

# NADP Total Deposition Science Committee (TDep) Newsletter

Fall 2019

The Fall 2019 TDep meeting will not be held this year due to the Fall TDep Workshop ‘*Connecting Stakeholder and Science Perspectives to Better Understand the Linkages Between Agriculture and Reactive Nitrogen Deposition*’ (<https://nadp.slh.wisc.edu/nadp2019/TDepworkshop.asp>).

This newsletter will act as an update for committee members on TDep activities

## 1. Meeting minutes

Please read through and provide comment to 2019 Spring meeting minutes from Madison, WI. Comments will be due by November 21<sup>st</sup>.

*Approved minutes from past meetings can be found at*  
<https://nadp.slh.wisc.edu/committees/tdep/minutes.aspx>

## 2. General Updates:

TDep Co-chair John Walker will be the new NADP secretary. TDep will need to nominate a new co-chair at the Spring 2020 meeting in Madison. Please let Greg Beachley know if you have any interest in becoming the next TDep co-chair.

- **TDep White paper** “Science needs for continued development of total nitrogen deposition budgets in the United States” was finalized and posted in May 2019. Thank you to all who contributed.  
<https://nadp.slh.wisc.edu/committees/tdep/reports/nrDepWhitePaper.aspx>
- **TDep White paper associated peer-reviewed journal articles and projects**
  - Currently exploring the best way to distribute and share White paper related articles that were published (AWMA & STOTEN).
    - Currently working on obtaining links to these and posting to the NADP/TDep website.
  - Currently amassing a “project queue” and bibliography to track TDep-relevant publications and current research projects.
- **TDep White paper webinars**
  - Monthly (3<sup>rd</sup> Wed at 2pm ET) seminar series organized by National Park Service (Mike Bell, Kristi Morris). Lead authors summarize their specific scientific topic included in White Paper <https://nadp.slh.wisc.edu/committees/TDep/webinars/>.

- **Developing FACT Sheet on White Paper**
  - Current effort to highlight the TDep White Paper in a 1-page fact sheet is underway and being led by Kristi Morris.
- **TDep Annual Report** TDep will begin compiling a year-end Annual Report to help track progress and projects. This will also be helpful when renewing the NADP charter.

### 3. Workgroups Update

TDep has adopted a Workgroup structure in order to:

- Increase structure and organization within TDep
- Promote collaborative work
  - Distribute workloads and make projects more accessible
  - Get more accomplished between meetings

Current workgroups:

- Stakeholder Workgroup (StaWG; Lead: John Walker)
- Measurement Model Fusion Workgroup (MMFWG: Lead: Greg Beachley)
- Deposition Uncertainty (Lead: Mike Bell)
- EOS representatives (Kristi Morris, Chris Rogers)

TDep will host the CityDep Science Committee chaired by Greg Wetherbee at our biannual meetings to give them a space to update the group on progress and convene. There are many overlapping objectives between CityDep and TDep, particularly in understanding urban deposition and its spatial variability and better representing urban deposition in TDep deposition maps.

#### **Stakeholder Workgroup**

*Lead:* John Walker, EPA ([walker.johnt@epa.gov](mailto:walker.johnt@epa.gov))

*Workgroup Objectives:*

- Increase communication across scientific communities (i.e., atmospheric chemistry, ecology)
- Create new opportunities for collaborative research by promoting the inclusion of deposition science in grant programs
- Advance the integration of TDep science needs into existing research programs across stakeholder groups
- Facilitate communication among program managers within stakeholder Agencies and user groups

*Current Projects:*

- Organizing TDep Workshop ‘Connecting Stakeholder and Science Perspectives to Better Understand the Linkages Between Agriculture and Reactive Nitrogen Deposition’

<https://nadp.slh.wisc.edu/nadp2019/TDepworkshop.asp>

- Participation in USDA North Central Regional Development Committee Project developed by Rich Grant and colleagues: 'NCDC233 Sources and Fate of NH<sub>3</sub> Across the Region'

### **Measurement Model Fusion Workgroup**

*Lead:* Greg Beachley, EPA ([beachley.gregory@epa.gov](mailto:beachley.gregory@epa.gov))

*Workgroup Objectives:*

- Caretakers of the TDep MMF grids and product output
- Ensure that TDep MMF stays at the State of the Science
- Respond to questions on the TDep MMF products

*Current Projects:*

- 2018 maps run with version 2018.02 using CMAQ v5.0.2 completed (grids and images available at <https://nadp.slh.wisc.edu/committees/tdep/tdepmaps/>).
- 2017 Maps Summary (<https://nadp.slh.wisc.edu/committees/tdep/reports/>) completed.
- TDep MMF script conversion
- Runs with CMAQ v5.3 time series

*Updates:*

- Held kick-off meeting in September 2019
- Will meet quarterly
- Draft MMF action item list and assign leads
- Plan for Future TDep scripts:
  - Script conversion SOW is being negotiated and goal is Summer 2020
  - 2010 (selected "anchor year") maps will be rerun with updated script and comparison will be performed and documented
  - Full CMAQv5.3 times series (2002-2017) expected in Quarter 1 of 2021
  - 2010 maps will be run using the updated script and CMAQv5.3
    - 2010 outputs for CMAQ v5.0.2 and CMAQ v5.3 will be compared and documented

### **Deposition Uncertainty Workgroup**

*Lead:* Mike Bell, NPS ([michael\\_d\\_bell@nps.gov](mailto:michael_d_bell@nps.gov))

*Workgroup Objectives:*

- Understand the uncertainty in measurements and models for deposition estimates
- Assess deposition measurements (bulk precipitation collectors, IER resin columns, snow pack, and lichen tissue)
- Evaluation of deposition model estimates (CMAQ, TDEP, CAMx, and ADAGIO) and comparison to measurements to assess the spatial variability of uncertainty

- Developing a framework of comparability of critical loads (CLs) developed from different data sources

*Current Projects:*

- Evaluation of how using different models (CMAQ, TDep, CAMx, and ADAGIO) impacts the exceedance of CLs in Class I areas (NPS-led).
- Downscaling deposition model data to land use type to develop more spatially explicit deposition data (EPA-led)
- Throughfall measurement database (CLAD; M. Bell)
- Weighted Deposition Uncertainty Metric (WDUM; Walker et al., 2019; TDep White Paper) and applying to near CL exceedance areas.