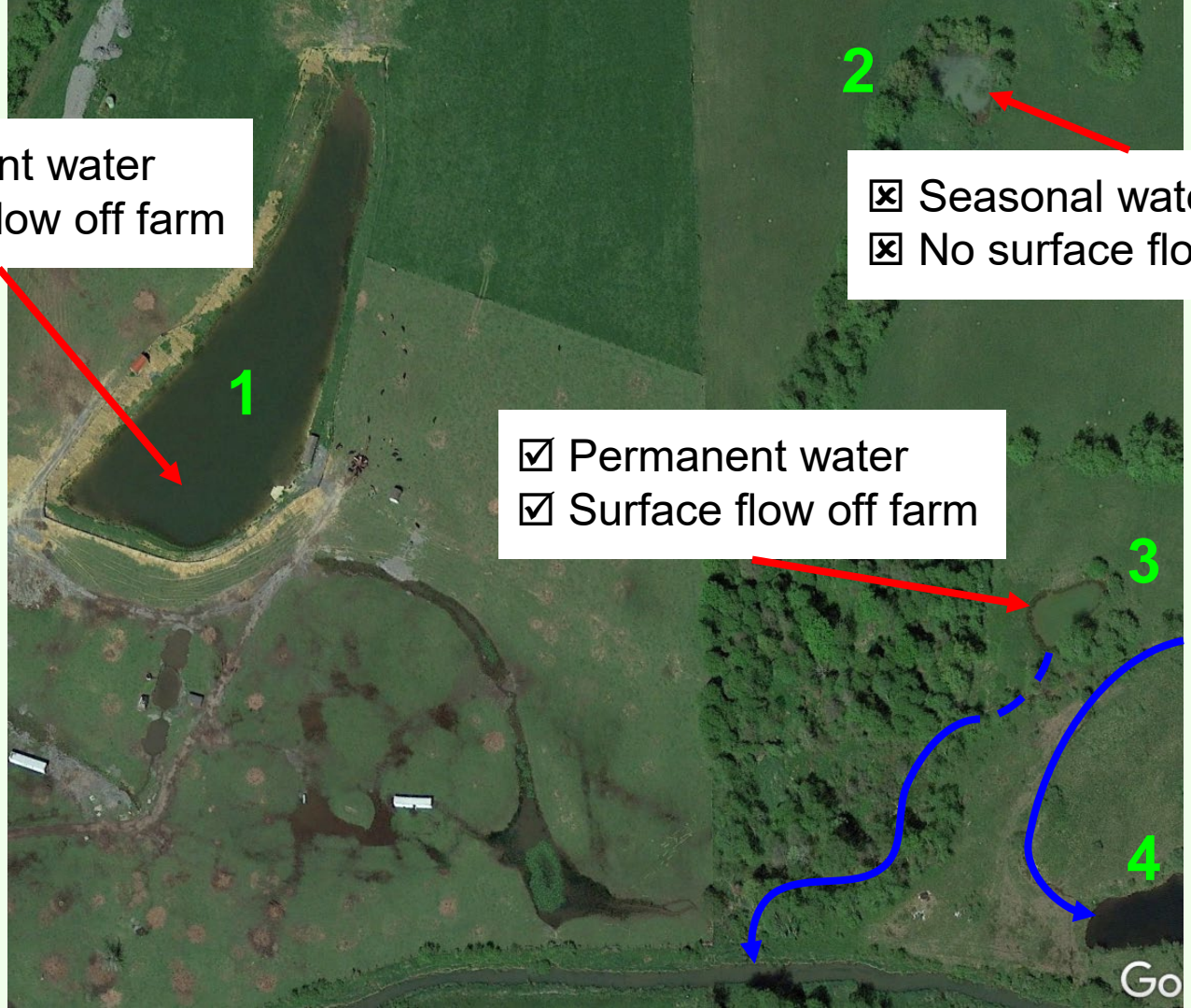

Stream having perennial flow


Not a qualifying water body

Stream having seasonal or intermittent flow?

Permanent water bodies such as lakes or ponds

- Contain water throughout the year in all years
- Provide at least seasonal flow of surface water off the farm

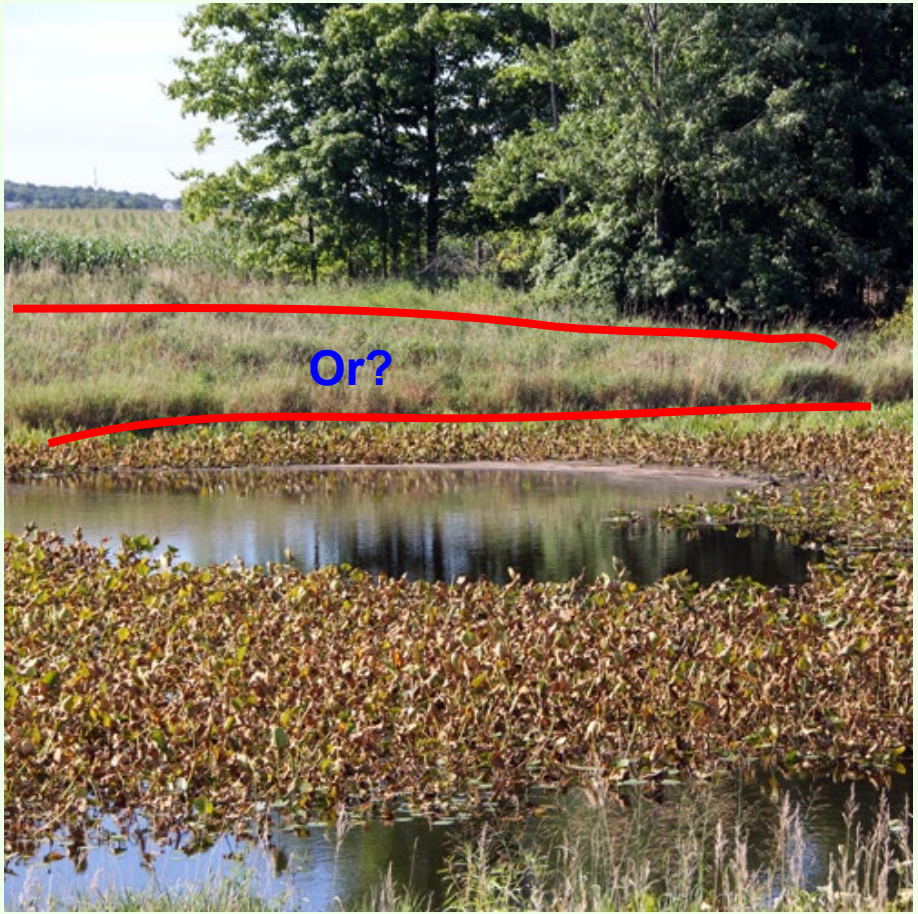

☑ Permanent water
☑ Surface flow off farm
1
2
☒ Seasonal water
☒ No surface flow off farm
☑ Permanent water
☑ Surface flow off farm
3
4

Sinkholes or karst areas

- Landscape underlined with dissolvable rock such as limestone
- Highly variable in appearance

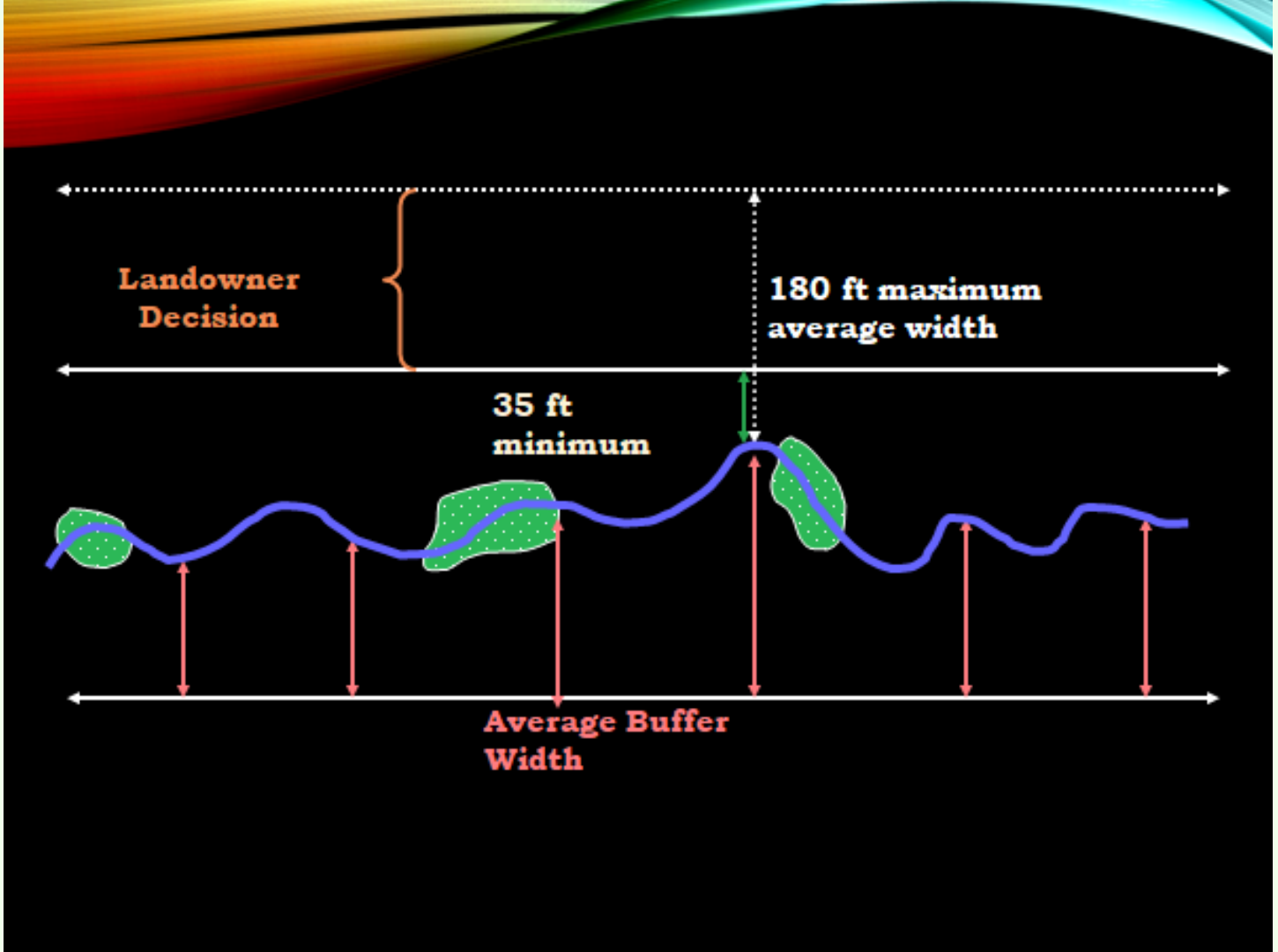
Wetlands

- Hydric soil
- Hydrophytes
- Hydrology
  - At minimum, inundated with surface water for ≥21 days during wet season
  - In WV, usually associated with streams that can help in determining the “edge” or “top of bank”



CP22: Element 1 - Size requirements

- ≥35’ width from top of bank to edge of buffer at any point
- ≤180 ft average buffer width
  - >180’ average width must be thoroughly documented and approved
- Measure horizontally (not along ground surface) from “top of bank”
  - Top of bank can be difficult to determine
  - Discuss with partners and document reasoning behind the decision

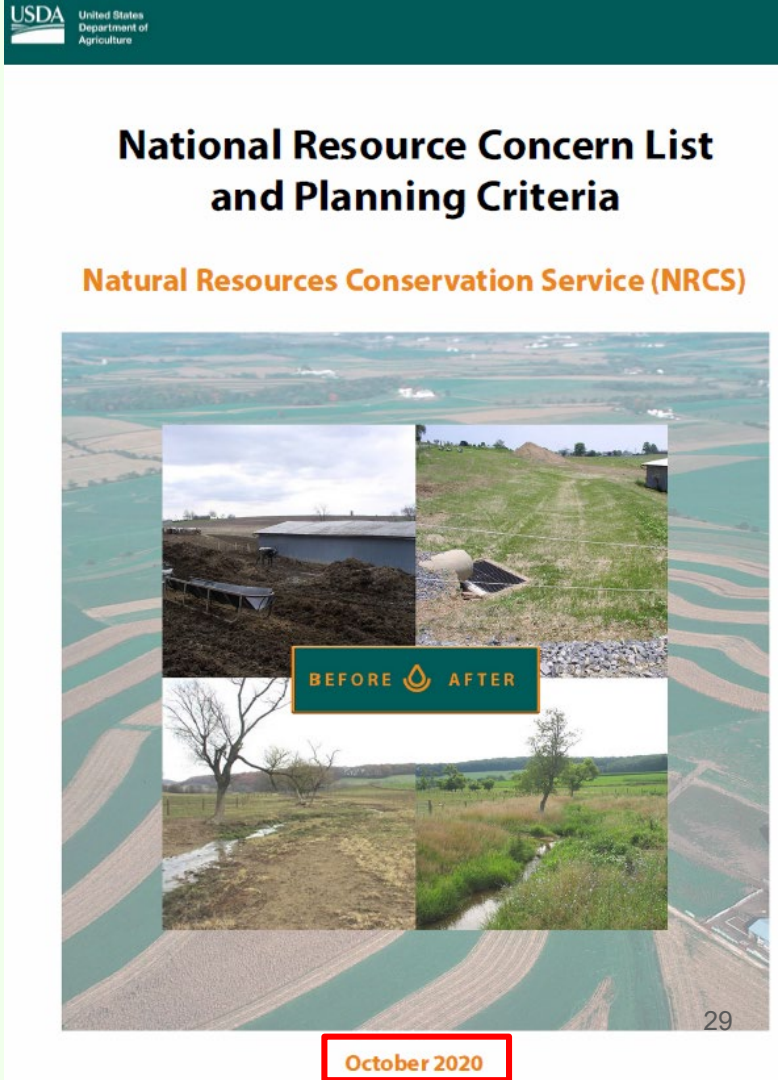

Landowner Decision
180 ft maximum average width
35 ft minimum
Average Buffer Width

CP22: Element 1 - Current cover type and land use

- Current cover type
  - Describe the existing vegetation community
  - Does not need to be elaborate - attaching photographs is much more helpful
- Current land use
  - Either crop or pasture
  - Partners communicate with FSA because mapped land use may not align with field observations

Element 2: Practice Need

- Is there a resource concern?
  - Use NRCS resource concerns, evaluation tools, and planning criteria
    - NRCS Field Office Technical Guide -> West Virginia -> Section 3 -> Resource Concern List and Planning Criteria
    - https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=44299.wba
  - ≥1 resource concern must be present
    - Some CPs require specific types
  - Consider existing cover



CP22: Element 2 - Practice need

- Water Quality Degradation: Excess nutrients in surface and ground waters
- Water Quality Degradation: Pesticides transported to surface and ground waters
- Water Quality Degradation: Excess pathogens and chemicals from manure, bio-solids or compost applications
- Water Quality Degradation: Excessive salts in surface and ground waters
- Water Quality Degradation: Petroleum, heavy metals and other pollutants transported to receiving waters
- Water Quality Degradation: Excessive sediment in surface waters
- Water Quality Degradation: Elevated water temperature
- Inadequate Habitat for Fish and Wildlife: Habitat degradation

- Nutrients transported to surface water
- Nutrients transported to groundwater

- Pesticides transported to surface water
- Pesticides transported to groundwater

- Pathogens and chemicals from manure, biosolids, or compost applications transported to surface water
- Pathogens and chemicals from manure, biosolids, or compost applications transported to groundwater

- Salts transported to surface water
- Salts transported to groundwater

- Petroleum, heavy metals, and other pollutants transported to surface water
- Petroleum, heavy metals, and other pollutants transported to groundwater

- Sediment transported to surface water
- Elevated water temperature

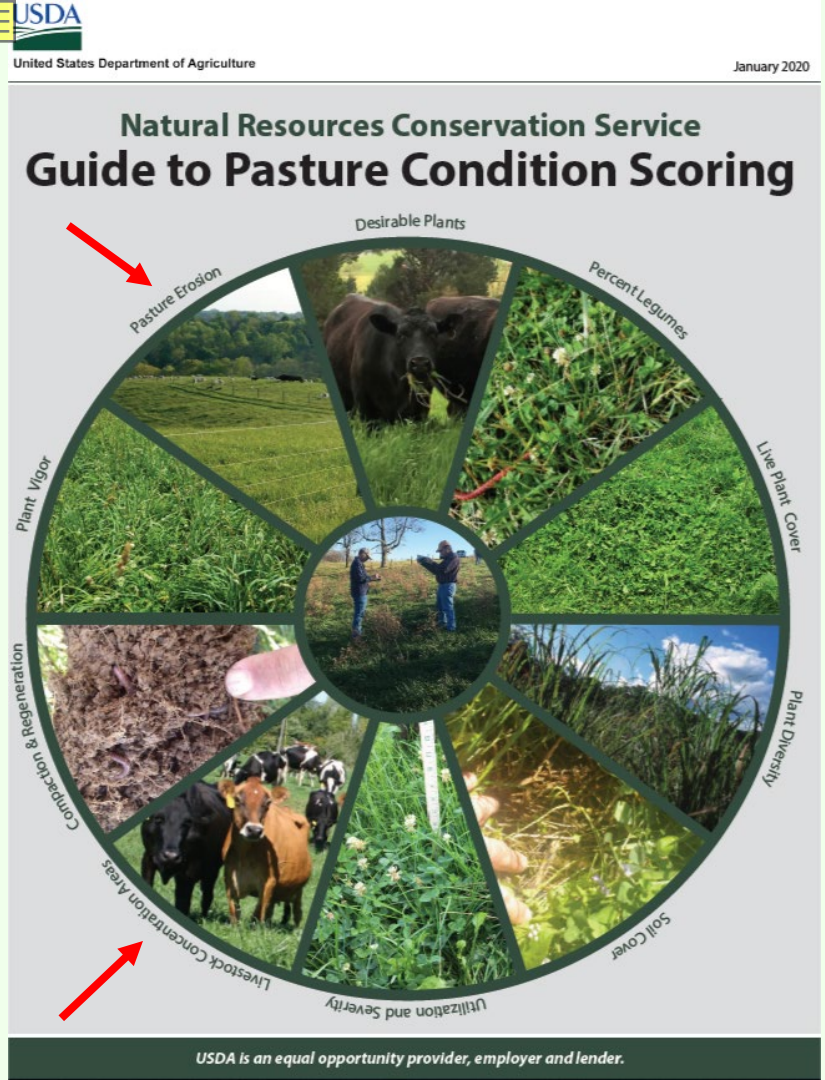
- Terrestrial habitat for wildlife and invertebrates
- Aquatic habitat for fish and other organisms

Nutrients transported to surface waters

- **Description:** Nutrients stored, concentrated, or applied are transported to receiving surface waters in quantities that degrade water quality and limit its use for intended purposes.
- **Evaluation tools**
  - **Crop:** evaluation of current nutrient management
  - **Pasture:** evaluation of current nutrient management **AND** pasture condition score sheet (PCSS)

Evaluation of current nutrient management

Nutrients are applied based on a plan, in accordance with Land Grant University recommendations, which specifies the source, amount, timing and method of application, required conservation practices needed to reduce nutrient movement to surface waters, and contains State-specific nutrient application and livestock access setbacks (e.g., sinkholes, wells, water courses, wetlands, or rapidly permeable soil areas).



Are livestock concentration areas...

- + / - 100 ft from the water?
- a direct conveyance to the water?
- + / - 0.1 acres?

What is the condition of the streambank/shoreline…

- bank stability
- vegetative cover and vigor
- crossings
- alternative water sources

Terrestrial habitat for wildlife and invertebrates

- **Description:** Quantity, quality, or connectivity of food, cover, space, shelter, and/or water is inadequate to meet requirements of identified terrestrial wildlife or invertebrate species
- **Evaluation tools**
  - WV Wildlife Habitat Evaluation Guide (WVWHEG)
- **Reminder:** Terrestrial habitat for wildlife and invertebrates resource concern alone does not meet the practice need for CP22

WV Wildlife Habitat Evaluation Guide (WVWHEG)

- Unique worksheets for different land uses
  - CP22 -> desired future condition is forest
- Not wildlife species-specific
- Habitat evaluation factors
  - Forest diversity and structure
  - Hard and soft mast
  - Forest patch size
  - Snags, cavity trees, and nest boxes
  - Livestock access
  - Distance to water

Element 3: Practice Feasibility

- Will the CREP CP and NRCS CPS solve or significantly improve the identified resource concern(s)?
  - Use NRCS resource concern evaluation tools and planning criteria to quantify/document planned improvements
- Is the client willing and able to install the required NRCS CPS?
  - A determination of “Practice Not Feasible” should be made if the client is not willing to install an NRCS CPS that meets standards and specification

314
382
391
490
516
533
574
578
612
614
642
666

Element 4: Practice Suitability

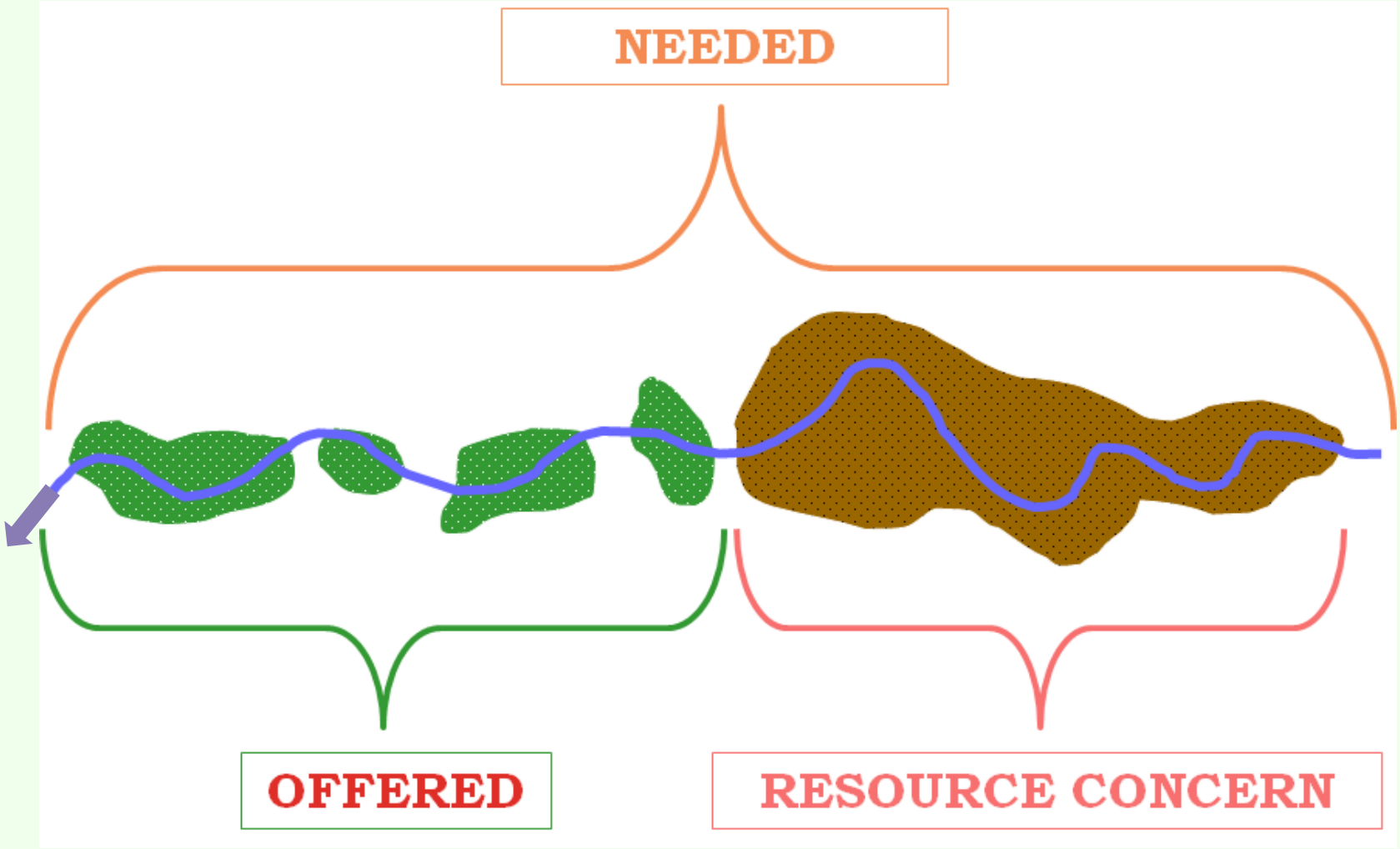
- Can CREP CP and supporting NRCS CPS be applied to the land?
  - Do site characteristics preclude the CPS from being installed and functioning as planned?
  - Soils, hydrology, geology, topography, legal and ownership requirements, safety issues, etc.

Element 4: CP22 Example

Photos by Bill Wolfe

Suitability and Feasibility Determination Findings

- Indicate the finding of the suitability and feasibility determination
  - If ALL element were met, check the first box
  - If ANY of the elements were not met, check the second box and indicate which of the four elements were not met
  - If a modification to the offer would satisfy ALL of the failing elements, check the third box
- Communicate findings with client and FSA


NEEDED
OFFERED
RESOURCE CONCERN

Documentation for completed S & F determination

- Element 1: Site conditions / program requirements
  - Location map
  - Photos of water body, existing cover, and land use
  - Maps of offer with scale
- Element 2: Practice need
  - NRCS evaluation tools (e.g., PCSS, WVWHEG)
- Element 3: Practice feasibility
  - Job sheets with site-specific specifications
- Element 4: Practice suitability
  - Photos
  - Soil interpretations (e.g., “Potential for seedling mortality”)
- Other documentation
  - NRCS-CPA-6
  - Geospatial data

Video #1

https://drive.google.com/file/d/1K1rhjs37URM8X-GeIuVT3hk6btc-d0PU/view?usp=sharing


Natural Stream Restoration
Natural Stream Restoration techniques have been applied to Moore's Run to return the stream reach to a stable pattern, profile, and dimension that will allow for proper sediment transport, decreased stream bank erosion, and enhanced aquatic habitat. Riparian buffers have been installed to improve water quality and enhance riparian habitat. This project is a cooperative demonstration between the WV Conservation Agency, WV Division of Forestry, USDA Natural Resources Conservation Service, USDA Farm Service Agency and West Virginia University.

Q & A

Conservation Plan Development and Requirements

Conservation Plan (2-CRP Par. 366 A)

A conservation plan is a record of the producer’s decisions and supporting information for the treatment of a unit of land or water as a result of the planning process that meets NRCS FOTG planning criteria for each natural resource and addresses economic and social considerations. The plan describes the schedule of operations and activities required to solve identified natural resource concerns.

What's in a conservation plan? (2-CRP, Part 11)

- Maps (Location, FSA producer, conservation plan, topographic, soils)
- Conservation Plan document (narratives, field #s, planned dates, amounts)
- Job Sheets / Implementation Requirements
- Tree planting and engineering designs*
- NRCS-CPA-1155 Conservation Plan or Schedule of Operations
    - From "Cost List Agreement" (CLA) in Conservation Desktop (CD)
- Supporting documentation (ICT report, PCSS, WIN-PST report, WV-SSC-1, WVWHEG)
- NRCS-CPA-6 Conservation Assistance Notes
- NRCS-CPA-52 Environmental Evaluation
- Photos

CREP Conservation Plan Requirements (2-CRP Part 11)

- Must require some action by the producer, such as tree planting, enhancement of cover, or wetland restoration
- Contains all NRCS CPS needed for establishment and maintenance of CREP cover on all acres enrolled
- Planting must be completed within 12 months of the effective date of contract*
- Established CREP cover not disturbed during primary nesting season (March 15 - July 15)

CREP Conservation Plan Requirements (2-CRP Part 11)

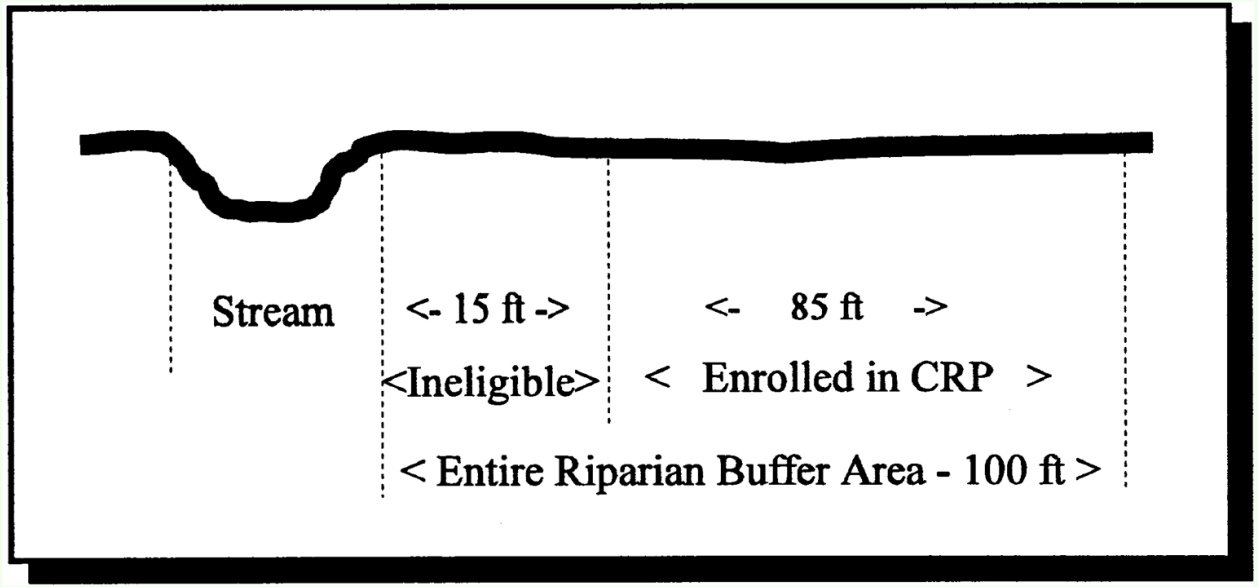
- Includes management activities
- CP maintained for the life of the contract
- Complies with Federal, State, and local laws
- “The cost-share agreement is the conservation plan.” (2-CRP Par. 368 A)
    - NRCS can use Cost List Agreements (CLA) in Conservation Desktop for CRP

CREP CP 22 Conservation Plan Requirements

- Must be devoted (planted or natural regeneration) to trees
- Can’t be planned in conjunction with…
  - CP9 - Shallow water areas for wildlife
  - CP21 - Filter strip
  - CP23 - Wetland restoration
  - CP29 - Marginal pastureland wildlife habitat buffer
  - CP30 - Marginal pastureland wetland buffer
- Buffer must not be harvested or grazed for life of contract*

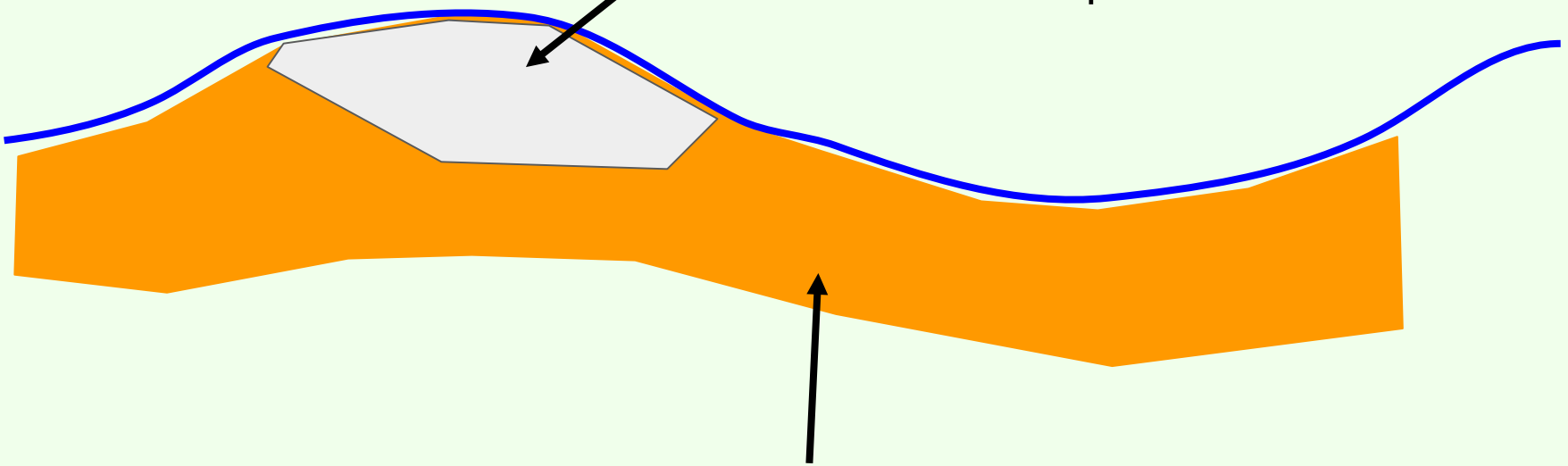
CREP CP 22 Conservation Plan Requirements

- Ineligible land within the first 35’ from the top of bank and positioned between the top of bank and other eligible land must be included in the conservation plan if eligible land is enrolled in CREP



Could be boulder field, old foundation, well pad, wetland, etc.

Rock outcrop extends 20’ from top of bank. Not enrolled in CREP but in area used as riparian buffer, in the conservation plan, and counted in the width of the riparian buffer.



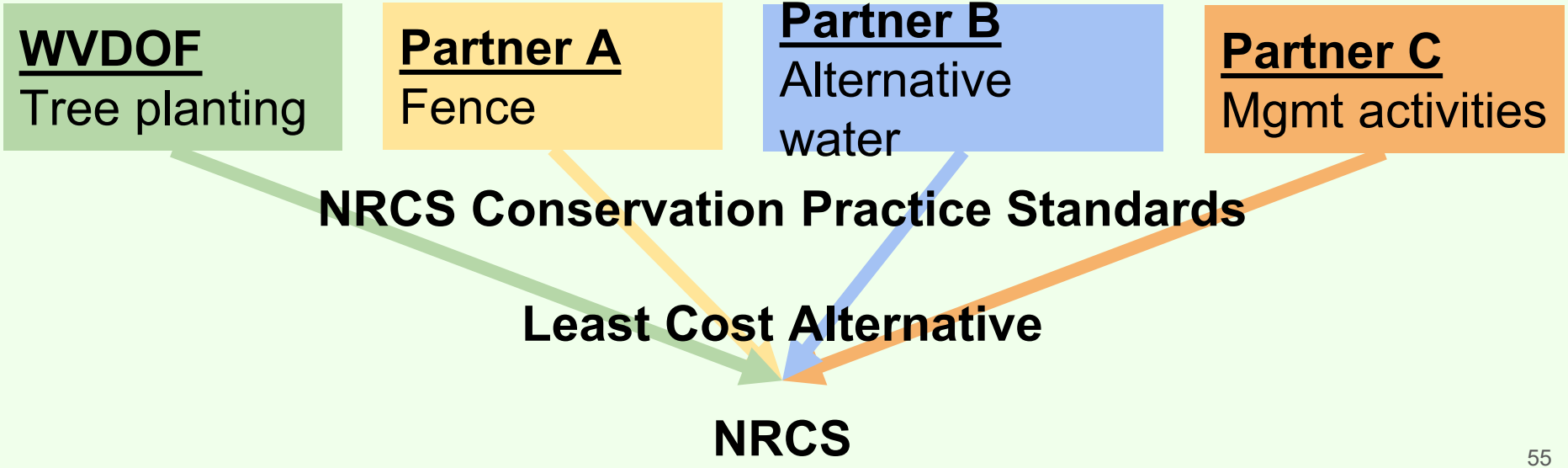
Enrolled in CREP, average width 40’

Partner Responsibilities - All

- Provide technical assistance to landowners
- “Assist … in the development of conservation plans consistent with 2-CRP procedure”
  - CREP Agreement

Partner Responsibilities - NRCS

- NRCS ultimately responsible for making sure all required documents are completed, meet NRCS standards and specifications, and are in the conservation plan



Typical NRCS CPS for CP22 conservation plans

- Riparian Forest Buffer (391)
  - Fence (382)
  - Access Control (472)
  - Brush Management (314)
  - Tree/Shrub Site Preparation (490)
  - Tree/Shrub Establishment (612)
- Alternative Water Development
  - Spring Development (574), Water Well (642), Pond (378)
  - Watering Facility (614) - i.e., trough
  - Livestock Pipeline (516)
  - Stream Crossing (578)
- Management Activities
  - Forest Stand Improvement (666)
  - Tree/Shrub Establishment (612)
  - Tree/Shrub Pruning (660)
  - Conservation Cover (327) or Wildlife Habitat Planting (512)

Partner Responsibilities - WVDOF

WVDOF forester develops tree planting plan

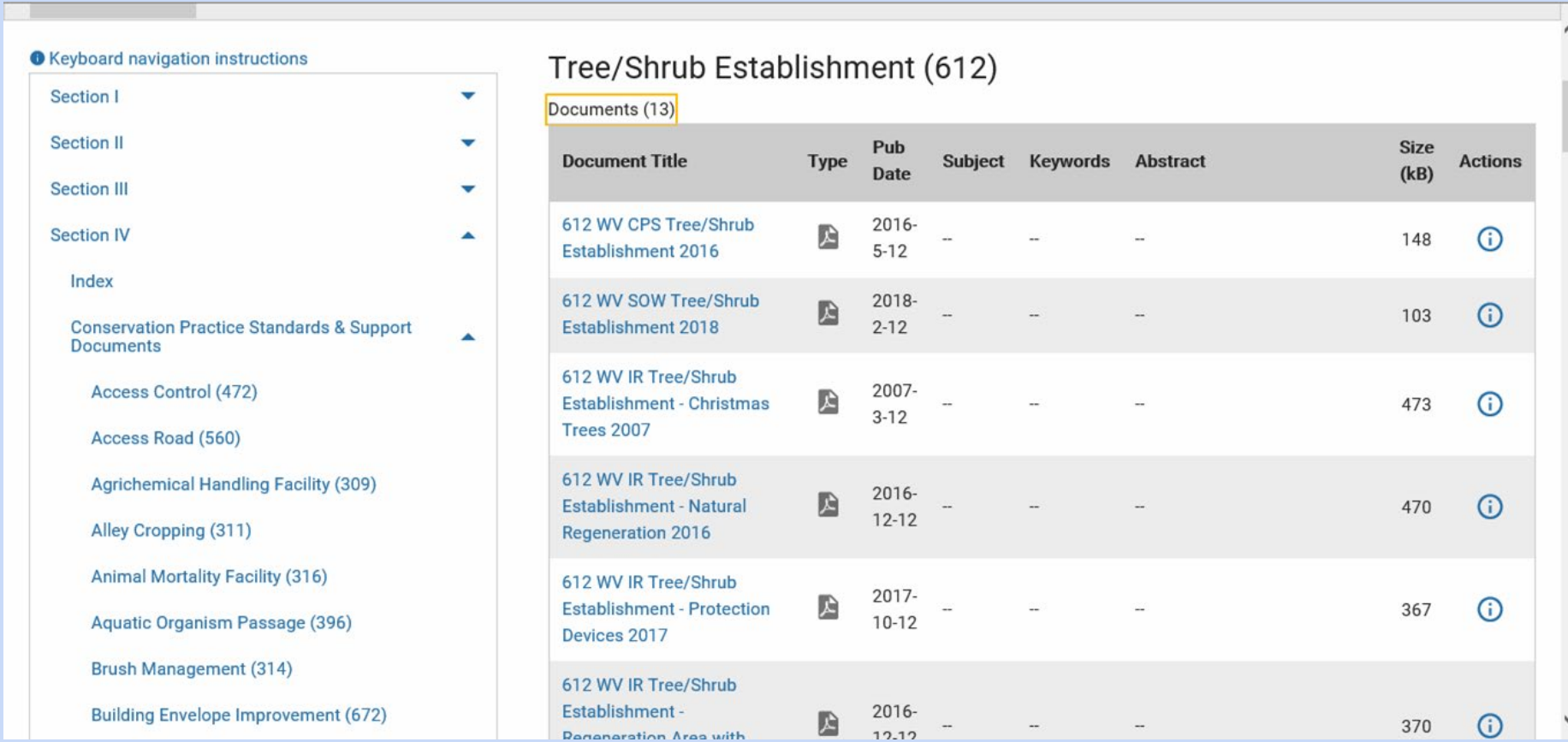
- Riparian Forest Buffer (CPS 391)
  - Developed in conjunction with NRCS
  - Operations and Maintenance packet (391 supplement)
- Tree/Shrub Site Preparation (CPS 490)
- Tree/Shrub Establishment (CPS 612)
  - Tree/Shrub Protection (612 supplement)
- Optional - supplemental planting map that details specific planting layout
  - Which species go where, site prep location, etc
- A cost estimate is no longer required!
  - We will send out FSA's cost caps per practice in the post meeting materials.

Developing the tree planting plan will require accessing NRCS's Electronic Field Office Technical Guide also known as the EFOTG

https://efotg.sc.egov.usda.gov/#/

The EFOTG is home to the technical documents needed for the tree planting plan.

- Conservation Practice Standard and Statement of Work
- Design Guides
- Job Sheets
- Supplemental information


Keyboard navigation instructions
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NATURAL RESOURCES CONSERVATION SERVICE

TREE/SHRUB ESTABLISHMENT

CODE 612

Design Guide

Species Selection

WV NRCS Personnel should work closely with WV Division of Forestry personnel, the NRCS staff forester, and/or biologist when utilizing this practice.

Composition of species will be adapted to site conditions and suitable for the planned purpose(s) and will accomplish the client's objectives.

Plant Guide and Plant Information Sheets for individual species found in the USDA Plants Database will be utilized to supplement the material in this standard. http://plants.usda.gov

For selection of species to be encouraged through natural regeneration and a listing of those that may be planted, refer to one or more of the following:

A. Tree and Shrub Lists for WV found in Section IV – Tools of the WV Field Office Technical Guide (FOTG)
http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=WV
B. Technical Guide Reference (Plant Materials) – Plant Selection Guide, Joe Ruffner
C. Technical Guide Reference (Plant Materials) – Conservation Plants for the Northeast, USDA-SCS
D. Technical Guide Reference (Biology) – Shrubs and Trees for Northeastern Wildlife, USFS General technical Report, NE-9, 1974
E. Technical Guide Reference (Forestry) – Conservation Tree and Shrubs Pocket ID Guide, USDA – SCS, 1993
F. Technical Guide Reference (Forestry) – Chesapeake Bay Riparian Handbook – A Guide for Establishing and Maintaining Riparian Forest Buffers, USFS, May 1997, Section VII – Site Evaluation, Planning and Establishment
G. Conservation Tree and Shrub Groups found in Section IV – Tools of the WV FOTG.
H. Soils Information
Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app)
Soil Data Mart (http://soildatamart.nrcs.usda.gov/)
Printed Soil Survey (http://soils.usda.gov/survey/printed_surveys)
Section II – Soils Information of the WV FOTG
I. WV Job Sheet – 391 – Trees and Shrubs Recommended for Riparian Forest Buffers – Section IV - WV FOTG
J. WV Pollinator Handbook – WV FOTG – Section IV – Tools – Pollinator Tools
K. Appalachian Regional Reforestation Initiative (ARRI) Forest Reclamation Advisory No. 5 MINE RECLAMATION PRACTICES TO ENHANCE FOREST DEVELOPMENT THROUGH NATURAL SUCCESSION (July 2007)
and No. 7 PLANTING HARDWOOD TREE SEEDLINGS ON RECLAIMED MINE LAND IN APPALACHIA (February 2010)
http://arri.osmre.gov/FRA/Advisories/FRA_No.7_Feb.26.2010.pdf

I. NatiVeg - https://www.goallcount.org/NatiVeg There are some inherent limitations to the database simply because it is based upon NRCS releases, leaving a gap in data for many adapted species but not part of the NRCS plant materials program. Options in the eastern part of bobwhite range are limited. None-the-less, it is a useful tool and will provide a great starting point for land managers in determining which releases are adapted to their location.

Note: Other species not listed in the above reference materials may also be suitable. Consult WV Division of Forestry personnel, NRCS staff forester and/or biologist concerning the suitability of other species.

Wet Areas/Soils – Use adapted species. Another alternative would be to plant in prepared ridges.

USDA United States Department of Agriculture

612-CPS-1

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

TREE-SHRUB ESTABLISHMENT

CODE 612

(ac)

DEFINITION

Establishing woody plants by planting seedlings or cuttings, by direct seeding, and/or through natural regeneration.

PURPOSE

This practice will be used to accomplish one or more of the following purposes:

- Maintain or improve desirable plant diversity, productivity, and health by establishing woody plants.
- Create or improve habitat for desired wildlife species compatible with ecological characteristics of the site.
- Control erosion
- Improve water quality. Reduce excess nutrients and other pollutants in runoff and groundwater.
- Sequester and store carbon.
- Restore or maintain native plant communities.
- Develop renewable energy systems.
- Conserve energy.
- Provide for beneficial organisms and pollinators.

CONDITIONS WHERE PRACTICE APPLIES

Tree/shrub establishment can be applied on any site capable of growing woody plants.

CRITERIA

General Criteria Applicable to All Purposes

Select one or more species that are suited to soil and site conditions, and appropriate for the planned purpose(s).

Determine desired stocking levels for trees and/or shrubs based on ecological characteristics of the site and species, and landowner objectives. Plant, seed, and/or naturally regenerate at densities/rates that reflect anticipated seedling mortality, to achieve desired stocking levels in the established stand.

Use NRCS Conservation Practice Standard (CPS) Tree/Shrub Site Preparation (Code 490) to prepare sites for planting, seeding, or natural regeneration, if conditions are not suitable for establishing the desired plants. ***Mineral soil must be exposed when using natural regeneration to allow seed to soil contact.***

When utilizing natural regeneration to establish trees and/or shrubs, ensure that a source of seed and/or vegetative propagules is or will be present, or that advanced reproduction exists, sufficient to achieve

NRCS Natural Resources Conservation Service

Tree/Shrub Establishment – Balled/Burlapped/Container

WV Conservation Practice Job Sheet **Code 612**

Definition

Establishing woody plants by planting seedlings or cuttings, direct seeding or natural regeneration.

Purpose

To establish woody plants for forest products, wildlife habitat, erosion control and improvement of water quality, treating waste, reduction of air pollution, sequestration of carbon, energy conservation, enhancing aesthetics and/or improving or restoring natural diversity.

Criteria

Select tree and shrub species adapted to local soil, site, and space conditions that will accomplish the landowner's objectives.

Planting Time

Trees/shrubs can be planted in the fall from the time growth stops until the soil is frozen; or in the spring after the soil has thawed until bud break which usually occurs by April 15th in most of West Virginia.

Balled and Burlapped/Containerized items usually have better survival. Containerized specimens can be stored for extended periods if they are protected. Store the plants in partial to full shade and water frequently.

Planting Methods

Hand or machine planting may be used. The techniques used should ensure the proper depth and placement of planting stock roots

Dig a large planting hole. CAUTION: Be sure you have had all underground utilities located prior to digging. The planting hole should be dug as deep as the root ball and at least twice as wide. A large-sized hole is important because as the tree begins to take hold in the ground, its roots must push through the surrounding soil. Roots have difficult time if the soil is rocky or compact; however, if the soil has been loosened by digging and backfilling, the roots will have room to establish well.

Prune sparingly. Examine the specimen closely for injury to roots or branches. If any roots are crushed, cut them at a point just in front of the break. On the top, prune only broken branches, making sure to leave the branch collar (swollen part where one branch meets another) intact. Begin corrective pruning after a full season of growth in the new location. See Tree/Shrub Pruning – 660.

Prepare the hole and soil. While some newly transplanted trees may benefit from an application of plant food, it is best not to use fertilizer until the plant is well-established. Good, rich native soil is usually adequate. Never apply high nitrogen fertilizer at planting as it may burn tender roots. The diameter of the hole should be at least 24 inches wider

USDA United States Department of Agriculture

Tree/Shrub Site Preparation

Tree/Shrub Planting/Seeding – Artificial Regeneration

WV Conservation Practice Job Sheet **Code 490**

Definition

Treatment of areas to improve site conditions for establishing trees and/or shrubs.

Purpose

- Permit artificial establishment of woody plants.

Criteria

A precondition for tree/shrub establishment is appropriately prepared sites. Site preparation is needed if competition from grass, weeds, and/or woody materials will interfere with plant establishment and growth.

The method, intensity and timing of site preparation must match the limitations of the site, equipment, and the requirements for establishing the desired woody species.

If herbicides are used, apply only when needed and handle and dispose of properly and within federal, state and local regulations. Follow label directions and heed all precautions listed on the container.

NOTE: West Virginia NRCS does not make pesticide recommendations. Landowners should be instructed to read product labels and follow product specifications. Landowners must contact the West Virginia Division of Forestry or the WVU Cooperative Extension Service for pesticide recommendations.

Comply with applicable federal, state and local laws and regulations during the installation, operation and maintenance of this practice.

The area must be protected from fire and destructive grazing.

For riparian sites, leave a 3-foot untreated strip at the edge of the bank or shoreline.

Avoid sites that have had recent application of pesticides harmful to woody species to be planted.

Riparian Forest Buffer - CPS 391

- Purposes
  - Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms.
  - Create or improve riparian habitat and provide a source of detritus and large woody debris.
  - Reduce the excess amount of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow groundwater flow.
  - Reduce pesticide drift entering water body.
  - Restore riparian plant communities.
  - Increase carbon storage in plant biomass and soils.

Criteria from CPS for Riparian Forest Buffer

- Additional Criteria to Reduce Excess Amounts of Sediment, Organic Material, Nutrients and Pesticides in Surface Runoff and Reduce Excess Nutrients and Other Chemicals in Shallow Ground Water Flow
- Additional Criteria to Create or Improve Riparian Habitat and Provide a Source of Detritus and Large Woody Debris.
- Additional Criteria to Create Shade to Lower or Maintain Water Temperatures
- Additional Criteria for Increasing Carbon Storage in Biomass and Soils

Tree/Shrub Site Preparation- CPS 490

- Will depend on if the tree establishment will be planned as natural regeneration or artificial tree/shrub establishment.
- Natural regeneration site preparation
  - Mineral soil must be exposed on at least 60% of the site (mechanical or chemical)
  - Site must be within 250 feet of wind dispersed seed species (eastern white pine, Virginia pine, yellow-poplar, maple, etc)
  - Heavy seed-bearing trees must be adequately spaced within the site (oaks, black cherry, etc)
- Artificial regeneration site preparation
  - Mechanical, hand or chemical means or a combination of techniques.
  - May include invasive species treatment.

Tree/Shrub Site Preparation- CPS 490

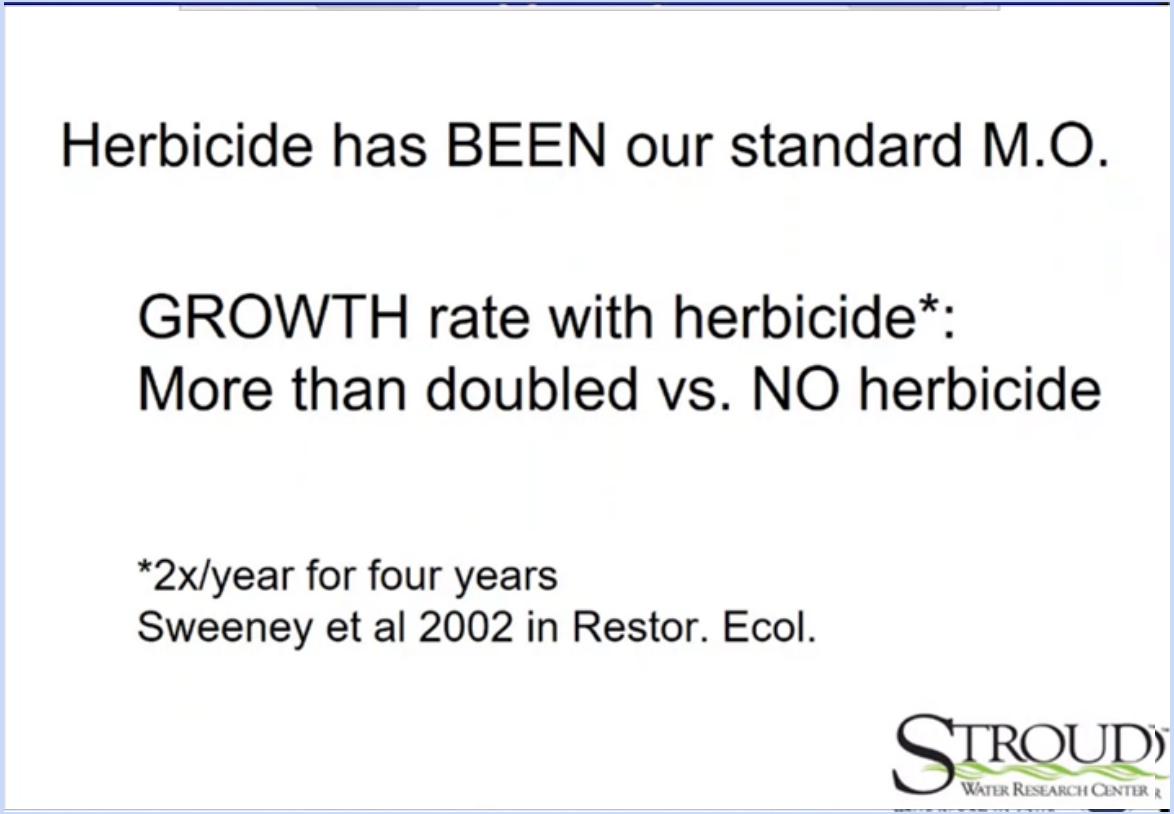
- Invasive species may be treated within the CREP area with site preparation, if they interfere with the intent of the planned practice or endanger neighboring lands.
- Often livestock have browsed these plants, so once excluded from livestock pressure the populations explode.

Tree/Shrub Site Preparation- CPS 490

Why does this matter?!

- The Green Death
- The Brown Death
- Clean culture for the establishment period will increase survival rates tremendously, then allow area to get messy and wild.

Herbicide in Riparian Areas?!



Tree/Shrub Establishment- CPS 612

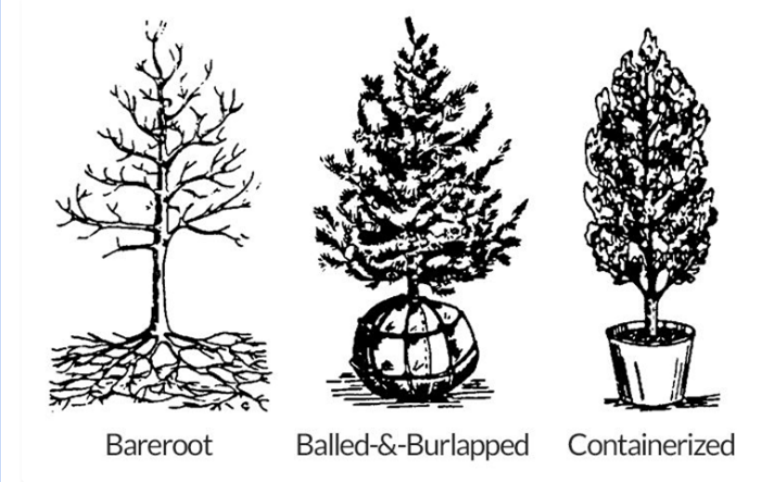
Natural Regeneration

- Relying totally on natural regeneration should be carefully considered.
- There is no cost share for natural regeneration.
- The producer will be required to plant approved cover with no cost share if the approved cover is not established within 2 years of the CRP-1 effective date.

Natural Regeneration Site - Guess How Old?

Tree/Shrub Establishment- CPS 612

- Natural vs artificial regeneration.
- Bare root vs containerized planting stock.
- Livestakes
- Specifications include - tree and shrub species and number, spacing, post arrival care, planting dates (must be planted before April 15th), etc.



Tree Species Selection

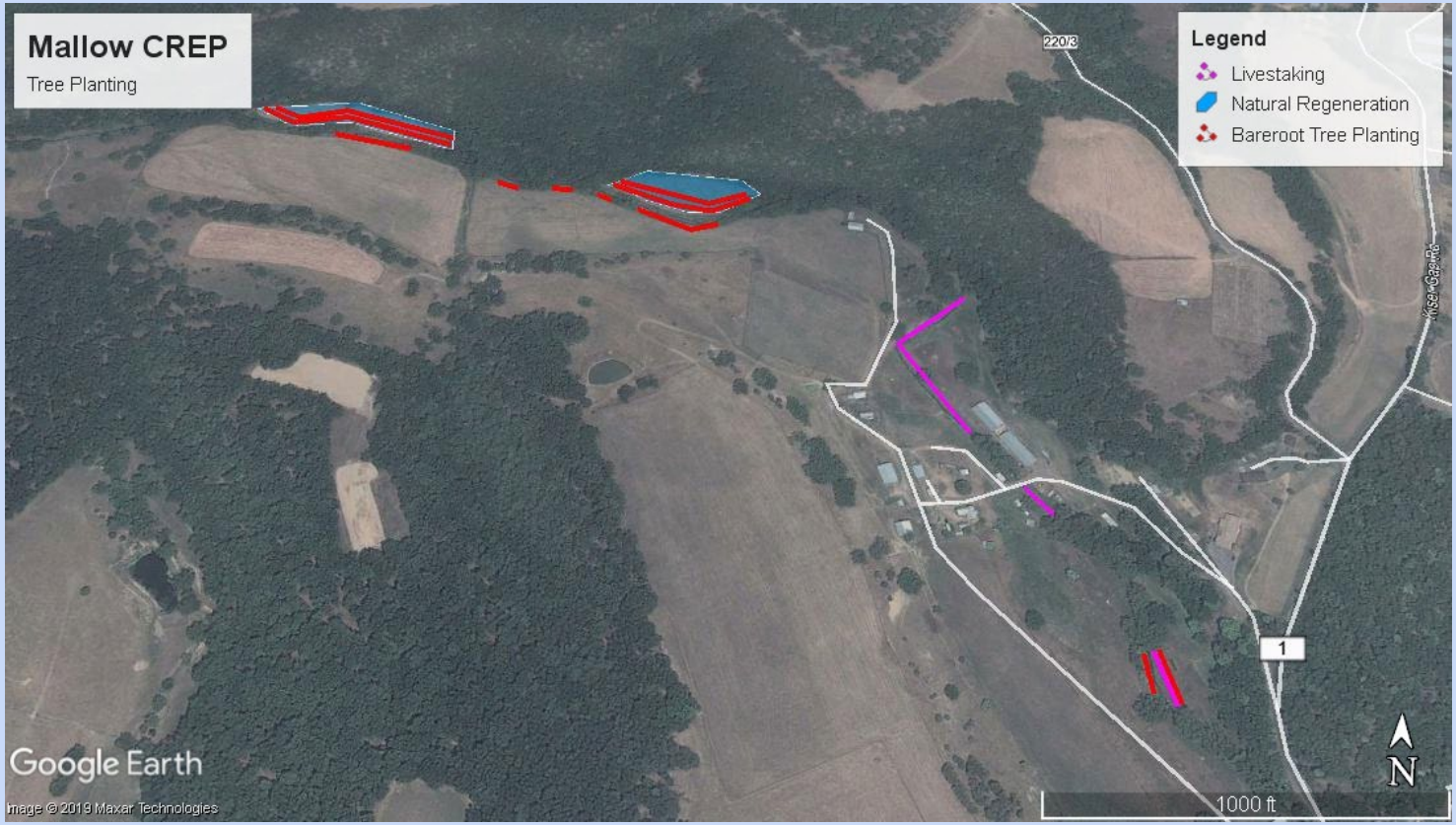
- The Riparian Buffer Design Guide (CPS 391) requires
  - a minimum of 3 species
  - preference towards native, hardwoods if possible
  - limit fruit trees to less than 30%
  - limit conifer component if possible.
- When selecting species moisture and shade tolerance are important factors to consider.
- Landowner input.

TREES	Soil Drainage Class [1]	Shade Tolerance [2]	Height at 20 Years	Approx. Height at Maturity	Wildlife					Wood Production Spacing	Remarks
					Food	Cover	Corridor	Pollinator	Spacing		
Oak, Black (*Quercus velutina*)	W.D. - M.W.D.	Intermed.	25 ft	80 ft	X		X		8-12 ft	20 X 20 ft	Valuable timber species; marketed as other red oaks but inferior to it; yellow inner bark
Oak, Bur (*Quercus macrocarpa*)	M.W.D. – S. P. D.	Intermed.	60 ft	110 ft	X		X				Suitable substitute for green ash. Excellent source of food for many wildlife species including deer, turkeys, squirrels rabbits, raccoons and rodents. As it reaches maturity, it provides roosting, loafing, and nesting for numerous species of birds.
Oak, Chinquapin (*Quercus muehlenbergii*)	W.D. - M.W.D.	Intolerant	40 ft	80 ft	X		X		8-12 ft		Rare throughout its range. Site specific to alkaline soils and limestone outcropped areas. Good riparian species.
Oak, Northern Red (*Quercus rubra*)	W.D. - M.W.D.	Intermed.	35 ft	100 ft	X		X		8-12 ft	20 X 20 ft	One of our most important and handsome oaks. Important as a wildlife food source, timber species and ornamental.
Oak, Overcup (*Quercus lyrata*)	M.W.D. - P.D.	Intermed.	30 ft	80 ft	X		X		8-12 ft	20 X 20 ft	Often planted for timber and ornamental. Planted to improve wildlife habitat for bottomland restoration. Native to the mid-west.
Oak, Pin (*Quercus palustris*)	M.W.D. - P.D.	Intolerant	40 ft	100 ft	X		X		8-12 ft	20 X 20 ft	Adapted to wetter sites. Good mast producer and attractive ornamental. Utilized by various wildlife especially wood ducks.

Tree/Shrub Protection- CPS 612 supplement

- Tree Shelters
  - Must have an effective height of at least 5 feet to protect from deer browse.
  - Maintained until the diameter of the tree at the top of the shelter reaches 1 ½ - 2 inches.
  - Must have ventilation holes.
  - Should be pushed 2-3 inches into the ground.
  - Commercially treated 1” x 1” wood, fiberglass, metal or plastic stakes.
  - White oak, locust or other rot-resistant 1” x 1” hardwood stakes can be used if necessary
- Wire Cages
  - Must be made of at least 14 1/2 gauge woven wire.
  - Must be at least 48” tall and 36” in diameter (10’ circumference).
  - Must be held upright using a minimum of two stakes.
  - Commercially treated 1” x 1” wood, fiberglass, metal or plastic stakes.
  - White oak, locust or other rot-resistant 1” x 1” hardwood stakes can be used if necessary

Tree Establishment Map



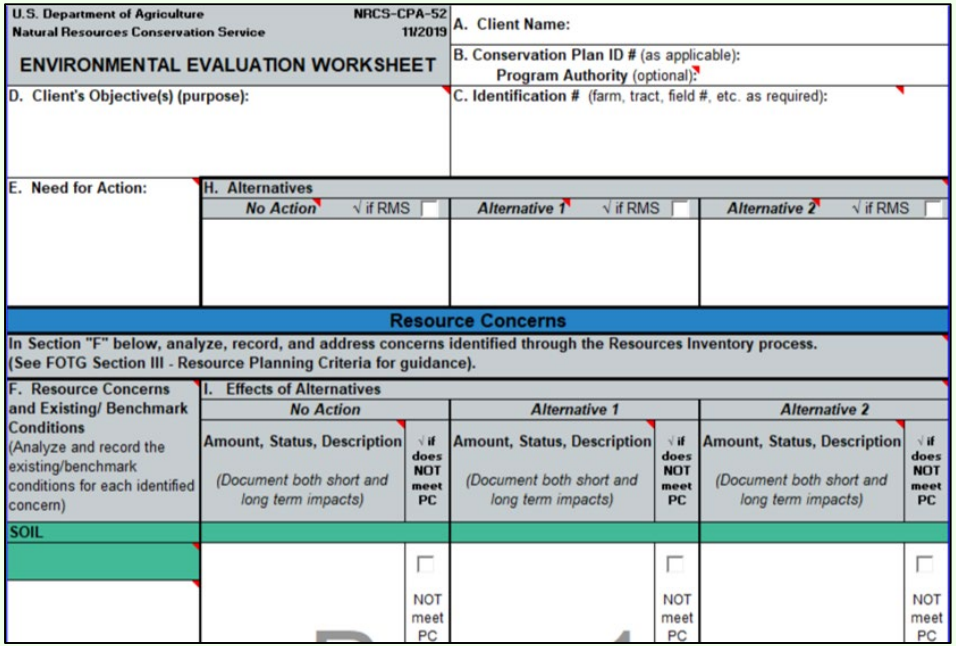
Providing a Cost Estimate

- There is a new cost list and payment schedule for CRP and CREP.
- WVDOF still need to provide an estimated cost per acre/per unit.
- The new costs are only "not to exceed" rates.
- The County Committee must still review the cost estimates and make cost share approvals as part of the contract.

Once the Tree Planting Plan is completed it needs to be delivered to NRCS to incorporate into their Conservation Plan.

NRCS-CPA-52 Environmental Evaluation

- NRCS, with partner input, completes sections A - O
  - Under section O, indicate that the NRCS-CPA-52 is being shared with FSA
- FSA completes sections P - S as the Responsible Federal Official (RFO)



U.S. Department of Agriculture Natural Resources Conservation Service	NRCS-CPA-52 11/2019	A. Client Name:
ENVIRONMENTAL EVALUATION WORKSHEET		B. Conservation Plan ID # (as applicable): Program Authority (optional):
D. Client's Objective(s) (purpose):		C. Identification # (farm, tract, field #, etc. as required):

E. Need for Action:	H. Alternatives					
	No Action	√ if RMS ☐	*Alternative 1*	√ if RMS ☐	*Alternative 2*	√ if RMS ☐

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. Effects of Alternatives					
	No Action		*Alternative 1*		*Alternative 2*	
	Amount, Status, Description *(Document both short and long term impacts)*	√ if does NOT meet PC	Amount, Status, Description *(Document both short and long term impacts)*	√ if does NOT meet PC	Amount, Status, Description *(Document both short and long term impacts)*	√ if does NOT meet PC
SOIL						
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC


Natural Stream Restoration
Natural Stream Restoration techniques have been applied to Moore's Run to return the stream reach to a stable pattern, profile, and dimension that will allow for proper sediment transport, decreased stream bank erosion, and enhanced aquatic habitat. Riparian buffers have been installed to improve water quality and enhance riparian habitat. This project is a cooperative demonstration between the WV Conservation Agency, WV Division of Forestry, USDA Natural Resources Conservation Service, USDA Farm Service Agency and West Virginia University.

Q & A

Farm Visit 2: Practice Installation

Video #2

https://drive.google.com/file/d/1IAeYRNJVn2H8_5Xbxb6IYTqS1owtdsZK/view?usp=sharing

Hierarchy of practices

CREP CP22 Riparian Forest Buffer

NRCS CPS 391 Riparian Forest Buffer

NRCS CPS 382 Fence

NRCS CPS 382 Stream Crossing

NRCS CPS 490 Tree/Shrub Site Preparation

NRCS CPS 612 Tree/Shrub Establishment

Before the Installation: Site Preparation

- Site should be laid out prior to site preparation
- Consider using different colored flags when laying out species to indicate moisture and shade tolerances.
- Layout site in accordance to future maintenance needs

After the Installation: How to Certify

Tree and Shrub Installation

Common Issues

- Tree planting depth
- Roots kept moist but not saturated
- Right species in the right places
- Tree planting layout

Protection Devices

Common issues- protection devices:

- Tube not well seated
- Protection devices not installed
- Stake not in the ground far enough
- Tube upside-down or improperly fastened
- Bird net installed incorrectly
- Tube not 5’ tall
- Tube not vented

NRCS-LTP-13 Status Review Form

- Use NRCS-LTP-13 status review form to document on site evaluations of contracted CREP acres
- Provides FSA with objective information to help determine compliance
  - Technical agencies document **conditions**
  - FSA decides **compliance**
- Include photos

FSA-848B

- Technical agency’s certification of practice completion is documented on the FSA-848B
- FSA-848B reports:
  - Items and extents that meet or do not meet NRCS standards and specifications
- If something is wrong and/or additional technical service is provided...

Video 2

https://drive.google.com/file/d/1IAeYRNJVn2H8_5Xbxb6IYTqS1owtdsZK/view?usp=sharing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Q & A

Break

Farm Visit 3: Practice Establishment

#3 Video

https://drive.google.com/file/d/1q1JhT6KCB9V1Xefnzb98H7L5qxm2rwXv/view?usp=sharing

Status Review for CREP Cover Establishment

- Within 2 years after certification that the NRCS CPS were installed, technical agency conducts status review to determine if CREP cover is established
- “Established” may or may not be “fully functional”
  - Installed and into operation and maintenance phase according to NRCS standards and specifications
  - Resource concerns improving toward NRCS planning criteria
- Use NRCS-LTP-13 Status Review form
  - Document current health/condition of the vegetation
  - Reason why practice not established and action required to be established according to NRCS standards and specifications
  - Photos

Tree and Shrub Practice Establishment

Mortality check- After 2nd growing season

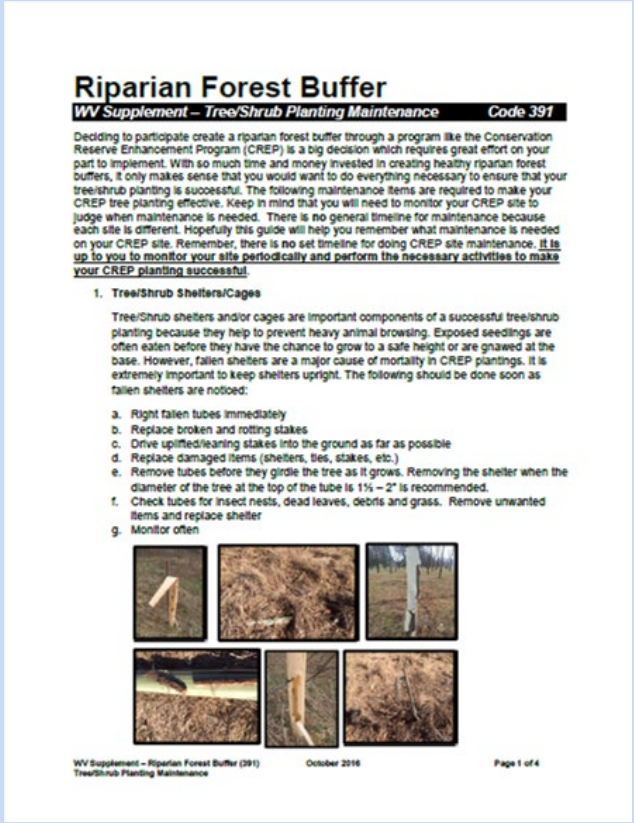
- Count living trees and tally by species
- Mark tubes with dead trees
- By tallying by species and marking the tubes with dead trees, it will be easier to replant in dormant season.

Tree and Shrub Practice Establishment

- If less than 60% survival rate, the operator can qualify for 50% cost share replanting if due to factors out of their control (drought, voles, flooding). Will need new tree planting plan!
- If more than 60% survival rate WVDOF/NRCS signs off on Riparian Forest Buffer CPS 391.

Tree and Shrub Practice Establishment

- Remind operator of operation and maintenance activities
  - Removing bird nets
  - Securing stakes and tubes
  - Cleaning out tubes
  - Herbicide or mowing competition/reduce mole & vole habitat



Riparian Forest Buffer

WV Supplement – Tree/Shrub Planting Maintenance ***Code 391***

Deciding to participate create a riparian forest buffer through a program like the Conservation Reserve Enhancement Program (CREP) is a big decision which requires great effort on your part to implement. With so much time and money invested in creating healthy riparian forest buffers, it only makes sense that you would want to do everything necessary to ensure that your tree/shrub planting is successful. The following maintenance items are required to make your CREP tree planting effective. Keep in mind that you will need to monitor your CREP site to judge when maintenance is needed. There is no general timeline for maintenance because each site is different. Hopefully this guide will help you remember what maintenance is needed on your CREP site. Remember, there is no set timeline for doing CREP site maintenance. **It is up to you to monitor your site periodically and perform the necessary activities to make your CREP planting successful**.

1. **Tree/Shrub Shelters/Cages**

   Tree/Shrub shelters and/or cages are important components of a successful tree/shrub planting because they help to prevent heavy animal browsing. Exposed seedlings are often eaten before they have the chance to grow to a safe height or are gnawed at the base. However, fallen shelters are a major cause of mortality in CREP plantings. It is extremely important to keep shelters upright. The following should be done soon as fallen shelters are noticed:

   a. Right fallen tubes immediately
   b. Replace broken and rotting stakes
   c. Drive uplifted/leaning stakes into the ground as far as possible
   d. Replace damaged items (shelters, ties, stakes, etc.)
   e. Remove tubes before they girdle the tree as it grows. Removing the shelter when the diameter of the tree at the top of the tube is 1½ – 2" is recommended.
   f. Check tubes for insect nests, dead leaves, debris and grass. Remove unwanted items and replace shelter
   g. Monitor often

Video #3

https://drive.google.com/file/d/1q1JhT6KCB9V1Xefnzb98H7L5qxm2rwXv/view?usp=sharing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Q & A

Farm Visit 4: Management Activities

CREP Management Activities

- Formerly referred to as “mid-contract management”
- Management activities are designed to ensure plant diversity and wildlife benefits while ensuring protections of soil and water resources
- Cost share is not authorized for contracts approved after June 3, 2019

CREP Management Activities

- Completed before the end of year 6 for 10-year contracts and before the end of year 9 for 15-year contracts
  - Status review performed following same timeline
- Must be included in the approved conservation plan
  - How to plan for an activity 6 - 9 years in the future?
  - “Planned” vs “designed”

Status Review for Management Activities

- Partners work together to determine when field visits for mgmt activities are needed
  - Good time to be thinking about management activities is during the status review for establishment
    - Mgmt activity already planned, now hash out specs
    - Mgmt activities needed?
- Visit again before, during, or after mgmt activities?

Status Review for Management Activities

- Regardless of the timing…
- Use NRCS-LTP-13 status review form to document findings/decisions
  - Is mgmt activity needed? Why? Why not?
  - What activity was done?
  - Objective, quantitative description
  - Photos

Management vs. Maintenance

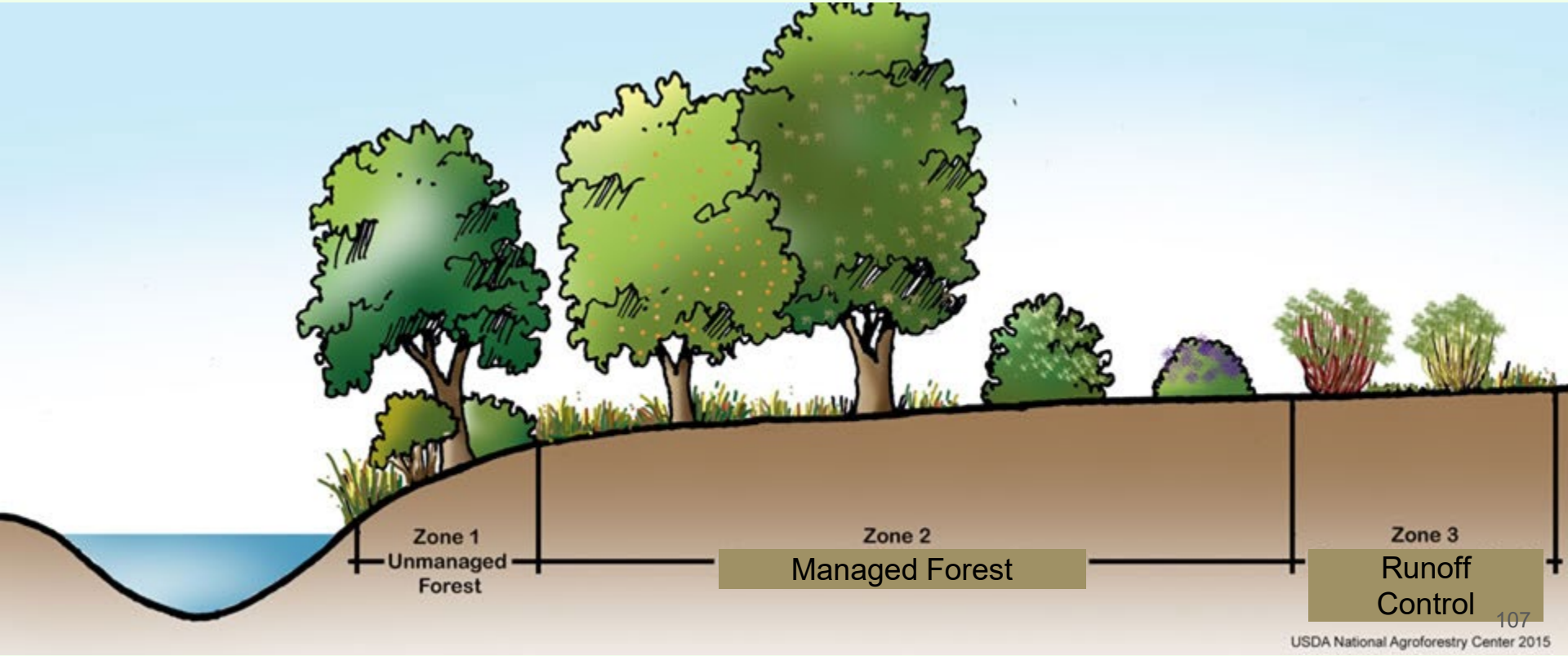
- Depends on the context and intent of the activity
  - Same type of activity (e.g., tree planting) could be either maintenance or management
- Maintenance activities
  - Activities performed to establish, maintain, or re-establish the minimum requirements according to NRCS standards and specifications
- Management activities
  - Activities performed to enhance a practice that is already meeting the minimum requirements according to NRCS standards and specifications

Management vs. Maintenance

WV CREP Approved Management Activities

Management Activity	CREP CP							
	1	2	3	3A	10	21	22	29
Interseeding, overseeding, interplanting (327, 420, 612); tree thinning, tree pruning (660, 666)			✔	✔			✔	
Interseeding, overseeding, interplanting herbaceous (327, 420)	✔	✔			✔	✔		✔

Tree thinning as a management activity



FSA Notice CRP-907 (09/01/2020)

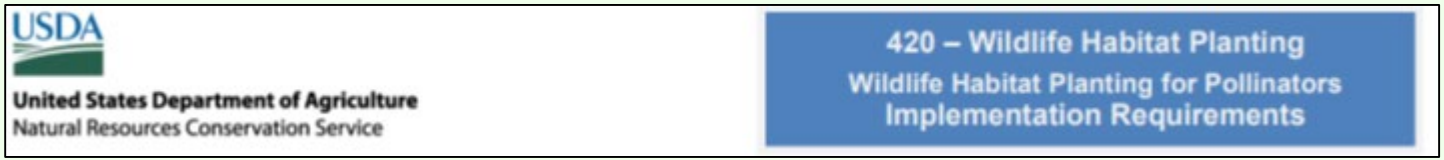
- CREP participants can use grazing as a management activity on ALL conservation practices if grazing…
  - is included in the conservation plan
  - is designed to ensure plant diversity and wildlife benefits
  - is used no more than once during a 10-year contract and twice during a 15-year contract and lasts no longer than 90 calendar days per use
  - will not cause any long-term damage to the conservation cover
  - occurs outside of the primary nesting season

Planning CREP Management Activities

- Conservation plan must include
  - frequency of management implementation
  - time period for management action
  - specifications for the management actions
  - eligible practices

Management activities in the conservation plan

- Use existing job sheets / implementation requirements on the FOTG

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Q & A

Farm Visit 5: Contract Maintenance

Status Review for Contract Maintenance

- Within two years of end of contract, technical agency conducts status review
  - CREP cover maintained and ***functioning*** according to CREP requirements and NRCS standards and specifications?
  - If re-enrolling, have NRCS CPS or CREP requirements changed since enrollment?
- CREP agreement calls for state of WV to review ≥25% of CREP CP22 contracts in the Chesapeake Bay area within 4 years to 6 months of end of contract
  - Coordinate locally

What is functioning CREP cover?

- Exceeds planning criteria using the same resource concern evaluation tools you used to originally document the need for the CREP cover, meaning the resource concern(s) have been addressed
- Meets NRCS standards and specifications

Riparian Forest Buffer function in WV

- “For the purpose of moderating water temperatures and providing detritus and large woody debris, riparian forest buffer management must maintain a minimum of **50 percent canopy cover**.” (NRCS CPS 391 Riparian Forest Buffer, Operation and Maintenance)
- “The purpose of this practice is to … create shade to lower water temperature to improve habitat for aquatic organisms … provide a source of detritus and large woody debris for aquatic organisms and habitat for wildlife.” (2-CRP, Exhibit 11)

Tree and Shrub Establishment

Assessment of CP22 practice

- What is the mortality rate?
- Has the landowner followed the operations and maintenance instructions detailed in the conservation plan?
- What is the total canopy cover of the CREP area?
- Is the buffer functioning?

Options for Expiring Contracts

- Contract maintenance status review needs to occur early enough that if an issue is discovered, the participant will have time to get the cover back to meeting NRCS standards and specifications
- Participants have the option to re-enroll in CRP, CREP, or CLEAR30 in the same or another CP, depending on the situation and client objectives
- Document findings and actions needed on NRCS-LTP-13 Status Review Form
    - Technical agencies document **conditions**
    - FSA decides **compliance**

Contract Compliance

- Technical agency provides technical information about the condition of the cover and whether it meets NRCS standards and specifications
- FSA is responsible for making the compliance determination with the help of the information provided

Additional Resources for CREP and Riparian Forest Buffers

- PA DCNR Riparian Forest Buffer Webinar Series
  - https://pacleanwateracademy.remote-learner.net/course/view.php?id=350
- USDA National Agroforestry Center Riparian Forest Buffer page
  - https://www.fs.usda.gov/nac/practices/riparian-forest-buffers.php
- NRCS Field Office Technical Guide
  - https://efotg.sc.egov.usda.gov/#/details
  - Conservation Practice Standards and support documents (e.g., job sheets)
  - Invasive Species Control Fact Sheets
- Landowner Guide to Buffer Success
  - https://www.creppa.org/pdf/landowner%20guide%20revised%2030oct07.pdf


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Q & A