RE: Climate Action Reserves' draft Soil Enrichment Protocol Version 1.0

Submitted by: **Ducks Unlimited, Inc.**
Ducks Unlimited (DU) is the world's leading wetland conservation organization, with an 83-year history representing over 15 million acres conserved. DU has been instrumental in delivering Farm-Bill programs for decades, and also maintains an active soil health program incentivizing the eligible practices noted within this protocol and tracking their outcomes at the field level. Furthermore, DU has been a leader in land-based carbon offset generation, namely grasslands, having co-authored multiple protocols and generating over 100,000 offsets as a project developer.

COMMENTS
2.2, p.3: Glad to see a 10 year no-conversion history of native ecosystems required. The term "native ecosystem" is a bit ambiguous though; for example, CRP planted acres would not be considered a "native ecosystem" by the scientific community, but it would be inappropriate to award a PD for plowing expiring CRP and claiming soil enrichment immediately thereafter. Consider further defining "native ecosystem" and to include established/restored grasslands and all types of wetlands.

2.3.1. Allowing Field Managers access to these projects is understandable given the tenant farmer percentages in many parts of the country. However, I find it quite dangerous to allow the managers to "transfer ownership of the GHG reduction rights of a project" without basic acknowledgment from the landowner. Some sort of basic acknowledgement (not necessarily a formal contract, co-signature stipulation, or deeded agreement) from the landowner for the tenant to engage in ownership transfer and transaction seems more than appropriate. Without it, you are unnecessarily garnering risk to the sustainability of these projects.

3.2 Project Start Date. Why was June 10th chosen? How does this align with on-farm practices, or is it based on the expected publication of the protocol? Might be wise to align with growing season start dates/calendar events, not the release of the protocol itself. It is even noted in 3.4.1 that "additionality for a project is demonstrated by the adoption, during the growing season which defines the project start date." Why not have more alignment between eligible start date and the actual growing season?

3.3 Crediting Period. The noted crediting period is 30 years. Is the full crediting period based on the baseline at the original start date? What measures are in place to reassess if the adopted projects are even additional/not status quo, say in 10-20 years? Have a static baseline would be inaccurate and irresponsible of a registry. All other land-based protocols require such. Why not factor in adoption rates, and at appropriate locales. See general comment at end of document on why you didn't choose to implement a moving baseline.

3.5.4 Is #2 essentially considering changing the permanence period for the project owner from 100 yrs post last issuance to 5 years, as it currently reads? I completely get the need to shrink this timeline, but 5 years is a lot different than 100. Your reasoning is based simply on 5 years of compliance without payment. Again, that seems dangerously shortsighted when predicting risk to a 100 permanence requirement of specific on-farm practices. Remember you are trying to incentivize practices that currently have around a 10% retention rate according to NRCS and industry experts. Risk of reversals is

very high. I'd argue your decision making should be a lot more encompassing than that, as a simple change in ownership after that 5 years could easily result in a reversal. Rather, the registry shall assess convincing social, economic, and cultural shifts at that time, by which tillage is the vast minority and market economics differentiate that practice type, prior to granting such approval. I'd be all for lowering the commitment if that arises. At this point, this doesn't even acknowledge basic threats from inevitable succession.

3.5.6. Tonne-Year Accounting. This section begins with, "Additional reductions of atmospheric CO_2 are realized immediately when CO_2 is sequestered in a carbon pool at levels beyond "business as usual." This statement and the proposed framework that ensues seemingly assumes that these gains happen immediately following any practice adoption. That is simply not true. Rather, there is substantial published data that shows (statistically significant) CO_2 gains don't occur for many years following project adoption for nearly of the included practices (outside of direct input reductions). Furthermore, this framework seems to be addressing a permanence criterion with a relative discount, not anything substantive around risk of reversals. Shouldn't the integrity of 1 ton of offset receive the same level of oversight of 100K+? I'm curious if this has been done before and how CAR maintains this approach upholds the critical permanence component of any one offset. To the reader, it seemingly does not.

Section 5. The protocol allows a retroactive grace period of roughly 24 months for the project start date, yet direct sampling is required to establish baseline estimates. How is one to handle this if the beneficial practices have been in place for 1 or 2 growing seasons already? Are those gains negated? Still, I think there might be some temporal alignment issues with this requirement as the 'baseline' could account for higher SOC than was there a few years prior. Maybe I'm missing something.

5.2 and Appendix D: Uncertainty. This process seems overly complex. In working with biogeochemical models, it can be extremely challenging to determine true uncertainty given all the parameters used. Some estimates of moderately stable pre- post- scenarios generated uncertainly estimates upwards of 60%. I recommend that this section be thoroughly reviewed by soil scientists and biogeochemical model engineers prior to publication to see if this data can even be generated. Past experience working with protocols and uncertainly conditions highlighted a general lack of dialogue to which the protocol requirements were not even feasible.

5.5.1 Livestock Leakage: While I admittingly don't follow what is laid out entirely in this section, additional conditions around enteric fermentation and livestock leakage when it comes to soil enrichment projects seems completely off-base. These projects—even those at large scales—are not influencing how many calves hit the ground each year. That is determined by global markets, mother nature, and host of other factors other than these projects. It must be recognized that feedlots have the ability to raise calves. Yes, cover crops could provide a new feed for cattle. Reality is that this typically doesn't directly result in more cattle in this world, it simply replaces days in a backgrounding operation/feedlot and/or supplemental haying. I fear methane emissions associated with cattle are highly inaccurate given these dynamics and most models do a poor job estimating the positive contributions ruminants make, and 'livestock leakage' would even more so. Consider removing entirely.

GENERAL

Did you consider following the path of forestry and require the development of a baseline scenario based on 'typical' management practices (cropland and grazing lands) in a relevant, defined geography that can evolve with broadscale evolution of practices? To which, any producer performing above that baseline can be rewarded. It seems farfetched to develop a 'historic' baseline on each field and then granting all gains over a 30-year period. This essentially assumes that farm practices would have remained the same over 30 years, correct? Hard to believe in this day and age with shifting markets, consumer access, and technology advances. The latter would be way less data intensive and seemingly evolve with changes in technology and broadscale application to ensure additionality over the entire reporting period. It would also allow tenant farmers to access these markets immediately on a newly rented field. Curious why this approach doesn't work as well as that proposed.