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Summary of Comments on the Nitrogen Management Project Protocol Minimum Data Standard

The Reserve hopes to expand the list of approved project activities under the Nitrogen Management Project Protocol (NMPP) as new data become available. The lack of field data on N₂O emissions for different regions, crops, and nitrogen management practices has been a significant limitation in the development of further quantification approaches, particularly a lack of data from “pairwise” or “side-by-side” comparisons (e.g. comparisons of baseline and project treatments on the same field in a given year). The protocol provides general guidelines for establishing field experiments to develop reference data sets which can be used to develop and/or calibrate and validate standardized quantification methodologies. These guidelines are referred to as “minimum data standards”.

The Reserve sought and received comments from stakeholders on a revised Minimum Data Standard in late 2013. Below is a summary of issues where there was some consensus from commenters. Individual comments received are available for download here:

<http://www.climateactionreserve.org/how/protocols/nitrogen-management/data-submittal/>

- **The Minimum Data Standard should be flexible and encourage ongoing improvement of data quality while maintaining a rigorous standard.** Many comments applauded the Reserve’s attempt to merge both a minimum data standard and a summary of best practices in an attempt to maintain the minimum standards while driving continual data improvement. However, many of these comments also noted that it was not clear how the minimum standard versus recommended best practices would play out in practice. One recommendation was for an expert panel to play a role in the review of data submissions.
- **More work is needed related to the spatial and temporal frequency of flux measurements.** Recommendations from commenters as to what should be considered acceptable minimum requirements for the Minimum Data Standard varied widely. Even so, there was consensus on the importance of striking the right balance between minimum sufficient measurement frequencies and a standard that is not so ambitious as to exclude high quality data from datasets or datasets published prior to the release of such standards. Minimum measurement frequencies are important to capture large peak emission events and to capture in-field variability between functional locations or soil types (in the case of temporal and spatial frequencies respectively). There was consensus on the importance of rigorous experimental design, as well as support for the expansion of pre-approved standard sampling methodologies.
- **Ideally, datasets should include two or more years of year-round flux measurement data on multiple study sites.** There was clear consensus that year-round data is preferable to growing-season-only data, so as to capture winter emissions from snowmelt or rain after dry periods. There was also consensus that multi-year studies were far superior to single-year studies due to variability year-to-year, and there was consensus that at least two (if not three or more) study sites within a region would be best for extrapolating to a region. However, there was also a uniform reluctance to *require* year-round measurements, multi-

year studies, or multi-site studies, due to the vast number of high-quality experiments that would be excluded if these “best practices” were minimum requirements.

- **Data that has not been published in peer reviewed journals but meets the data standard criteria should be considered, but should receive a deeper level of scrutiny.** The Reserve’s intent is to cast a wide net in terms of untapped data resources by allowing for data of sufficiently high quality from studies that may never be published in peer-reviewed journals; most comments concurred that such datasets should be included, so long as they meet requirements of the Minimum Data Standard. These datasets include studies and datasets from USDA, state agencies, and industry groups, unpublished data collected as part of university studies, and potentially datasets in the peer-review publication pipeline whose authors want to begin working with the Reserve on data submittals prior to publication. One recommendation was for an expert panel to play a role in the review of data submissions, particularly for submissions that have not been published in peer reviewed journals.
- **An expert review panel would be an important resource for both reviewing submitted datasets and updating the Minimum Data Standard on an ongoing basis.** It is unlikely that a dataset will fit perfectly into all categories; it would therefore be very important for reviewers to have sufficient expertise to exercise good judgment for whether certain criteria are met or not (and how that can be mitigated).
- **Clarity is needed as to the purpose of the Minimum Data Standard and the explicit process by which the Reserve might decide to expand the applicability of the NMPP.** While received comments indicate a general understanding that the Minimum Data Standard is meant to support the expansion of the NMPP, there continues to be some confusion about how exactly the Minimum Data Standard is meant to do so. Further, clarity was urged as to whether the Minimum Data Standard is meant to be used for broadening the scope of the NMPP, for project reporting and/or verification, and/or for validation of existing models.

Note from the Reserve: The Minimum Data Standard does not apply to monitoring, reporting, or verification requirements for offset projects implementing the NMPP, but rather to datasets from field experiments that might inform the development, expansion, refinement, and/or validation of quantification methods (both Tier 2 and Tier 3) to be included in future versions of the NMPP. Though the Reserve will not move forward with further updates at this time, the process by which expansions to the NMPP could be considered has been clarified here: <http://www.climateactionreserve.org/how/protocols/nitrogen-management/data-submittal/>