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VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

# Chesapeake Bay Agricultural Workgroup Meeting

## Buffer  Upland Crediting a Proposal for Phase 7

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# Topics VA Requested WTWG/CBP Consider for P7

- Cover Crop Excess – Revisit how Cropland Rotations are Estimated - Possible Redistribution of Excess
- **Review How Buffer Upland Benefit is Calculated - Proposed Change to Assignment of Load Sources for Upland Benefit Exclusion versus Non-Exclusion Buffers**
- Animal BMP Excess Particularly Animal Waste Management Systems – Request a Review of Current Process in Model versus BMP Reporting
- Backout of Herbaceous Land Use Change BMPs – Proposed a Change to the Backout Process Used for Herbaceous Land Use Change BMPs



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# BMP Refresher

- Efficiency BMPs (Cover Crops, Nutrient Mgt) - An Efficiency reduction applied per acre of BMP Credited.
- Land Use Change BMPs (Tree Planting, Land Retirement to Ag Open) – Load Reduction for each Acre Converted from a Higher Loading Load Source to forest or Ag Open i.e. 1 Acre of Cropland Now Simulated as 1 Acre of Ag Open
- Land Use Change Plus **Upland Efficiency** (Buffers All Types) – Buffer Area is a Land Use Change from Higher Loading Source to a Lower One, Plus Upland Acres Treated as an Efficiency BMP by the Buffer (TN = 4 upland acres, TP and TSS = 2 upland acres)

# The Problem

## For 2024 Progress Year in VA

- Pasture Getting Non-exclusion Buffer Acres Applied = 0.00
- Pasture Providing an Upland Efficiency Benefit for Non-exclusion Buffers = 24,404
- Pasture Deemed Excess for Upland Credit for Forest Buffer with Streamside Fencing (Exclusion Buffer) = 14,027
- Seems Illogical to Provide Upland Benefit from a Load Source the BMP is Not Applied – Zero Acres of Non-Exclusion Buffers Applied to Pasture yet Pasture Provides Upland Benefit for Non-Exclusion Buffers?



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# Current Process Used for Buffer Upland Credit

- Exclusion Buffers (grass, narrow grass, forest, narrow forest with streamside fencing) Applied Exclusively to Pasture - Buffer Upland Credit Applied Exclusively to Pasture

- Non-Exclusion Buffers (grass, narrow grass, forest, narrow forest no streamside fencing) Applied to All* Ag Load Sources Except Pasture – Buffer Upland Credit Applied to All Ag Load Sources Including Ag Open and Pasture

* Forest Buffer can be applied to Ag Open, but Grass Buffers are not

# The Proposals

- Distribute the Upland Benefit from Non-Exclusion Buffers Proportionally to the Load Sources it is Applied – **Stop Providing Upland Credit to Non-Exclusion Buffers from Pasture**
- Examine the BMP Batting Order so that Exclusion Buffers and Upland Credit are Applied to Pasture First Any Unused Acres Could Be Utilized by Non-Exclusion Buffers



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# Scenarios Run

- 2023 Corrected – Progress Year 2023 Run with Transposed Measurements Removed – Current Process to Distribute Buffer Upland Credit
- 2023 Corrected No Pasture – The Above Scenario but with Proportional Distribution of Buffer Upland Credit and **Zero Acres of Paster for Non-Exclusion Buffers**



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# Current Process Used for Buffer Upland Credit

| Current Method (Scenario 2023 Corrected) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BMP | Load Source | % Applied All | DE % | MD % | NY % | PA % | VA % | WV % |
| Non-Exclusion Buffer | Ag Open Space | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Non-Exclusion Buffer | Total Hay | 26.07% | 3.96% | 9.44% | 65.54% | 28.98% | 54.58% | 62.24% |
| Non-Exclusion Buffer | Pasture | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Non-Exclusion Buffer | Cropland | 73.93% | 96.04% | 90.56% | 34.46% | 71.02% | 45.42% | 37.76% |
| Non-Exclusion Buffer | All | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Non-Exclusion Buffer Upland Acres | Ag Open Space | 29.36% | 0.38% | 2.03% | 9.32% | 50.22% | 4.99% | 1.64% |
| Non-Exclusion Buffer Upland Acres | Total Hay | 11.96% | 3.75% | 7.61% | 49.37% | 12.17% | 26.28% | 28.83% |
| Non-Exclusion Buffer Upland Acres | Pasture | 13.53% | 4.13% | 6.79% | 15.43% | 13.30% | 42.60% | 38.98% |
| Non-Exclusion Buffer Upland Acres | Cropland | 45.14% | 91.74% | 83.57% | 25.88% | 24.31% | 26.13% | 30.55% |
| Non-Exclusion Buffer Upland Acres | All | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Exclusion Buffer | Pasture | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Exclusion Buffer Upland Acres | Pasture | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |



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# Proposed Process for Buffer Upland Credit

| Proportional Distribution (Scenario 2023 Corrected no pasture) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BMP | Load Source | % Applied All | DE % | MD % | NY % | PA % | VA % | WV % |
| Non-Exclusion Buffer | Ag Open Space | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Non-Exclusion Buffer | Total Hay | 26.07% | 3.96% | 9.44% | 65.54% | 28.98% | 54.58% | 62.24% |
| Non-Exclusion Buffer | Pasture | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Non-Exclusion Buffer | Cropland | 73.93% | 96.04% | 90.56% | 34.46% | 71.02% | 45.42% | 37.76% |
| Non-Exclusion Buffer | All | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Non-Exclusion Buffer Upland Acres | Ag Open Space | 2.36% | 0.02% | 1.19% | 8.63% | 2.23% | 8.27% | 0.33% |
| Non-Exclusion Buffer Upland Acres | Total Hay | 21.27% | 3.96% | 9.23% | 60.09% | 23.71% | 51.80% | 54.89% |
| Non-Exclusion Buffer Upland Acres | Pasture | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Non-Exclusion Buffer Upland Acres | Cropland | 76.37% | 96.02% | 89.58% | 31.28% | 74.06% | 39.93% | 44.78% |
| Non-Exclusion Buffer Upland Acres | All | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Exclusion Buffer | Pasture | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Exclusion Buffer Upland Acres | Pasture | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |



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# Proportional vs Current Distribution of Upland Credit Loadings Impacts

| | Delta TN Proportional Dist - Current | Delta TP Proportional Dist - Current | Delta TSS Proportional Dist - Current |
|---|---|---|---|
| Delaware (CBWS Only) | -1,980 | 96 | -39,434 |
| District of Columbia (CBWS Only) | 0 | 0 | 0 |
| Maryland (CBWS Only) | -66,876 | 1,298 | -2,049,398 |
| New York (CBWS Only) | -1,366 | 4 | -48,249 |
| Pennsylvania (CBWS Only) | -16,309 | 9,995 | -1,897,400 |
| Virginia (CBWS Only) | -21,765 | 1,815 | -1,658,175 |
| West Virginia (CBWS Only) | -2,169 | 41 | -122,478 |
| All | -110,464 | 13,250 | -5,815,134 |



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# Discussion