



CONSERVATION ENHANCEMENT ACTIVITY

E314A

CONSERVATION STEWARDSHIP PROGRAM

Brush management to improve wildlife habitat

Conservation Practice 314: Brush Management

APPLICABLE LAND USE: Pasture, Range, Forest, Associated Ag Land

RESOURCE CONCERN: Plants; Animals

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description

Brush management is employed to create a desired plant community, consistent with the related ecological site steady state, which will maintain or enhance the wildlife habitat desired for the identified wildlife species. It will be designed to provide plant structure, density and diversity needed to meet those habitat objectives. This enhancement does not apply to removal of woody vegetation by prescribed fire or removal of woody vegetation to facilitate a land use change.

Criteria

- This enhancement will be applied in a manner to achieve the desired control of the target woody species while protecting the desired species through mechanical, chemical, or biological methods, alone or in combination. NRCS will not develop biological or chemical treatment recommendations except for biological control using grazing animals. NRCS may provide clients with acceptable biological and/or chemical control references.
- Identify wildlife species of concern and landscape specific brush habitat functionality that is consistent with the related ecological site steady state or another desired state that will meet the objective.
- Brush management will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by the state's NRCS Wildlife Habitation Evaluation Guide (WHEG).



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- Evaluate wildlife habitat with the state NRCS WHEG and manage for a value of 0.60 or greater.
- Brush management will be designed to achieve the desired plant community based on species composition, structure, density, and canopy (or foliar) cover or height.
- Conduct treatments during periods of the year that accommodate reproduction and other life-cycle requirements of target wildlife and pollinator species.



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Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, meet with NRCS to complete the Wildlife Habitat Evaluation Guide (WHEG) evaluation at the site.
- ☐ Prior to implementation, determine and write down clear objectives for brush management and implementation of this enhancement.
- ☐ Prior to implementation, develop a map delineating the areas to be treated and enrolled in this enhancement.
- ☐ During implementation, maintain records of applied treatments (pesticide used, rate applied, timing, etc.) and grazing restrictions. The records must support the label requirements for re-entry or grazing restrictions when applicable.
- ☐ After implementation, reassess habitat condition with NRCS using the WHEG.
- ☐ After implementation, provide records for review by NRCS to verify enhancement was implemented to meet criteria.

NRCS will:

As needed, provide technical assistance to participant as requested.

- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Brush Management (Code 314) as it relates to implementing this enhancement.
- ☐ Prior to implementation, confirm brush management and grazing management plan objectives clearly identify the wildlife of concern for the area.
- ☐ Prior to implementation, meet with participant to complete WHEG evaluation at the site.

Existing WHEG score = _____ Planned Post Implementation WHEG score = _____

- ☐ Prior to implementation, NRCS will make cover or density measurements at georeferenced transects on key areas within the treatment area.
- ☐ After implementation, NRCS will return to georeferenced area to measure cover or density and report the results.
- ☐ After implementation, review records to verify participant implemented enhancement to meet criteria.



- ☐ After implementation, review record of applied treatment (pesticide used, rate applied, timing, etc.) and grazing restrictions.
- ☐ After implementation, reassess habitat condition using the Wildlife Habitat Evaluation Guide.

Post Implementation WHEG score = _____

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NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
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Additional Criteria for Ohio

- In addition to the criteria specified in the National job sheet E314A the following additional criteria apply in Ohio:
- The targetted wildlife species for consideration are grassland birds (e. g. northern quail, ring-neck pheasant, dickcissel, bobolink) for pasture settings and ruffed grouse, wild turkey and migratory songbirds for forest settings; for associated ag land, targetted species will be either grassland birds or woodland birds depending on the predominant cover of the associated ag land
- The Wildlife Habitat Evaluation Guide (WHEG) to be used for evaluation of this enhancement is the Ohio NRCS Wildlife Habitat Evaluation Procedure found in Ohio EFOTG, Section I, Assessment procedures, 5. Wildlife Habitat. Use the pasture/hayland form for pasture situations, the woodland form for forested areas and either shrub-oldfield or woodland form (as appropriate) for associated ag land
- Generally, this enhancement should be planned to reduce the presence of invasive species that degrade a plant community; this allows for plant species that provide better habitat to increase or be maintained
- To avoid adverse impacts to wildlife, activities which would disrupt wildlife should not be undertaken from April 1 until July 15; if they must be done during this period, they shall be done in a way to minimize disturbance of nesting or brooding wildlife

Additional Documentation Requirements for Ohio

- There are no additional documentation requirements that apply in Ohio

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CONSERVATION ENHANCEMENT ACTIVITY

E315A

CONSERVATION STEWARDSHIP PROGRAM

Herbaceous weed treatment to create desired plant communities consistent with the ecological site

CONSERVATION PRACTICE: 315 - Herbaceous Weed Treatment

APPLICABLE LAND USE: Pasture, Range, Forest, Associated Ag Land

RESOURCE CONCERN: Plant, Wildlife

ENHANCEMENT LIFE SPAN: 5 years

Enhancement Description

Mechanical, chemical, or biological, herbaceous weed treatment will be used to control targeted, herbaceous weeds to create, release, or restore desired plant communities that are consistent with achievable, ecological site, steady state descriptions.

Criteria

- Herbaceous weed treatment will be applied to achieve the recorded desired level of control of the target weed species and protect the recorded desired species within the plant community. NRCS will not develop biological or chemical recommendations except biological control by grazing animals.
- Ecological site description (ESD), state and transition models will be employed in development of treatment specifications that are ecologically sound and defensible. The treatments must be congruent with dynamics of the ecological site(s) and keyed to state and plant community phases that have the potential for supporting the desired plant community. If an ESD is not available, base specifications on the best approximation of the desired plant community composition, structure, and function.
- Herbaceous weed treatment will include post treatment measures as needed to achieve the recorded resource management objectives.



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- Treatment periods will accommodate reproduction and other life-cycle requirements of target recorded wildlife and/or pollinator species, and the resultant plant community will enhance the plant community composition and structure to meet their needs.
- Treatments will be conducted when target weed species are most vulnerable and will promote restoration of the desired plant communities.
- When herbicides are used, environmental hazards and site-specific application criteria listed on the pesticide label must be followed.
- Access to treated or targeted area will be controlled based on management methods applied and restrictions as listed on chemical labels.

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, obtain an appropriate management plan based upon land use where this enhancement is planned. The plan will be based on NRCS Conservation Practice Standards Prescribed Grazing (Code 528), Forest Stand Improvement (Code 666), or Upland Wildlife Habitat Management (Code 645). The management plan must identify desired plant community composition, structure, and function. The management strategy must complement NRCS Conservation Practice Standards Herbaceous Weed Treatment (Code 315) in supporting upward trends. (NRCS will provide technical assistance, as needed.)
- ☐ Prior to implementation, develop a map indicating areas to be treated as a part of the management plan.
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, keep records of all treatments, including application method, timing, and amount applied as recommended by NRCS. Refer to NRCS Conservation Practice Standard Herbaceous Weed Treatment (Code 315).



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Treatment Date	
Treatment Method	
Amount Applied (acres)	

- ☐ During implementation, develop a map indicating treated areas.
- ☐ After implementation, make the following records and documents available for review by NRCS to verify implementation of the enhancement:
 - Monitoring data records associated with management plan that measures trend toward desired plant community.
 - Treatment records including timing, application method and amount (acres) applied.

NRCS will:

- ☐ Prior to implementation and as needed, NRCS will provide technical assistance.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Herbaceous Weed Treatment (Code 315) as it relates to implementing this enhancement.
- ☐ Prior to implementation, provide and explain (depending on land use where the enhancement will be implemented) NRCS Conservation Practice Standard Prescribed Grazing (Code 528), Forest Stand Improvement (Code 666), or Upland Wildlife Habitat Management (Code 645) as they relate to implementing this enhancement.
- ☐ Prior to implementation, provide assistance as needed in the development of the management plan or completing state specific job sheet for NRCS Conservation Practice Standard Herbaceous Weed Treatment (Code 315) to treat targeted species.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.



- ☐ After implementation, review documentation and records to verify implementation of the enhancement.

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NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____

Contract Number _____

Total Amount Applied _____

Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
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E315A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E315A the following additional criteria apply in Ohio:

- There are no Ecological Site Descriptions (ESD) available for Ohio and the Provisional Site information does not provide sufficient information to develop enhancement specification/requirements; base enhancement specifications on best approximation of desired plant community from sources such as scientific literature, professional experts or personal knowledge of the plant community
- Generally, this enhancement should be planned to reduce the presence of invasive species or widespread weed species that degrade the plant community allowing the more desirable plant community to improve

Additional Documentation Requirements for Ohio

There are no additional documentation requirements apply in Ohio



CONSERVATION ENHANCEMENT ACTIVITY

E327B

CONSERVATION STEWARDSHIP PROGRAM

Establish Monarch butterfly habitat

Conservation Practice 327: Conservation Cover

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land; Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 5 years

Enhancement Description

Seed or plug milkweed (*Asclepias* spp.), and high-value monarch butterfly nectar plants on marginal cropland, field borders, contour buffer strips, and similar areas.

Criteria

- Habitat areas must be at least 0.5 acres.
- Establish and maintain habitat for monarch butterflies as described below:

A. Monarch butterflies

- Lists of larval host plants and nectar plants suitable for monarch butterfly habitat are provided in the NRCS Field Office Technical Guide (FOTG).
- A grass component to a monarch habitat planting is commonly needed for ecological stability, weed control, and fuel for prescribed burning. The FOTG provides information on the grass/forb ratio for monarch habitat plantings.
- To provide food (nectar and pollen) for adult monarch butterflies, at least 60% of the forb seeds (pure live seed) in the mix shall be from the monarch butterfly planting list



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(FOTG). Milkweed seeds are included in meeting the 60% minimum because milkweeds are excellent nectar plants. The FOTG provides information on the required number of forb species per bloom period (early, mid, or late season) for monarch habitat plantings. Bloom periods are to coincide with monarch presence in the area.

- To provide food for monarch butterfly larvae, plantings shall include at least one species of milkweed (*Asclepias* spp.) from the FOTG monarch butterfly planting list. All milkweed species used in the mix must be from this list and shall represent at least 1.5% of the total seeds in the mix. The total seeds include pure live seed from both grass and forbs. Tropical milkweed (*Asclepias curassavica*) shall not be planted.

Waiver: In some regions, a commercial source of native Asclepias species is limited or not available. In these situations, the NRCS State Conservationist may apply for a waiver, and only require that plantings include monarch nectaring species. In this situation, milkweed seed or plugs are still encouraged to be planted, if possible. If such a waiver is granted, the mix will result in at least 80% of the seed being from the state's monarch nectaring plant list.

- Any other use of the monarch butterfly habitat area must not compromise its intended purpose.
- If a Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG) is available for use in the state, a minimum planned Monarch WHEG score of "0.60 will be obtained for the planted area.

B. Planting criteria for monarch butterfly habitat

- Site selection should consider existing weed pressures and available methods of control. Delay planting and conduct an additional growing season of weed control if high weed pressure requires aggressive treatment.
- Site preparation and plant establishment shall be accomplished according to the state's specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327) or Wildlife Habitat Planting (Code 420).
- Successful establishment is when the planting provides at least 80 percent soil cover when visually estimated, and resultant cover consists of at least 500 milkweed plants



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per acre (approx. 1 stem per each 100-sq. ft.), and successful establishment of at least two targeted nectar plants per bloom period when monarchs are present in the state. A milkweed plant is defined as a single stem emerging from the ground.

- Insecticides should not be used in the habitat planting area.
- Herbicides are allowed during site preparation (prior to planting) when it is necessary to eliminate competing weeds from a planting area in order for nectar and pollen producing plants to establish.
- After a monarch habitat enhancement has been planted, herbicides may be spot-sprayed to remove broad-leaf weeds, or grass-selective herbicides may be applied to larger areas to eliminate persistent weedy grasses. Similarly, in the first-year post-planting, the entire site may be mowed 8 to 10 inches high to reduce annual or biennial weeds that persist (site should be mowed just before dominant annual weeds flower).

C. Operation and maintenance for monarch butterfly habitat

- Management and/or maintenance activities such as mowing, haying, burning, or grazing shall be conducted outside of the season when monarch larvae or adults are present.
- Insecticides should not be used in the habitat planting area.
- The planted habitat areas shall be regularly inspected for invasive and/or noxious plants or other plants that may compromise the purpose of this enhancement. Undesirable species shall be controlled using Individual Plant Treatment methods, for example, spot-spraying with herbicide or physical removal of individual plants.



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Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide a map showing the location of proposed habitat areas with notes on land use adjacent to proposed habitat areas to discuss with NRCS staff.
- ☐ During implementation, purchase specified seed mix or plant materials that meets monarch-specific seeding or planting requirements provided by NRCS.
- ☐ During implementation, follow habitat establishment guidance provided by NRCS in the state specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327).
- ☐ After implementation, provide a list of management and/or maintenance activities carried out to manage the habitat areas and the dates on which those activities occurred.
- ☐ After implementation, provide photo documentation of monarch habitat areas.

NRCS will:

- ☐ Prior to implementation, assess habitat condition using a monarch Wildlife Habitat Evaluation Guide (WHEG) to calculate current WHEG score and anticipated WHEG score after implementation of Enhancement. **Benchmark WHEG score = _____ Planned Post Implementation WHEG score = _____**
- ☐ Prior to implementation, provide participant with suitable larval host plants and nectar plants lists.
- ☐ Prior to implementation, provide and explain State specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327) or Wildlife Habitat Planting (Code 420).
- ☐ Prior to implementation, provide participant with a recommended seed mix and planting specifications per above criteria (grass/forb ratio; number of forb species per bloom period for monarch habitat plantings).
- ☐ After implementation, verify successful establishment (per planting criteria above).



United States Department of Agriculture

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

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Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

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E327B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E327B the following additional criteria apply in Ohio:

- The list below contains plant species that are highly and very highly recommended for monarch butterfly habitat establishment; use this list when selecting plant species to establish under this enhancement.
 - Establishment may be done by seeding and/or planting plugs. Plugs are generally recommended for milkweed plants in all cases and for high value forbs especially in areas with already established vegetation.
- On page 3, C. Operation and maintenance for monarch butterfly, the second bulletin states "Insecticides should not be used in the habitat planting area."; in addition to no spraying in the habitat planting area, also seriously consider the effects of drift if insecticides are applied to adjacent crop areas and consider use of measures to mitigate this effect
- Habitat conditions will be evaluated using the NRCS Monarch WHEG: Midwest Edition found in Ohio EFOTG, Section I, Assessment Procedures, 5. Wildlife Habitat, Monarch Butterfly.

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio.

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Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period		
					Early	Mid	Late
<i>Agastache nepetoides</i>	AGNE2	yellow giant hyssop	forb/herb, subshrub	High		x	x
<i>Amorpha canescens</i>	AMCA6	leadplant	shrub, subshrub	High		x	
<i>Amsonia tabernaemontana</i>	AMTA2	eastern bluestar	forb/herb	High	x		
<i>Apocynum cannabinum</i>	APCA	Indianhemp	forb/herb	High	x	x	
<i>Asclepias incarnata</i>	ASIN	swamp milkweed	forb/herb	Very High		x	x
<i>Asclepias ovalifolia</i>	ASOV	oval-leaf milkweed	forb/herb	High	x	x	
<i>Asclepias purpurascens</i>	ASPU2	purple milkweed	forb/herb	High	x	x	
<i>Asclepias speciosa</i>	ASSP	showy milkweed	forb/herb	High	x	x	x
<i>Asclepias sullivantii</i>	ASSU3	prairie milkweed	forb/herb	High		x	
<i>Asclepias syriaca</i>	ASSY	common milkweed	forb/herb	Very High		x	
<i>Asclepias tuberosa</i>	ASTU	butterfly weed	forb/herb	Very High	x	x	
<i>Asclepias verticillata</i>	ASVE	whorled milkweed	forb/herb	Very High	x	x	x
<i>Bidens aristosa</i>	BIAR	bearded beggarticks	forb/herb	Very High		x	
<i>Bidens laevis</i>	BILA	smooth beggartick	forb/herb	High		x	x
<i>Blephilia ciliata</i>	BECI	downy pagoda-plant	forb/herb	High	x	x	
<i>Blephilia hirsuta</i>	BLHI	hairy pagoda-plant	forb/herb	High	x	x	x
<i>Boltonia asteroides</i>	BOAS	white doll's daisy	forb/herb	High		x	x
<i>Brickellia eupatorioides</i>	BREU	false boneset	forb/herb, subshrub	High		x	x
<i>Cirsium discolor</i>	CIDI	field thistle	forb/herb	High		x	x
<i>Cirsium flodmanii</i>	CIFL	Flodman's thistle	forb/herb	High		x	x
<i>Cirsium muticum</i>	CIMI	swamp thistle	forb/herb	High		x	x
<i>Conoclinium coelestinum</i>	COCO13	blue mistflower	forb/herb	High		x	x
<i>Coreopsis palmata</i>	COPA10	stiff tickseed	forb/herb	High		x	
<i>Coreopsis tripteris</i>	COTR4	tall tickseed	forb/herb	High		x	x
<i>Dalea candida</i>	DACA7	white prairie clover	forb/herb, subshrub	High	x	x	
<i>Delphinium tricorne</i>	DETR	dwarf larkspur	forb/herb	High			
<i>Dicentra cucullaria</i>	DICU	dutchman's breeches	forb/herb	High	x		



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Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period		
					Early	Mid	Late
<i>Doellingeria umbellata</i>	DOUM2	parasol whitetop	forb/herb	High		x	x
<i>Echinacea angustifolia</i>	ECAN2	blacksamson echinacea	forb/herb	High	x	x	
<i>Echinacea pallida</i>	ECPA	pale purple coneflower	forb/herb	High	x	x	
<i>Echinacea purpurea</i>	ECPU	eastern purple coneflower	forb/herb	Very High	x	x	x
<i>Eryngium yuccifolium</i>	ERYU	rattlesnake master	forb/herb	High	x	x	
<i>Eupatorium altissimum</i>	EUAL3	tall thoroughwort	forb/herb	Very High		x	x
<i>Eupatorium perfoliatum</i>	EUPE3	common boneset	forb/herb	High		x	x
<i>Eupatorium serotinum</i>	EUSE2	late-flowering thoroughwort	forb/herb	Very High		x	x
<i>Euthamia graminifolia</i>	EUGR5	grass-leaved goldentop	forb/herb	Very High	x	x	x
<i>Eutrochium fistulosum</i>	EUF14	trumpetweed	forb/herb	High		x	x
<i>Eutrochium maculatum</i>	EUMA9	spotted joe pye weed	forb/herb	Very High		x	x
<i>Eutrochium purpureum</i>	EUPU21	sweetscented joe pye weed	forb/herb	High		x	x
<i>Helianthus annuus</i>	HEAN3	common sunflower	forb/herb	Very High		x	x
<i>Helianthus giganteus</i>	HEGI	giant sunflower	forb/herb	High		x	x
<i>Helianthus grosseserratus</i>	HEGR4	sawtooth sunflower	forb/herb	Very High		x	x
<i>Helianthus maximiliani</i>	HEMA2	Maximilian sunflower	forb/herb	High		x	x
<i>Helianthus pauciflorus</i>	HEPA19	stiff sunflower	forb/herb	High		x	x
<i>Helianthus strumosus</i>	HEST	Paleleaf woodland sunflower	forb/herb	High		x	x
<i>Helianthus tuberosus</i>	HETU	Jerusalem artichoke	forb/herb	High		x	x
<i>Helianthus *laetiflorus</i>	HELA	cheerful sunflower	forb/herb	High		x	x
<i>Heliopsis helianthoides</i>	HEHE5	smooth oxeye	forb/herb	High		x	x
<i>Krigia biflora</i>	KRBI	twoflower dwarf dandelion	forb/herb	High	x	x	
<i>Liatris aspera</i>	LIAS	tall blazing star	forb/herb	Very High			x
<i>Liatris cylindracea</i>	LICY	Ontario blazing star	forb/herb	Very High		x	
<i>Liatris ligulistylis</i>	LILI	Rocky Mountain blazing star	forb/herb	Very High		x	x
<i>Liatris punctata</i>	LIPU	dotted blazing star	forb/herb	High		x	x



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Species name	Plant symbol	Common name	Growth habit	Monarch Value	Bloom Period		
					Early	Mid	Late
<i>Liatris pycnostachya</i>	LIPY	prairie blazing star	forb/herb	High		x	x
<i>Liatris scariosa</i>	LISC2	devil's bite	forb/herb	High		x	x
<i>Liatris spicata</i>	LISP	dense blazing star	forb/herb	High		x	x
<i>Lilium superbum</i>	LISU	turk's-cap lily	forb/herb	High		x	x
<i>Lithospermum canescens</i>	LICA12	hoary puccoon	forb/herb	High	x	x	
<i>Lobelia siphilitica</i>	LOSI	great blue lobelia	forb/herb	High		x	x
<i>Mertensia virginica</i>	MEVI3	Virginia bluebells	forb/herb	High	x	x	
<i>Monarda fistulosa</i>	MOFI	wild bergamot	forb/herb, subshrub	High	x	x	x
<i>Monarda punctata</i>	MOPU	spotted beebalm	forb/herb, subshrub	High	x	x	
<i>Oligoneuron rigidum</i>	OLRI	stiff goldenrod	forb/herb	High		x	x
<i>Onosmodium bejarriense</i>	ONBE	western marblesseed	forb/herb	High		x	
<i>Phlox divaricata</i>	PHDI5	wild blue phlox	forb/herb	High	x		
<i>Phlox glaberrima</i>	PHGL4	smooth phlox	forb/herb	High	x	x	
<i>Phlox paniculata</i>	PHPA6	fall phlox	forb/herb	High		x	
<i>Physostegia virginiana</i>	PHVI8	obedient plant	forb/herb	High		x	x
<i>Rubus flagellaris</i>	RUFL	northern dewberry	subshrub	High	x	x	
<i>Rudbeckia hirta</i>	RUHI2	blackeyed Susan	forb/herb	High		x	x
<i>Silphium integrifolium</i>	SIIN2	wholeleaf rosinweed	forb/herb	High		x	x
<i>Silphium laciniatum</i>	SILA3	compassplant	forb/herb	High		x	x
<i>Silphium perfoliatum</i>	SIPE2	cup plant	forb/herb	High		x	x
<i>Sium suave</i>	SISU2	hemlock waterparsnip	forb/herb	High		x	x
<i>Solidago canadensis</i>	SOCA6	Canada goldenrod	forb/herb	High			x
<i>Solidago nemoralis</i>	SONE	gray goldenrod	forb/herb	High		x	x
<i>Solidago speciosa</i>	SOSP2	showy goldenrod	forb/herb	Very High			x
<i>Symphotrichum cordifolium</i>	SYCO4	common blue wood aster	forb/herb	High		x	x
<i>Symphotrichum laeve</i>	SYLA3	smooth aster	forb/herb	High		x	x
<i>Symphotrichum novae-angliae</i>	SYNO2	New England aster	forb/herb	Very High		x	x
<i>Symphotrichum oolentangiense</i>	SYOO	skyblue aster	forb/herb, subshrub	High		x	x



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					Bloom Period		
Species name	Plant symbol	Common name	Growth habit	Monarch Value	Early	Mid	Late
<i>Symphyotrichum pilosum</i>	SYPI2	hairy white oldfield aster	forb/herb	High		x	x
<i>Verbena stricta</i>	VEST	hoary verbena	forb/herb	High		x	
<i>Vernonia baldwinii</i>	VEBA	Baldwin's ironweed	forb/herb	High		x	x
<i>Vernonia fasciculata</i>	VEFA2	prairie ironweed	forb/herb	High		x	x
<i>Veronicastrum virginicum</i>	VEVI4	Culver's root	forb/herb	High		x	x



CONSERVATION ENHANCEMENT ACTIVITY

E327C

CONSERVATION STEWARDSHIP PROGRAM

Wildlife habitat for nesting and brooding on non-cropped areas

Conservation Practice 327: Conservation Cover

APPLICABLE LAND USE: Associated Ag Land, Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 5 Years

Enhancement Description

Grass and legume mixtures provide refuge areas for nesting, brood rearing and winter survival of wildlife in non-cropped areas.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Select a minimum of 2 species of grass and 3 legumes or forbs that will provide wildlife habitat and food.
- Inoculate all legumes with the appropriate rhizobia bacteria as available before planting.
- Do not disturb cover during the primary nesting/fawning season **(REFER TO STATE SPECIFIC DATES)**.
- Create non-linear edges, when possible, to increase the value of the conservation cover plant near other habitats, like wetlands, woodlands or pollinator habitats.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

NRCS and Participant will:

- ☐ Prior to implementation, discuss State criteria for wildlife habitat that must be followed and the control of disturbance of the conservation cover during primary nesting/fawning seasons.
- ☐ Revise or develop a plan map showing the location of existing habitat areas, if applicable.
- ☐ Inventory existing stand plant species.

Participant will:

- ☐ Make decisions on new plant species both grasses and legumes to add.
- ☐ During implementation, purchase specified seed mix or plant materials that meet the planting requirements provided by NRCS.
- ☐ During implementation, follow habitat establishment guidance provided by NRCS in the state specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327).
- ☐ After implementation, provide a list of management and/or maintenance activities carried out to manage the habitat areas and the dates on which those activities occurred.
- ☐ After implementation, take photographs as documentation of habitat condition.
- ☐ Provide seed tags or receipts showing the quantity and quality of seed purchased.

NRCS will:

- ☐ After implementation, verify successful establishment by review of seed tags, record of planting date, management activities and/or disturbances, and photographs.



CONSERVATION STEWARDSHIP PROGRAM

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E327C

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E327C the following additional criteria apply in Ohio:

- If habitat is to be managed for a particular species of bird, the plant species, their relative amounts and density should be selected to maximize habitat potential for that species.
- To maintain the appropriate cover (open stand with forbs), management through prescribed burning, disturbance, weed control or other actions is typically necessary.
- The use of cover by many grassland bird species may be influenced by the size of the area established to this cover and its proximity to other covers and land uses.
- The focus of this enhancement is to provide nesting and brooding habitat for wildlife; see Appendix A-Wildlife Habitat (Ohio FOTG, Section IV, Ecological Sciences Tools) for additional recommendations on species to plant (specifically the section referring to Grassland Nesting Birds)
- No activities or disruptions to the sites are to occur between March 1st and July 15th (primary nesting and fawning season in Ohio).

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio

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OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E327C

Introduced Grass Mixes

1. Grass Requirements
 - a. Seed mixes will contain both timothy and orchardgrass; neither Kentucky bluegrass nor redtop may be used.
 - b. Grasses will be seeded at rates found in table 1b*.
2. Forb/Legume Requirements
 - a. Allowable introduced legumes are limited to alfalfa, alsike clover, crimson clover and Korean clover (annual lespedeza).
 - b. Native forbs/legumes may be any species included in the table 2a*.
 - c. Seed mixes will contain a minimum of 5 species of forbs or legumes; each species will be at least 3% of the mix based on number of seeds per square foot.
 - d. Forbs/legumes will be seeded at a rate of 12-16 PLS per square foot.
 - e. Seed mixes must contain at least one legume species but may not be entirely legumes.
 - f. Seed mixes may be entirely native forbs/legumes or a combination of native forbs/legumes and introduced legumes. If introduced legumes are included, they may not comprise more than 50% of forbs/legumes based on number of seeds per square foot.

* For tables please refer to Appendix A-Wildlife Habitat



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E327C

Native Grass Mixes

1. Grass Requirements
 - a. Native grasses may be any species included in table 2a*.
 - b. Seed mixes will contain a minimum of 3 grass species; each species must be at least 10% of the grasses in the mix based on number of seeds; no species may be greater than 60% of the grasses in the mix based on number of seeds.
 - c. Grasses will be seeded at a rate of 20-25 PLS per square foot.
 - d. Seed mixes must contain both short and tall grass species; neither should be more than 70% of the mix.
2. Forb/Legume Requirements
 - a. Seed mixes will contain a minimum of 5 species of native forbs or legumes; each species will be at least 3% of the mix based on number of seeds.
 - b. Native forbs/legumes may be any species included in the table 2a*.
 - c. Forbs/legumes will be seeded at a rate of 12-16 PLS per square foot.
 - d. Seed mixes must contain at least one legume species but may not be entirely legumes.
 - e. Seed mixes must contain species from at least two bloom periods.
3. Winter Cover – Optional If dense herbaceous cover for thermal protection in winter is needed, an option is to plant separate stands of tall native grasses. Requirements for this are:
 - a. These will be established as separate patches (strips or blocks). They will not be more than 20% of the cover managed for grassland birds.
 - b. Seeding will consist of either switchgrass or indiangrass or a mix of the two. No forbs or legumes need to be included in the mix.
 - c. Grasses will be seeded at a rate of 30-40 PLS per square foot.

* For tables please refer to Appendix A-Wildlife Habitat



CONSERVATION ENHANCEMENT ACTIVITY

E328A

CONSERVATION STEWARDSHIP PROGRAM

Resource conserving crop rotation

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERNS: Soil; Plants

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three-year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plant pest pressures.

Criteria

- Crops shall be grown in a planned sequence. The crop rotation shall include a minimum of two different crops in a minimum three-year crop rotation. Rotation must include AT LEAST one resource conserving crop (refer to State Specific List of Resource Conserving Crops). For purposes of these criteria a cover crop is considered a different crop.
- Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value, as determined by the Soil Conditioning Index (SCI) calculated using current NRCS wind and water erosion prediction technologies. (management SCI value)
- Design the crop sequence to provide sufficient diversity in plant family and species as well as timing and type of field operations to suppress the pest(s) of concern, which may include weeds, insects, and pathogens. Use land grant university or industry standards to determine a suitable crop sequence.



CONSERVATION STEWARDSHIP PROGRAM

- Select crops, varieties of crops, and the sequences of crops based on local climate patterns, soil conditions, irrigation water availability, and an approved water balance procedure.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- The crop rotation shall include at least one of the following types of resource conserving crops (refer to State Specific List of Resource Conserving Crops):
 - With at least one other crop in the rotation, include a perennial grass grown at least 2 years from time of planting;
 - With at least one other crop in the rotation, include a legume that is grown at least 2 years from time of planting;
 - With at least one other crop in the rotation, include a legume-grass mixture that is grown at least 2 years from time of planting;
 - With at least one other crop in the rotation, include a grass-forbs or legume-grass-forbs mixture, in which at least the grass component of the mixture is grown at least 2 years from time of planting, or
 - With at least two other crops in the rotation, include a non-fragile residue or high residue crop or a crop that efficiently uses soil moisture, reduces irrigation water needs, or is considered drought tolerant. Neither the crop residue nor the cover crop shall be harvested or grazed.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Prior to implementation, verify that the crop rotation includes at least two different crops in a minimum three-year crop rotation.
- ☐ Prior to implementation, verify the crop rotation includes at least one resource conserving crop (refer to State Specific List of Resource Conserving Crops).



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, use the information provided from the participant to calculate the management Soil Conditioning Index (SCI) value using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value. **Management SCI Value = _____ OM subfactor value = _____**
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use the information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria. **Management SCI Value = _____ OM subfactor value = _____**

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet the following apply in Ohio:

The definitions and lists of resource conserving crops are:

1. A perennial grass grown for at least 2 years. Grasses that meet this criterion are:

A. Cool Season Grasses

- o Fescue, Tall
- o Fescue, Turf-Type Tall
- o Garrison Creeping Foxtail
- o Kentucky bluegrass
- o Orchardgrass
- o Perennial Ryegrass
- o Reed Canarygrass
- o Smooth Brome grass
- o Timothy
- o Wildrye, Canadian
- o Wildrye, Virginia

B. Warm Season Grasses

- o Big Bluestem
- o Little Bluestem
- o Eastern Gamagrass
- o Indiangrass
- o Switchgrass

2. A legume grown for at least 2 years for use as forage, seed for planting, or green manure.

Legumes that meet this criterion are:

A. Cool Season Legumes

- o Alfalfa
- o Alsike Clover
- o Birdsfoot Trefoil
- o Crownvetch
- o Kura Clover
- o Red Clover
- o White Clover

B. Warm Season Legumes

- o Lespedeza



CONSERVATION STEWARDSHIP PROGRAM

3. A legume-grass mixture. Grass/legumes mixes would include a mixture of 1 and 2 above.
4. Common crops or cover crops in Ohio that meet the criteria; non-fragile residue or high residue crop or a crop that efficiently uses soil moisture, reduces irrigation water needs, or is considered drought tolerant are listed below.

To utilize this resource conserving crop, the listed crop must be a new crop species to the rotation and the rotation must be at least 3-years with at least two other crops. Crop residue or cover crops cannot be harvested, grazed or manipulated in such a way that the residue becomes fragile before the next cash crop is planted.

Crops

- o Corn (grain)
- o Small grains (barley, oats, rye, triticale, wheat)
- o Sorghum/Millet/Milo

Cover Crops

If a cover crop is utilized to meet the criteria, seeding rates and seeding dates must be in accordance with Appendix A (cover crop). A mixture of listed species below is acceptable if all the criteria listed in Appendix A are met. If winter killed species are utilized, the cover crop can not be terminated before normal winter kill date. If non-winter kill species are used, the cover crop cannot be terminated before planting of the cash crop or flowering/headling of the cover crop.

Winter Killed	Non-winter killed
Sorghum-Sudangrass	Winter Rye
Sorghum	Winter Triticale
Sudangrass	Winter Barley
Pearl Millet	Winter Wheat
Japanese Millet	Spelt
Teff	Crimson Clover
Sunflower	Balansa Clover
Sunn Hemp	
Berseem Clover	
Oats	

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro” to document soil erosion estimate, and SCI calculation.



CONSERVATION ENHANCEMENT ACTIVITY

E328B

CONSERVATION STEWARDSHIP PROGRAM

Improved resource conserving crop rotation

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERNS: Soil; Plants

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Improve an existing Resource Conserving Crop Rotation. Must enrich an existing rotation which already includes AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three-year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plant pest pressures.

Criteria

- Crops shall be grown in a planned sequence. The crop rotation shall include a minimum of two different crops in a minimum three-year crop rotation. Rotation must include AT LEAST one resource conserving crop (refer to State Specific List of Resource Conserving Crops). For purposes of these criteria a cover crop is considered a different crop.
- Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value, as determined by the Soil Conditioning Index (SCI) calculated using current NRCS wind and water erosion prediction technologies. (management SCI value)
- Design the crop sequence to provide sufficient diversity in plant family and species as well as timing and type of field operations to suppress the pest(s) of concern, which



may include weeds, insects, and pathogens. Use land grant university or industry standards to determine a suitable crop sequence.

CONSERVATION STEWARDSHIP PROGRAM

- Select crops, varieties of crops, and the sequences of crops based on local climate patterns, soil conditions, irrigation water availability, and an approved water balance procedure.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- The improved resource conserving crop rotation shall include at least one of the following (refer to State Specific List of Resource Conserving Crops):
 - Additional growing year for perennial resource conserving crop
 - Perennial resource conserving crop (grass or grass/legume) substituted for a row crop
 - If current perennial resource conserving crop is a legume, change to a perennial grass or grass/legume crop



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop. Note all improvements to the existing Resource Conserving Crop Rotation.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Prior to implementation, verify that the crop rotation includes at least two different crops in a minimum three-year crop rotation.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, verify the crop rotation includes at least one resource conserving crop (refer to State Specific List of Resource Conserving Crops).
- ☐ Prior to implementation, verify the planned crop rotation improves the current Resource Conserving Crop Rotation.
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value. **Management SCI Value = _____ OM subfactor value = _____**
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria. **Management SCI Value = _____ OM subfactor value = _____**

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



United States Department of Agriculture

CONSERVATION STEWARDSHIP PROGRAM





**OHIO SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

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STEWARDSHIP
PROGRAM**

E328B

Additional Criteria for Ohio

The definitions and lists of improved resource conserving crops are:

1. A perennial grass. Grasses that meet this criterion are:

A. Cool Season Grasses

- o Fescue, Tall
- o Fescue, Turf-Type Tall
- o Garrison Creeping Foxtail
- o Kentucky bluegrass
- o Orchardgrass
- o Perennial Ryegrass

- o Reed Canarygrass
- o Smooth Bromegrass
- o Timothy
- o Wildrye, Canadian
- o Wildrye, Virginia

B. Warm Season Grasses

- o Big Bluestem
- o Little Bluestem
- o Eastern Gamagrass
- o Indiangrass
- o Switchgrass

2. A legume grown for use as forage, seed for planting, or green manure. Legumes that meet this criterion are:

A. Cool Season Legumes

- o Alfalfa
- o Alsike Clover
- o Birdsfoot Trefoil
- o Crownvetch

- o Kura Clover
- o Red Clover
- o White Clover

B. Warm Season Legumes

- o Lespedeza



3. A legume-grass mixture. Grass/legumes mixes would include a mixture of 1 and 2 above.

CONSERVATION STEWARDSHIP PROGRAM

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, and SCI calculation.



CONSERVATION ENHANCEMENT ACTIVITY

E328C

CONSERVATION STEWARDSHIP PROGRAM

Conservation crop rotation on recently converted CRP grass/legume cover

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Crop rotation on acres converted, no more than 2 years prior, from CRP grass/legume cover to annual crops. Rotation minimizes disturbance (STIR less than 10) and reduces soil erosion below soil tolerance level. Enhancement not applicable on hayland.

Criteria

- Enhancement limited to acres where the conversion from Conservation Reserve Program (CRP) grass/legume conservation cover to annual cropland took place not more than 2 years prior to enrollment in Conservation Stewardship Program.
- This enhancement is not applicable on hayland.
- Crops shall be grown in a planned sequence as outlined in the implementation requirements.
- The crop rotation must include a minimum of three different crop types. For the purpose of this enhancement a cover crop is considered a different crop.
- Select crops, a tillage system, and cropping sequence(s) that will produce sufficient and timely quantities of biomass or crop residue which, in conjunction with other



practices in the management system that will reduce soil erosion from water and wind to a level below the soil tolerance (T) level (average annual soil loss).

CONSERVATION STEWARDSHIP PROGRAM

- Crop management must minimize soil disturbance resulting in a Soil Tillage Intensity Rating (STIR) less than 10 for the crop rotation (management STIR value).
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.



Documentation and Implementation Requirements

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STEWARDSHIP
PROGRAM**

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, verify the enhancement is planned for acres where the conversion from CRP grass/legume conservation cover to annual cropland took place no more than 2 years prior to enrollment in CSP. **Date of Conversion:** _____



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- ☐ Prior to implementation, verify the enhancement is not planned on hayland.
- ☐ Prior to implementation, use information provided from the participant to calculate soil loss estimates and STIR calculations using the current NRCS approved wind and water erosion prediction technologies. The planned rotation must meet the enhancement criteria of a management STIR value of less than 10 and average annual soil erosion from water and wind less than "T".

"T" = _____ t/ac/year Soil erosion = _____ t/ac/year STIR value = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use information provided from the participant to calculate soil loss estimates and STIR calculations. The applied rotation must meet the enhancement criteria above.
Soil erosion = _____ t/ac/year and STIR value = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E328D

CONSERVATION STEWARDSHIP PROGRAM

Leave standing grain crops unharvested to benefit wildlife

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: ANIMALS

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Implement a crop rotation which allows a portion of grain crops to be left in fields unharvested to provide food and cover for wildlife during winter months.

Criteria

- Crops must be grown in a planned sequence as outlined in the plan. The crop rotation shall include a minimum of three different crops. For this purpose, a cover crop is considered a different crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- Select the crops and crop management activities that provide food, cover, and shelter for the targeted wildlife species using an approved habitat evaluation procedure.
- Leave a minimum $\frac{1}{2}$ acre of unharvested, standing grain crops for each 40 acres of cropland. Unharvested plots shall be located in a single location on the 40 acre unit and additional plots shall be located on different 40 acres. *This enhancement is to be planned, contracted, and implemented on an entire field, not just the unharvested acres.*



- Locate the unharvested plots adjacent to permanent cover such as brushy fence rows, field borders, forest land, or wetlands (this does not include newly established vegetation).
- Leave unharvested crops standing over winter until it is time to prepare the soil for planting the next crop.

CONSERVATION STEWARDSHIP PROGRAM



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

- ☐ Prior to implementation, develop a map showing planned location(s), crop type(s), and acreage of crops to be left unharvested.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ During implementation, take photos of all unharvested plots. Photos must indicate field location and date.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.
- ☐ After implementation, make a map showing implemented location(s), crop type(s), and acreage of crops that were left unharvested each year available for review by NRCS to verify implementation of the enhancement.
- ☐ After implementation, make photos of the unharvested plots available for review by NRCS to verify implementation of the enhancement.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ As needed, provide technical assistance in selecting crops for food, cover, and shelter according to the approved habitat evaluation procedure.
- ☐ As needed, provide additional assistance to the participant as requested.



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- ☐ During implementation, evaluate planned crop changes, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, review the map(s) showing implemented location(s), crop type(s), and acreage of crops that were left unharvested each year, to verify implementation of the enhancement.
- ☐ After implementation, review photos of unharvested plots to verify implementation of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328D

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E328D the following additional criteria apply in Ohio:

- The purpose of this enhancement is to produce food in the form of grain and cover for typically-occurring wildlife species present during the winter
- For the purposes of this enhancement, the unharvested crop must be a crop which produces mature grain before winter, typically corn or soybeans; other crops may include oats, millet, sunflower, and grain sorghum. Newly seeded winter wheat and corn cut for silage cannot be used for this purpose.
- Use information in this supplement rather than an approved habitat evaluation procedure for selecting appropriate crops
- Do not use areas that will not produce grain due to flooding, shading, weather damage, poor management or animal damage
- Cover crops may be used if they will produce grain prior to winter and management of that cover crop will not prevent the production of that grain
- Unharvested crops shall be left undisturbed over winter until time to prepare the soil for planting the next crop; the unharvested crop may not be cut, chopped, rolled, crimped or otherwise disturbed in a manner that would reduce the availability of the grain for wildlife

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio.

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CONSERVATION ENHANCEMENT ACTIVITY

E328E

CONSERVATION STEWARDSHIP PROGRAM

Soil health crop rotation

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

PRACTICE LIFE SPAN: 1 Year

Enhancement Description

Implement a crop rotation which addresses all four principle components of soil health: increases diversity of the cropping system; maintains residue throughout the year; keeps a living root; and minimizes soil chemical, physical and biological disturbance. The rotation will include at least 4 different crop and/or cover crop types (crop types include cool season grass, warm season grass, cool season broadleaf, warm season broadleaf) grown in a sequence that will produce a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). The current NRCS wind and water erosion prediction technologies must be used to document the rotation and SCI calculations.

Criteria

- Crops must be grown in a planned sequence as outlined in the plan. The crop rotation must include a minimum of four different crop types. For the purpose of this criteria a cover crop is considered a different crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- Grow crops that will produce a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). (management SCI value)



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- The crop rotation includes at least 2 years of high residue crops and/or cover crops per 3 years of the rotation. **(See STATE list of high residue crops)**
- For crop diversity, the planned crop sequence should contain four different crop types; for example, a mix of the following: warm season grass; warm season broadleaf; cool season grass; cool season broadleaf.
- Leave crop residue on the soil surface throughout the year.
- Keep a living root system established as much as practical for the given soil, cropping system, and climate area. Maximize root growth periods by planting the next crop or cover crop as soon as practical after the harvest and/or utilize perennial crops in the rotation. Aim to have living roots at least 90% of available growing days. **(See STATE provided guidance of options to maximize living root systems in local climate and cropping systems; determine available growing days and period of no growth, such as frozen periods in the north.)** Show before and after management files from current NRCS wind and water erosion prediction technologies to document benchmark and planned crop rotation to show increase in living root periods.
- Minimize all types of soil disturbance. No more than one crop-year in the rotation will have a Soil Tillage Intensity Rating (STIR) value greater than 20 (crop STIR value) and the rotation will have a positive trending SCI (management SCI value).



Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and planned field operation(s) used for each crop.

CONSERVATION STEWARDSHIP PROGRAM

Current Management – Crop Rotation

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)	Crop Type (Warm Grass-WG, Cool Grass-CG, Warm Broadleaf-WB, Cool Broadleaf-CB)

Current Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management – Crop Rotation *(Planned crop rotation must include at least 2 years of high residue crops and/or cover crops per 3 years of the rotation and at least 4 different crop types. Use STATE list of high residue crops.)*

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)	Crop Type (Warm Grass-WG, Cool Grass-CG, Warm Broadleaf-WB, Cool Broadleaf-CB)



CONSERVATION STEWARDSHIP PROGRAM

Planned Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, take dated pictures with field indicated at least every 3 months to show residue or growing crops.
- ☐ During implementation, leave crop residue on the soil surface throughout the year.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.
- ☐ After implementation, provide for review pictures showing residue or growing crops throughout the year.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Prior to implementation, verify the planned crop rotation includes at least four different crop types.
- ☐ Prior to implementation, verify the crop rotation includes at least 2 years of high residue crops and/or cover crops per 3 years of the rotation. (Use STATE list of high residue crops.)
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value for each field using current NRCS wind



CONSERVATION STEWARDSHIP PROGRAM

and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value.

Management SCI Value = _____

OM subfactor value = _____

- ☐ Prior to implementation, use NRCS wind and water erosion prediction technologies to document benchmark and planned crop rotation to show increase in living root periods.
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria.
Management SCI Value = _____ OM subfactor value = _____
- ☐ After implementation, review pictures showing residue or growing green crops throughout the year to verify the applied system meets the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E328F

CONSERVATION STEWARDSHIP PROGRAM

Modifications to improve soil health and increase soil organic matter

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Use of soil health assessment to evaluate impact of current conservation crop rotation in addressing soil organic matter depletion (primary assessment made in Year 1). Modifications to the crop rotation and/or crop management will be made as a result of the assessment results (adding a new crop and/or cover crop to the rotation; making changes to planting and/or tillage system, harvest timing of crops, or termination timing of cover crops). During Year 3 a follow up assessment will be completed to allow time for the modifications to show increased soil organic matter. Modified system must produce a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). The current NRCS wind and water erosion prediction technologies must be used to document the rotation and SCI calculations.

Criteria

- Crops must be grown in a planned sequence as outlined in plan. The crop rotation must include a minimum of four different crops. For purposes of these criteria a cover crop is considered a different crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.



CONSERVATION STEWARDSHIP PROGRAM

- Evaluation of the modified cropping system must produce a soil conditioning index (SCI) of zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation. (management SCI value)
- Soil health assessment will be used to evaluate impact of current conservation crop rotation in addressing soil organic matter depletion, as well as additional soil health objectives of the individual grower (primary assessment made in Year 1). During Year 3, a follow up assessment will be completed to allow time for changes to crop rotation and management activities to have an impact on soil health. No specific soil health assessment type is required or recommended by NRCS, but at a minimum the assessment must account for soil organic matter. The specific assessment selected should provide the grower information based on their soil health objectives.
- Modifications to the crop rotation and/or crop management will be made as a result of the assessment results (adding a new crop and/or cover crop to the rotation; making changes to planting and/or tillage system, harvest timing of crops, or termination timing of cover crops).



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current/planned crop rotation and field operation(s) used for each crop.

Current/Planned Management – Crop Rotation

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Current/Planned Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ Prior to implementation, select an assessment based on your soil health objectives.

Soil Health Assessment

Producer Objective	Year 1 Assessment (Value)	Year 3 Assessment (Value)
Soil Organic Matter (Required)		



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, adjust crops, crop rotation, or field operations to improve the system after receiving the results of the soil health assessment. Make Complete in Year 1 and Year 3 at a minimum. Document adjustments below:

Adjusted Management – Crop Rotation

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Adjusted Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Prior to implementation, verify the planned crop rotation includes at least four different crops.
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value for each field using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value. **Management SCI Value = _____**
OM subfactor value = _____



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, evaluate planned adjustments in crops, crop rotation, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant to calculate SCI values to document that the applied rotation met the enhancement criteria.

Management SCI Value = _____ OM subfactor value = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E328G

CONSERVATION STEWARDSHIP PROGRAM

Crop rotation on recently converted CRP grass/legume cover for soil organic matter improvement

Conservation Practice 328: Conservation crop rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Crop rotation on acres converted, no more than 2 years prior, from CRP grass/legume cover to annual crops. Diverse rotation with living roots and residue cover throughout year and minimal disturbance. Enhancement not applicable on hayland.

Criteria

- This enhancement is limited to acres where the conversion of CRP grass/legume conservation cover to annual crops took place not more than 2 years prior to enrollment in CSP. This enhancement is not applicable on hayland.
- Crops must be grown in a planned sequence as outlined in plan. The crop rotation must include a minimum of four different crops. For purposes of these criteria a cover crop is considered a different crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.



CONSERVATION STEWARDSHIP PROGRAM

- Grow crops that will produce a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation, as determined by the Soil Conditioning Index. (management SCI value)
- The crop rotation includes at least 2 years of high residue crops and/or cover crops per 3 years of the rotation. **(See STATE list of high residue crops)**
- For crop diversity, the planned crop sequence of at least 4 different crops should contain at least 3 different crop types; for example a mix of the following: warm season grass; warm season broadleaf; cool season grass; cool season broadleaf.
- Leave crop residue on the soil surface throughout the year.
- Keep a living root system established as much as practical for the given soil, cropping system, and climate area. Maximize root growth periods by planting the next crop or cover crop as soon as practical after the harvest and/or utilize perennial crops in the rotation. Aim to have living roots at least 90% of available growing days. **(See STATE provided guidance of options to maximize living root systems in local climate and cropping systems; determine available growing days and period of no growth, such as frozen periods in the north)**. Show before and after management files from current NRCS wind and water erosion prediction technologies to document benchmark and planned crop rotation to show increase in living root periods.
- Minimize all types of soil disturbance. No more than one crop-year in the rotation will have a Soil Tillage Intensity Rating (STIR) value greater than 20 and the rotation will have a positive trending SCI.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and planned field operation(s) used for each crop.

Current Management – Crop Rotation

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)	Crop Type (Warm Grass-WG, Cool Grass-CG, Warm Broadleaf-WB, Cool Broadleaf-CB)

Current Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management – Crop Rotation *(Crop rotation must include at least 4 different crops from 3 of the different crop types. The rotation must also include 2 years of high residue crops and/or cover crops per 3 years of the rotation. Use STATE list of high residue crops.)*

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)	Crop Type (Warm Grass-WG, Cool Grass-CG, Warm Broadleaf-WB, Cool Broadleaf-CB)



CONSERVATION STEWARDSHIP PROGRAM

Planned Management – Field Operations

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, leave crop residue on the soil surface throughout the year.
- ☐ During implementation, take dated pictures with field indicated at least every 3 months to show residue or growing crops.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.
- ☐ After implementation, provide for review pictures showing residue or growing crops throughout the year.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres where the conversion from CRP grass/legume conservation cover to annual cropland took place no more than 2 years prior to enrollment in CSP. **Conversion Date:** _____
- ☐ Prior to implementation, verify the enhancement is not planned on hayland.

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CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, verify the crop rotation includes at least 2 years of high residue crops and/or cover crops per 3 years of the rotation. (Use STATE list of high residue crops)
- ☐ Prior to implementation, verify the planned crop rotation includes at least 4 different crops and contains at least 3 different crop types; for example a mix of the following: warm season grass; warm season broadleaf; cool season grass; cool season broadleaf.
Planned number of crops: _____
Planned number of crop types: _____
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value for each field using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value.
Management SCI Value = _____ **OM subfactor value =** _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use information provided from the participant to document that the applied rotation met the enhancement criteria.
Applied number of crops: _____
Applied number of crop types: _____
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria.
Management SCI Value = _____ **OM subfactor value =** _____
- ☐ After implementation, review pictures showing residue or growing green crops throughout the year to verify the applied system meets the enhancement criteria.



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date

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OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328G

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E328G the following additional criteria and criteria definitions apply in Ohio:

- The crop rotation includes at least 2 years of high residue crops and/or cover crops per 3 years of the rotation.
 - o Common high residue crops in Ohio are:
 - Corn (grain)
 - Wheat (straw not harvested)
 - Oats (grown for grain) (straw not harvested)
 - Meadow
- Keep a living root system established as much as practical for the given soil, cropping system, and climate area. Maximize root growth periods by planting the next crop or cover crop as soon as practical after the harvest and/or utilize perennial crops in the rotation. Aim to have living roots at least 90% of available growing days.
 - o In Ohio to maximize living root system consider inter-seeding cover crops into standing un-harvested crops
 - o In Ohio the number of growing days considered for this enhancement is 365 days a year. Therefore a crop or cover crop must be present 328 days (47 weeks) or more to meet the criteria of this enhancement.

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, crop year STIR and SCI calculation. Also print before and after management files from RUSLE 2 to document benchmark and planned crop rotation to show increase in living root periods.

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CONSERVATION ENHANCEMENT ACTIVITY

E328J

CONSERVATION STEWARDSHIP PROGRAM

Improved crop rotation to provide benefits to pollinators

Conservation Practice 328: Conservation Cropping System

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Improve the existing crop rotation by adding pollinator friendly crops into the rotation. The crop rotation shall include a minimum of three different crops in a minimum five-year crop rotation. Each year, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Use of insecticides is limited for the pollinator friendly crop.

Criteria

- Crops will be grown in a planned sequence over a five-year rotation. The crop rotation shall include a minimum of three different crops in a minimum five-year crop rotation.
- The crop rotation must include at least one pollinator friendly. For these criteria, a pollinator friendly cover crop is considered a different crop. A pollinator friendly crop is defined as a crop, planted for harvest or as a cover crop, which provides nectar for pollinators and other beneficial insects. Examples of pollinator friendly crops are canola, sunflowers, clovers, and borage. To meet the purpose and definition of a pollinator friendly crop, these “flowering” crops must be allowed to bloom prior to harvest or termination. **<REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>**



CONSERVATION STEWARDSHIP PROGRAM

- Each year the enhancement is planned, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Plan/contract the actual acres planted to the pollinator friendly crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- Foliar systemic insecticides may not be applied to the pollinator friendly crop.
- Insecticides may not be applied during crop bloom period of the pollinator friendly crop.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation for all cropland acres on the operation. **<REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>**
- ☐ Prior to implementation, as needed, NRCS can provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ Prior to implementation, provide maps for review by NRCS of the planned crop rotation, including areas which will include the pollinator friendly crops. Each year the enhancement is planned, at least 5% of the cropland acres on the operation must be planted to a pollinator friendly crop.

Current Management Rotation (complete table for each rotation)

Field	Current Crops (in sequence)	Planting Date	Harvest Date

Planned Management Rotation including Pollinator Friendly Crops (complete table for each rotation)

Field	Planned Crops (in sequence)	Planting Date	Harvest Date	Acres in rotation



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, maintain records of any insecticide applications to the pollinator friendly crop, including timing, material/product, application rate, and crop stage.

Field	Crop	Insecticide Applied	Application Date	Application Rate	Crop Stage

- ☐ During implementation, notify NRCS of any planned changes in crop rotation, insecticide applications, or management to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS for review.
- ☐ After implementation, provide insecticide application records to NRCS for review to verify implementation meets the enhancement criteria.

NRCS will:

- ☐ As needed, provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, verify the crop rotation meets the criteria of the enhancement. The rotation must include a minimum of three different crops in a five-year crop rotation and each year the enhancement is planned the pollinator friendly crop must be planted on a minimum of 5% of cropland acres contained within the operation. *Plan/contract the actual acres planted to the pollinator friendly crop.*
- ☐ During implementation, evaluate any planned changes in crop rotation, insecticide applications, or management to verify the new system meets the enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, if there were any changes to planned rotation or management evaluate the applied crop rotation using information provided from the participant to verify the applied rotation meets the enhancement criteria.
- ☐ After implementation, review insecticide application records to verify implementation meets the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328J

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E328J the following additional criteria apply in Ohio:

- The following crops are considered suitable for implementation of this enhancement:
 - Clovers: crimson, red, white, alsike; **not** sweet clover
 - Alfalfa
 - Peas: field pea, cow pea, winter pea
 - Hairy vetch
 - Phacelia
 - Radish
 - Turnip
 - Sunflower
 - Buckwheat
 - Canola
 - Flax
 - Borage
- Where possible, wait to terminate until greater than 75% of the crop is past peak bloom
- Terminate with minimal disturbance to minimize damage to soil nesting species; roller crimping is recommended option
- Leave as much residue as possible to protect eggs or hibernating adults
- In addition to limiting foliar insecticide application, no insecticide seed treatments or insecticide application with burndown prior to planting the pollinator friendly crop should be used



CONSERVATION ENHANCEMENT ACTIVITY

E328K

CONSERVATION STEWARDSHIP PROGRAM

Multiple crop types to benefit wildlife

Conservation Practice 328: Conservation Cropping System

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Alternating crops in a systematic arrangement of strips across a field to provide diverse rotations of crops that provide wildlife food. At least two crops will be planted in adjacent strips a minimum of 0.5 acres in size.

Criteria

- If the field is currently divided and planted to more than one crop, further division would be required.
- The crop rotation must include a minimum of two different crops in a minimum three-year rotation. **<REFER TO STATE SPECIFIC LIST OF WILDLIFE FOOD FRIENDLY CROPS>**
- Crop strips will be a minimum of 0.5 acres in size not to exceed 40 acres. Grazing of crop residues and cover crops are permissible provided 60 percent cover remains after grazing.
- Annual crop strips will be rotated each year. If annual crops are used in conjunction with perennial crops, only that annual crop type would change the following year or growing season.



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- Harvested crop residue will remain standing through state identified critical wildlife periods.

CONSERVATION STEWARDSHIP PROGRAM





CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation for all cropland acres on the operation. **<REFER TO STATE SPECIFIC LIST OF WILDLIFE FOOD FRIENDLY CROPS>**
- ☐ Prior to implementation, as needed, NRCS can provide technical assistance in selecting wildlife food crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ Prior to implementation, provide maps for review by NRCS of the planned crop rotation, including the strips which will include the wildlife food friendly crops.

Current Management Rotation (complete table for each rotation)

Field	Current Crops (in sequence)	Planting Date	Harvest Date

Planned Management Rotation including Wildlife Food Friendly Crops (complete table for each rotation)

Field	Planned Crops (in sequence)	Planting Date	Harvest Date	Acres in rotation

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or management to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS for review.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, make photos of strips available for review by NRCS to verify implementation meets the enhancement criteria.

NRCS will:

- ☐ As needed, provide technical assistance in selecting wildlife food crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, verify the crop rotation meets the criteria of the enhancement. The rotation must include a minimum of two different crops in a three-year crop rotation.
Plan/contract the actual acres planted to the wildlife food friendly crop.
- ☐ During implementation, evaluate any planned changes in crops, crop rotation, or management to verify the new system meets the enhancement criteria.
- ☐ After implementation, if there were any changes to planned rotation or management evaluate the applied crop rotation using information provided from the participant to verify the applied rotation meets the enhancement criteria.
- ☐ After implementation, review photos of strips to verify implementation of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

**CONSERVATION
STEWARDSHIP
PROGRAM**

E328K

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E328K the following additional criteria apply in Ohio:

- Wildlife-friendly crops appropriate for this enhancement are:
 - Corn
 - Wheat
 - Oats
 - Pearl millet
 - Barley
 - Grain sorghum
 - Sunflower
 - Soybeans



CONSERVATION ENHANCEMENT ACTIVITY
E328L

**CONSERVATION
STEWARDSHIP
PROGRAM**

Leaving tall crop residue for wildlife

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (annual and mixed)

RESOURCE CONCERN ADDRESSED: Animals

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Fields may be harvested but must leave crop residue standing a minimum of 14 inches. Residue will be left through winter and into spring, providing valuable winter cover and forage for wildlife spanning late summer and through the following winter.

Criteria

- The entire crop field must be harvested with residual stubble height minimum of 14 inches on average throughout the field. Only acres with this minimum stubble height are eligible for payment.
- Stubble must remain undisturbed until the State designated date in the following year to provide cover throughout winter months
- Planting and management of cover crops is not prohibited if it does not compromise the height and structure of the stubble cover
- States will supply a list of eligible crops and specify the dates that stubble must remain undisturbed for this enhancement.
- When possible, reduce or eliminate the use of herbicide treatments on weedy growth between the rows to provide additional cover and food sources for wildlife.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, develop a map showing planned location(s), crop type(s) and acreage of crops to leave tall standing stubble.
- ☐ After implementation, provide photo documentation of stubble height left standing.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant.
- ☐ After implementation, verify stubble height and ensure stubble is left standing after winter months.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328L

Leaving tall crop residue for wildlife

Additional Criteria for Ohio

- Crops that provide beneficial winter cover will be used; typical Ohio crops are listed below only if the straw or crop residue is not harvested. Only those crops that can provide a minimum standing height of 14 inches will be used and stubble must remain undisturbed until April 1 of the following year:
 - Corn
 - Grain Sorghums
 - German/pearl millet
 - Small Grains
 - Sunflowers
- Consideration should be given to the harvest equipment and/or varieties used.
 - Corn harvesting equipment that includes stalk crushers or stalk stompers may eliminate or flatten out the standing residue and not meet the 14-inch criteria.
 - Harvesting small grains with a stripper head may be required to insure the 14 inches of standing residue on shorter small grain varieties of wheat or oats.



CONSERVATION ENHANCEMENT ACTIVITY

E328M

CONSERVATION STEWARDSHIP PROGRAM

Diversify crop rotation with canola or sunflower to provide benefits to pollinators

Conservation Practice 328: Conservation Cropping System

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Diversify existing crop rotation by adding pollinator friendly canola or sunflower crops into the rotation. The crop rotation shall include a minimum of three different crops. Each year, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Use of insecticides compliant with grower industry best management practice is allowed only during pre-bloom and bloom of canola or sunflower.

Criteria

- Crops will be grown in a planned sequence and shall include a minimum of three different crops.
 - The crop rotation must include at least one year of canola or sunflower. Other pollinator friendly crops may be included. For these criteria, a pollinator friendly cover crop is considered a different crop. A pollinator friendly crop is defined as a crop, planted for harvest or as a cover crop, which provides nectar for pollinators and other beneficial insects. Examples of pollinator friendly crops are canola, sunflowers, clovers, and borage. To meet the purpose and definition of a pollinator friendly crop, these “flowering” crops must be allowed to bloom prior to harvest or termination.
- <REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>



CONSERVATION STEWARDSHIP PROGRAM

- Each year the enhancement is planned, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Plan/contract the actual acres planted to the pollinator friendly crop.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- Foliar systemic insecticides may not be applied to the pollinator friendly crop.
- Insecticides and fungicides applied during crop pre-bloom and bloom period of the canola or sunflower crop must be mitigated through integrated pest management and must follow industry best management practices.
 - Apply pesticides only when economic thresholds are met.
 - Apply pesticides at night or within two hours of sunset as this is when bees are least active.
 - Follow best practices for minimizing drift:
 - Use a low-drift nozzle, calibrate spray equipment, and use medium-to-coarse droplet size if possible.
 - Install cones or shrouds on field sprayers to reduce off- field movement.
 - When spraying fields, consider spot spraying or only applying pesticides to infested areas.
 - Select crop pest products with a residual activity of less than 8 hours.
 - Improve foraging areas for bees and other pollinators. Where possible, include flowering plants in non-crop areas. Avoid pesticide drift onto non-crop areas that include floral resources. Leave areas that include these resources intact whenever possible.

References

National Sunflower Association of Canada. Sunflower Production Guide. <http://www.canadasunflower.com/production/sunflower-production-guide/>
U. S. Canola Association. 2019. Best management Practices (BMPS) for Pollinator Protection in Canola Fields. https://www.uscanola.com/wp-content/uploads/2019/07/HBHC_Canola_030119.pdf



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation for all cropland acres on the operation. **<REFER TO STATE SPECIFIC LIST OF POLLINATOR FRIENDLY CROPS>**
- ☐ Prior to implementation, as needed, NRCS can provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ Prior to implementation, provide maps for review by NRCS of the planned crop rotation, including areas which will include the pollinator friendly crops. Each year the enhancement is planned, at least 5% of the cropland acres on the operation must be planted to a pollinator friendly crop.

Current Management Rotation (complete table for each rotation)

Field	Current Crops (in sequence)	Planting Date	Harvest Date

Planned Management Rotation including Pollinator Friendly Crops (complete table for each rotation)

Field	Planned Crops (in sequence)	Planting Date	Harvest Date	Acres in rotation



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, maintain records of any pesticide applications to canola, sunflower or pollinator friendly crops, including timing, material/product, application rate, and crop stage.

Field	Crop	Insecticide Applied	Application Date	Application Rate	Crop Stage

- ☐ During implementation, notify NRCS of any planned changes in crop rotation, pesticide applications, or management to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS for review.
- ☐ After implementation, provide insecticide application records to NRCS for review to verify implementation meets the enhancement criteria.

NRCS will:

- ☐ As needed, provide technical assistance in selecting pollinator crops for the crop rotation or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, verify the crop rotation meets the criteria of the enhancement. *Plan/contract the actual acres planted to canola or sunflower.*
- ☐ During implementation, evaluate any planned changes in crop rotation, pesticide applications, or management to verify the new system meets the enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, if there were any changes to planned rotation or management evaluate the applied crop rotation using information provided from the participant to verify the applied rotation meets the enhancement criteria.
- ☐ After implementation, review pesticide application records to verify implementation meets the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



United States Department of Agriculture

OHIO SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E328M

Diversify crop rotation with canola or sunflower to provide benefits to pollinators

Additional Criteria for Ohio

- Listing of crops in Ohio with benefits to pollinators:
 - Canola
 - Sunflower



CONSERVATION ENHANCEMENT ACTIVITY

E328O

CONSERVATION STEWARDSHIP PROGRAM

Perennial grain crop conservation rotation

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERNS: Soil; Plants

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Establish a perennial grain crop as part of a rotation with two other crops. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plant pest pressures.

Criteria

- Crops shall be grown in a planned sequence. The rotation must include one perennial grain crop with two other crops in rotation. The perennial grain crop will be grown for at least two years after planting.
- Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value, as determined by the Soil Conditioning Index (SCI) calculated using current NRCS wind and water erosion prediction technologies. (management SCI value)
- Design the crop sequence to provide sufficient diversity in plant family and species as well as timing and type of field operations to suppress the pest(s) of concern, which may include weeds, insects, and pathogens. Use land grant university or industry standards to determine a suitable crop sequence.



- Select crops, varieties of crops, and the sequences of crops based on local climate patterns, soil conditions and irrigation water availability. Plan for rotation substitutions for planting delays or crop failures.

CONSERVATION STEWARDSHIP PROGRAM





CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide NRCS with the planned crop rotation including the perennial grain and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- Prior to implementation, verify that the crop rotation includes a perennial grain crop in a minimum three-year crop rotation.
- Prior to implementation, verify the perennial grain crop.



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- Prior to implementation, use the information provided from the participant to calculate the management Soil Conditioning Index (SCI) value using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value.

Management SCI Value = _____ OM subfactor value = _____

- During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- After implementation, if the applied crop rotation is different than the planned crop rotation, use the information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria.

Management SCI Value = _____ OM subfactor value = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name

Contract Number

Total Amount Applied

Fiscal Year Completed

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E328P

CONSERVATION STEWARDSHIP PROGRAM

Low Nitrogen Requirement Annual Crop Rotation

CONSERVATION PRACTICE: 328 - Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil, Water

ENHANCEMENT LIFE SPAN: 1 years

Enhancement Description

Design a planned annual crop rotation which requires less average annual nitrogen fertilizer than the current (benchmark) crop rotation. This is accomplished by replacing high N-requirement annual crops with low N-requirement annual crops. Examples include replacing high N-requirement small grain crops such as spring wheat, with low N-requirement small grain crops (oats or malt barley) or annual legumes. The crop rotation will reduce fertilizer N application, decrease the potential for nitrates to leach to groundwater, maintain soil organic matter, and slow the effects of soil acidification.

Criteria

- Both the benchmark and planned rotation will be grown in a planned sequence and must have a minimum of two different crops. A cover crop is considered a different crop.
- The planned crop rotation must produce a Soil Conditioning Index (SCI) value of greater than or equal to zero, as calculated by the current NRCS wind and water erosion prediction technologies.
- Sufficient residues must be left on the soil surface to prevent potential erosion issues. Use the current NRCS wind and water erosion prediction technologies to calculate residue requirements.



CONSERVATION STEWARDSHIP PROGRAM

- Use Land Grant University guidance and average county crop yields for the past 5 years to determine the N-requirement of each crop in both the benchmark and planned rotations.
- Design the crop sequence to provide sufficient diversity in plant family and species as well as timing and type of field operations to suppress pest(s) of concern, which may include weeds, insects, and pathogens. Use Land Grant University or industry standards to determine a suitable crop sequence.
- Select crops, varieties of crops, and the sequences of crops based on local climate patterns, soil conditions and irrigation water availability. Plan for rotation substitutions, for planting delays, or crop failures.
- Perennials are allowed in both the benchmark and planned rotation; however, they cannot be included in the average annual N-requirement calculation to meet the enhancement criteria.
- Fallow periods are allowed in both the benchmark and planned rotation; however, they cannot be included in the average annual N-requirement calculation to meet the enhancement criteria.

Documentation and Implementation Requirements

Participant will:

- ☐ Provide NRCS with the current (benchmark) and a suggested planned annual crop rotation.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.

NRCS will:

- ☐ As needed, provide technical assistance in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- ☐ Calculate the 5-year average county yield for each crop in both the benchmark and planned rotation. If this information is not available, consult with LGU personnel to make an informed decision.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Calculate the average annual LGU nitrogen requirement for the benchmark and planned rotations based on the crops and their 5-year county yield averages. Fill in the tables below with this information.
- ☐ Verify that the average annual nitrogen requirement of the planned rotation is less than the average annual nitrogen requirement of the benchmark rotation.
- ☐ Prior to implementation, verify that both the benchmark and planned crop rotation include at least two different crops.
- ☐ Prior to implementation, use the information provided from the participant to calculate the average annual erosion and Soil Conditioning Index (SCI) using current NRCS wind and water erosion prediction technologies. The planned crop rotation must produce an SCI value of greater than or equal to 0, and the average annual erosion must be at or below T.

Average Annual Erosion (ton/ac/yr) = _____ SCI value = _____

Benchmark Rotation and N Requirement

Field: _____ Acres: _____

Current Annual Crops (in sequence) (Do not include fallow or perennial crops)	5-year County Average Yield	LGU Nitrogen Requirement (lb/ac)
Total Rotation N Requirement		
AVERAGE ANNUAL N REQUIREMENT (Total/Rotation Years)		



CONSERVATION STEWARDSHIP PROGRAM

Planned Rotation and N Requirement

Field: _____ Acres: _____

Planned Annual Crops (in sequence) (Do not include fallow or perennial crops)	5-year County Average Yield	LGU Nitrogen Requirement (lb/ac)
Total Rotation N Requirement		
AVERAGE ANNUAL N REQUIREMENT (Total/Rotation Years)		

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crop rotation is different than the planned crop rotation, use the information provided from the participant to re-calculate the average annual N requirement, average annual erosion, and SCI values to document that the applied rotation met the enhancement criteria.

Re-calculated Average Annual Erosion (ton/ac/yr) = _____ SCI value = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____

Contract Number _____

Total Amount Applied _____

Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E329A

CONSERVATION STEWARDSHIP PROGRAM

No till to reduce soil erosion

Conservation Practice 329: Residue & Tillage Management, No Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish no till system to reduce sheet and rill and wind erosion soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water and wind erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 10 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to calculate soil loss and STIR.

Criteria

- Residue shall not be burned.
- All residues shall be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Field(s) must have a soil loss at or below the soil tolerance (T) level for water and wind erosion for the crop rotation (average annual soil loss).
- No full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- The Soil Tillage Intensity Rating value must include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow



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periods). Each crop must have a Soil Tillage Intensity Rating value of no greater than 10.

- Use the current approved water and wind erosion prediction technology to determine the:
 - amount of randomly distributed surface residue needed;
 - time of year the residue needs to be present in the field, and
 - amount of surface soil disturbance allowed to reduce erosion to the desired level.
- Calculations must account for the effects of other practices in the management system.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use information provided from the participant to calculate the soil loss and the Soil Tillage Intensity Rating values using current NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a soil loss at or



CONSERVATION STEWARDSHIP PROGRAM

below the soil tolerance (T) level for water and wind erosion for the crop rotation and a Soil Tillage Intensity Rating value of no greater than 10 for each crop in the planned rotation.

"T" = _____ t/ac/year Soil erosion = _____ t/ac/year STIR values = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil loss and the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.

Soil erosion = _____ t/ac/year and STIR values = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E329B

CONSERVATION STEWARDSHIP PROGRAM

No till to reduce tillage induced particulate matter

Conservation Practice 329: Residue and Tillage Management, No Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Air

PRACTICE LIFE SPAN: 1 Year

Enhancement Description

Establish no till system to reduce tillage induced particulate matter. Field(s) must have a soil loss at or below the soil tolerance (T) level for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 10 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to document soil loss and STIR calculations.

Criteria

- Residue shall not be burned.
- All residues shall be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Field(s) must have an average annual soil loss at or below the soil tolerance (T) level for the crop rotation.
- No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation. The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination



of the current cash crop (includes fallow periods). Each crop must have a STIR value of no greater than 10.

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- Use the current approved water and/or wind erosion prediction technology to determine the:
 - amount of randomly distributed surface residue needed;
 - time of year the residue needs to be present in the field, and
 - amount of surface soil disturbance allowed to reduce erosion to the desired level.
- Calculations shall account for the effects of other practices in the management system.



Documentation and Implementation Requirements

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue shall be burned.
- ☐ During implementation, all residues shall be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, verify that the field to be established in no-till has a soil loss at or below the soil tolerance (T) level for water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 10 for each crop in the planned rotation.
"T" = _____ t/ac/year Soil erosion = _____ t/ac/year STIR values = _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil loss and the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.
Soil erosion = _____ t/ac/year and STIR values = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



CONSERVATION ENHANCEMENT ACTIVITY

E329C

CONSERVATION STEWARDSHIP PROGRAM

No till to increase plant-available moisture

Conservation Practice 329: Residue & Tillage Management, No Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a no till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.

Criteria

- Residue shall not be burned.
- All residues shall be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation. The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value shall be no greater than 20.



- Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.

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Documentation and Implementation Requirements

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ During implementation, maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS.



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NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and estimated surface residue cover using the NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a Soil Tillage Intensity Rating value of no greater than 20 for each crop in the planned rotation, and the estimated surface residue cover.
STIR values for each crop in the rotation = _____
Estimated surface residue cover for each crop in the rotation = _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to the Soil Tillage Intensity Rating value, and estimated surface residue cover to document that the applied rotation met the enhancement criteria.
STIR values for each crop in the rotation = _____
Estimated surface residue cover for each crop in the rotation = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E329D

CONSERVATION STEWARDSHIP PROGRAM

No till system to increase soil health and soil organic matter content

Conservation Practice 329: Residue & Tillage Management, No Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a no till system to increase soil health and soil organic matter content. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The crop rotation must achieve a soil conditioning index (SCI) of zero or higher. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. Residue shall not be burned, grazed, or harvested.

Criteria

- All residues must be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Residue must not be burned, grazed, or harvested.
- No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation. The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value shall be no greater than 20.



- Evaluation of the cropping system (management) using the current approved soil conditioning index (SCI) procedure results in zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation.

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CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned, grazed, or harvested.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied crop rotation for the contract period and provide to NRCS.



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NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use information provided from the participant to calculate the Soil Tillage Intensity Rating (STIR) values using NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a Soil Tillage Intensity Rating value of no greater than 20 for each crop in the planned rotation.

STIR values for each crop = _____

- ☐ Prior to implementation, use information provided from the participant and the approved soil conditioning index (SCI) procedure to verify the SCI is zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation. **SCI value = _____ and OM subfactor value = _____**

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.

- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.

STIR values for each crop = _____

- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil conditioning index (SCI) and Organic Matter (OM) subfactor values to document that the applied rotation met the enhancement criteria. **SCI value = _____ and OM subfactor value = _____**

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E329E

CONSERVATION STEWARDSHIP PROGRAM

No till to reduce energy

Conservation Practice 329: Residue & Tillage Management, No Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Energy

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a no till system which reduces total energy consumption associated with field operations by at least 25% compared to current tillage system (benchmark). Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations and energy consumption.

Criteria

- Residue shall not be burned.
- All residues must be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- The Soil Tillage Intensity Rating (STIR) value must include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). Each crop must have a STIR value no greater than 20.



- Reduce the total energy consumption associated with field operations by at least 25% compared to the current benchmark tillage system. Use the current NRCS wind and water erosion prediction technologies for determining energy use to document energy use reductions.

CONSERVATION STEWARDSHIP PROGRAM





CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current (benchmark) and planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Current (Benchmark) Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Current (Benchmark) Field Operation	Timing of Field Operation (month/year)

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Planned Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.



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- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no full-width tillage may be performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ During implementation, reduce the total energy consumption associated with field operations by at least 25% compared to the current benchmark tillage system.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use the information provided from the participant to calculate the Soil Tillage Intensity Rating values and energy consumption for both the current system and the planned system using the approved NRCS wind and water erosion prediction technologies. Verify the Soil Tillage Intensity Rating value is no greater than 20 for each crop in the planned rotation and total energy consumption is reduced by at least 25%.

Current STIR values = _____ and Energy Consumption = _____

Planned STIR values = _____ and Energy Consumption = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes were made to the planned crop(s), crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and total energy consumption to document that the applied rotation met the enhancement criteria.

Applied STIR values = _____ and Energy Consumption = _____



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E329F

CONSERVATION STEWARDSHIP PROGRAM

No-till into green cover crops to improve soil organic matter quantity and quality

Conservation Practice 329: Residue and Tillage Management, No-Till

APPLICABLE LAND USE: Crop (Annual and Mixed), Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Prepare fields using appropriate site preparation to establish a no till, planting green system to increase soil health and soil organic matter content. Planting green methods will be used to maximize the benefits of the cover crop by leaving the cover crop in place for an extended growing period. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. The health of the soil will be monitored using the In-Field Soil Health Assessment and through a laboratory analysis.

Criteria

- All residues must be uniformly distributed over the entire field.
- Residue must not be burned, grazed, or harvested.
- Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- The crop rotation must achieve a soil conditioning index (SCI) of zero or higher. If there is a planned change in crop rotation, the planned crop rotation must have an SCI greater than the current crop rotation.



CONSERVATION STEWARDSHIP PROGRAM

- Evaluation of the cropping system (management) using the current approved soil conditioning index (SCI) procedure results in zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation.
- Use the Cropland In-Field Soil Health Assessment Guide to record the benchmark conditions prior to adopting no-till green planting in Year 1. During Year 3, a follow up assessment for soil health with laboratory testing will be completed. Soil samples will be collected and tested for soil organic carbon content measured by dry combustion and carbon mineralization potential measure by 24 hour carbon dioxide burst OR permanganate-oxidizable carbon laboratory methods.
- The current version of the NRCS Cover Crop Termination Guidelines must be followed to ensure the next crop is eligible for crop insurance. Risk Management Agency's Good Farming Practices Handbook indicates that following NRCS 340 Cover Crop and the Termination Guidelines are acceptable practices. In some zones, an agreement with the insurer may be needed, check with local crop insurance provider.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

- ☐ Provide NRCS with the planned crop rotation and tillage operation(s) used for each crop prior to implementation using the following tables. If the implemented rotation differs from the planned rotation, provide NRCS with updated tables.

Field	Acres	Planned Crops (in sequence)	Length of Rotation (years)

Field	Crop	Field Operation	Timing of Operation (month/year)

- ☐ Notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ Collect soil samples in the area of field where this enhancement action has been applied. Follow the soil sample collection protocol for soil health assessments as outlined in Tech Note 450-3. Submit for laboratory analysis.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Provide laboratory test results and sampling locations to NRCS for interpretation by e-mailing the data to SoilHealthTest@usda.gov
- ☐ Will not burn, graze, or harvest residues.
- ☐ Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ Not use any full-width tillage from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ After implementation, provide NRCS with representative pictures of the implemented enhancement as well as the following information:

Crop	Height of Cover Crop When Planting (inches)	Mechanical Termination Methods Used	Chemical Methods Used	Days Between Cover Crop Termination and Planting of Cash Crop



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ Provide technical assistance to meet the criteria of the enhancement, as needed.
- ☐ Provide participant with current NRCS Cover Crop Termination Guidelines.
- ☐ Prior to implementation, evaluate the field condition using the Cropland In-Field Soil Health Assessment.
- ☐ Prior to implementation, use information provided by the participant to calculate the Soil Tillage Intensity Rating (STIR) values using NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a Soil Tillage Intensity Rating value of no greater than 20 for each crop in the planned rotation.

Crop	STIR Value Planned	STIR Value Implemented (if different than planned)

- ☐ Prior to implementation, use information provided from the participant and the approved soil conditioning index (SCI) procedure to verify the SCI is zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation. If the crop rotation is changing, the planned rotation must have a higher SCI than the original crop rotation. If the implemented rotation differs from the planned rotation, note the values below.

Planned SCI value = _____ and Planned OM Subfactor Value = _____

Implemented SCI value = _____ and Implemented OM Subfactor Value = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria. After implementation, if the applied



CONSERVATION STEWARDSHIP PROGRAM

crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria. STIR values for each crop = _____

- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil conditioning index (SCI) and Organic Matter (OM) subfactor values to document that the applied rotation met the enhancement criteria.
- ☐ Review soil health assessment lab test results and SHAPE interpretation with the participant.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E334A

CONSERVATION STEWARDSHIP PROGRAM

Controlled traffic farming to reduce compaction

Conservation Practice 334: Controlled Traffic Farming

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 5 Year

Enhancement Description

Establish a controlled traffic system where no more than 25% of the surface is tracked with heavy axle loads to minimize soil compaction. For row crops (e.g. corn in 30-inch rows) no tire should run on a row except for flotation tires on combines and/or fertilizer and lime spreading trucks. If wide flotation tires are used, they must be big enough that the inflation pressure will be below 18 psi to minimize compaction on trafficked rows.

Criteria

- Ensure that controlled traffic lanes are designed and used in a manner that avoids concentrated flow that may result in gully erosion.
- Limit wheel/track traffic to no more than 25 percent of the soil surface. The same tracks must be used for all high load traffic continually. High wheel load traffic is defined here as any tire or track that bears a load higher than 6,000 pounds at 30 psi or 6 tons per axle.
- For row crops (e.g. corn in 30-inch rows) no tire should run on a row except for flotation tires on combines and/or fertilizer and lime spreading trucks.
- If wide flotation tires are used, they must be big enough that the inflation pressure will be below 18 psi to minimize compaction on trafficked rows.



- Use a Geographic Positioning System (GPS) to guide field operations and wheeled/track traffic when the designated traffic lanes are obscured.
- Once the tram lines or traffic pattern is established, do not till deeper than 4 inches.

CONSERVATION STEWARDSHIP PROGRAM





CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, develop a plan to limit wheel/track traffic to no more than 25 percent of the soil surface.
- ☐ Prior to implementation, complete the following table to provide the current and any planned changes to crop row width.

Crops in Rotation (shown in sequence)	Current Crop Row Width	Planned Crop Row Width

- ☐ Prior to implementation, complete the following table to provide the current equipment width and spacing used for the above crop rotation.

Equipment Used in Crop Rotation	Width of Equipment (feet)	Tire/Track Spacing (on-center Inches)

- ☐ Prior to implementation, complete the following table to provide any planned changes to equipment width and spacing used for the above crop rotation.

Equipment used in Crop Rotation	Width of equipment (feet)	Tire/Track spacing (on-center Inches)



CONSERVATION STEWARDSHIP PROGRAM

Equipment used in Crop Rotation	Width of equipment (feet)	Tire/Track spacing (on-center Inches)

- ☐ During implementation, the same tracks must be used for all high load traffic continually. High wheel load traffic is any tire or track that bears a load higher than 6,000 pounds at 30 psi or 6 tons per axle.
- ☐ During implementation, use a Geographic Positioning System (GPS) to guide field operations and wheeled/track traffic when the designated traffic lanes are obscured.
- ☐ During implementation, once the tram lines or traffic pattern is established, do not till deeper than 4 inches.
- ☐ During implementation, if ruts develop, use tillage or other specialized equipment to remove ruts and reestablish controlled traffic lanes.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, verify the developed plan will limit wheel/track traffic to no more than 25 percent of the soil surface. **Percent wheel/track traffic =** _____
- ☐ Prior to implementation, ensure that controlled traffic lanes are planned and implemented in a manner that avoids concentrated flow that may result in gully erosion.
- ☐ After implementation, verify the plan was implemented to limit wheel/track traffic to no more than 25 percent of the soil surface. **Percent wheel/track traffic =** _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

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United States Department of Agriculture

Total Amount Applied _____
Fiscal Year Completed _____

CONSERVATION STEWARDSHIP PROGRAM

NRCS Technical Adequacy Signature

Date





CONSERVATION ENHANCEMENT ACTIVITY

E338A

CONSERVATION STEWARDSHIP PROGRAM

Strategically planned, patch burning for grazing distribution and wildlife habitat

Conservation Practice 338: Prescribed Burning

APPLICABLE LAND USE: Forest, Pasture, and Range

RESOURCE CONCERN: Plants

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Patch burn grazing is the application of prescribed fires on portions of an identified grazing unit at different times of the year. Patch burn grazing allows grazing animals to select where they want to graze creating a mosaic of vegetation structures and diversity that will maintain or enhance the wildlife habitat desired for the identified wildlife species and maintain livestock production.

Criteria

Each burn event will cover 10% to 50% of any grazing unit's acreage. Subsequent individual burn events will occur during different seasons (as defined by the state NRCS office), whether conducted during the same year or a subsequent year as the prior burn event.

The following examples are to be used for illustration purposes only:

- Grazing unit A is burned in March. Another part of grazing unit A is burned in August of the same year.
- Grazing unit A is burned in March. Grazing unit B is burned in August two years later.
- Grazing unit A is burned in March. Grazing unit C is burned in August of the same year.
- At least two burn applications will be applied during the contract period.



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- Annual application by burning different patches each year or different patches in different seasons in one year is acceptable and desirable for many wildlife species.
- Prescribed burning will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by the state's NRCS Wildlife Habitation Evaluation Guide (WHEG).
- Conduct treatments during periods of the year that accommodate reproduction and other life-cycle requirements of target wildlife and pollinator species.
- Evaluate wildlife habitat with the state NRCS Wildlife Habitat Evaluation Guide (WHEG) and manage for a WHEG value of 0.60 or greater.
- A written prescribed burn plan for each burn that meets or exceeds NRCS Conservation Practice Standard Prescribe Burning (Code 338) criteria.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- Y Prior to implementation, obtain a written grazing plan with guidelines and recommendations for matching the forage quantity and quality produced with the grazing and/or browsing demand and clearly identify the wildlife species of concern for the area that includes a Wildlife Habitat Evaluation Guide.
- Y Prior to implementation, obtain a written prescribed burn plan with map delineating the areas that will be burned, burn prescription, timing of burn, and method of burn.
- Y During implementation, keep grazing/herd in/out records,
- Y During implementation, keep prescribed burn documentation such as date, weather conditions, etc.
- Y After implementation, make the following items available for review by NRCS to verify implementation of the enhancement:
 - o Written grazing plan, including Wildlife Habitat Evaluation Guide with before and after evaluation values.
 - o Grazing /herd in/out records
 - o Prescribed burn plan with documentation of conditions during implementation.

NRCS will:

- Y Prior to implementation, provide and explain NRCS Conservation Practice Standard Prescribed Burning (Code 338) as it relates to implementing this enhancement.
- Y As needed, provide technical additional assistance to the participant as requested.
- Y After implementation, complete forage utilization jobsheet for NRCS Conservation Practice Standard Prescribed Grazing (Code 528).
- Y After implementation, verify implementation of the written grazing plan, by reviewing plan and grazing/herd in/out records kept during enhancement implementation.



CONSERVATION STEWARDSHIP PROGRAM

Y After implementation, verify the completed and certified Wildlife Habitat Evaluation Guide (WHEG) has a total score after implementation of equal or greater than 0.60.

WHEG score after = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E338B

CONSERVATION STEWARDSHIP PROGRAM

Short-interval burns to promote a healthy herbaceous plant community

Conservation Practice 338: Prescribed Burning

APPLICABLE LAND USE: Range, Forest, Associated Ag Land

RESOURCE CONCERN: Animals, Plants

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description:

The controlled use of fire is applied in a forest to restore fire-adapted plants and forage while improving wildlife habitat, wildlife food supply, and reducing the risk of damage from intense, severe wildfires. The ideal interval between prescribed burns is not often achieved. To improve the effectiveness of prescribed burning, the frequency of prescribed burning is increased appropriately, for a specified time period, to help restore ecological conditions in forests and woodlands. Short return interval prescribed burning is used to regenerate desirable tree species, improve the condition of fire-adapted plants and native herbaceous vegetation, improve wildlife food supply and forage quantity and quality, create wildlife habitat (snags and den/cavity trees), limit encroachment of competing vegetation including non-native species, and reduce the future risk of damage from intense, severe wildfires.

Criteria:

- States will apply general criteria from the NRCS National Conservation Practice Standard Prescribed Burning (Code 338) as listed below, and additional criteria as required by the NRCS State Office.
- Update the Prescribed Burning Plan or other Prescribed Burn prescription, in consultation with NRCS personnel to address restoration needs for fire-adapted vegetative communities and forages on the property.



CONSERVATION STEWARDSHIP PROGRAM

- Assess the need for pre-treatment of vegetation and fuels, and for application of complementary NRCS Conservation Practice Standards such as Fuel Break (Code 383), Firebreak (Code 394), and Woody Residue Treatment (Code 384).
- Apply to sites where prescribed burning has previously been implemented at longer intervals than recommended to maintain the desired plant community, and where burn frequency must be increased to achieve the objectives listed in the enhancement description.
- The prescribed burning frequency will be increased (i.e., the burn interval will be reduced) from the previous regimen to an interval appropriate for the target plant community.
- Assess the existing fuel load using appropriate tools and methods for the geographic area.
- If invasive plants are present, utilize methods and timing that will prevent or control their spread.
- A written burn plan must be developed, and all necessary approvals secured prior to conducting a prescribed burn. The plan will include the following components at a minimum:
 - The objectives of the burn and the expected post-burn conditions.
 - Maps, images and/or descriptions of the proposed burn area and any associated or adjacent smoke sensitive areas.
 - Inventory of available fuels.
 - Required weather and fuel conditions under which the burn will be conducted.
 - Firing sequence and methods.
 - List of equipment and personnel needed and job assignments.
 - Any pre-burn preparation needed to safely and effectively conduct the prescribed burn.
 - List of appropriate authorities, agencies, departments, individuals, and facilities to be contacted and necessary signatures of approval.
 - Checklist for a post-burn evaluation.

Burning criteria

- Follow all components of the burn plan.
- A current fire weather forecast is required prior to conducting a prescribed burn. Collect weather parameters and other data that affect fire behavior for the day of the burn and monitor the appropriate weather parameters during the burn. Weather conditions outside those prescribed in the written plan will result in postponement or cessation of the burn.



Grazing criteria

- If grazing is used in combination with prescribed burning to manage understory vegetation, a grazing plan must be in place and be used to guide the frequency and duration of grazing periods.

CONSERVATION STEWARDSHIP PROGRAM



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

- ☐ Prior to implementation, identify sites where at least one application of prescribed burning was implemented at longer burn intervals (i.e., insufficient frequency) than recommended for the target plant community by an existing prescribed burn plan or other habitat management plan. (NRCS will provide technical assistance, as needed)
- ☐ Prior to implementation, identify and document those sites in need of restoration of fire-adapted vegetative communities and forages where increased burn frequency will achieve the objectives listed in the enhancement description. (NRCS will provide technical assistance, as needed)
 - ☐ If grazing is used in combination with prescribed burning to manage understory vegetation, develop or update a grazing plan prior to implementation to guide the frequency and duration of grazing periods in accordance with the objectives of the enhancement description. Provide a copy to NRCS.
- ☐ Prior to implementation, assess the existing fuel load using appropriate tools and methods for the geographic area. Determine the need for pre-treatment of the vegetation and fuels to facilitate a desired fire intensity to achieve the enhancement objectives. Use complimentary practices as needed, such as NRCS Conservation Practice Standards Fuel Break (Code 383), Firebreak (Code 394) and Woody Residue Treatment (Code 384) to achieve appropriate conditions. (NRCS will provide technical assistance, as needed.)
- ☐ Prior to implementation, acquire a written burn plan for the enrolled land use acres that meets the enhancement criteria and any additional state NRCS requirements. Provide to NRCS for approval.
- ☐ Prior to implementation of a prescribed burn, acquire all necessary approvals and permits (local, state, federal as applicable).
- ☐ During implementation, and prior to ignition of each prescribed burn, acquire a current fire weather forecast and ensure all weather conditions are within those prescribed in the written burn plan. If conditions are not within prescription, postpone burn.
- ☐ During implementation, and prior to ignition of any prescribed burn, notify NRCS to confirm NRCS verification for any planned changes will meet NRCS or State required enhancement criteria.
- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)



CONSERVATION STEWARDSHIP PROGRAM

- ❑ After implementation of each prescribed burn, conduct a post-burn evaluation as required within the burn plan and provide to NRCS.

NRCS will:

- ❑ Prior to Implementation, as needed, provide technical assistance in determining sites for enhancement implementation that meet specified criteria.
- ❑ Prior to implementation, as needed, provide explanation and technical assistance in interpreting the following NRCS Conservation Practice Standards as they relate to implementing this enhancement:
 - Prescribed Burning (Code 338)
 - Fuel Break (Code 383)
 - Firebreak (Code 394)
 - Woody Residue Treatment (Code 384)
 - Additional Conservation Practice Standards for erosion control, as needed for the site.
- ❑ Prior to implementation, review and certify the prescribed burn plan meets the enhancement criteria and any additional state NRCS requirements.
- ❑ (If livestock are used) Prior to implementation, review the prescribed grazing plan to ensure objectives of the enhancement will be met when used in combination with prescribed burning.
- ❑ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ❑ After implementation of each prescribed burn, review the post burn evaluation provided by the participant. Discuss any issues that may have occurred, and provide assistance as needed in adjusting plans and procedures to improve future prescribed burns.



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

**CONSERVATION
STEWARDSHIP
PROGRAM**

E338B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E338B the following additional criteria apply in Ohio:

- This enhancement will be used where prescribed burning has been used at intervals greater than 8 years.
- Burns under this enhancement will be conducted at intervals of 3 to 5 years.

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio.

NOTE: NRCS will not prepare or assist in the preparation of burn plan for this enhancement. NRCS will provide information such as the 338-Prescribed Burning Ohio CPS to the applicant.

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CONSERVATION ENHANCEMENT ACTIVITY

E338C

CONSERVATION STEWARDSHIP PROGRAM

Sequential patch burning

Conservation Practice 338: Prescribed Burning

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Conduct prescribed burning beneath a forest canopy (ground fire), burning a portion of the area each year to create a mosaic of vegetation in several stages of development to provide a more diverse understory and contribute to wildlife habitat. The health of conifer and oak-conifer forests, particularly longleaf pine with a characteristic herbaceous understory, is dependent on fire or another means of controlling encroaching woody vegetation. A healthy longleaf or shortleaf pine, or pine-oak forest, can support a wide array of wildlife including pollinators and several endangered or threatened species.

Criteria

- States will apply the general criteria from the NRCS National Conservation Practice Standard Prescribed Burning (Code 338) as listed below, and additional criteria as required by the NRCS State Office.
- Apply to conifer forests of species that are adapted to frequent low-intensity ground fires, where undesirable understory vegetation has encroached.
- Selected areas of the enrolled land use acres will be underburned annually for a minimum of three consecutive years to create a mosaic of vegetation in different stages of development.
- Re-burning of already-burned areas during the cumulative year period is prohibited.



CONSERVATION STEWARDSHIP PROGRAM

- Over the cumulative year period (three or more years) all acres will be underburned.
- Prior to the burn, assess the existing fuel load. Determine the need for pre-treatment of vegetation and fuels, and for application of complementary NRCS Conservation Practice Standards such as Fuel Break (Code 383), Firebreak (Code 394), and Woody Residue Treatment (Code 384).
- If invasive plants are present, utilize methods and timing that will prevent or control their spread.
- A written burn plan must be developed, and all necessary approvals secured prior to conducting a prescribed burn. The plan will include the following components at a minimum:
 - Objectives of the burn and expected post-burn conditions.
 - Maps, images and/or descriptions of the proposed burn area and any associated or adjacent smoke sensitive areas.
 - Inventory of available fuels.
 - Required weather and fuel conditions under which the burn will be conducted.
 - Firing sequence and methods.
 - List of equipment and personnel needed and job assignments.
 - Any pre-burn preparation needed to safely and effectively conduct the burn
 - List of appropriate authorities, agencies, departments, individuals, and facilities to be contacted and necessary signatures of approval.
 - Checklist for a post-burn evaluation.
- Burning criteria:
 - Follow all components of the burn plan.
 - A current fire weather forecast is required prior to conducting a prescribed burn. Collect weather parameters and other data that affect fire behavior for the day of the burn and monitor the appropriate weather parameters during the burn. Weather conditions outside those prescribed in the written plan will result in postponement or cessation of the burn.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

- ☐ Prior to implementation, identify and document sites dominated by conifer forests adapted to low-intensity ground fires that when properly applied will improve understory diversity for wildlife habitat and control undesirable encroaching vegetation. (NRCS will provide technical assistance, as needed)
- ☐ Prior to implementation, differentiate the enrolled acres into no fewer than 3 units, one to be burned each year, to create a mosaic of vegetation in different stages of development.
- ☐ Prior to implementation, assess the existing fuel load and determine the need for pre-treatment of the vegetation and fuels to facilitate a low-intensity ground fire. As needed, apply complimentary conservation practices such as NRCS Conservation Practice Standards Fuel Break (Code 383), Firebreak (Code 394) and Woody Residue Treatment (Code 384) to achieve appropriate conditions. (NRCS will provide technical assistance, as needed)
- ☐ Prior to implementation, acquire a written burn plan for the enrolled land use acres that meets the enhancement criteria and any additional state NRCS requirements. Provide to NRCS for review and written approval.
- ☐ Prior to implementation of a prescribed burn, acquire all necessary approvals and permits (i.e. local, state, federal as applicable).
- ☐ During implementation, and prior to ignition of each prescribed burn, acquire a current fire weather forecast and ensure all weather conditions are within those prescribed in the written burn plan. If conditions are not within the prescription, postpone burn.
- ☐ During implementation, and prior to ignition of any prescribed burn, notify NRCS to confirm NRCS verification for any planned changes will meet NRCS or State required enhancement criteria.
- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ After implementation of each prescribed burn, conduct a post-burn evaluation as required within the burn plan and provide evaluation documentation to NRCS.

NRCS will:

- ☐ Prior to implementation and as needed, provide technical assistance in determining sites for enhancement implementation that meet specified criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation and as needed, provide explanation and technical assistance to the following NRCS Conservation Practice Standards as they relate to implementing this enhancement:
 - ☐ Prescribed Burning (Code 338)
 - ☐ Fuel Break (Code 383)
 - ☐ Firebreak (Code 394)
 - ☐ Woody Residue Treatment (Code 384)
 - ☐ Additional Conservation Practice Standards for erosion control, as needed for the site.
- ☐ Prior to implementation, review and certify the prescribed burn plan meets the enhancement criteria and any additional state NRCS requirements.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation of each prescribed burn, review the post burn evaluation provided by the participant. Discuss any encountered issues, and as needed, provide assistance for changes in planning and procedure for the remaining prescribed burns.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



CONSERVATION ENHANCEMENT ACTIVITY

E340A

CONSERVATION STEWARDSHIP PROGRAM

Cover crop to reduce soil erosion

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Cover crop added to current crop rotation to reduce soil erosion from water and wind to below soil tolerance (T) level. Cover crops grown during critical erosion period(s). Species are selected that will have physical characteristics to provide adequate erosion protection.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions (**REFER TO STATE SPECIFIC LISTS**). Determine method and timing of termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.
- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with production crop yield or harvest.
- Do not burn cover crop residue.
- Do not harvest or graze cover crop.



CONSERVATION STEWARDSHIP PROGRAM

- If specific rhizobium bacteria for selected legumes are not present in the soil, treat seed with appropriate inoculum at time of planting.
- Time cover crop establishment in conjunction with other practices to adequately protect soil during critical erosion period(s).
- Select cover crops that will have the physical characteristics necessary to provide adequate erosion protection.
- Use NRCS erosion prediction technology to determine amount of surface and/or canopy cover needed from cover crop to achieve the erosion objective (average annual soil loss below T).
- Crops planted following the cover crop must be no-tilled.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current planned crop rotation, cover crop information, and field operation(s) used for each crop.

Current Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Current Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date



CONSERVATION STEWARDSHIP PROGRAM

Planned Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, cover crops must not be burned, grazed or harvested.
- ☐ During implementation, the crop following the cover crop must be no till seeded.



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- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, use information provided from the participant to calculate the management sheet and rill erosion from water and wind erosion value for each field using current NRCS water erosion prediction technologies.

Benchmark Management Soil Loss = _____ tons/acre/year

Planned Management Soil Loss = _____ tons/acre/year

- ☐ During implementation, evaluate any planned changes to cover crop mix, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied cover crop in the crop rotation or management using information provided from the participant, if any variation to planned evaluation, then calculate erosion values to document that the applied rotation met the enhancement criteria.

Applied Management Soil Loss = _____ tons/acre/year



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340A the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document (before and after) soil erosion estimate, crop year STIR and SCI calculations (as needed). Also print before and after management files from RUSLE 2 to document benchmark and planned crop rotation.

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CONSERVATION ENHANCEMENT ACTIVITY

E340B

CONSERVATION STEWARDSHIP PROGRAM

Intensive cover cropping to increase soil health and soil organic matter content

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Implementation of cover crop mix to provide soil coverage during ALL non-crop production periods in an annual crop rotation. Cover crop shall not be harvested or burned. Planned crop rotation including cover crops and associated management activities must achieve a soil conditioning index (SCI) of zero or higher. The current NRCS wind and water erosion prediction technologies must be used to document SCI calculations.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Determine the method and timing of termination to meet the grower's objective and the current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.



CONSERVATION STEWARDSHIP PROGRAM

- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with the production crop yield or harvest.
- Do not burn cover crop residue.
- Do not harvest the cover crop.
- If the specific rhizobium bacteria for the selected legume are not present in the soil, treat the seed with the appropriate inoculum at the time of planting.
- Cover crop must provide soil coverage during all non-crop production periods to the maximum extent possible considering the cropping system, climate, and soils in the annual crop rotation. **(STATES SHALL PREPARE GUIDANCE FOR THEIR LOCAL CLIMATES AND CROPPING SYSTEMS.)**
- Minimum 3 species mix will be selected on the basis of producing higher volumes of organic material and root mass to maintain or increase soil organic matter.
- Planned crop rotation including cover crops, biomass produced, and associated management activities must achieve a management soil conditioning index (SCI) of zero or higher and result in a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Current Management Rotation

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Current Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date



CONSERVATION STEWARDSHIP PROGRAM

Planned Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).

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CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, cover crops must not be burned or harvested.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, verify the cover crop mix has a minimum of 3 species.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, use the information provided from the participant to calculate the management Soil Conditioning Index (SCI) and Organic Matter (OM) sub factor value over the life of the rotation. Cover crop must increase SCI and OM sub factor from the current/benchmark condition and SCI value must be 0 or greater and have a positive trending OM subfactor over the life of the rotation.

Benchmark Management SCI = _____, Benchmark Management OM sub factor = _____

Planned Management SCI = _____, Planned Management OM sub factor = _____

- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, then calculate SCI values to document that the applied rotation met the enhancement criteria.

Applied Management SCI = _____, Applied Management OM sub factor = _____

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NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name: _____ Contract Number: _____

Total Acres Applied: _____ Fiscal Year Completed: _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340B the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).
- Cover crop must provide soil coverage during all non-crop production periods to the maximum extent possible considering the cropping system, climate, and soils in the annual crop rotation.
 - In Ohio non-crop periods are any period greater than 45 days between the planned harvest date and the planned planting date of the next crop. If the period is greater than 45 days a cover crop is to be implemented to the criteria in the National job sheet E340106z1

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, crop year STIR and SCI calculations (as needed).

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CONSERVATION ENHANCEMENT ACTIVITY

E340C

CONSERVATION STEWARDSHIP PROGRAM

Use of multi-species cover crop to improve soil health and increase soil organic matter

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial), Pasture

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Implement a multi-species cover crop to add diversity and increase biomass production to improve soil health and increase soil organic matter. Cover crop mix must include a minimum of 4 different species. The cover crop mix will increase diversity of the crop rotation by including crop types currently missing, e.g. Cool Season Grass (CSG), Cool Season Broadleaves (CSB), Warm Season Grasses (WSG), Warm Season Broadleaves (WSB).

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions (**REFER TO STATE SPECIFIC LISTS**).
- Determine the method and timing of termination to meet the grower's objective and the current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.



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- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with the production crop yield or harvest.
- Do not burn cover crop residue.
- Do not harvest the cover crop.
- If the specific rhizobium bacteria for the selected legume are not present in the soil, treat the seed with the appropriate inoculum at the time of planting.
- Cover crop must provide soil coverage during all non-crop production periods to the maximum extent possible considering the cropping system, climate, and soils in the annual crop rotation. **(STATES SHALL PREPARE GUIDANCE FOR THEIR LOCAL CLIMATES AND CROPPING SYSTEMS)**
- The crop rotation, to include the cover crop species, shall consist of the four crop types: Cool Season Grass (CSG), Cool Season Broadleaves (CSB), Warm Season Grasses (WSG), and Warm Season Broadleaves (WSB). The multi-species cover crop mix must include at least 4 different species, of those 4 species at least two of them must be from one or more of the crop types needed to fill in the missing crop types in the crop rotation. The cover crop mix will increase diversity of the crop rotation.
- Planned crop rotation including cover crops, biomass produced, and associated management activities must achieve a management soil conditioning index (SCI) of zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation.

Additional criteria when livestock are included in the system:

Cover Crops may only be grazed in a manner that retains or enhances the purpose of increasing soil organic matter.

- A grazing plan must be developed to document livestock management. Plan must include at a minimum a forage estimate and livestock inventory for all fields implementing this



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enhancement that will be grazed. For soil health benefits, utilization by livestock must be less than 50% of available cover crop forage.

- Before cover crops are grazed, they must have produced enough biomass to allow for grazing while maintaining soil health benefits. Cover crops that are planted in late fall will not typically be well enough established, however if stands are adequate cover crops may be grazed in the spring prior to termination.
- Different cover crop species have varying tolerances to grazing; this should be taken into consideration when developing cover crop seeding specifications.
- Grazing shall not occur during wet soil conditions.
- Some pesticides have restrictions on grazing following application (up to 18 months). Refer to pesticide labels.



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Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Current Management Rotation

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Current Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date



CONSERVATION STEWARDSHIP PROGRAM

Planned Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Cover Crop Mix (minimum of 4 species and 2 different crop types) and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)	Crop Type (CSG, CSB, WSG, WSB)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	
Grazing Management, as needed	



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- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, if livestock are included in the system consider cover crop species tolerant to grazing.
- ☐ Prior to implementation, if livestock are included in the system develop a grazing plan which must document livestock management. Plan must include at a minimum a forage estimate and livestock inventory for all fields implementing this enhancement that will be grazed. For soil health benefits, utilization by livestock must be less than 50% of available cover crop forage.
- ☐ During implementation, cover crops must not be burned or harvested.
- ☐ During implementation, if livestock are included in the system maintain records of forage utilization.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.
- ☐ After implementation, if livestock are included in the system provide grazing plan and forage utilization records to NRCS for review to verify additional criteria of the enhancement were met.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) and Organic Matter (OM) sub factor value over the life of the rotation using current NRCS Soil Conditioning Index (SCI) procedure. Cover crop must increase SCI and OM sub factor from the current/benchmark condition and SCI



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value must be 0 or greater and have a positive trend in OM sub factor over the life of the rotation.

Benchmark Management SCI = _____, Benchmark Management OM sub factor = _____

Planned Management SCI = _____, Planned Management OM sub factor = _____

- ☐ Prior to implementation, if livestock are included in the system verify a grazing plan has been developed.
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, then calculate SCI values to document that the applied rotation met the enhancement criteria.

Applied Management SCI = _____, Applied Management OM sub factor = _____

- ☐ After implementation, if livestock are included in the system review grazing plan and forage utilization records to verify additional criteria of the enhancement were met.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340C

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340C the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - o Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, crop year STIR and SCI calculations (as needed).

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CONSERVATION ENHANCEMENT ACTIVITY

E340D

CONSERVATION STEWARDSHIP PROGRAM

Intensive orchard/vineyard floor cover cropping to increase soil health

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Implement orchard or vineyard floor cover crops. Cover crop shall not be harvested, grazed, or burned. Must achieve a soil conditioning index of zero or higher and produce a positive trend in the Organic Matter subfactor over the life of the rotation.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions (**REFER TO STATE SPECIFIC LISTS**).
- Determine the method and timing of termination to meet the grower's objective and the current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.
- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will



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achieve the purpose of the cover crop without negatively impacting the production crop yield or harvest.

- Do not burn cover crop residue.
- Do not harvest the cover crop.
- If the specific rhizobium bacteria for the selected legume are not present in the soil, treat the seed with the appropriate inoculum at the time of planting.
- Cover crop must provide soil coverage during all non-crop production periods to the maximum extent possible considering the cropping system, climate, and soils in the annual crop rotation. **(STATES SHALL PREPARE GUIDANCE FOR THEIR LOCAL CLIMATES AND CROPPING SYSTEMS.)** *Minimum 2 species cover crop mix* will be selected based on producing higher volumes of organic material and root mass to maintain or increase soil organic matter.
- Planned crop rotation including cover crop biomass production and associated management activities must achieve a management soil conditioning index (SCI) of zero or higher and result in a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation.
- Cover crops are replanted annually.
- Grow cover crops on a minimum of 60% of the field area year annually.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Current Management Rotation

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Current Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

**CONSERVATION
STEWARDSHIP
PROGRAM****Cover Crop Mix and Seeding Rate – *minimum 2 species*
cover crop mix**

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, determine develop map showing the area(s) to be planted to cover crop. Cover crop must cover at least 60% of the field area each year.
- ☐ During implementation, cover crops must not be burned or harvested.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.



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NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value and Organic Matter (OM) subfactor value over the life of the rotation. Cover crop must increase SCI and OM sub factor from the current/benchmark condition and SCI value must be zero or greater and have a positive trending OM subfactor over the life of the rotation.

Benchmark Management SCI = _____ Benchmark Management OM sub factor = _____

Planned Management SCI = _____ Planned Management OM sub factor = _____

- ☐ Prior to implementation, verify the cover crop mix includes at least 2 species of cover crop.
- ☐ Prior to implementation, verify the development of a map showing the area(s) to be planted to cover crop.
- ☐ Prior to implementation, verify cover crop will cover at least 60% of the field area each year.
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, then calculate SCI values to document that the applied rotation met the enhancement criteria.

Applied Management SCI = _____, Applied Management OM sub factor = _____



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NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

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E340D

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340D the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - o Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, crop year STIR and SCI calculations (as needed).

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CONSERVATION ENHANCEMENT ACTIVITY

E340E

CONSERVATION STEWARDSHIP PROGRAM

Use of soil health assessment to assist with development of cover crop mix to improve soil health

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed), Crop (Perennial), Pasture

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Soil health assessment (year 1) to evaluate current crop rotation in addressing soil organic matter depletion. Results are utilized to select a multi-species cover crop mix to add to the current crop rotation. Follow up assessment completed (year 3).

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions (**REFER TO STATE SPECIFIC LISTS**).
- Determine the method and timing of termination to meet the grower's objective and the current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.



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- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with the production crop yield or harvest.
- Do not burn cover crop residue. Do not harvest the cover crop.
- If the specific rhizobium bacteria for the selected legume are not present in the soil, treat the seed with the appropriate inoculum at the time of planting.
- Cover crop must provide soil coverage during all non-crop production periods to the maximum extent possible considering the cropping system, climate, and soils in the annual crop rotation. **(STATES SHALL PREPARE GUIDANCE FOR THEIR LOCAL CLIMATES AND CROPPING SYSTEMS)**
- Soil health assessment will be used to evaluate impact of current conservation crop rotation in addressing soil organic matter depletion, as well as additional soil health objectives of the individual grower (primary assessment made in Year 1). During Year 3, a follow up assessment will be completed to allow time for the addition of a cover crop and other management activities to have an impact on soil health. No specific soil health assessment type is required or recommended by NRCS, but at a minimum the assessment must account for soil organic matter. The specific assessment selected should provide the grower information based on their soil health objectives.
- Minimum 4 species cover crop mix will be selected based on producing higher volumes of organic material and root mass to maintain or increase soil organic matter. The cover crop mix must be compatible with the local soil, climate, and cropping systems.
- Planned crop rotation including cover crops, biomass produced, and associated management activities must achieve a management soil conditioning index (SCI) of zero or higher and results in a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation.

Additional criteria when livestock are included in the system:

Cover Crops may only be grazed in a manner that retains or enhances the purpose of increasing soil organic matter.



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- Grazing plan must be developed to document livestock management. Plan must include at a minimum a forage estimate and livestock inventory for all fields implementing this enhancement that will be grazed. For soil health benefits, utilization by livestock must be less than 50% of available cover crop forage.
- Before cover crops are grazed, they must have produced enough biomass to allow for grazing while maintaining soil health benefits. Cover crops planted in late fall will not typically be well enough established, however if stands are adequate cover crops may be grazed in the spring prior to termination.
- Different cover crop species have varying tolerances to grazing; this should be taken into consideration when developing cover crop seeding specifications.
- Grazing shall not occur during wet soil conditions.
- Some pesticides have restrictions on grazing following application (up to 18 months). Refer to pesticide labels.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Current Management Rotation

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Current Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date



CONSERVATION STEWARDSHIP PROGRAM

Cover Crop Mix (*minimum of 4 species*) and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Grazing Management, as needed	
Termination Date (window)	
Termination Method	

Soil Health Assessment:

Producer Objective	Year 1 Assessment Value	Year 3 Assessment Value
Soil Organic Matter (required)		

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, if livestock are included in the system consider cover crop species tolerant to grazing.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, if livestock are included in the system develop a grazing plan which must document livestock management. Plan must include at a minimum a forage estimate and livestock inventory for all fields implementing this enhancement that will be grazed. For soil health benefits, utilization by livestock must be less than 50% of available cover crop forage.
- ☐ During implementation, cover crops must not be burned or harvested.
- ☐ During implementation, if livestock are included in the system maintain records of forage utilization.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.
- ☐ After implementation, if livestock are included in the system provide grazing plan and forage utilization records to NRCS for review to verify additional criteria of the enhancement were met.
- ☐ After implementation, provide soil health assessment results and any documentation of changes made to NRCS for review to verify implementation of the enhancement.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) and Organic Matter (OM) sub factor value over the life of the rotation using current NRCS Soil Conditioning Index (SCI) procedure. Cover crop must increase SCI and OM sub factor from the current/benchmark condition and SCI value must be 0 or greater and have a positive trend in OM sub factor over the life of the rotation.

Benchmark Management SCI = _____, Benchmark Management OM sub factor = _____



CONSERVATION STEWARDSHIP PROGRAM

Planned Management SCI = _____,

Planned Management OM sub factor = _____

- ☐ Prior to implementation, if livestock are included in the system verify a grazing plan has been developed.
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, then calculate SCI values to document that the applied rotation met the enhancement criteria.

Applied Management SCI = _____, Applied Management OM sub factor = _____

- ☐ After implementation, if livestock are included in the system review grazing plan and forage utilization records to verify additional criteria of the enhancement were met.
- ☐ After implementation, review soil health assessment results and any documentation of changes made to verify implementation of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340E

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340E the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - o Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

Additional Documentation Requirements for Ohio

Use RUSLE 2 worksheet profile output (from the profile window)

NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro to document soil erosion estimate, crop year STIR and SCI calculations (as needed).

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CONSERVATION ENHANCEMENT ACTIVITY

E340F

CONSERVATION STEWARDSHIP PROGRAM

Cover crop to minimize soil compaction

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a cover crop mix that includes plants with both fibrous root and deep rooted systems. Fibrous to treat and prevent both near surface (0-4") and deep (>4") soil compaction and deep rooted to break up deep compacted soils. Cover crop shall not be harvested, grazed, or burned.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Determine method and timing of cover crop termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.
- Cover crops may be established between successive production crops, companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with production crop yield or harvest.



CONSERVATION STEWARDSHIP PROGRAM

- Do not burn cover crop residue.
- Do not harvest or graze cover crop.
- If specific rhizobium bacteria for selected legumes are not present in the soil, treat seed with appropriate inoculum at time of planting.
- Select a mix of cover crop species that includes plants with both fibrous root and deep rooted systems. Fibrous rooted cover crop species are essential to treat and prevent both near surface (0-4") and deep (>4") soil compaction and deep rooted species to break up deep compacted soils.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and field operation(s) used for each crop.

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Planned Field Operations for each crop

Field	Crop	Field Operation	Timing of Field Operation (month/year)

Cover Crop Mix (*minimum of 2 species, one each fibrous and deep rooted*) and Seeding Rate

- ☐ Deep rooted crop types must have documented ability to alleviate compaction.

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)	Root Type (fibrous or deep)



CONSERVATION STEWARDSHIP PROGRAM

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, cover crops must not be burned, grazed, or harvested.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ Prior to implementation, verify the cover crop mix includes both fibrous root and deep rooted systems.
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.



- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, document that the applied rotation met the enhancement criteria.

CONSERVATION STEWARDSHIP PROGRAM

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name: _____ Contract Number: _____

Total Acres Applied: _____ Fiscal Year Completed: _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340F

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340F the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).
- Select a mix of cover crop species that includes plants with both fibrous root and deep rooted systems. Fibrous to treat and prevent both near surface (0-4") and deep (>4") soil compaction and deep rooted to break up deep compacted soils.
 - Use Fig. 2 of Ohio Appendix A (cover crop) for complete list of species; rating of good and excellent meets the criteria.
 - Examples of fibrous rooting species are winter rye, winter wheat, annual ryegrass, oats, and pearl millet.
 - Examples of deep rooting species are oilseed radish, alfalfa, red clover, yellow sweet clover, sorghum-sudangrass and sun hemp.

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CONSERVATION ENHANCEMENT ACTIVITY

E340G

CONSERVATION STEWARDSHIP PROGRAM

Cover crop to reduce water quality degradation by utilizing excess soil nutrients

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a cover crop mix to take up excess soil nutrients. Select cover crop species for their ability to effectively utilize nutrients. Terminate the cover crop as late as practical to maximize plant biomass production and nutrient uptake. Cover crop shall not be harvested, grazed, or burned.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions (**REFER TO STATE SPECIFIC LISTS**).
- Determine method and timing of cover crop termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines. *Terminate the cover crop as late as practical to maximize plant biomass production and nutrient uptake.*
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.



CONSERVATION STEWARDSHIP PROGRAM

- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with production crop yield or harvest.
- Do not remove cover crop biomass or burn cover crop residue.
- Do not harvest or graze cover crop.
- If specific rhizobium bacteria for selected legumes are not present in the soil, treat seed with appropriate inoculum at time of planting.
- Select cover crop species for their ability to efficiently scavenge excess soil nutrients. Nutrient uptake only occurs when the cover crop is actively growing. Once the cover crop is terminated and begins to degrade the plant available nutrients that had been up taken by the cover crop will be released back to the soil. Therefore, it is imperative that the following production crop be planted as soon as possible after cover crop termination to maximize nutrient cycling and minimize offsite transport of nutrients.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Document excess nutrients identified in soil tests: Soil tests should be taken as close to production crop harvest as possible.

Field	Soil Test Date	Nutrient	Soil Test Nutrient Result (ppm or lbs/ac)

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

- ☐ Establish cover crops as soon as practical prior to or after harvest of the production crop.

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CONSERVATION STEWARDSHIP PROGRAM

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, cover crops must not be grazed, burned, harvested or biomass removed.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.

E340G - Cover crop to reduce water quality degradation by utilizing excess soil nutrients	July 2019	Page 4
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- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, document that the applied rotation met the enhancement criteria.

CONSERVATION STEWARDSHIP PROGRAM

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



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PROGRAM**

E340G

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340G the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).
- Cover crops may be established between successive production crops, or companion planted or relay-planted into production crops.
 - When the time between successive production crops is the winter, at least ½ of the proportional seeding rate must be non-winter killed cover crop species. See Ohio Appendix A (cover crop) fig 1 for a list of non-winter killed cover crops.

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CONSERVATION ENHANCEMENT ACTIVITY

E340H

CONSERVATION STEWARDSHIP PROGRAM

Cover crops to suppress excessive weed pressures and break pest cycles

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Plants

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a cover crop mix to suppress excessive weed pressures and break pest cycles. Select cover crop species for their life cycles, growth habits, and other biological, chemical and/or physical characteristics. Select cover crop species that do not harbor pests or diseases of subsequent crops in the rotation. Cover crop shall not be harvested, grazed, or burned.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Determine method and timing of cover crop termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.



CONSERVATION STEWARDSHIP PROGRAM

- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with production crop yield or harvest.
- Do not burn cover crop residue.
- Do not harvest or graze cover crop.
- If specific rhizobium bacteria for selected legumes are not present in the soil, treat seed with appropriate inoculum at time of planting.
- Select cover crop species that do not harbor pests or diseases of subsequent crops in the rotation. Select cover crop species for their life cycles, growth habits, and other biological, chemical and or physical characteristics to provide one or more of the following:
 - To suppress weeds or compete with weeds.
 - Break pest life cycles or suppress of plant pests or pathogens.
 - Provide food or habitat for natural enemies of pests.
 - Release compounds such as glucosinolates that suppress soil borne pathogens or pests.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, cover crops must not be grazed, burned, harvested or biomass removed.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, document that the applied rotation met the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



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E340H

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340H the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - o Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

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CONSERVATION ENHANCEMENT ACTIVITY

E340I

CONSERVATION STEWARDSHIP PROGRAM

Using cover crops for biological strip till

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish alternating strips of cover crops in which one strip acts as a biological strip-tiller and the adjacent strip promotes soil health with high residue cover crops. This will facilitate planting of the subsequent cash crop into the biologically strip-tilled row without the need for mechanical disturbance.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Determine method and timing of cover crop termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines. Terminate the cover crop as late as practical to maximize plant biomass production and nutrient uptake.
- Select species that are compatible with other components of the cropping system.
- Use a precision guidance system to ensure seeding is placed in the existing cover crop rows.
- Do not burn cover crop residue.
- Do not harvest or graze cover crop.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	



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- ☐ Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, cover crops must not be grazed, burned, harvested or biomass removed.
- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- ☐ As needed, provide additional assistance to the participant as requested.
- ☐ Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- ☐ During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- ☐ After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, document that the applied rotation met the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



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E340I

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E340I the following additional criteria and criteria definitions apply in Ohio:

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions.
 - o Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A (Cover Crop); section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).



CONSERVATION ENHANCEMENT ACTIVITY

E345A

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to reduce soil erosion

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced tillage system to reduce soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water and wind erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 40 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to calculate soil loss and STIR.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn crop residues.
- The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value ratings shall be no greater than 40, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.
- Use the current approved soil erosion prediction technology for water and wind erosion to determine the:



CONSERVATION STEWARDSHIP PROGRAM

- o Amount of randomly distributed surface residue needed.
 - o Time of year the residue needs to be present in the field.
 - o Amount of surface soil disturbance allowed to reduce erosion to the desired level of average annual soil loss.
 - o Calculations must account for the effects of other practices in the management system.
- In ridge-till systems, plan ridge height and ridge orientation to manage runoff and minimize erosion, with a maximum row grade of 4%.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use the information provided from the participant to calculate the soil loss and the Soil Tillage Intensity Rating values using current NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a soil loss at or below the soil tolerance (T) level for water and wind erosion for the crop rotation and a Soil Tillage Intensity Rating value of no greater than 40 for each crop in the planned rotation.

"T" = _____ t/ac/year Soil erosion = _____ t/ac/year STIR values = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil loss and the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.

Soil erosion = _____ t/ac/year and STIR values = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E345B

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to reduce tillage induced particulate matter

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced tillage system to reduce tillage induced particulate matter. Field(s) must have a soil loss at or below the soil tolerance (T) level for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 40 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to document soil loss and STIR calculations.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn crop residues.
- The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value rating shall be no greater than 40, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.
- Reduce or modify tillage operations that create dust, especially during critical air quality periods.



- Adopt tillage practices that reduce particulate emissions.

CONSERVATION STEWARDSHIP PROGRAM





Documentation and Implementation Requirements

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Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, verify that the field to be establish in no-till has a soil loss at or below the soil tolerance (T) level for water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 40 for each crop in the planned rotation.

"T"= _____ t/ac/year Soil erosion = _____ t/ac/year STIR values = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil loss and the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.

Soil erosion = _____ t/ac/year and STIR values = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E345C

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to increase plant-available moisture

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn crop residues.
- Field must have an annual soil loss at or below the soil tolerance (T) level for the crop rotation.
- The Soil Tillage Intensity Rating (STIR) value MUST include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value rating shall be no greater than 80, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.



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- Maintain a minimum 60 percent surface residue cover throughout the year.

CONSERVATION STEWARDSHIP PROGRAM





Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- ☐ During implementation, maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use information provided from the participant to calculate the soil loss, Soil Tillage Intensity Rating values, and estimated surface residue cover using current NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have an annual soil loss at or below the soil tolerance (T) level, a Soil Tillage Intensity Rating value of no greater than 80 for each crop in the planned rotation, and the estimated surface residue cover.
"T" = _____ t/ac/year Soil erosion = _____ t/ac/year
STIR values for each crop in the rotation = _____
Estimated surface residue cover for each crop in the rotation = _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information the provided from the participant to calculate soil loss, Soil Tillage Intensity Rating values, and estimated surface residue cover to document that the applied rotation met the enhancement criteria.
Soil erosion = _____ t/ac/year
STIR values for each crop in the rotation = _____
Estimated surface residue cover for each crop in the rotation = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E345D

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to increase soil health and soil organic matter content

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced till system to increase soil health and soil organic matter content. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The crop rotation must achieve a soil conditioning index (SCI) of zero or higher and produce a positive trend in the Organic Matter (OM) subfactor over the life of the crop rotation. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. Residue shall not be burned, grazed, or harvested.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn residues.
- Field must have an annual soil loss at or below the soil tolerance (T) level for the crop rotation.
- The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop



STIR value rating shall be no greater than 80, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.

CONSERVATION STEWARDSHIP PROGRAM

- Evaluation of the cropping system using the current approved soil conditioning index (SCI) procedure results in zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation (management SCI value).



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Field Operation	Timing of Field Operation (month/year)

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, use information provided from the participant to calculate the soil loss and the Soil Tillage Intensity Rating values using current NRCS wind and water erosion prediction technologies.
Verify the enrolled field(s) will have an annual soil loss at or below the soil tolerance (T) level for the crop rotation and a Soil Tillage Intensity Rating value of no greater than 80 for each crop in the planned rotation.
"T" = _____ t/ac/year Soil erosion = _____ t/ac/year STIR values = _____
- ☐ Prior to implementation, use information provided from the participant and the approved soil conditioning index (SCI) procedure to verify the SCI is zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation. SCI value = _____ and OM subfactor value = _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil loss and the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria.
Soil erosion = _____ t/ac/year and STIR values = _____
- ☐ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil conditioning index (SCI) and Organic Matter (OM) subfactor values to document that the applied rotation met the enhancement criteria. SCI value = _____ and OM subfactor value = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E345E

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to reduce energy use

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN: Energy

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced tillage system which reduces total energy consumption associated with field operations by at least 25% compared to conventional tillage systems (benchmark). Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations and energy consumption.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn crop residues.
- The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value rating shall be no greater than 80, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.
- Reduce the total energy consumption associated with field operations by at least 25% compared to the benchmark condition. The current NRCS wind and water erosion



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prediction technologies must be used for determining energy use to document energy use reductions.

CONSERVATION STEWARDSHIP PROGRAM





CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, provide NRCS with the current (benchmark) and planned crop rotation and tillage operation(s) used for each crop.

Field	Acres	Current (Benchmark) Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Current (Benchmark) Field Operation	Timing of Field Operation (month/year)

Field	Acres	Planned Crops (in sequence)	Length of Crop Rotation (years)

Field	Crop	Planned Field Operation	Timing of Field Operation (month/year)



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ During implementation, no residue will be burned.
- ☐ During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- ☐ During implementation, reduce the total energy consumption associated with field operations by at least 25% compared to the current benchmark tillage system.
- ☐ After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and energy consumption for both the current system and the planned system using the approved NRCS wind and water erosion prediction technologies. Verify the Soil Tillage Intensity Rating value is no greater than 80 for each crop in the planned rotation and total energy consumption is reduced by at least 25%.
Current STIR values = _____ and Energy Consumption = _____
Planned STIR values = _____ and Energy Consumption = _____
- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ After implementation, if changes were made to the planned crops, crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and total energy consumption to document that the applied rotation met the enhancement criteria.
Applied STIR values = _____ and Energy Consumption = _____

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NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E372A

CONSERVATION STEWARDSHIP PROGRAM

Switch to Renewable Power Source

Conservation Practice 372: Combustion System Improvement

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land; Farmstead

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 10 Year

Enhancement Description

Replace an existing 5-30 horsepower internal combustion engine with a new appropriately-sized electric motor powered by a new on-farm renewable source (wind, solar, geothermal, etc.).

Criteria

- Replace the existing internal combustion engine with a new electric motor that is powered by an on-farm renewable source such as wind, solar, geothermal, etc. that can adequately maintain the existing operating conditions (e.g., flow rates, pressures, etc.).
- The new electric motor must serve the same function and perform similar type of work as the existing internal combustion engine.
- The new electric motor and on-farm renewable source and related components or devices meet or exceed currently applicable federal, state, and local standards and guidelines.
- Components of this enhancement will meet the NRCS Conservation Practice Standard, Combustion System Improvement (Code 372).



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

Prior to implementation

- ☐ Evaluate current operating conditions of the existing internal combustion engine including season of use and overall power needs.
- ☐ Evaluate site specific renewable energy alternatives.
- ☐ Evaluate power options during lack of production of renewable energy source.

During implementation

- ☐ Ensure installation meets federal National Electrical Code and any local or state codes.

After implementation

- ☐ Monitor and maintain system for the life span of the practice (10 years).

NRCS will:

- ☐ Provide and explain NRCS Conservation Practice Standard Combustion System Improvement (Code 372) as it relates to implementing this enhancement.
- ☐ As needed, provide additional technical assistance to the participant as requested.
- ☐ Review with the participant the costs and benefits of conversion to renewable energy source.
- ☐ Consider and document the air quality benefits in addition to the energy source savings.
- ☐ Develop written specifications describing site specific details of installation, including:
 - ☐ Description and amount of usage of the existing internal combustion system
 - ☐ Description and planned usage of the new electric motor and renewable energy source
 - ☐ Plan view showing the location of the practice installation in relation to other structures or natural features, where appropriate.
 - ☐ Method used to protect existing power provider from back feed from renewable source.
 - ☐ Electrical components that meet the requirements of the National Electrical Code.



- Operation and maintenance plan that is consistent with the purpose(s) of this practice, its intended life, and safety requirements.

CONSERVATION STEWARDSHIP PROGRAM

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E372B

CONSERVATION STEWARDSHIP PROGRAM

Renewable Energy Source for Large Internal Combustion Engines

Conservation Practice 372: Combustion System Improvement

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land; Farmstead

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 10 Year

Enhancement Description

Replace an existing large (>30 horsepower) internal combustion engine with a new appropriately-sized electric motor powered by a new on-farm renewable source (wind, solar, geothermal, etc.).

Criteria

- Replace the existing internal combustion engine with a new electric motor that is powered by an on-farm renewable source such as wind, solar, geothermal, etc. that can adequately maintain the existing operating conditions (e.g., flow rates, pressures, etc.).
- The new electric motor must serve the same function and perform similar type of work as the existing internal combustion engine.
- The new electric motor and on-farm renewable source and related components or devices meet or exceed currently applicable federal, state, and local standards and guidelines.
- Components of this enhancement will meet the NRCS Conservation Practice Standard, Combustion System Improvement (Code 372).



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

Prior to implementation

- ☐ Evaluate current operating conditions of the existing internal combustion engine including season of use and overall power needs.
- ☐ Evaluate site specific renewable energy alternatives.
- ☐ Evaluate power options during lack of production of renewable energy source.

During implementation

- ☐ Ensure installation meets federal National Electrical Code and any local or state codes.

After implementation

- ☐ Monitor and maintain system for the life span of the practice (10 years).

NRCS will:

- ☐ Provide and explain NRCS Conservation Practice Standard Combustion System Improvement (Code 372) as it relates to implementing this enhancement.
- ☐ As needed, provide additional technical assistance to the participant as requested.
- ☐ Review with the participant the costs and benefits of conversion to renewable energy source.
- ☐ Consider and document the air quality benefits in addition to the energy source savings.
- ☐ Develop written specifications describing site specific details of installation, including:
 - ☐ Description and amount of usage of the existing internal combustion system
 - ☐ Description and planned usage of the new electric motor and renewable energy source
 - ☐ Plan view showing the location of the practice installation in relation to other structures or natural features, where appropriate.
 - ☐ Method used to protect existing power provider from back feed from renewable source.
 - ☐ Electrical components that meet the requirements of the National Electrical Code.



- Operation and maintenance plan that is consistent with the purpose(s) of this practice, its intended life, and safety requirements.

CONSERVATION STEWARDSHIP PROGRAM

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E381A

**CONSERVATION
STEWARDSHIP
PROGRAM**

Silvopasture to improve wildlife habitat

Conservation Practice 381: Silvopasture Establishment

APPLICABLE LAND USE: Pasture; Forest; Associated Agricultural Land

RESOURCE CONCERN: Plants; Animals

ENHANCEMENT LIFE SPAN: 15 years

Enhancement Description

Establishing a combination of trees or shrubs and compatible forages on the same acreage, providing forage, shade, and/or shelter for livestock that include a purpose of enhancing wildlife cover and shelter.

Criteria

- Tree species and forage species must be adapted to the site and compatible with the planned management of the site.
- No plants on the federal or state noxious weeds list shall be planted.
- Where trees will be added to existing pasture, site preparation should be based on existing vegetation and soil conditions. Trees will be planted at an appropriate density to allow acceptable forage production and wood products.
- If pesticides are used, label recommendations must be followed.
- Only viable, high quality and adapted planting stock or seed will be used.
- Plant nutrients and/or soil amendments for establishment purposes will be applied according to a current soil test. Legume seed will be pre-inoculated or inoculated with the proper viable strain of Rhizobia immediately before planting.



CONSERVATION STEWARDSHIP PROGRAM

- Establish forage species and understory shrubs that will provide forage, browse, seed, cover, or nesting habitat for the wildlife species of concern. For additional guidance refer to NRCS Conservation Practice Standards Upland Wildlife Habitat Management (Code 645).
- Favor herbaceous seed mixes that include a diverse mix of native forbs and/or legumes to benefit wildlife including pollinators. Select species that vary in attributes such as timing of flowering, and production of leaves and fruit.
- Plantings will be protected from grazing until an adequate stand is established and meets the species specific, local standard for beginning grazing.



CONSERVATION STEWARDSHIP PROGRAM

Documentation Implementation Requirements

Participant will:

- ☐ Prior to implementation, select a tree or shrub species for establishment.

Tree or Shrub species	
Trees per acre	
Percent canopy cover	

- ☐ Prior to implementation, develop a grazing plan to keep grazing periods sufficiently short to allow for plants to recover before re-grazing occurs.
- ☐ During implementation, keep the following documentation:
 - ☐ Records and photographs of planting preparation and any materials purchased or materials on hand used for the implementation of the enhancement.
 - ☐ Documentation of seed (Pure Live Seed) and any fertilizer or soil amendments used for the implementation of the enhancement.
- ☐ After implementation, make documentation and photographs of livestock turn in/turn out grazing records for each field available for review by NRCS to verify implementation of the enhancement.
- ☐ After implementation, make the forage planting/or tree planting and grazing records available for review by NRCS to verify implementation of the enhancement.
- ☐ The State approved NRCS Wildlife Habitat Evaluation Guide (WHEG) as completed and certified by an NRCS or partner wildlife biologist. Wildlife species of concern for the silvopastoral area will be specified on the WHEG. Total WHEG score after installation will equal 0.60 or greater.

NRCS will:

- ☐ Prior to implementation, complete the State approved NRCS Wildlife Habitat Evaluation Guide (WHEG) as completed and certified by an NRCS or partner wildlife biologist when applicable. Specific pollinator species targeted will be notated on the WHEG, and total



score after implementation will equal 0.60 or greater.

WHEG score after implementation = _____

CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, verify a grazing plan was developed to keep grazing periods sufficiently short to allow for forages to recover before re-grazing occurs.
- ☐ Prior to implementation and as needed, NRCS will provide technical assistance:
 - ☐ Planning site preparation and establishment specifications meeting NRCS Conservation Practice Standard Forage and Biomass Planting (Code 512) or Tree/Shrub Site Preparation (Code 490) and Tree/Shrub Establishment (Code 612).
 - ☐ Prepare specifications for applying this enhancement for each site using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
 - ☐ Develop a grazing plan to keep grazing periods sufficiently short to allow for forages to recover before re-grazing occurs.
- ☐ During implementation, evaluate any planned changes to verify they meets the enhancement criteria.
- ☐ After implementation, verify the planned perennial planting was established to specifications developed for the site.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E381A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E381A the following additional criteria apply in Ohio:

- The wildlife species of concern targeted with enhancement are northern bobwhite, ringneck pheasant, and grassland nesting songbirds.
- Hogs are not an acceptable livestock species for this practice. Other livestock species will be deemed acceptable if damage to the tree roots and bark/stem will be prohibited.
- Manage grazing at appropriate levels to establish and maintain silvopasture productivity and function. Facilities for providing water, minerals, or supplemental feed will be located and distributed such that livestock will properly utilize forages in the silvopasture. Control livestock access to areas with sensitive soils (e.g., wetlands, riparian zones, habitats of concern, karst areas, etc.).
- Establish and maintain silvopasture in a condition that is at least 10-percent, but no more than 30-percent, stocked by single-stemmed woody species of any size that will be at least 4 meters (13 feet) tall at maturity.
- Silvopasture establishment is not appropriate in existing forest and woodland communities.
- Maintenance practices and activities shall not disturb vegetative cover during the primary reproductive period (e.g., nesting period) of wildlife (Ohio's primary nesting season for grassland birds is March 1 until July 15). Exceptions can be considered for periodic burning or mowing when necessary to maintain the health of the plant community.

When Planting Forages:

- Planners will utilize Appendix A (Wildlife Habitat) or Appendix A (Forage Production and Erosion Control) located in section IV of eFOTG for planting rates, methods, dates, and mixes.
- All species used in the seed mix shall be species native to Ohio. At least 80% of the grass mix shall be composed of two or more the following wildlife-friendly native grasses: switchgrass, big bluestem, little bluestem, indiangrass, eastern gamagrass. Native forbs and legumes shall be selected from those listed as

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OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

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beneficial for wildlife; these are listed in the Ohio Wildlife Habitat Instructions found in Ohio eFOTG, Section I, Assessment Procedures, 5. Wildlife Habitat, General Wildlife Habitat Evaluation.

When Planting Trees/Shrubs:

- When planting trees/shrubs, appropriate care must be taken to protect them until their lowest branch cannot be reached by livestock.
- Acceptable tree and shrub species are listed below. If not on the list, species must be approved by the NRCS State Grazing Specialist.

Trees

American Chestnut	Arborvitae	Black Locust
Black Walnut	Black Willow	Bur Oak
Chinkapin Oak	Crabapple (native species only)	Eastern Cottonwood
Eastern Red Cedar	Honeylocust (thornless varieties only)	
Pawpaw	Pecan	Persimmon
Pignut Hickory	Pitch or Pit-lolly Pine	Red Mulberry
Shagbark Hickory	Swamp White Oak	White Oak

Shrubs

Allegheny Chinquapin	Gray Dogwood	Hazelnut
Red-Osier Dogwood	Silky Dogwood	

Additional Documentation Requirements for Ohio

In addition to the documentation requirements specified in the National job sheet E381A the following additional documentation requirements apply in Ohio:

- Use the Ohio Pasture/Hayland Wildlife Habitat Evaluation found in Ohio EFOTG, Section I, Assessment Procedures, 5. Wildlife Habitat, General Wildlife Habitat Evaluation for the NRCS Wildlife Habitat Evaluation Guide (WHEG).



CONSERVATION ENHANCEMENT ACTIVITY

E382A

CONSERVATION STEWARDSHIP PROGRAM

Incorporating “wildlife friendly” fencing for connectivity of wildlife food resources

Conservation Practice 382: Fence

APPLICABLE LAND USE: Pasture; Range; Forest, Associated Ag Land

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 20 Years

Enhancement Description

Retrofitting or constructing fences that provide a means to control movement of animals, people, and vehicles, but minimizes wildlife movement impacts.

Criteria

- The type and design of fence retrofitting or construction will meet the management objectives and site challenges.
- The fence jobsheet will specify:
 - Animal species of concern, both wildlife and domestic,
 - Wildlife movement specific modifications to be made to existing fences to meet these management objectives, or
 - Wildlife movement specific specifications that will be incorporated into newly constructed fences, and



CONSERVATION STEWARDSHIP PROGRAM

- o Location of the "wildlife friendly" fence(s) and location of the habitat types affected by the fence.
- Examples:
 - o Pronghorn antelope need to be afforded a smooth wire at the bottom of the fence with a 14" height above ground.
 - o Deer need a maximum height of 42" with a minimum of 12" between the top two wires.
 - o Fawns and turkeys need a stranded fence to negotiate (not woven wire).
 - o Fences should be retrofitted to let down and put back up for migrating herds.
 - o All open top pipes should be capped for songbirds.
 - o If bats or sage grouse/lesser prairie chicken are selected as species of concern, then fences should be marked for visibility.
 - o For bats, height requirements above water sources will be honored.
- Height, size, spacing and type of materials used will provide the desired control, life expectancy, and management of people and animals of concern. New fences will be designed, located, and installed to meet appropriate local wildlife and land management needs and requirements.
- Avoid clearing of right-of-way vegetation during the nesting season for migratory birds.
- Plans and specifications are to be prepared for all fence types, installations and specific sites.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, obtain an NRCS jobsheet that clearly identifies the species of concern. This document should clearly identify construction techniques for wildlife friendly modifications on existing fences, or specifications for newly constructed fences.
- ☐ Prior to implementation, develop a map with assistance from NRCS as needed, which identifies the location of the wildlife friendly fences to be modified or constructed.
- ☐ During implementation, consult with NRCS if there are any changes to modification or construction techniques.
- ☐ After implementation, provide a map of the actual location of constructed or modified fences for review to verify the enhancement was implemented.
- ☐ After implementation, provide pictures of newly constructed or modified fences depicting the specified construction techniques to benefit wildlife for review to verify the enhancement was implemented.

NRCS will:

- ☐ Prior to implementation, as requested, assist the participant in the development of a map identifying the location of wildlife friendly fences to be constructed or modified.
- ☐ Prior to implementation, develop a jobsheet (or specification as required in the state) for the participant that details wildlife friendly construction techniques.
- ☐ During implementation, assist the participant with modification of construction techniques to allow fences to function for both wildlife and domestic species.
- ☐ After implementation, review actual fence location map and photo documentation of constructed or modified wildlife friendly fences.



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E382A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E382A the following additional criteria apply in Ohio:

- Typically, most fences in Ohio do not present a significant impediment to movement of wildlife to access food sources, however where there is evidence that desirable wildlife cannot access food sources due to fences, this enhancement will be applicable; two species that may be affected by fencing are whitetail deer and wild turkey
- This enhancement does not apply to fences that are designed to protect crops or other potential wildlife food sources from damage by the desired wildlife species
- For guidance on retrofitting existing fence to improve passage or increasing visibility follow the criteria found in Montana Fish, Wildlife and Parks publication “A Landowner’s Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind” (<http://fwp.mt.gov/fishAndWildlife/habitat/wildlife/publications/default.html>)

Additional Documentation Requirements for Ohio

In addition to the documentation requirements specified in the National job sheet E382A the following additional documentation requirements apply in Ohio:

- The Ohio Fence (382) job sheet does not have a specific location to document desired wildlife species and fence modifications to benefit those species; this information may be developed separately and attached to the Fence jobsheet.

E382A	December 2019	Page 1



CONSERVATION ENHANCEMENT ACTIVITY

E382B

CONSERVATION STEWARDSHIP PROGRAM

Installing electrical fence offsets and wire for cross-fencing to improve grazing management

Conservation Practice 382: Fence

APPLICABLE LAND USE: Pasture, Range

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 20 Years

Enhancement Description

Retrofitting conventional fences such as barb wire, with new electrical offsets and electrical wire to facilitate cross-fencing for improved grazing management.

Criteria

- Electrical offsets will be attached to conventional fences to provide installation points for electrical tape, polywire, or other NRCS state approved electrical wire fence that will construct cross-fencing.
- The type and design of the fence retrofitting or construction will meet the management objectives and site challenges.
- The conventional or existing fence must meet state technical standards prior to the retrofit of the offsets.
- The offsets and electrical fence Implementation Requirement (IR) or jobsheet will specify:
 - Animal species of concern, both wildlife and domestic
 - Installation of cross-fence according to the conservation plan map
 - Installation of offsets and electric fence according to fence specifications



CONSERVATION STEWARDSHIP PROGRAM

Adoption Requirements

This enhancement is considered adopted when the criteria is met, documentation records are provided, and results viewed on the planned location.

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, obtain NRCS Implementation Requirement (IR) or jobsheet that provides the construction specification for the offsets and electric cross-fence.
- ☐ Prior to implementation, develop a map with assistance from NRCS as needed, which identifies the location(s) of the conventional fence and the location(s) of the retrofitting with offsets and electrical cross-fencing.
- ☐ Prior to implementation, consult with NRCS on the quality of the existing conventional fence.
- ☐ During implementation, consult with NRCS if there are any changes or modifications to the material or construction techniques.
- ☐ After implementation, provide a map of the actual location(s) of construction of the offsets and electrical cross-fence(s) for review.
- ☐ After implementation, provide pictures of newly constructed offsets and cross-fence(s) showing the specified construction specifications were implemented.

NRCS will:

- ☐ Provide technical assistance as requested.
- ☐ Prior to implementation, as requested, assist the participant in the development of a map identifying the location(s) of the conventional fence and the location(s) of the retrofitting with offsets and electrical cross-fencing.
- ☐ Prior to Implementation, develop an Implementation Requirement or jobsheet with construction specifications.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, provide technical determination of the quality of the existing conventional fence to state technical standards.
- ☐ During implementation, assist the participant with any modifications to the construction specifications when needed.
- ☐ After implementation, review offsets and electric cross-fence(s) location map.
- ☐ After implementation, certify offset and cross-fence(s) construction meets the Implementation Requirements (IR) or jobsheet design.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT

CONSERVATION STEWARDSHIP PROGRAM

ACTIVITY E382B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E382B the following additional criteria apply in Ohio:

- Planners will utilize Fence Standard (382) and job sheet located in Section IV of eFOTG for criteria and considerations.

Additional Documentation Requirements for Ohio

In addition to the documentation requirements specified in the National job sheet E382B, the following additional documentation requirements that apply in Ohio:

- Provide as-built documentation on the Fence Conservation Practice job sheet (382) or map indicating the conventional or existing fence meets Fence (382) standard.
- Prepared plans and specifications for retrofitting conventional fences will be recorded on the Fence job sheet and map. The following elements must be addressed in the job sheet and map:
 - Conventional or existing fence meets Fence (382) Standard
 - Type of electrical offsets and NRCS State Approved electrical wire is used to create cross-fencing
 - Location of offsets and cross-fencing
 - Animal species of concern
 - GMP (if applicable)



CONSERVATION ENHANCEMENT ACTIVITY

E386A

CONSERVATION STEWARDSHIP PROGRAM

Enhanced field borders to reduce soil erosion along the edge(s) of a field

Conservation Practice 386: Field Border

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description:

Enhance existing field borders to a width of at least 30 feet and establish a single species or mixture of species that provide a dense ground cover along the edge(s) of the field.

Criteria:

- Field borders shall be established at selected field edges at a width of at least 30 feet.
- Locate borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.
- Orient plant rows as closely as possible to perpendicular to sheet flow direction (water erosion) or most erosion wind directions (wind erosion).
- Field borders shall be established to adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective.
- Plants selected for field borders will have the physical characteristics necessary to control wind and water erosion to tolerable levels on the field border area. No plant listed by the state as a noxious or invasive species shall be established in the field border.
- Seedbed preparation, seeding rates, dates, depths, fertility requirements, and planting methods will be consistent with approved local criteria and site conditions.



CONSERVATION STEWARDSHIP PROGRAM

- Ephemeral gullies and rills present in the planned border area will be eliminated as part of seedbed preparation. If present, ephemeral gullies and rills located immediately upslope from the planned border area need to be treated to ensure more of a sheet flow into the planned border area.
- Field border establishment, in conjunction with other practices, will be timed so that the soil will be adequately protected during the critical erosion period(s).
- Establish stiff-stemmed, upright grasses, grass/legumes or forbs to trap water- borne soil particles.
- The amount of surface and/or canopy cover needed from the field border shall be determined using current approved water and wind erosion prediction technology. Soil erosion estimates shall account for the effects of other practices in the management system.
- Operation and maintenance requirements:
 - Repair storm damage.
 - Remove sediment from above, within and along the leading edge of the field border when accumulated sediment either alters the function of the field border or threatens the degradation of the planted species.
 - Shut off sprayers and raise tillage equipment to avoid damage to field borders.
 - Shape and reseed border areas damaged by animals, chemicals, tillage, or equipment traffic.
 - Do not use the field border as a hay yard or machinery parking lot for any extended period of time, especially if doing so will damage or impair the function of the field border.
 - Maintain desired vegetative communities and plant vigor by liming, fertilizing, mowing, disking, or burning and controlling noxious and invasive weeds to sustain effectiveness of the border.
 - Repair and reseed ephemeral gullies and rills that develop in the border.
 - Minimally invasive vertical tillage (e.g. paraplowing) may be performed in rare cases where compaction and vehicle traffic have degraded the field border function. The



CONSERVATION STEWARDSHIP PROGRAM

- purpose of the tillage is strictly to relieve soil compaction and increase infiltration rates to provide a better media for reestablishment of vegetation and field border function.
- o When managing for wildlife, maintenance activities that result in disturbance of vegetation should not be conducted during the primary nesting, fawning and calving seasons. Activities should be timed to allow for regrowth before the growing season ends whenever possible.
 - o Periodic removal of some products such as medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.
 - o Avoid vehicle traffic when soil moisture conditions are saturated.
 - o Maintain records of the field border maintenance as needed by the land user.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

- ☐ Prior to implementation, prepare the planned area for vegetation establishment. Refer to NRCS Conservation Practice Standard Field Border (Code 386). (NRCS will provide technical assistance, as needed.) Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, select adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, determine liming and fertilizer requirements, planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Lime and Fertilizer Required	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.
- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned within the field(s) or farm boundary.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Field Border (Code 386) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for vegetation establishment. Total planned amount of field border extension = _____feet
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planning site preparation meeting NRCS Conservation Practice Standard Field Border (Code 386).
 - ☐ Selecting the adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.



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- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E386B

CONSERVATION STEWARDSHIP PROGRAM

Enhanced field borders to increase carbon storage along the edge(s) of a field

Conservation Practice 386: Field Border

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description:

Enhance existing field borders to a width of at least 30 feet and establish a single species or mixture of species that provide a dense ground cover and dense rooting system along the edge(s) of the field.

Criteria:

- Field borders shall be established along selected field edges at a width of at least 30 feet.
- Locate borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.
- Field borders shall be established to adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective.
- Establish plant species that will produce adequate above- and below-ground biomass for the site.
- Maximize the width and length of the herbaceous border to fit the site and increase total biomass production.



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- Do not burn the field border
- Do not disturb the roots of the established vegetation with tillage.
- Plants selected for field borders will have the physical characteristics necessary to produce adequate round cover and dense rooting system. No plant listed by the state as a noxious or invasive species shall be established in the field border.
- Seedbed preparation, seeding rates, dates, depths, fertility requirements, and planting methods will be consistent with approved local criteria and site conditions.
- Ephemeral gullies and rills present in the planned border area will be eliminated as part of seedbed preparation. If present, ephemeral gullies and rills located immediately upslope from the planned border area need to be treated to ensure more of a sheet flow into the planned border area.
- Operation and maintenance requirements:
 - Repair storm damage.
 - Remove sediment from above, within and along the leading edge of the field border when accumulated sediment either alters the function of the field border or threatens the degradation of the planted species.
 - Shut off sprayers and raise tillage equipment to avoid damage to field borders.
 - Shape and reseed border areas damaged by animals, chemicals, tillage, or equipment traffic.
 - Do not use the field border as a hay yard or machinery parking lot for any extended period of time, especially if doing so will damage or impair the function of the field border.
 - Maintain desired vegetative communities and plant vigor by liming, fertilizing, mowing, disking, or burning and controlling noxious and invasive weeds to sustain effectiveness of the border.
 - Repair and reseed ephemeral gullies and rills that develop in the border.
 - When managing for wildlife, maintenance activities that result in disturbance of vegetation should not be conducted during the primary nesting, fawning and calving seasons. Activities should be timed to allow for regrowth before the growing season ends whenever possible.



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- o Periodic removal of some products such as medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.
- o Avoid vehicle traffic when soil moisture conditions are saturated.
- o Maintain records of the field border maintenance as needed by the land user.



Documentation and Implementation Requirements:

**CONSERVATION
STEWARDSHIP
PROGRAM**

Participant will:

- ☐ Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Field Border (Code 386). (NRCS will provide technical assistance, as needed.) Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, select adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, determine liming and fertilizer requirements, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Lime and Fertilizer Requirements	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.
- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned within the field(s) or farm boundary.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Field Border (Code 386) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for vegetation establishment. Total planned amount of field border extension = _____feet
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planning site preparation meeting NRCS Conservation Practice Standard Field Border (Code 386).
 - ☐ Selecting the adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.



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- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____

Contract Number _____

Total Amount Applied _____

Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E386C

CONSERVATION STEWARDSHIP PROGRAM

Enhanced field borders to decrease particulate emissions along the edge(s) of a field

Conservation Practice 386: Field Border

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description:

Enhance existing field borders to a width of at least 40 feet and establish a mixture of species that decrease the particulate emissions along the edge(s) of the field.

Criteria:

- Field borders shall be established along selected field edges at a width of at least 40 feet.
- Locate borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.
- Plants selected for field borders will have the physical characteristics to optimize the interception and adhesion of airborne particles (species with a mature height of at least 2 feet). No plant listed by the state as a noxious or invasive species shall be established in the field border.
- Seedbed preparation, seeding rates, dates, depths, fertility requirements, and planting methods will be consistent with approved local criteria and site conditions.



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- Ephemeral gullies and rills present in the planned border area will be eliminated as part of seedbed preparation. If present, ephemeral gullies and rills located immediately upslope from the planned border area need to be treated to ensure more of a sheet flow into the planned border area.
- Do not burn the field border.
- Operation and maintenance requirements.
 - Repair storm damage.
 - Remove sediment from above, within and along the leading edge of the field border when accumulated sediment either alters the function of the field border or threatens the degradation of the planted species.
 - Shut off sprayers and raise tillage equipment to avoid damage to field borders.
 - Shape and reseed border areas damaged by animals, chemicals, tillage, or equipment traffic.
 - Do not use the field border as a hay yard or machinery parking lot for any extended period of time, especially if doing so will damage or impair the function of the field border.
 - Schedule mowing, harvest, weed control, and other management activities within the field border to accommodate the plants ability to intercept particulate emissions. Vehicle traffic should be avoided in the field border area.
 - Maintain desired vegetative communities and plant vigor by liming, fertilizing, mowing, disking, or burning and controlling noxious and invasive weeds to sustain effectiveness of the border.
 - Repair and reseed ephemeral gullies and rills that develop in the border.
 - When managing for wildlife, maintenance activities that result in disturbance of vegetation should not be conducted during the primary nesting, fawning and calving seasons. Activities should be timed to allow for regrowth before the growing season ends whenever possible.
 - Periodic removal of some products such as medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.



- o Avoid vehicle traffic when soil moisture conditions are saturated.
- o Maintain records of the field border maintenance as needed by the land user.

CONSERVATION STEWARDSHIP PROGRAM



Documentation and Implementation Requirements:

**CONSERVATION
STEWARDSHIP
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Participant will:

- ☐ Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Field Border (Code 386). (NRCS will provide technical assistance, as needed.) Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, select adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, determine liming and fertilizer requirements, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Lime and Fertilizer Requirements	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.
- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.



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- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned within the field(s) or farm boundary.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Field Border (Code 386) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for vegetation establishment. Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planning site preparation meeting NRCS Conservation Practice Standard Field Border (Code 386).
 - ☐ Selecting the adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.



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- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.
- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E386D

CONSERVATION STEWARDSHIP PROGRAM

Enhanced field borders to increase food for pollinators along the edge(s) of a field

Conservation Practice 386: Field Border

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description:

Enhance existing field borders to a width of at least 40 feet and establish a mixture of species that provide food for pollinators along the edge(s) of the field.

Criteria:

- Field borders shall be established along selected field edges at a width of at least 40 feet.
- Locate borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.
- Field borders shall be established to a mixture adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective.
- **The NRCS at the state level will develop lists of plants suitable for pollinator habitat. The lists must emphasize as many native species as practical.**
- Plants selected for field borders will have the physical characteristics necessary to produce pollen during multiple seasons.



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- No plant listed by the state as a noxious or invasive species shall be established in the field border.
- Seedbed preparation, seeding rates, dates, depths, fertility requirements, and planting methods will be consistent with approved local criteria and site conditions.
- Ephemeral gullies and rills present in the planned border area will be eliminated as part of seedbed preparation. If present, ephemeral gullies and rills located immediately upslope from the planned border area need to be treated to ensure more of a sheet flow into the planned border area.
- Operation and maintenance requirements:
 - Repair storm damage.
 - Remove sediment from above, within and along the leading edge of the field border when accumulated sediment either alters the function of the field border or threatens the degradation of the planted species.
 - Shut off sprayers and raise tillage equipment to avoid damage to field borders.
 - Shape and reseed border areas damaged by animals, chemicals, tillage, or equipment traffic.
 - Do not use the field border as a hay yard or machinery parking lot for any extended period of time, especially if doing so will damage or impair the function of the field border.
 - Schedule mowing, harvest, weed control, and other management activities within the field border to accommodate reproduction and other life cycle requirements of target wildlife species. Vehicle traffic should be avoided in the field border area.
 - Maintain desired vegetative communities and plant vigor by liming, fertilizing, mowing, disking, or burning and controlling noxious and invasive weeds to sustain effectiveness of the border.
 - Repair and reseed ephemeral gullies and rills that develop in the border.
 - When managing for wildlife, maintenance activities that result in disturbance of vegetation should not be conducted during the primary nesting, fawning



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and calving seasons. Activities should be timed to allow for regrowth before the growing season ends whenever possible.

- o Periodic removal of some products such as medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.
- o Avoid vehicle traffic when soil moisture conditions are saturated.
- o Maintain records of the field border maintenance as needed by the land user.



Documentation and Implementation Requirements:

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Participant will:

- ☐ Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Field Border (Code 386). (NRCS will provide technical assistance, as needed.) Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, select adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, determine liming and fertilizer requirements, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Lime and Fertilizer Requirements	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.
- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.



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- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned within the field(s) or farm boundary.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Field Border (Code 386) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for vegetation establishment. Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planning site preparation meeting NRCS Conservation Practice Standard Field Border (Code 386).
 - ☐ Selecting the adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.



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- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.
- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of field border implemented. Total implemented amount of field border extension = _____ feet

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E386D

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E386D the following additional criteria apply in Ohio:

- For pollinator habitat, the following species found in the table on pages 2 and 3 of this supplement are recommended; see Appendix A-Wildlife Habitat (Ohio FOTG, Section IV, Old Section IV, Appendices) for additional recommendations on herbaceous species to plant

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio

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E386D

Establishment of pollinator habitat

- Minimum 9 species from following lists
- At least 3 from each bloom period (early, mid and late)
- May be forbs, vines, shrubs and/or trees

For herbaceous plantings:

- Each species must be at least 3% of mix based on number of seeds (not weight)
- Seeding shall provide 20-30 pure live seeds per square foot
- Grass and grass-like plants may be included in the mix
 - these will be in addition to requirements above; no more than 25% of the pls of the total mix may be grasses
 - species should be short in height and not overly competitive
 - suggested species include little bluestem, sideoats grama or wild rye; wet sites may use fox sedge, pennsylvania sedge or tussock sedge

Herbaceous Species	Bloom Period	Bloom Color
Eastern Columbine (<i>Aquilegia canadensis</i>)	Early	Red
Golden Alexanders (<i>Zizia aurea</i>)	Early	Yellow
Tall White Beardtongue (<i>Penstemon digitalis</i>)	Early	White
Wild Lupine (<i>Lupinus perennis</i>)	Early	Blue
Blue False Indigo (<i>Baptisia australis</i>)	Early	Purple
Cow Parsnip (<i>Heracleum lanatum</i>)	Early	White
Golden Ragwort (<i>Senecio aureus</i>)	Early	Yellow
Northern Wild Senna (<i>Senna hebecarpa</i>)	Mid	Yellow
Wild Bergamot (<i>Monarda fistulosa</i>)	Mid	Pink
Purple Bergamot (<i>Monarda media</i>)	Mid	Red
Partridge Pea (<i>Chamaecrista fasciculata</i>)	Mid	Yellow
Black-eyed Susan (<i>Rudbeckia hirta</i>)	Mid	Yellow
Blue Vervain (<i>Verbena hastata</i>)	Mid	Purple
Butterfly Milkweed (<i>Asclepias tuberosa</i>)	Mid	Orange
Canada Tick-Trefoil (<i>Desmodium canadense</i>)	Mid	Pink
Joe-Pye Weed (<i>Eupatorium fistulosum</i>)	Mid	Pink
Culvers Root (<i>Desmanthus illinoensis</i>)	Mid	White
Illinois Bundleflower (<i>Veronicastrum virginicum</i>)	Mid	White

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CONSERVATION STEWARDSHIP PROGRAM

Herbaceous Species	Bloom Period	Bloom Color
Purple Coneflower (<i>Echinacea purpurea</i>)	Mid-Late	Purple
Swamp Milkweed (<i>Asclepias incarnata</i>)	Mid-Late	Pink
Common Milkweed (<i>Asclepias syriaca</i>)	Mid-Late	Pink
Brown-eyed Susan (<i>Rudbeckia triloba</i>)	Mid-Late	Yellow
New England Aster (<i>Aster novae-angliae</i>)	Late	Purple
Smooth Blue Aster (<i>Aster laevis</i>)	Late	Blue
Gray-headed Coneflower (<i>Ratibida pinnata</i>)	Late	Yellow
Smooth Oxeye (<i>Heliopsis helianthoides</i>)	Late	Yellow
Blazingstar (<i>Liatris spicata</i>)	Late	Purple
Rough Goldenrod (<i>Solidago rugosa</i>)	Late	Yellow
Showy Goldenrod (<i>Solidago speciosa</i>)	Late	Yellow
Sneezeweed (<i>Helenium autumnale</i>)	Late	Yellow
Trees and Shrubs	Bloom Period	Bloom Color
Black Chokeberry (<i>Aronia melanocarpa</i>)	Early	White
Serviceberry (<i>Amelanchier spp.</i>)	Early	White
Eastern Redbud (<i>Cercis canadensis</i>)	Early	Pink
Dogwood (<i>Cornus spp.</i>)	Mid	White
Spicebush (<i>Lindera benzoin</i>)	Early	Yellow-green
Eastern Ninebark (<i>Physocarpus opulifolius</i>)	Mid	White
Red Elderberry (<i>Sambucus racemosa</i>)	Mid	White
Sassafras (<i>Sassafras albidum</i>)	Early	Yellow-green
Cranberry (<i>Vaccinium macrocarpon</i>)	Early	White-pink
Black Haw (<i>Viburnum prunifolium</i>)	Early	White



CONSERVATION ENHANCEMENT ACTIVITY

E386E

CONSERVATION STEWARDSHIP PROGRAM

Enhanced field borders to increase wildlife food and habitat along the edge(s) of a field

Conservation Practice 386: Field Border

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description:

Enhance existing field borders to a width of at least 40 feet and establish a mixture of species that provide wildlife food and habitat along the edge(s) of the field. The extended field border will also provide enhanced wildlife habitat continuity.

Criteria:

- Field borders shall be established along selected field edges at a width of at least 40 feet.
- The field border must connect an existing field border to another field border or to an existing or planned wildlife area (e.g. wood lot, CRP, pond, rangeland, etc.).
- Locate borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.
- Field borders shall be established to a mixture adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective.



CONSERVATION STEWARDSHIP PROGRAM

- Plants selected for field borders will have the physical characteristics necessary to produce wildlife food and cover for the targeted species.
- No plant listed by the state as a noxious or invasive species shall be established in the field border.
- Seedbed preparation, seeding rates, dates, depths, fertility requirements, and planting methods will be consistent with approved local criteria and site conditions.
- Ephemeral gullies and rills present in the planned border area will be eliminated as part of seedbed preparation. If present, ephemeral gullies and rills located immediately upslope from the planned border area need to be treated to ensure more of a sheet flow into the planned border area.
- Operation and maintenance requirements:
 - Repair storm damage.
 - Remove sediment from above, within and along the leading edge of the field border when accumulated sediment either alters the function of the field border or threatens the degradation of the planted species.
 - Shut off sprayers and raise tillage equipment to avoid damage to field borders.
 - Shape and reseed border areas damaged by animals, chemicals, tillage, or equipment traffic.
 - Do not use the field border as a hay yard or machinery parking lot for any extended period of time, especially if doing so will damage or impair the function of the field border.
 - Schedule mowing, harvest, weed control, and other management activities within the field border to accommodate reproduction and other life cycle requirements of target wildlife species. Vehicle traffic should be avoided in the field border area.



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- Maintain desired vegetative communities and plant vigor by liming, fertilizing, mowing, disking, or burning and controlling noxious and invasive weeds to sustain effectiveness of the border.
- Repair and reseed ephemeral gullies and rills that develop in the border.
- When managing for wildlife, maintenance activities that result in disturbance of vegetation should not be conducted during the primary nesting, fawning and calving seasons. Activities should be timed to allow for regrowth before the growing season ends whenever possible.
- Periodic removal of some products such as medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.
- Avoid vehicle traffic when soil moisture conditions are saturated.
- Maintain records of the field border maintenance as needed by the land user.



Documentation and Implementation Requirements:

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Participant will:

- ☐ Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Field Border (Code 386). (NRCS will provide technical assistance, as needed.) Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, plan the field border extension to an existing field border which connects to another field border or to an existing or planned wildlife area (e.g. wood lot, CRP, pond, rangeland, etc.). Total planned acres connected = _____
- ☐ Prior to implementation, select adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, determine liming and fertilizer requirements, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Lime and Fertilizer Requirements	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.
- ☐ After implementation, verify the total amount of field border implemented and areas connected. Total implemented amount of field border extension = _____ feet
Total areas connected = _____ Total acres connected = _____

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned within the field(s) or farm boundary.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Field Border (Code 386) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for vegetation establishment. Total planned amount of field border extension = _____ feet
- ☐ Prior to implementation, verify the field border extension connects to another field border or to an existing or planned wildlife area (e.g. wood lot, CRP, Pond, Rangeland, etc.). Total planned areas connected = _____
Total planned acres connected = _____
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - Planning site preparation meeting NRCS Conservation Practice Standard Field Border (Code 386).
 - Selecting the adapted species of permanent grass, forbs and/or shrubs that accomplish the design objective and are best suited to site conditions.
 - Selecting planting techniques and timing appropriate for the site and soil conditions.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ Planning the use of additional erosion control, as needed for the site.
- ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.
- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of field border implemented and areas connected. Total implemented amount of field border extension = _____ feet
Total areas connected = _____ Total acres connected = _____

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
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E386E

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E386E the following additional criteria apply in Ohio:

- **Recommended species** for extension of existing field borders in Ohio are:
 - Grasses: timothy, orchard grass, indiangrass, little bluestem, big bluestem, switchgrass
 - Forbs: red clover, alsike clover, ladino clover, purple coneflower, black-eyed susan, partridge pea, Illinois bundleflower
 - Shrubs: common alder, chokeberry, dogwoods, arrowwood, American cranberrybush
 - Mix must include at least 5 species including both grasses and forbs or shrubs.
- Seeding rates will be based on information contained in Ohio EFOTG, Section IV, Appendices, Appendix A-Wildlife Habitat.
- Spacings of shrub plantings shall be based on Ohio EFOTG, Section IV, Appendices, Appendix B.
- Disturbance of the cover shall not occur during the primary nesting season, April 1 until July 15

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio.

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CONSERVATION ENHANCEMENT ACTIVITY

E390A

CONSERVATION STEWARDSHIP PROGRAM

Increase riparian herbaceous cover width for sediment and nutrient reduction

Conservation Practice 390: Riparian Herbaceous Cover

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 5 Years

Enhancement Description

Where an existing herbaceous riparian buffer is located along a river, stream, pond, lake, or other waterbody, increase the width of the buffer in order to allow a greater percentage of sediment and nutrient removal from surface and subsurface flows.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Maximum enhancement buffer width may be increased up to the greater of 100 feet or the State-allowed maximum width.
- To the extent possible, the buffer area and extended buffer will be shaped and vegetated to increase overland flow interception.
- Concentrated flow erosion or mass soil movement shall be controlled in the up-gradient area prior to establishment of the riparian herbaceous cover.
- Existing underground functional drains that pass through these areas shall be replaced with rigid, non-perforated pipe through the buffer or equipped with a management regulating structure to allow control of overflow.



CONSERVATION STEWARDSHIP PROGRAM

- Species selected shall have stiff stems and high stem density near the ground surface to reduce water velocities and facilitate infiltration into the floodplain. Only viable, high quality and site-adapted planting stock will be used. Selection of native plants is recommended.
- In areas where native seeds and propagules are present, natural regeneration can be used in lieu of planting. Planting is required if no native seed bank is present.
- Selected plant species must be adapted to the projected duration of saturation and inundation of the site.
- Where available, use Ecological Site Description to guide restoration to appropriate vegetative community phase and include appropriate vegetative functional groups.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Management systems applied will be designed to maintain or improve the vigor and reproduction of the desired plant community.
- Harmful pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Protect riparian vegetation by reducing or excluding haying and grazing until the desired plant community is well established, with grazing deferred for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 5 years.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, prepare the planned buffer area for vegetation establishment. Refer to NRCS Conservation Practice Standard Riparian Herbaceous Cover (Code 390). (NRCS will provide technical assistance, as needed.)
- ☐ Prior to implementation, in areas that are highly disturbed and are unlikely to have existing native seed in the soil work closely with NRCS to select plant species that are adapted to your specific site. (NRCS will provide technical assistance, as needed.)

Species	Species type (grass, legume, forb)	Rate (Lbs/Ac) PLS

- ☐ Prior to implementation, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Seeding Depth	

- ☐ During implementation, grade the site, as needed, to eliminate concentrated flow through the buffer including that from uphill from the buffer.
- ☐ During implementation, replace any underground functional tile drains that pass through the buffer with rigid, non-perforated pipe or install a management regulating structure to allow overflow control.
- ☐ During implementation, conduct planting of selected species according to dates, techniques, depth, and other requirements listed in the plan.
- ☐ During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- ☐ During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, control harmful pests at the site, as necessary, and in a manner that mitigates impacts to pollinators.
- ☐ After implementation, protect the area by reducing haying and excluding grazing until the plant community is established, deferring grazing for a minimum of two years.

NRCS will:

- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Herbaceous Cover (Code 390) to show how it relates to this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for cropland.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for riparian herbaceous cover.
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Preparing a site plan that meets NRCS Conservation Practice Standard Riparian Herbaceous Cover (CPS 390).
 - ☐ Selecting the stiff-stemmed species of grasses and/or perennial forbs best suited to site saturation and inundation conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests, has had limited haying, and that grazing is being excluded, if established less than two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
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E390A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E390A the following additional criteria apply in Ohio:

- **Recommended species** for extension of existing field borders in Ohio are:
 - Grasses: orchard grass, switchgrass, eastern gamagrass, tall fescue, perennial ryegrass, Kentucky bluegrass, garrison foxtail,
 - Forbs: red clover, alsike clover
- Seeding rates (section 4 – table 2) and dates will be based on information contained in Ohio EFOTG, Section IV, Appendix A.

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio:

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CONSERVATION ENHANCEMENT ACTIVITY

E390B

CONSERVATION STEWARDSHIP PROGRAM

Increase riparian herbaceous cover width to enhance wildlife habitat

Conservation Practice 390: Riparian Herbaceous Cover

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Associated Ag Land; and Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 5 Years

Enhancement Description

Where an existing herbaceous riparian buffer is located along a river, stream, pond, lake, or other waterbody, increase the diversity of native species, control invasive species, install fencing and relocate equipment operations, trails, and livestock, and increase the width of the buffer.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Maximum enhancement buffer width may be increased up to the greater of 100 feet or the State-allowed maximum width.
- The management plan shall consider habitat and wildlife objectives such as habitat diversity, habitat linkages, daily and seasonal habitat ranges, limiting factors, and native plant communities.
- Select native species adapted to the site. Selected species should have multiple values such as those suited for biomass, wintering and nesting cover, aesthetics, forage value for aquatic invertebrates, and tolerance to locally used herbicides.



CONSERVATION STEWARDSHIP PROGRAM

- Density of the vegetative stand established shall be managed for targeted wildlife habitat requirements and shall encourage plant diversity. The location, layout and vegetative structure and composition of the buffer should complement natural features.
- Corridor configuration, establishment procedures and management should enhance habitats for threatened, endangered and other plant or animal species of concern, where applicable.
- Include forbs and legumes that provide pollen and nectar for native pollinators. Utilize a diverse mix of plant species that bloom at different times throughout the year.
- If mowing is necessary to maintain herbaceous cover it will occur outside the nesting and fawning season and allow for adequate re-growth for winter cover. To protect pollinators and maintain habitat with a diversity of plant structure, a third or less of the site should be disturbed (mowed, grazed, burned, etc.) each year, allowing for recolonization of pollinators from surrounding habitat.
- Harmful plant and animal pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Protect riparian vegetation by reducing or excluding haying and grazing until the desired plant community is well established, with grazing deferred for a minimum of two years.
- Control access of people, machinery, and livestock to the riparian zone with fencing.
- Design the expanded buffer enhancement for an expected life of at least 5 years.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, prepare the planned buffer area for vegetation establishment. Refer to NRCS Conservation Practice Standard Riparian Herbaceous Cover (Code 390). (NRCS will provide technical assistance, as needed.)
- ☐ Prior to implementation, in areas that are highly disturbed and unlikely to have existing native seed in the soil, work closely with NRCS to select plant species that are adapted to your specific site. (NRCS will provide technical assistance, as needed.)

Species	Species type (grass, legume, forb)	Rate (Lbs/Ac) PLS

- ☐ Prior to implementation, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Seeding Depth	

- ☐ During implementation, grade the site, as needed, to eliminate concentrated flow through the buffer including that from uphill from the buffer.
- ☐ During implementation, conduct planting of selected species according to dates, techniques, depth, and other requirements listed in the plan.
- ☐ During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- ☐ During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.
- ☐ After implementation, control harmful pests at the site, as necessary, and in a manner that mitigates impacts to pollinators.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, protect the area by reducing haying and excluding grazing until the plant community is established, deferring grazing for a minimum of two years.

NRCS will:

- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Herbaceous Cover (Code 390) to show how it relates to this enhancement.
- ☐ Prior to implementation, verify this enhancement is planned for cropland.
- ☐ Prior to implementation, develop a Wildlife Habitat Management Plan for targeted suite of species and meet with participant to review the Management Plan.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for riparian herbaceous cover.
- ☐ Prior to implementation, verify no plants are on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planned site preparation meets NRCS Conservation Practice Standard Riparian Herbaceous Cover (Code 390).
 - ☐ Selecting plant species that meet the habitat needs of targeted wildlife species, and that have multiple values such as those suited for biomass, wintering and nesting cover, aesthetics, forage value for aquatic invertebrates, tolerance to locally used herbicides, and best suited to site saturation and inundation conditions.
 - ☐ Select planting techniques and timing that is appropriate for the site and soil conditions.
 - ☐ Plan the use of additional erosion control, as needed for the site.
 - ☐ Prepare specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.



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- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests, has had limited haying, and that grazing is being excluded, if established less than two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

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E390B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E390B the following additional criteria apply in Ohio:

- Species plated, mix requirements and seeding rates will be based on information contained in Ohio EFOTG, Section IV, Appendices, Appendix A-Wildlife Habitat.
- Seed mixes must include a minimum of five species.
- Disturbance of the cover shall not occur during the primary nesting season, April 1 until July 15

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio.

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CONSERVATION ENHANCEMENT ACTIVITY

E391A

CONSERVATION STEWARDSHIP PROGRAM

Increase riparian forest buffer width for sediment and nutrient reduction

Conservation Practice 391: Riparian Forest Buffer

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Water

PRACTICE LIFE SPAN: 15 Years

Enhancement Description

Where an existing forested riparian area is located along a river, stream, pond, lake, or other waterbody, increase the width of the buffer in order to allow a greater percentage of sediment and nutrient removal from surface and subsurface flows.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Maximum enhancement buffer width may be increased up to the greater of 180 feet or the State-allowed maximum width.
- To the extent possible, the buffer area and extended buffer will be shaped and vegetated to increase overland flow interception.
- Excessive sheet-rill and concentrated-flow erosion will be controlled in the areas immediately adjacent and up-gradient of the buffer site. Overland flow through the riparian area will be maintained as sheet flow.
- Existing functional underground drains through the riparian area will be plugged, removed or replaced with perforated pipe/end plugs or water control structures.



CONSERVATION STEWARDSHIP PROGRAM

- Dominant vegetation will consist of existing, naturally regenerated, or seeded/planted trees and shrubs suited to the soil and hydrology of the site and the intended purpose of nutrient reduction.
- Use tree and shrub species that are native and non-invasive. Substitution with improved and locally accepted cultivars or purpose-specific species is allowed. For plantings and seeding, only viable, high-quality and adapted plant materials will be used.
- Favor tree and shrub species that have multiple values such as those suited for timber, nuts, fruit, florals, browse, nesting, and aesthetics.
- Periodic removal of some forest products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the buffer area is not compromised by the loss of vegetation or harvesting disturbance.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Harmful plant and animal pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Livestock shall be controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock is present, follow a Prescribed Grazing Plan (CPS 528) and defer grazing for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 15 years.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, prepare the planned buffer area according to the planting plan NRCS has developed with you. Refer to NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391). (NRCS will provide technical assistance)
- ☐ Prior to implementation, select planting date, method, and density/spacing appropriate for the site and soil conditions. (NRCS will provide technical assistance.)

Planting Date	
Planting Method	
Density and spacing	

- ☐ Prior to implementation, work closely with NRCS to select plant species that are adapted to your specific site and meet the goals of this enhancement.

Species	Vegetative or Rootstock	Size	Protection (tubes, mats, nets)

- ☐ During implementation and before planting, grade the site, as needed, to eliminate concentrated flow through the buffer including water coming from uphill of the buffer.
- ☐ During implementation and before planting, replace underground tile drains that pass through the buffer with rigid, non-perforated pipe or install a water control device that allows for overflow management.
- ☐ During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- ☐ During implementation, conduct planting of selected species according to dates, methods, spacing and other requirements listed in the planting plan.
- ☐ During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.

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CONSERVATION STEWARDSHIP PROGRAM

- ☐ After Implementation, control harmful pests and vegetation and in a manner that limits effects to pollinators. Inspect and maintain tubes and protection measures regularly.
- ☐ After implementation, livestock and wildlife may need be controlled or excluded to achieve the buffer's water quality improvement purpose. If livestock are present, follow a Prescribed Grazing Plan (Code 528) and defer grazing for a minimum of two years. Wildlife may need to be controlled during establishment of vegetative treatments. Temporary and local population control methods should be used with caution and within state and local regulations.

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned for cropland.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) to show how it relates to this enhancement.
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included in the planting list.
- ☐ Prior to implementation, NRCS will provide technical assistance on:
 - ☐ Preparing a site preparation and planting plan that meets NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) and lists the species, vegetation type, density, protection measures, and planting dates.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Assessing impacts of drainage removal/plugging on adjacent land units and uses.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, review any planned changes to ensure they meet the enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications provided to the participant.
- ☐ After implementation, verify that any underground drains through the riparian area, if they exist, were plugged, removed or replaced with perforated pipe/end plugs or structures for flow control.
- ☐ After implementation, verify the vegetation was established and any protections required are being maintained according to the specifications provided to the participant.
- ☐ After implementation verify livestock are controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock are present, verify a Prescribed Grazing Plan (Code 528) is being followed and that grazing is being deferred for a minimum of two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E391A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E391A the following additional criteria apply in Ohio:

- **Recommended species** for extension of existing riparian forest buffers in Ohio are:

Shrubs

Sumacs
Viburnums
Poison Ivy
Elderberry
Chokeberries
Alder
Willows
Dogwoods
Buttonbush
Blackberries/Raspberries
Greenbriar
Blackhaw
Sassafras
Chokecherry

Trees

Oaks
Maples
Willows
Ashes
Sycamore
Hickories
Walnut
Black Cherry
Red Cedar
Wild Plum
Redbud
Flowering Dogwood
Wild Crabapple
Hawthorns
Pines
Beech

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio



CONSERVATION ENHANCEMENT ACTIVITY

E391B

CONSERVATION STEWARDSHIP PROGRAM

Increase stream shading for stream temperature reduction

Conservation Practice 391: Riparian Forest Buffer

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land; Farmstead

RESOURCE CONCERN: Water

PRACTICE LIFE SPAN: 15 Years

Enhancement Description

Riparian area tree canopy cover density is increased and the extent of the forested riparian area is increased to provide greater stream shading.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Buffer width shall be increased to 60 feet and may be extended up to 180 feet or the State-allowed maximum width.
- Where necessary to improve stream shading, increase canopy cover density in the existing buffer area.
- In addition to providing shading, establish plant communities that address aquatic and terrestrial wildlife and pollinator needs and have multiple values such as habitat enhancement and nutrient uptake.
- Dominant vegetation will consist of existing, naturally regenerated, or seeded/planted trees and shrubs suited to the soil and hydrology of the site and the intended purpose of providing stream shading.



CONSERVATION STEWARDSHIP PROGRAM

- Use tree and shrub species that are native and non-invasive. Substitution with improved and locally accepted cultivars or purpose-specific species is allowed. For plantings and seeding, only viable, high-quality, and adapted plant materials will be used.
- Favor tree and shrub species that have multiple values such as those suited for timber, nuts, fruit, florals, browse, nesting, and aesthetics.
- Periodic removal of some forest products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the buffer area is not compromised by the loss of vegetation or harvesting disturbance.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Harmful plant and animal pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Protect riparian vegetation until the desired plant community is well established.
- Livestock shall be controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock is present, follow a Prescribed Grazing Plan (CPS 528) and defer grazing for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 15 years.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, prepare the planned buffer area according to the planting plan NRCS has developed with you. Refer to NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391). (NRCS will provide technical assistance)
- ☐ Prior to implementation, select planting date, method, and density/spacing appropriate for the site and soil conditions. (NRCS will provide technical assistance.)

Planting Date	
Planting Method	
Density and spacing	

- ☐ Prior to implementation, work closely with NRCS to select plant species that are adapted to the specific site and that meet the goal of providing increased stream shading.

Species	Vegetative or Rootstock	Size	Protection (tubes, mats, nets)

- ☐ During implementation and before planting, grade the site, as needed, to eliminate concentrated flow through the buffer including water coming from uphill of the buffer.
- ☐ During implementation, conduct planting of selected species according to dates, methods, spacing and other requirements listed in the planting plan.
- ☐ During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- ☐ During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.
- ☐ After implementation, control harmful pests and vegetation and in a manner that limits effects to pollinators. Inspect and maintain tubes and protection measures regularly.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, livestock and wildlife may need be controlled or excluded to achieve the buffer's stream shading purpose. If livestock are present, follow a Prescribed Grazing Plan (Code 528) and defer grazing for a minimum of two years. Wildlife may need to be controlled during establishment of vegetative treatments. Temporary and local population control methods should be used with caution and within state and local regulations.

NRCS will:

- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) to show how it relates to this enhancement.
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included in the planting list.
- ☐ Prior to implementation, NRCS will provide technical assistance on:
 - ☐ Site preparation and planting plan that meets NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) and lists the species, vegetation type, density, protection measures, and planting dates.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ The potential for denser species plantings and focus in areas that will provide the most shade to the stream throughout the day.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, review any planned changes to ensure they meet the enhancement criteria.
- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications provided to the participant.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, verify the vegetation was established and any protections required are being maintained according to specifications provided to the participant.
- ☐ After implementation verify livestock are controlled or excluded as necessary to achieve the buffer's goal of greater stream shading. If livestock are present, verify a Prescribed Grazing Plan (Code 528) is being followed and grazing is being deferred for a minimum of two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E391B

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E391B the following additional criteria apply in Ohio:

- Planned height and spread of trees or shrubs shall be sufficient to cast shade on at least 50% of the stream surface. A tree can be assumed to cast shade horizontally a distance equal to its height. The further from the stream the tree is, the taller it will need to be. Tree heights can be found in Appendix B, located in Ohio EFOTG, Section IV, Appendices.
- Recommended species** for extension of existing riparian forest buffers in Ohio are:

Shrubs

Alder
Willows
Dogwoods
Blackhaw
Sassafras
Chokecherry

Trees

Oaks
Maples
Willows
Ashes

Sycamore
Hickories
Walnut
Black Cherry
Red Cedar
Wild Plum
Redbud
Flowering Dogwood
Wild Crabapple
Hawthorns
Pines
Beech

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio

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CONSERVATION ENHANCEMENT ACTIVITY

E391C

CONSERVATION STEWARDSHIP PROGRAM

Increase riparian forest buffer width to enhance wildlife habitat

Conservation Practice 391: Riparian Forest Buffer

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land; Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 15 Years

Enhancement Description

Where an existing riparian forest buffer is located along a river, stream, pond, lake, or other waterbody, increase the diversity of native species, control invasive species, install fencing and relocate equipment operations, trails, and livestock to increase the functional width of the buffer.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Buffer width shall be increased to 60 feet and may be extended up to 180 feet or the State-allowed maximum width.
- The management plan shall consider habitat and wildlife objectives such as habitat diversity, habitat linkages, daily and seasonal habitat ranges, limiting factors, and native plant communities.
- Establish plant communities that address aquatic, terrestrial wildlife and pollinator needs and have multiple values such as habitat enhancement and nutrient uptake.
- Dominant vegetation will consist of existing, naturally regenerated, or seeded/planted trees and shrubs suited to the soil and hydrology of the site.



CONSERVATION STEWARDSHIP PROGRAM

- Use tree and shrub species that are native and non-invasive. Substitution with improved and locally accepted cultivars or purpose-specific species is allowed. For plantings and seeding, only viable, high-quality and adapted plant materials will be used.
- Favor tree and shrub species that have multiple values such as those suited for timber, nuts, fruit, florals, browse, nesting, and aesthetics.
- Periodic removal of some forest products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the buffer area is not compromised by the loss of vegetation or harvesting disturbance.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Harmful plant and animal pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Protect riparian vegetation until the desired plant community is well established.
- Livestock shall be controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock is present, follow a Prescribed Grazing Plan (CPS 528) and defer grazing for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 15 years.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, prepare the planned buffer area according to the planting plan NRCS has developed with you. Refer to NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391). (NRCS will provide technical assistance.)
- ☐ Prior to implementation, select planting dates, methods, and density/spacing appropriate for the site and soil conditions. (NRCS will provide technical assistance.)

Planting Date	
Planting Method	
Density and spacing	

- ☐ Prior to implementation, work closely with NRCS to select diverse native and naturally regenerated or seeded/planted trees and shrubs that are adapted to your specific site and meet the wildlife habitat objectives of this enhancement.

Species	Vegetative or Rootstock	Size	Protection (tubes, mats, nets)

- ☐ During implementation, conduct planting of selected species according to dates, methods, spacing and other requirements listed in the planting plan.
- ☐ During implementation, install and maintain erosion control measures as needed, such as, silt fencing and mulching.
- ☐ During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.
- ☐ After Implementation, control harmful pests and vegetation to reduce competition for water, nutrients, and space and in a manner that limits effects to pollinators. Inspect and maintain tubes and protection measures regularly.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, livestock and wildlife may need be controlled or excluded to achieve the buffer's habitat enhancement purpose. If livestock are present, follow a Prescribed Grazing Plan (Code 528) and defer grazing for a minimum of two years. Wildlife may need to be controlled during establishment of vegetative treatments. Temporary and local population control methods should be used with caution and within state and local regulations.

NRCS will:

- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) to show how it relates to this enhancement.
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included in the planting list.
- ☐ Prior to implementation, NRCS will provide technical assistance on:
 - ☐ Site preparation and planting plan that meets NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) and lists the species, vegetation type, density, protection measures, and planting dates.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Having the participant consider planting a more diverse number of species that help establish plant communities to address targeted aquatic and terrestrial wildlife and pollinator needs.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, review any planned changes to ensure they meet the enhancement criteria.
- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications provided to the participant.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, verify the vegetation was established, and any protections required are being maintained according to specifications provided to the participant.
- ☐ After implementation verify livestock are controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock are present, verify a Prescribed Grazing Plan (Code 528) is being followed and grazing is being deferred for a minimum of two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



**OHIO SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

**CONSERVATION
STEWARDSHIP
PROGRAM**

E391C

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E391C the following additional criteria apply in Ohio:

- **Recommended species** for extension of existing riparian forest buffers in Ohio are:

Shrubs

Sumacs
Viburnums
Poison Ivy
Elderberry
Chokeberries
Alder
Willows
Dogwoods
Buttonbush
Blackberries/Raspberries
Greenbriar
Blackhaw
Sassafras
Chokecherry

Trees

Oaks
Maples
Willows
Ashes
Sycamore
Hickories
Walnut
Black Cherry
Red Cedar
Wild Plum
Redbud
Flowering Dogwood
Wild Crabapple
Hawthorns
Pines
Beech

Additional Documentation Requirements for Ohio

There are no additional documentation requirements that apply in Ohio



CONSERVATION ENHANCEMENT ACTIVITY

E393A

CONSERVATION STEWARDSHIP PROGRAM

Extend existing filter strip to reduce water quality impacts

Conservation Practice 393: Filter Strip

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial);
Associated Ag Land

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description

Extend existing filter strips for water quality protection. Extend the existing buffer for a total of 60 feet or more to enhance water quality functions. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.

Criteria

- Extend existing filter strip for water quality protection.
- Extend the existing buffer for a total of 60 feet or more to enhance water quality functions.
- Overland flow entering the filter strip shall be uniform sheet flow. Concentrated flow shall be dispersed before it enters the filter strip.
- The maximum gradient along the leading edge of the filter strip shall not exceed one-half of the up-and-down hill slope percent, immediately upslope from the filter strip, up to a maximum of 5%.
- Filter strips shall not be used as a travel lane for equipment or livestock.



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- The filter strip will be designed to have a 10-year life span, following the procedure in the Agronomy Technical Note No. 2 (Using RUSLE2 for the Design and Predicted Effectiveness of Vegetative Filter Strips (VFS) for Sediment), based on the sediment delivery in RUSLE2 to the upper edge of the filter strip and ratio of the filter strip flow length to the length of the flow path from the contributing area.
- The filter strip shall be located immediately downslope from the source area of contaminants.
- The drainage area above the filter strip shall have a slope of 1% or greater.
- The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible. State-listed noxious or invasive plants will not be established in the filter strip.
- The filter strip shall be established to permanent herbaceous vegetation. Species selected shall be:
 - able to withstand partial burial from sediment deposition and
 - tolerant of herbicides used on the area that contributes runoff to the filter strip.
- Species selected shall have stiff stems and a high stem density near the ground surface.
- Species selected for seeding or planting shall be suited to current site conditions and intended uses.
- Selected species will have the capacity to achieve adequate density and vigor within an appropriate period to stabilize the site sufficiently to permit suited uses with ordinary management activities.
- Species, rates of seeding or planting, minimum quality of planting stock, such as pure live seed or stem caliper, and method of establishment shall be specified before application. Only viable, high quality seed or planting stock will be used.
- Site preparation and seeding or planting shall be done at a time and in a manner that best ensures survival and growth of the selected species. What constitutes successful



CONSERVATION STEWARDSHIP PROGRAM

establishment, e.g. minimum percent ground/canopy cover, percent survival, stand density, etc. shall be specified before application.

- Planting dates shall be scheduled during periods when soil moisture is adequate for germination and/or establishment. Seeding shall be timed so that tillage for adjacent crop does not damage the seeded filter strip.
- The minimum seeding and stem density shall be equivalent to a high-quality grass hay seeding rate for the climate area or the density of vegetation selected in RUSLE2 to determine trapping efficiency, whichever is the higher seeding rate.



Documentation and Implementation Requirements

CONSERVATION STEWARDSHIP PROGRAM

Participant will:

- ☐ Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Filter Strip (Code 393). (NRCS will provide technical assistance, as needed.) Total planned amount of filter strip extension = _____ feet

- ☐ Prior to implementation, select at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- ☐ Prior to implementation, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	

- ☐ During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- ☐ During implementation, protect the planting from plant and animal pests and fire.
- ☐ After implementation, maintain and protect the planting from plant and animal pests and fire.
- ☐ After implementation, verify the total amount of filter strip implemented. Total implemented amount of filter strip extension = _____ feet



CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- ☐ Prior to implementation, verify the enhancement is planned for cropland.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Filter Strip (Code 393) as it relates to implementing this enhancement.
- ☐ Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for filter strip establishment. Total planned amount of filter strip extension = _____ feet
- ☐ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- ☐ As needed, prior to implementation, NRCS will provide technical assistance:
 - ☐ Planning site preparation meeting NRCS Conservation Practice Standard Filter Strip (Code 393).
 - ☐ Selecting the wildlife friendly grasses and/or perennial forbs best suited to site conditions.
 - ☐ Selecting planting techniques and timing appropriate for the site and soil conditions.
 - ☐ Planning the use of additional erosion control, as needed for the site.
 - ☐ Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify the vegetation was established to specifications developed for the site.
- ☐ After implementation, verify the planting is protected from pests and fire.



CONSERVATION STEWARDSHIP PROGRAM

- ☐ After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify the total amount of filter strip implemented. Total implemented amount of filter strip extension = _____ feet

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



OHIO SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E393A

Additional Criteria for Ohio

In addition to the criteria specified in the National job sheet E393A the following additional criteria and criteria definitions apply in Ohio:

- The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.
 - o Grasses: timothy, orchard grass, indiangrass, little bluestem, big bluestem, switchgrass
 - o Forbs and Legumes: red clover, alsike clover, ladino clover, purple coneflower, black-eyed susan, partridge pea, Illinois bundleflower, gray headed coneflower, prairie coreopsis
- Ohio state specific species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods are included in Appendix A; section IV of Ohio e-FOTG (<https://efotg.sc.egov.usda.gov/>).

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CONSERVATION ENHANCEMENT ACTIVITY

E395A

CONSERVATION
STEWARDSHIP
PROGRAM

Stream habitat improvement through placement of woody biomass

Conservation Practice 395: Stream Habitat Improvement & Management

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 5 years

Enhancement Description

Flexible placement of wood (unanchored/unpinned) in small, 1st and 2nd order streams to improve stream habitat conditions for aquatic species and natural stream processes.

Criteria

- Provide a heterogeneous and complex physical habitat consistent with the physiographic setting that is important to fish and other aquatic species in the watershed.
- Apply to 1st- and 2nd-order streams, typically less than 15 feet wide, that are lacking in woody biomass. The stream should not be actively incising or down cutting.
- Develop a written plan detailing the actions, including a map indicating the action locations, for the stream segment(s) being impacted.
- Obtain all necessary Clean Water Act, Section 404 permits, and other federal, state or local permits, as required.
- If present, implement upstream of beaver flowages or wetlands which will collect wood moving downstream.



CONSERVATION STEWARDSHIP PROGRAM

- Select stream segments where ample canopy cover exists and cut trees will not greatly reduce shading. Refrain from cutting trees on the stream bank, which are creating undercut banks or adding to the stability of the system.
- Leave felled logs on floodplains to increase roughness elements that will reduce the effects of flooding and create wildlife habitat.
- Develop areas called “strainers” where a few large trees can be felled across the stream on the downstream end of the treatment area to collect any wood which may dislodge during high flows.
- Cut trees a few feet from the ground leaving a higher than normal stump on the downstream side to help secure recently cut trees.
- Where possible, utilize trees with full intact root wads to create complex habitat.
- Design the expanded buffer enhancement for an expected life of at least 5 years.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, develop a written plan detailing proposed actions, including a map indicating the action locations for the stream segment(s) being impacted, using Conservation Practice Standard Stream Habitat Improvement and Management (Code 395). (NRCS will provide technical assistance, as needed.)
- ☐ Prior to implementation, obtain all necessary Clean Water Act, Section 404 permits, and other federal, state or local permits, as required.
- ☐ Prior to implementation, document pre-treatment conditions of the area including the use of representative digital images/photos.
- ☐ During implementation, place wood using appropriate methods to provide complex and diverse stream habitat as per the plan and specifications.
- ☐ During implementation, notify NRCS of any planned changes to verify the planned system meets the enhancement criteria.
- ☐ After implementation, document post-treatment conditions of the area including the use of representative digital images/photos.
- ☐ After implementation, conduct periodic inspections and prompt repair or modification of any structures that are found to cause excessive streambank or streambed instability.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement, including NRCS engineering oversight where required.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Stream Habitat Improvement and Management (Code 395) as it relates to implementing this enhancement.
- ☐ Prior to implementation, ensure that the planned habitat enhancement is consistent with the physiographic setting for fish and other aquatic species in the watershed. Use the NRCS Stream Visual Assessment Protocol, Version 2 or comparable evaluation



tool(s) to ensure that the planned activities will meet or exceed the minimum planning criteria for stream habitat in Section II of the FOTG.

CONSERVATION STEWARDSHIP PROGRAM

- ☐ Prior to implementation, ensure that all necessary Clean Water Act, Section 404, and other federal, state, or local permits have been acquired and cover the planned work.
- ☐ Prior to implementation, prepare specifications for applying this enhancement using Code 395, approved state implementation requirements, national technical notes, state technical notes, and other appropriate guidance.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- ☐ After implementation, verify that the stream enhancement was established to specifications developed for the site. Use pre- and post-treatment images/photos of the area as part of this verification.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



CONSERVATION ENHANCEMENT ACTIVITY

E399A

CONSERVATION
STEWARDSHIP
PROGRAM

Fishpond management for native aquatic and terrestrial species

Conservation Practice 399: Fishpond Management

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Farmstead; Associated Ag Land

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Pond rehabilitation, buffer, and watershed management actions are taken to improve habitat for native species of fish, amphibians, and shorebirds.

Criteria

- The pond must meet the requirements of NRCS Conservation Practice Standard Pond (Code 378).
- Where feasible, retain features such as trees in the upper reaches of the pond and stumps in the pool area. If necessary, shape upper reaches of the pond to provide shallow areas and wetland habitat.
- Based on client objectives and local regulations develop a pond management plan that specifies species selection, stocking rates, and ratios. Develop species selection, stocking rates, and ratios with respect to the size, depth, water temperature, and water quality of the pond to be stocked.
- Use native species that are locally adapted for use in ponds, lakes, or reservoirs. Comply with state and local regulations when selecting species to be stocked. Control nuisance non-native species in compliance with state and local regulations.



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- If needed, use of supplemental aeration equipment to improve gas transfer, water quality, and minimize fish stress within the impoundment.
- Protect the site from flooding, sedimentation, and contamination. Use erosion control and nutrient and pest management conservation practices in the watershed to maintain water quality and reduce sediment production.
- Establish a minimum 35-foot vegetated buffer around the pond. Improve the diversity of native or natural shrub and/or herbaceous plant species suitable for the site and appropriate for the riparian and aquatic species. Exclude livestock from the pond and the buffer area.
- Grassy cover around the impoundment that may provide nesting habitat should not be mowed until after the primary nesting season.



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Documentation and Implementation Requirements

Participant will:

- ☐ Prior to implementation, have a written plan detailing proposed actions, including proposed fish stocking and pond, pond buffer area, and watershed actions. Refer to NRCS Conservation Practice Standards Riparian Herbaceous Cover (Code 391) and Fishpond Management (Code 399). (NRCS will provide technical assistance, as needed.)
- ☐ During implementation, if necessary as per the plan, shape upper reaches of the pond to provide shallow areas and wetland habitat.
- ☐ During implementation, if necessary as per the plan, install aeration equipment.
- ☐ During implementation, as per the plan, stock the pond using native species that are locally adapted and that comply with state and local regulations.
- ☐ During implementation, establish a minimum 35-foot vegetated buffer around the pond. In this buffer, improve the diversity of native or natural shrub and/or herbaceous plant species suitable for the site.
- ☐ During implementation, notify NRCS of any planned changes to verify the planned system meets the enhancement criteria.
- ☐ After implementation, use erosion control and nutrient and pest management conservation practices and activities in the pond's contributing watershed to maintain water quality, reduce sediment production, and control pests.
- ☐ After implementation, protect the pool and buffer area from livestock, and do not mow the buffer area around the impoundment until after the primary nesting season.

NRCS will:

- ☐ As needed, provide technical assistance to meet the criteria of the enhancement.
- ☐ Prior to implementation, verify the pond meets the requirements of NRCS Conservation Practice Standards Pond (Code 378).
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standards Fishpond Management (Code 399) and Riparian Herbaceous Cover (Code 390) as they relate to implementing this enhancement.



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- ☐ Prior to implementation, based on client objectives and local regulations, help develop a pond management plan that specifies species selection, stocking rates, and ratios, and that complies with state and local regulations.
- ☐ Prior to implementation, as needed, prepare specifications for applying this enhancement using NRCS Conservation Practice Standards Riparian Herbaceous Cover (Code 391) and Fishpond Management (Code 399), approved state implementation requirements, national technical notes, state technical notes, and other appropriate guidance.
- ☐ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify that fish stocking was done properly, that buffer vegetation was established to specifications developed for the site, and that appropriate erosion control, nutrient management, and pest management conservation practices are being used in the pond's contributing watershed.
- ☐ After implementation, verify the pond and buffer area is being protected from inappropriate mowing and livestock use

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date