



# CP42, Pollinator Habitat (3/11)

## Purpose

Establishing pollinator habitat provides flowering plants such as shrubs, legumes, forbs, and wildflowers for foraging pollinators during the spring, summer and fall. This practice will in conjunction with other CRP practices.

## Designated Area

Pollinator habitat may be established on any portion of a CRP offer. However, areas must be at least 0.5 acres. In order to receive additional EBI points, CRP parcels less than 10 acres must have at least 1.0 acre seeded to pollinator habitat. For CRP parcels larger than 10 acres, at least 10% of the area must be seeded to pollinator habitat. Square plantings are preferred. However, if planted in strips, each strip must be a minimum of at least 20 feet wide.

## Specifications

Seeding composition must include a minimum of 9 species of pollinator friendly shrubs, legumes, and wildflowers including at least 3 species in bloom during each period of April – June 15, June 16 – July 31 and August 1 to killing frost. Seeding mixes may include not more than 25% grasses based on seeds per square foot.

Select at least three forb species from each bloom period. The plantings can be entirely forbs, shrubs or wildflowers or can be seeded with grasses to help reduce competition from weed species. Native forb species are preferred. If grasses are used in the mix, only native grasses are allowed to reduce competition between grasses and the shrubs, legumes, and wildflowers. Non-sod forming grasses are recommended. If shrubs are planted by machine spacing cannot exceed 5 ft. by 5ft.

## Establishment Considerations

A nurse crop may be used for spring seeded grasses and legumes for erosion control and weed suppression. Use a maximum of 10 lbs./acre of oats or barley, or 7 lbs./acre of flax.

Companion crops shall be clipped prior to the boot stage to minimize competition with emerging grass and forb plants. Second and subsequent clippings may be necessary when

re-growth provides competition during the first year of establishment. Clipping height should be above developing seedlings.

## Seeding Dates

Pollinator habitat should be seeded within 12 months of the contract's effective date. Seeding windows as follows:

| Season of Planting for Cool Season Species | Area of the State             |                               |
|--|-------------------------------|-------------------------------|
|  | North of North Dakota Hwy 200 | South of North Dakota Hwy 200 |
| Spring                                     | Prior to May 20               | Prior to May 10               |

## Seed bed Preparation

The seedbed must be essentially free of competing vegetation. It should be firm enough to permit seed placement at the desired depth and protected against erosion. A firm seedbed should hardly reveal adult footprints. This will allow for placement of the seeds at a depth of 1/4 to 1/2 of an inch into the soil.

Seedbed preparation will be mechanical or chemical. Refer to North Dakota Weed Control Guide (NDSU Circular W-253) for specific herbicide and weed control recommendations.

## Seeding Operation

The seed may be planted with a grass drill or grain drill. Grass drills with a legume box are recommended. Broadcasting seed may meet practice specifications and is eligible for cost share payments on areas of 5 acres or less. Due to the small amount of seed being planted, a carrier such as cracked corn or chick starter may be needed to provide even distribution of the seed across the field.

The seeding depth should not exceed 1/2 inch in all soils.

## **Operation and Maintenance**

Operation and maintenance will include but not be limited to the following:

1. Control annual weeds and other competition the year of establishment, with early and timely clipping before weed seed heads appear.
2. After the cover is established, prevent disturbance of cover during the entire growing season to provide pollinator habitat until freeze up.
3. After cover is established, control all weeds to the extent they do not adversely impact the required cover or surrounding landowner and remain in compliance with State noxious weed laws by: a) spot treating with chemicals per label directions, or b) spot mow before weed seed heads form. When possible delay use of control measures until after August 1st to protect nesting wildlife. Spot treatment on problem areas may be authorized by FSA during the primary nesting season.
4. Protect the acres from haying and grazing year round. Fences may need to be constructed and maintained to exclude livestock throughout all 12 months of the year.
5. Re-seed any areas that do not have adequate permanent cover using the same species mixture.
6. Do not use the contract area for field borders, field roads or other uses that will damage or destroy the cover.
7. Do not use the field for disposal of livestock or organic waste unless that use is authorized in the additional specifications and remarks.
8. Control rodent infestations that adversely affect the perennial ground cover.

## **Cover Management**

Pollinator habitat areas are required to have management activities that are site specific and ensure:

- Plant diversity
- Wildlife benefits
- Protection of soil and water resources.

Management activities may include:

- Heavy harrow
- Clipping and removal
- Prescribed burning
- Interseeding forbs and legumes

Management of cover will be required once during the contract period. Cost share may be available for the management activity.

## **Use of Pesticides**

Only those pesticides, which are labeled for the specific use, will be recommended. University and Extension publications and specific label instructions will be used for guidance on herbicide selection and use.

|   |   |
|---|---|
| <b>CRP Pollinator Habitat - Example Mixes</b> | Seeding composition must include a minimum of 9 species of pollinator-friendly shrubs, legumes, and wildflowers, including at least 3 species in bloom during the each period of April to June 15, June 16 to July 31 and August 1 to killing frost. Seeding mixes may include not more than 25 percent grasses based on seeds per square foot. <b>Machine planted shrubs must be spaced at a maximum of 5 ft. by 5 ft.</b> |
|---|---|

|                               |                            |
|-------------------------------|----------------------------|
| <b>Conservation Cover 327</b> | <b>Maximum 25% grasses</b> |
|-------------------------------|----------------------------|

Example mixes for sites such as loamy (silty), loamy overflow (overflow), sub-irrigated, clayey, wet meadow

|                      | <i>Percentage</i> | <i>PLS/AC</i> | <i>PLS/Mix</i> | <i>Bloom period</i> |
|----------------------|-------------------|---------------|----------------|---------------------|
| Green needlegrass    | 10%               | 7.5           | 0.75           |                     |
| Western wheatgrass   | 5%                | 10            | 0.50           |                     |
| Canada wildrye       | 10%               | 7.5           | 0.75           |                     |
|                      | <b>25%</b>        |               |                |                     |
| Maximilian sunflower | 5%                | 1             | 0.05           | l                   |
| Purple prairieclover | 10%               | 3.8           | 0.38           | m                   |
| Canada milkvetch     | 10%               | 4             | 0.40           | m                   |
| Leadplant            | 5%                | 6             | 0.30           | l                   |
| Purple coneflower    | 10%               | 9.0           | 0.9            | l                   |
| Lewis blue flax      | 10%               | 3.8           | 0.38           | e                   |
| Shell-leaf penstemon | 5%                | 4             | 0.20           | e                   |
| Plains coreopsis     | 15%               | 0.7           | 0.10           |                     |
| Black-eyed Susan     | 8%                | 0.8           | 0.06           | m                   |
|                      | <b>75%</b>        |               |                |                     |

|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Conservation Cover 327</b> | <b>Forbs, shrubs, legumes only</b> |
|-------------------------------|------------------------------------|

Example mixes for sites such as loamy (silty), loamy overflow (overflow), sub-irrigated, clayey, wet meadow

|                      | <i>Percentage</i> | <i>PLS/AC</i> | <i>PLS/Mix</i> | <i>Bloom period</i> |
|----------------------|-------------------|---------------|----------------|---------------------|
| Maximilian sunflower | 10%               | 1             | 0.10           | l                   |
| Purple prairieclover | 15%               | 3.8           | 0.57           | m                   |
| Canada milkvetch     | 12%               | 4             | 0.48           | m                   |
| Leadplant            | 7%                | 6             | 0.42           | l                   |
| Purple coneflower    | 15%               | 9.0           | 1.35           | l                   |
| Lewis blue flax      | 11%               | 3.8           | 0.41           | e                   |
| Shell-leaf penstemon | 5%                | 4             | 0.08           | e                   |
| Plains coreopsis     | 15%               | 0.7           | 0.04           | e                   |
| Black-eyed Susan     | 10%               | 0.8           | 0.08           | m                   |
|                      | <b>100%</b>       |               |                |                     |

| Conservation Cover 327  |                   | Maximum 25% grasses |                |                     |
|---|-------------------|---------------------|----------------|---------------------|
| Example Mixes for sites such as loam (silty), thin loamy (thin upland), loamy overflow (overflow), clayey |                   |                     |                |                     |
|   | <i>Percentage</i> | <i>PLS/AC</i>       | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Green needlegrass   | 10%               | 7.5                 | 0.75           |                     |
| Western wheatgrass  | 5%                | 10                  | 0.50           |                     |
| Canada wildrye  | 10%               | 7.5                 | 0.75           |                     |
|   | <b>25%</b>        |                     |                |                     |
| Maximilian sunflower  | 5%                | 1                   | 0.05           | l                   |
| Purple prairieclover  | 12%               | 3.8                 | 0.46           | m                   |
| Yellow coneflower   | 10%               | 1.5                 | 0.15           | m                   |
| Black-eyed Susan  | 10%               | 0.8                 | 0.08           | m                   |
| Lewis blue flax   | 15%               | 3.8                 | 0.57           | e                   |
| Western yarrow  | 5%                | 0.4                 | 0.02           | e                   |
| American vetch  | 5%                | 36                  | 1.80           | e                   |
| Leadplant   | 3%                | 6                   | 0.18           | l                   |
| Purple coneflower   | 10%               | 9.0                 | 0.90           | l                   |
|   | <b>75%</b>        |                     |                |                     |

| Conservation Cover 327  |                   | Forbs, shrubs, legumes only |                |                     |
|---|-------------------|-----------------------------|----------------|---------------------|
| Example Mixes for sites such as loam (silty), thin loamy (thin upland), loamy overflow (overflow), clayey |                   |                             |                |                     |
|   | <i>Percentage</i> | <i>PLS/AC</i>               | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Maximilian sunflower  | 10%               | 1                           | 0.10           | l                   |
| Purple prairieclover  | 15%               | 3.8                         | 0.57           | m                   |
| Yellow coneflower   | 12%               | 1.5                         | 0.18           | m                   |
| Black-eyed Susan  | 12%               | 0.8                         | 0.10           | m                   |
| Lewis blue flax   | 15%               | 3.8                         | 0.57           | e                   |
| Western yarrow  | 10%               | 0.4                         | 0.04           | e                   |
| American vetch  | 6%                | 36                          | 2.16           | e                   |
| Leadplant   | 5%                | 6                           | 0.30           | l                   |
| Purple coneflower   | 15%               | 9.0                         | 1.35           | l                   |
|   | <b>100%</b>       |                             |                |                     |

| Conservation Cover 327   |                   | Maximum 25% grasses |                |                     |
|--|-------------------|---------------------|----------------|---------------------|
| Example mixes for sites such as saline lowland, claypan and thin claypan and closed depression |                   |                     |                |                     |
|  | <i>Percentage</i> | <i>PLS/AC</i>       | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Slender wheatgrass   | 4%                | 5.5                 | 0.22           |                     |
| Western wheatgrass   | 5%                | 10                  | 0.50           |                     |
| Beardless wildrye  | 8%                | 8.5                 | 0.68           |                     |
| Green needlegrass  | 8%                | 7.5                 | 0.60           |                     |
|  | <b>25%</b>        |                     | 0.00           |                     |
| Maximilian sunflower   | 5%                | 1                   | 0.05           | l                   |
| Western yarrow   | 5%                | 0.4                 | 0.02           | e                   |
| Blue aster   | 10%               | 0.8                 | 0.08           | l                   |
| Four-winged saltbush   | 10%               | 6                   | 0.60           | m                   |
| Blanketflower  | 5%                | 7                   | 0.35           | m                   |
| Lewis blue flax  | 10%               | 3.8                 | 0.38           | e                   |
| Black-eyed Susan   | 10%               | 0.8                 | 0.08           | e                   |
| Yellow coneflower  | 10%               | 1.5                 | 0.15           | m                   |
| Canada goldenrod   | 10%               | 0.4                 | 0.04           | l                   |
|  | <b>75%</b>        |                     |                |                     |

| Conservation Cover 327   |                   | Forbs, shrubs, legumes only |                |                     |
|--|-------------------|-----------------------------|----------------|---------------------|
| Example mixes for sites such as saline lowland, claypan and thin claypan and closed depression |                   |                             |                |                     |
|  | <i>Percentage</i> | <i>PLS/AC</i>               | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Maximilian sunflower   | 10%               | 1                           | 0.10           | l                   |
| Western yarrow   | 5%                | 0.4                         | 0.02           | e                   |
| Blue aster   | 12%               | 0.8                         | 0.10           | l                   |
| Four-winged saltbush   | 10%               | 6                           | 0.60           | m                   |
| Blanketflower  | 7%                | 7                           | 0.49           | m                   |
| Lewis blue flax  | 15%               | 3.8                         | 0.57           | e                   |
| Black-eyed Susan   | 15%               | 0.8                         | 0.12           | e                   |
| Yellow coneflower  | 15%               | 1.5                         | 0.23           | m                   |
| Canada goldenrod   | 11%               | 0.4                         | 0.04           | l                   |

|  |             |  |  |  |
|--|-------------|--|--|--|
|  | <b>100%</b> |  |  |  |
|--|-------------|--|--|--|

| Conservation Cover 327  |                   | Maximum 25% grasses |                |                     |
|---|-------------------|---------------------|----------------|---------------------|
| Example mixes for sites such as sands, sandy, shallow-to-gravel, and shallow. |                   |                     |                |                     |
|   | <i>Percentage</i> | <i>PLS/AC</i>       | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Canada wildrye  | 10%               | 7.5                 | 0.75           |                     |
| Western wheatgrass  | 5%                | 10                  | 0.50           |                     |
| Green needlegrass   | 10%               | 7.5                 | 0.75           |                     |
|   | <b>25%</b>        |                     | 0.00           |                     |
| Dotted gayfeather   | 3%                | 8                   | 0.24           | <i>l</i>            |
| False boneset   | 10%               | 0.4                 | 0.04           | <i>l</i>            |
| Yellow coneflower   | 10%               | 1                   | 0.10           | <i>m</i>            |
| Purple coneflower   | 12%               | 9                   | 1.08           | <i>m</i>            |
| Purple prairieclover  | 12%               | 3.8                 | 0.46           | <i>m</i>            |
| Shell-leaf penstemon  | 10%               | 4                   | 0.40           | <i>e</i>            |
| Stiff sunflower   | 3%                | 12.8                | 0.38           | <i>l</i>            |
| Lewis blue flax   | 10%               | 3.8                 | 0.38           | <i>e</i>            |
| Western yarrow  | 5%                | 0.4                 | 0.02           | <i>e</i>            |
|   | <b>75%</b>        |                     |                |                     |

| Conservation Cover 327  |                   | Forbs, shrubs, legumes only |                |                     |
|---|-------------------|-----------------------------|----------------|---------------------|
| Example mixes for sites such as sands, sandy, shallow-to-gravel, and shallow. |                   |                             |                |                     |
|   | <i>Percentage</i> | <i>PLS/AC</i>               | <i>PLS/Mix</i> | <i>Bloom period</i> |
| Dotted gayfeather   | 3%                | 8                           | 0.24           | <i>l</i>            |
| False boneset   | 4%                | 0.4                         | 0.02           | <i>l</i>            |
| Yellow coneflower   | 15%               | 1                           | 0.15           | <i>m</i>            |
| Purple coneflower   | 15%               | 9                           | 1.35           | <i>m</i>            |
| Purple prairieclover  | 15%               | 3.8                         | 0.57           | <i>m</i>            |
| Shell-leaf penstemon  | 14%               | 4                           | 0.56           | <i>e</i>            |
| Stiff sunflower   | 5%                | 12.8                        | 0.64           | <i>l</i>            |

|                 |             |     |      |   |
|-----------------|-------------|-----|------|---|
| Lewis blue flax | 17%         | 3.8 | 0.65 | e |
| Western yarrow  | 12%         | 0.4 | 0.05 | e |
|                 | <b>100%</b> |     |      |   |

## North Dakota Pollinator Plants Eligible for CRP

| Native Forbs – No single species can exceed 15% PLS/ac. |                                    |   |                                    |                                  |                                    |
|---|------------------------------------|---|------------------------------------|----------------------------------|------------------------------------|
| <i>Early<br/>April – June 15</i>                        | <i>Full Seed<br/>PLS<br/>lb/ac</i> | <i>Middle<br/>June 15 - July</i>        | <i>Full Seed<br/>PLS<br/>lb/ac</i> | <i>Late<br/>August - October</i> | <i>Full Seed<br/>PLS<br/>lb/ac</i> |
| American vetch (VIAM)                                   | 36.0                               | Black-eyed Susan (RUHI2)                | 0.8                                | Blue aster (SYLAL3)              | 1.5                                |
| Black-eyed Susan (RUHI2)                                | 0.8                                | Blanketflower (GAAR)                    | 7.0                                | Blue vervain (verbena) (VEHA2)   | 1.0                                |
| Canada anemone (ANCA8)                                  | 10.0                               | Butterfly milkweed (ASTU)               | 16.2                               | Butterfly milkweed (ASTU)        | 16.2                               |
| Columbine (AQCA)  | 3.0                                | Canada goldenrod (SOCA6)                | 0.2                                | Canada goldenrod (SOCA6)         | 1.4                                |
| Evening primrose (OEBI)                                 | 0.8                                | Canada milkvetch (ASCAC6)               | 4.0                                | Cup plant (SIPE2)                | 19.0                               |
| Golden Alexander (ZIAU)                                 | 6.2                                | Canada tickclover (DECA7)               | 12.3                               | Dotted gayfeather (LIPU)         | 8.0                                |
| Lewis flax (blue) (LILE3)                               | 3.8                                | Culvers root (VEVI4)                    | 0.1                                | False boneset (EUPE3)            | 0.4                                |
| Plains coreopsis (COTI3)                                | 0.7                                | Dotted gayfeather (LIPU)                | 8.0                                | Fragrant giant hyssop (ADAST)    | 0.8                                |
| Prairie phlox (PHPI)                                    | 4.0                                | False sunflower (HEHES)                 | 18.0                               | Grayhead coneflower (RAPI)       | 1.7                                |
| Rocky Mountain Bee Plant (CLSE)                         | 20.0                               | Heath aster (SYER)                      | 0.4                                | Hoary Vervain (VEST)             | 2.4                                |
| Shell-leaf penstemon (PEGR7)                            | 4.0                                | Illinois Bundleflower (DEIL)            | 8.0                                | Ironweed (VEFA2)                 | 2.8                                |
| Silvery lupine (LUAR3)                                  | 8                                  | Joe Pye weed (EUMAB)                    | 0.7                                | Joe Pye weed (EUMAB)             | 0.7                                |
| Spiderwort (TROC)                                       | 7.0                                | Missouri goldenrod (SOMI2)              | 0.5                                | Maximilian sunflower (HEMA2)     | 1.0                                |
| Western yarrow (ACMIO)                                  | 0.4                                | Narrow-leaved purple coneflower (ECAN2) | 9.0                                | Missouri goldenrod (SOMI2)       | 0.5                                |
|   |                                    | Prairie Onion (ALST)                    | 6.2                                | New England Aster (SYNO2)        | 0.8                                |
|   |                                    | Purple coneflower (ECPU)                | 9.0                                | Purple coneflower (ECPU)         | 9.0                                |
|   |                                    | Purple meadow rue (THDA)                | 6.2                                | Sneezeweed (HEAU)                | 0.4                                |
|   |                                    | Purple prairieclover (DAPU5)            | 3.8                                | Stiff goldenrod (SORI2)          | 1.4                                |
|   |                                    | Scarlet globemallow (SPCO)              | 3.9                                | Stiff sunflower (HEPAS)          | 2.5                                |
|   |                                    | Silvery lupine (LUAR3)                  | 8.0                                | Swamp milkweed (ASIN)            | 15.0                               |
|   |                                    | Spiderwort (TRBR)                       | 7.0                                | Thickspike Gayfeather (LIRY)     | 8.0                                |
|   |                                    | Stiff goldenrod (SORI2)                 | 1.4                                | Wild bergamot (MOFI)             | 0.9                                |

|  |    |                                 |      |                                   |      |
|--|----|---------------------------------|------|-----------------------------------|------|
|  |    | Stiff sunflower<br>(HEPAS)      | 2.5  | Blue aster<br>(SYLAL3)            | 1.5  |
|  |    | Swamp milkweed<br>(ASIN)        | 15.0 | Blue vervain<br>(verbena) (VEHA2) | 1.0  |
|  |    | Thickspike Gayfeather<br>(LIRY) | 8    | Butterfly milkweed<br>(ASTU)      | 16.2 |
|  |    | Western yarrow<br>(ACMIO)       | 0.4  | Canada goldenrod<br>(SOCA6)       | 1.4  |
|  |    | White prairieclover<br>(DAAL)   | 3.9  |                                   |      |
| <b>Introduced Forbs</b>  |    |                                 |      |                                   |      |
| Alfalfa  | 6  | May not exceed 10% of PLS/ac    |      |                                   |      |
| Sainfoin   | 35 | May not exceed 10% of PLS/ac    |      |                                   |      |
| <b>Shrubs (early*, middle** and late***) bold denotes introduced species</b> |    |                                 |      |                                   |      |
| American highbush cranberry*   |    | American plum*                  |      | Buffaloberry*                     |      |
| <b>Caragana*</b>   |    | Chokeberry**                    |      | Chokecherry*                      |      |
| Elderberry* **   |    | False indigo**                  |      | Golden currant*                   |      |
| Juneberry*   |    | <b>Lilac*</b>                   |      | Leadplant**                       |      |
| Missouri willow*   |    | <b>Mongolian cherry*</b>        |      | Nanking cherry*                   |      |
| Potentilla** ***   |    | Prairie rose*                   |      | Redosier dogwood*                 |      |
| <b>Russian almond*</b>   |    | Sandbar willow*                 |      | Sandcherry*                       |      |
| Silverberry**  |    | Skunkbush sumac*                |      | Western snowberry*                |      |
| Woods rose*  |    | Smooth sumac**                  |      |                                   |      |