Grass Buffers Credit Duration Discussion

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What are Grass Buffers?

- CBP Definition
  - Linear strips of grass or other non-woody vegetation maintained to help filter nutrients, sediment and other pollutants from runoff. The recommended buffer width for buffers is 100 feet, with a 35 feet minimum width required.
- CBP Credit Duration – 10 years

- NRCS Related Practices
  - 393 Filter Strip – 10-year lifespan
  - 390 Riparian Herbaceous Cover – 5 year
  - 412 Grassed Waterway – 10 year
  - 386 Field Border – 10 year

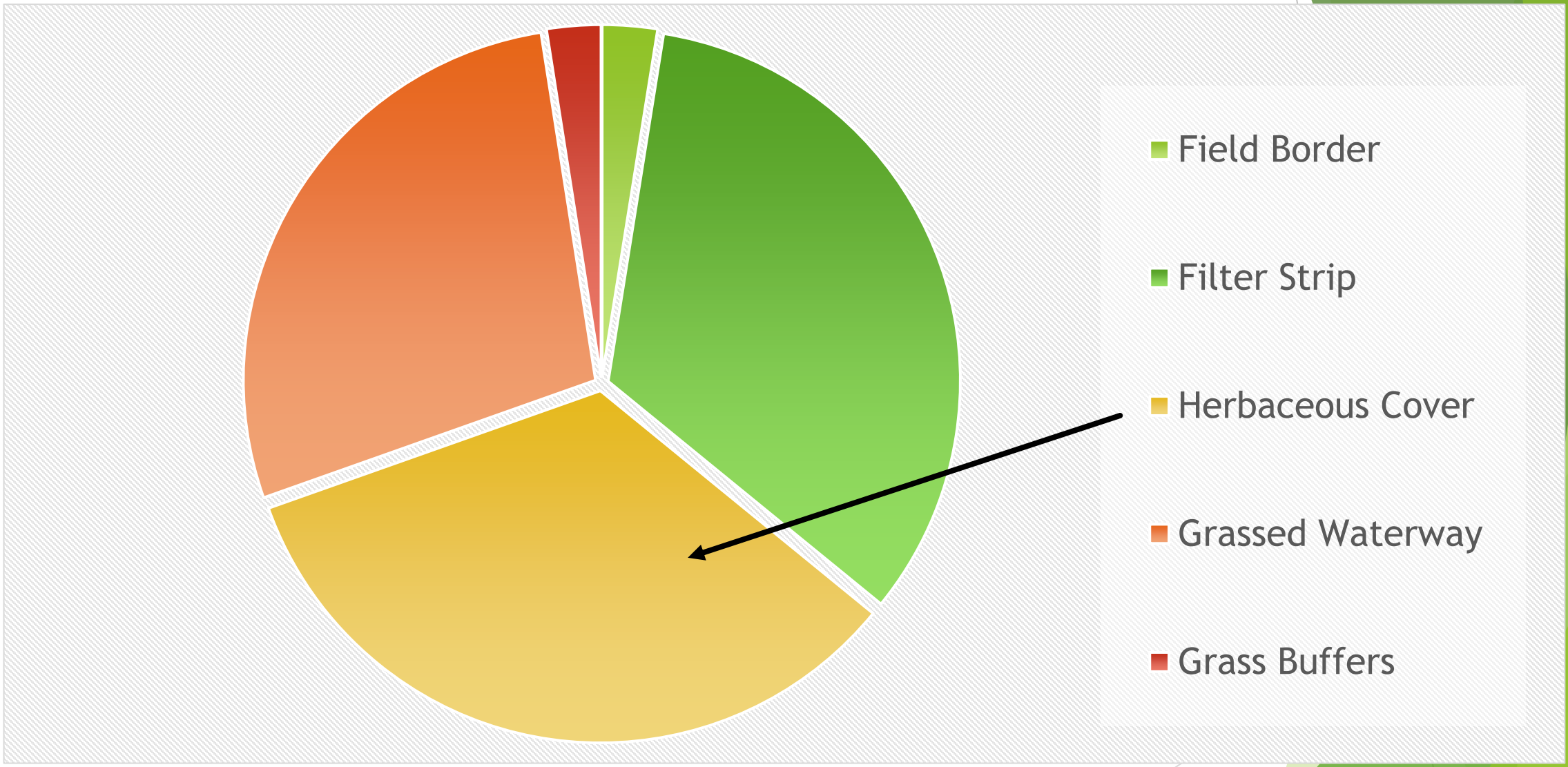
Other Related CBP Practices: CBP Credit Duration 10 Years

- **Grass Buffer with Stream Exclusion Fencing**
  - When buffers are implemented along a pasture exclusion fencing is installed to prevent livestock from grazing and trampling the buffer or entering the stream.
  - Assumes 22.9 AU/Acre Fenced and 35 ft width

- **Narrow Grass Buffer**
  - Linear strips of grass or other non-woody vegetation maintained on agricultural land between the edge of fields and streams, rivers or tidal waters that help filter nutrients, sediment and other pollutants from runoff. Narrow grass buffers are between 10 and 35 feet in width.

- **Narrow Grass Buffer with Stream Exclusion Fencing**
  - When buffers are implemented along a pasture exclusion fencing is installed to prevent livestock from grazing and trampling the buffer or entering the stream.
  - Assumes 22.9 AU/Acre Fenced and 10 ft width

How are Grass Buffers Reported by Jurisdictions?



From the NEIEN_NPS_BMP_P6_Appendix and NEIEN Validation Reports.

How are Grass Buffers Reported by Jurisdictions?

- 49,252 Acres reported across the watershed.

- Field Border
  - MD = 485 Acres
  - PA = 474 Acres
  - VA= 343 Acres
  - DE = 17 Acres
- Filter Strip
  - MD = 11,939 Acres
  - DE = 2,383 Acres
  - VA = 1,195 Acres
  - WV = 1,564 Acres
  - PA = 383 Acres

- Riparian Herbaceous Cover
  - MD = 16,229 Acres
  - PA = 965 Acres
  - VA = 327 Acres
  - DE = 109 Acres
- Grassed Waterway
  - PA = 13,152 Acres
  - MD = 1,417 Acres
  - VA = 49 Acres
- Grass Buffers
  - VA = 842 Acres
  - NY= 396 Acres
  - PA = 36 Acres
  - DE = 25 Acres

How are Grass Buffers Reported by Jurisdictions?

Filter Strip	17,465	33%	Acre
Field Border	1,320	3%	Acre
Grass Buffers	1,299	2%	Acre
Grassed Waterway	14,617	28%	Acre
Riparian Herbaceous Cover	17,629	34%	Acre
Total	52,330		Acre

- From the NEIEN_NPS_BMP_P6_Appendix and NEIEN Validation Reports.

NRCS Related Practices to Grass Buffers

- **393 Filter Strip – 10-year NRCS lifespan**

  Definition: A strip or area of herbaceous vegetation that removes contaminants from overland flow.

  Condition where practice applies: Filter strips are established where environmentally sensitive areas need to be protected from sediment, other suspended solids, and dissolved contaminants in runoff.

  Purpose:

  - Reduce suspended solids and associated contaminants in runoff and excessive sediment in surface waters.
  - Reduce dissolved contaminant loadings in runoff.
  - Reduce suspended solids and associated contaminants in irrigation tailwater and excessive sediment in surface waters.

- ***This standard can be little more complex as compared to NRCS 390 in that the criteria to apply this standard requires specific gradients and flow paths to meet the purposes and why when talking grass buffers in riparian areas often NRCS applies the Riparian Herbaceous Buffer and not necessarily the Filter Strip standard.

NRCS Related Practices to Grass Buffers

Field Border (NRCS 386); 10-year NRCS practice lifespan

Definition: A strip of permanent vegetation established at the edge or around the perimeter of a field.

Condition where practice applies: This practice is applied around the inside perimeter of fields. Its use can support or connect other buffer practices within and between fields. This practice applies to cropland and pasture fields.

Purpose:

- Reduce erosion from wind and water and reduce excessive sediment to surface waters (soil erosion).
- Reduce sedimentation offsite and protect water quality and nutrients in surface and ground waters (water quality degradation).
- Provide food and cover for wildlife and pollinators or other beneficial organisms (inadequate habitat for fish and wildlife).
- Reduce greenhouse gases and increase carbon storage (air quality impact).
- Reduce emissions of particulate matter (air quality impact).

NRCS Related Practices to Grass Buffers

Riparian Herbaceous Cover (NRCS 390); 5-year NRCS practice lifespan

- Definition: Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.
- Conditions where practice applies:
  - Areas adjacent to perennial and intermittent watercourses or water bodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and water bodies, this zone extends to the center of the channel or basin.
  - Where channel and stream bank stability is adequate to support this practice.
  - Where the riparian area has been altered and the potential natural plant community has changed.
- Purpose:
  - Provide or improve food and cover for fish, wildlife and livestock,
  - Improve and maintain water quality.
  - Establish and maintain habitat corridors.
  - Increase water storage on floodplains.
  - Reduce erosion and improve stability to stream banks and shorelines.
  - Increase net carbon storage in the biomass and soil.
  - Enhance pollen, nectar, and nesting habitat for pollinators.
  - Restore, improve or maintain the desired plant communities.
  - Dissipate stream energy and trap sediment.
  - Enhance stream bank protection as part of stream bank soil bioengineering practices.

412 Grassed Waterways – 10-year lifespan

Purpose

- To move water from one location to another via a vegetated channel.
- To address erosion by creating a shaped and vegetated channel to convey water where that flow has created the erosion issue. If in a field, this usually means taking an amount of the field out of production to construct and maintain the grassed waterway.

Design criteria – design to peak runoff from 10 yr – 24 hr storm event. Designs check capacity and stability (looking at soil tractive stress based on that location's soil erodibility class) for the design storm event. Designs are based on vegetal parameters that are dependent on some O&M.

For example, capacity is checked at the max height vegetation will reach before being mowed (when vegetation amount takes up space in the channel and therefore reduces capacity). Stability is checked at the mowed condition when there would be the least resistance to erosion. We don't plug in specific numbers, but we do have 5 categories that correlate to mowed conditions. Typically, in PA, we are checking capacity when mowing only occurs once or twice per year, so it's not a high level of management.

Other practices that may go along with a grassed waterway include

- 606 Subsurface Drain (20-year lifespan) – adding tile drains at the waterway location to reduce chance of saturated conditions in the grassed waterway.
- 638 Water and Sediment Control Basin – earth embankment, could be planned at the top of the waterway to trap sediment before it reaches the waterway and to help control low flow/base flows that would result in saturated grassed waterway conditions.
- 587 Structure for Water Control (20-year lifespan) – Structure (possibly a pre-cast concrete box) to help capture and control base flows at the top of a grassed waterway.
- 468 Lined Waterway or Outlet (15-year lifespan) – Often consists of riprap at a waterway outlet to provide a stable location, to dissipate energy, and to help disperse water. This will often be planned at the very end of a grassed waterway.

Arguments to Extend the Credit Durations of Grass Buffers

Arguments for Keeping the Credit Duration the Same

- Riparian Herbaceous Cover is reported most often. The Lifespan of Herbaceous Cover is 5 years.
- All related NRCS practices have 10 years lifespans or less.
- Grass Buffers can be more easily converted back to farmland as environmental or economic factors change throughout time. They are easily altered or removed.
- The contract duration is relevant because the assumption is that the practice BMP is subject to requirements and periodic inspection during the contract life. When the contract ends, it is reasonable to assume that a practice might be altered or discontinued - hence triggering inspection to determine if credit should be extended. If contracts for grass buffers do not routinely extend to 15 years, that is another reason why credit extension should not be on our agenda.

Arguments to Extend the Credit Durations of Grass Buffers

Arguments for Extending the Credit Duration

What are the arguments for extending credit durations?

Should Grass Buffers with Stream Exclusion Fencing be considered for credit duration as well?

Are Narrow Grass Buffers equivalent to Grass Buffers?