DRAFT Proposed Practice Life and Credit Duration for Forestry BMPs in the Chesapeake Bay Model

The Forestry Workgroup agreed to take a new look at Practice Life and Credit Duration that is used in CAST. While there has been some ongoing work and discussions with the Forestry Workgroup, we are wanting to better understand how forestry BMP's are showing up on high-resolution land cover mapping and whether verification should be based on those maps.

Definitions

Practice Life-- The length of time a practice is expected to persist. This is primarily used to analyze annual cost-benefit. The longer the practice life, the lower the cost of establishment/year as the cost is more spread out.

Credit Duration- The length of time a practice can be credited in the model before it needs to be verified. This is important for planning and executing Verification.

Forest vs. Tree Establishment

Once established, forests can grow indefinitely with little maintenance-- even in the event of a natural disaster (flooding, ice storms, etc.) -- as they are the natural land cover for this region. BMPs that are intended as "forest plantings" are ag and urban riparian buffers and urban forest plantings. These are distinguished from the "tree planting" practices (ag and urban tree planting) as they have a higher standard of planning, implementation, maintenance, and regeneration (natural regeneration can be part of forest plantings per Verification protocol).

Tree planting survival primarily depends on site characteristics, quality of planting stock, species selected for planting, weather, and a landowner's willingness to keep it at that site. As information on good planting conditions and "right tree, right place" is shared and heeded, the practice life is likely to be extended. Most urban tree planting in occurs in lawns and community spaces; less often along streets. Less is known about the life span of these "lawn" plantings.

Agricultural tree planting is distinguished from urban tree planting by occurring in lawns or fields outside developed areas. Trees may be planted as individuals, in a cluster, or in a row (e.g., the so-called narrow buffers).

Forestry BMPs	Practice Life Span		Credit Duration	
	Current	Proposed	Current	Proposed
Ag Forest Buffer[1] (w/o fencing-crop)	40 years[1]		10 years[1]	15 years
Ag Forest Buffer[1] (w/ fencing-pasture)	30 years[1]		10 years[1]	15 years
Urban Forest Buffer	40 years[1]		10 years[1]	15 years
(Urban) Forest Planting	28 years[1]		15 years then modeled as Land Use	15 years (No change)
Ag Tree Planting	40 years[1]		10 years then modeled as Land Use	No change
Narrow forest buffers (w/o fencing)	40 years[1]		10 years	No change
Narrow forest buffers (w/ fencing)	25 years[1]		10 years	No change
Urban tree planting	40 years[1]		10 years then modeled as Land Use	No change
(Urban) Forest Planting	28 years[1]		15 years then modeled as Land Use	No change
Forest Harvesting	1 year	No change	3 years then reverts to Forest Land Use	No change

[1] This Practice Life was determined without consultation with the Forestry Workgroup.

Practice Life

Forest plantings are given a longer Practice Life Span than Tree Planting practices. The reasoning is:

1) A forest established after 15 years, is unlikely to be converted (compare to grass buffer). Multiple landowner surveys have shown that 80-88% of landowners intend to keep their new forest buffer indefinitely.

2) Forests are naturally regenerative.

3) The practice life of a forest is not dependent on fencing (fencing is for cows, not trees). After a 15-year establishment period some grazing can occur without impacting buffer function. The 2018 Farm Bill newly allows grazing in some buffers.

Credit Duration

Credit duration for forest plantings is longer than for tree plantings because:

1) Contract length (The majority of CREP forest buffers have 15 year contract commitment. After that, they can be extended another 15 years.)
2) Landowner investment— considerable investment is involved in establishing a forest and the landowner is unlikely to convert after establishment.
3) Consultation with forester—as has been stated, forest plantings have a higher bar for planning, implementation and establishment and are therefore more likely to persist.

A 15-year credit life is thought to be conservative.

References

(Hyberg and English) results show higher rates of retention than are often reported anecdotally. For tree covers established within the Soil Bank, a predecessor to the modern CRP, Fesco et al. (1982) showed that over 80 percent of land remained in trees after contract expiration."

Cooper, E.R. 2005. The Attitudes and Opinions of Pennsylvania Conservation Reserve Enhancement Program (CREP) Participants Towards Riparian Buffers and Conservation Easements. A Thesis in Forest Resources Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science, The Pennsylvania State University. State College. PA.

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