Status Update:
Christopher Lehmann, University of Illinois

ARCHIVING PRECIPITATION DATA AND INFORMATION FROM ACROSS THE GLOBE

WDCPC

Home Labs & Stations Global Assessment Data Contact

http://wdcpc.org/

World Data Centre for Precipitation Chemistry

Welcome to the World Data Centre for Precipitation Chemistry or WDCPC. This centre receives and archives precipitation chemistry data and complementary information from stations around the world. Data archived by this centre are accessible via connections with the WDCPC database. Freely available data from regional and national programmes with their own Web sites are accessible via links to these sites. The WDCPC is one of six World Data Centres in the World Meteorological Organization Global Atmosphere Watch (GAW). The focus on precipitation chemistry is described in the GAW Precipitation Chemistry Programme. Guidance on all aspects of collecting precipitation for chemical analysis is provided in the GAW Guidelines for Precipitation Chemistry and Deposition Measurements.

A new global assessment of precipitation chemistry and deposition has been published. See: https://doi.org/10.5281/zenodo.3981435.

Please contact manager@qasac-americas.org if you have data that meet the guidance in WMO-GAW Report 160 and could be added to the WDCPC archive.

The WDCPC is closely linked with the Quality Assurance/Science Activity Centre – Americas (QA/SAC-Americas), which helps to ensure and document data quality at precipitation chemistry laboratories. Graphical and tabular summaries on the QA/SAC-Americas Web site enable researchers and other users to assess the quality of data suitable for their applications.

To enhance geographic data coverage, the WDCPC maintains close cooperation with a number of regional precipitation monitoring programmes, including:

- Acid Deposition Monitoring Network in East Asia (EANET)
- Canadian Air and Precipitation Monitoring Network (CAPMoN)

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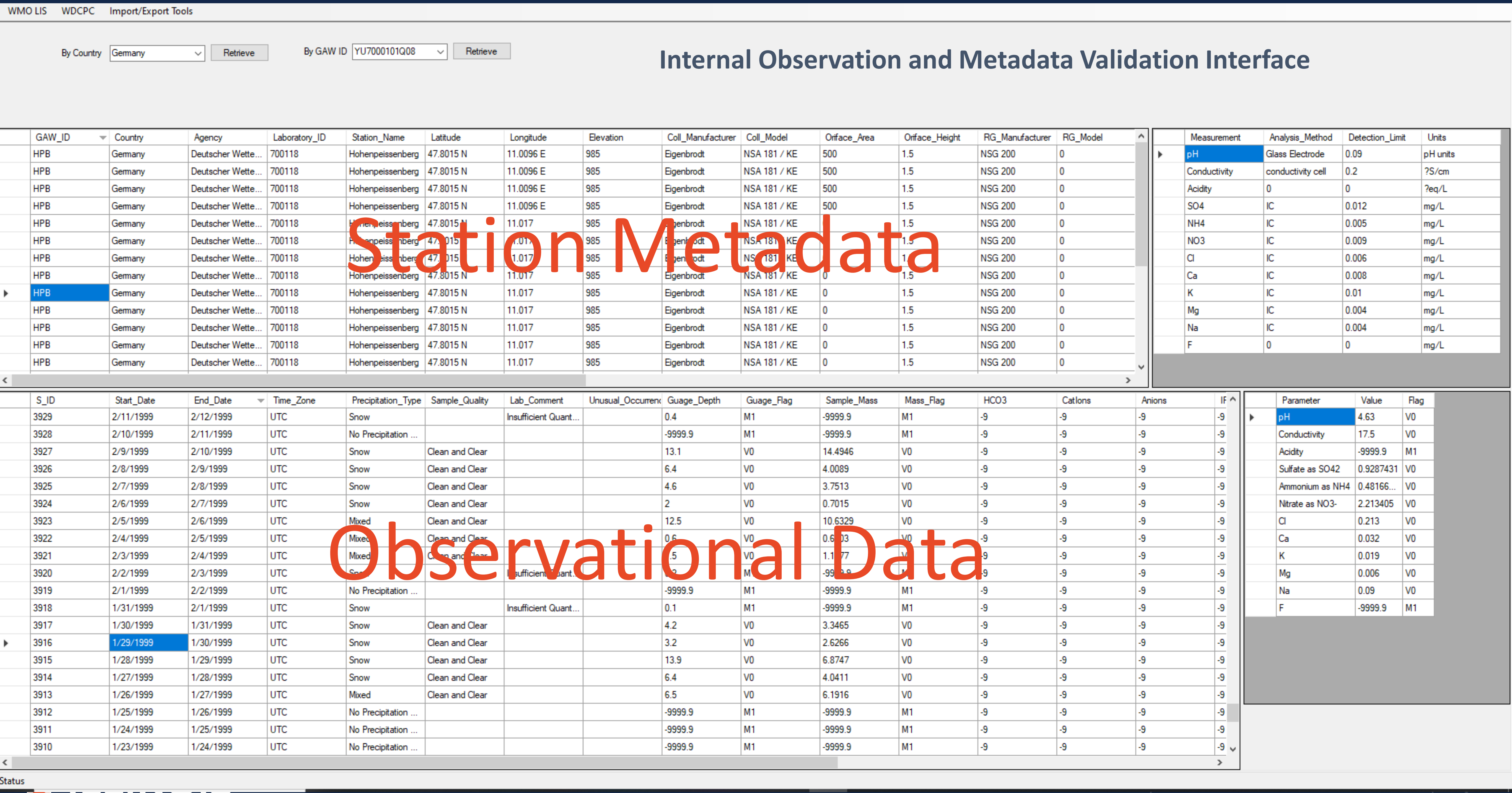
Progress Report Summary

1. Helpful support from Drasko Vasiljevic on WIGOS Metadata Standards and gaining access to OSCAR System
2. Completed Metadata Key Elements – Survey on World Data Centre for Precipitation Chemistry (WDCPC) Data Sets
3. Improved internal Metadata Interface
4. Release of Public WDCPC Data w/DOIs using Zenodo Platform



GAW_ID	Country	Agency	Laboratory_ID	Station_Name	Latitude	Longitude	Elevation	Coll_Manufacturer	Coll_Model	Oriface_Area	Oriface_Height	RG_Manufacturer	RG_Model
HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.0096 E	985	Eigenbrodt	NSA 181 / KE	500	1.5	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.0096 E	985	Eigenbrodt	NSA 181 / KE	500	1.5	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.0096 E	985	Eigenbrodt	NSA 181 / KE	500	1.5	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.0096 E	985	Eigenbrodt	NSA 181 / KE	500	1.5	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	[illegible]	[illegible]	11.017	985	[illegible]	NSA 181 / KE	[illegible]	1.5	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	[illegible]	[illegible]	[illegible]	985	[illegible]	[illegible]	[illegible]	[illegible]	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	[illegible]	[illegible]	[illegible]	985	[illegible]	[illegible]	[illegible]	[illegible]	NSG 200	0
HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.017	985	Eigenbrodt	NSA 181 / KE	0	1.5	NSG 200	0
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HPB	Germany	Deutscher Wette...	700118	Hohenpeissenberg	47.8015 N	11.017	985	Eigenbrodt	NSA 181 / KE	0	1.5	NSG 200	0

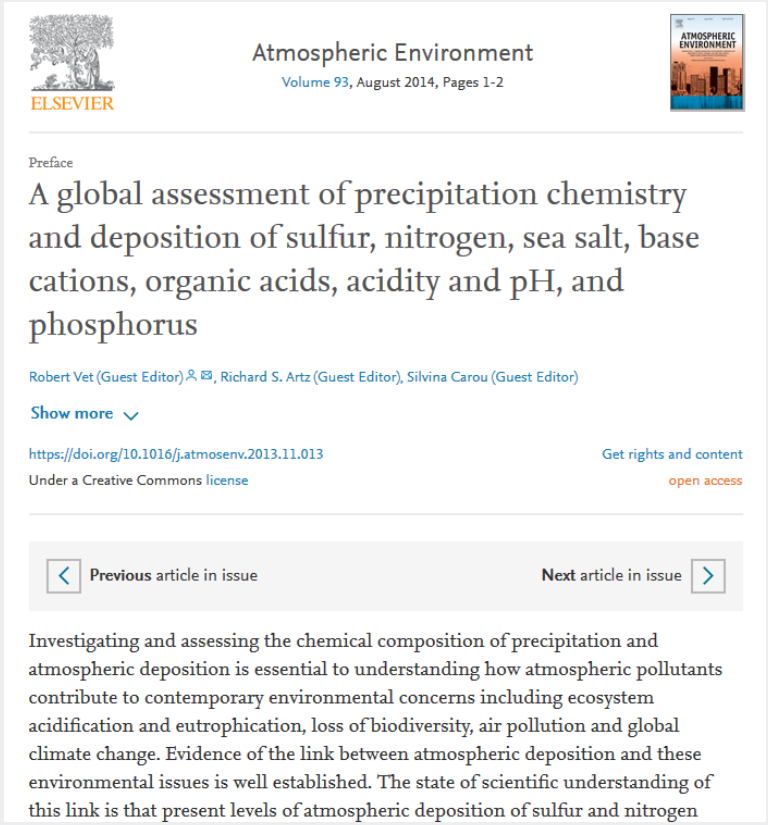
Measurement	Analysis_Method	Detection_Limit	Units
pH	Glass Electrode	0.09	pH units
Conductivity	conductivity cell	0.2	?S/cm
Acidity	0	0	?eq/L
SO4	IC	0.012	mg/L
NH4	IC	0.005	mg/L
NO3	IC	0.009	mg/L
Cl	IC	0.006	mg/L
Ca	IC	0.008	mg/L
K	IC	0.01	mg/L
Mg	IC	0.004	mg/L
Na	IC	0.004	mg/L
F	0	0	mg/L

S_ID	Start_Date	End_Date	Time_Zone	Precipitation_Type	Sample_Quality	Lab_Comment	Unusual_Occurrenc	Guage_Depth	Guage_Flag	Sample_Mass	Mass_Flag	HCO3	CatIons	Anions	IF
3929	2/11/1999	2/12/1999	UTC	Snow		Insufficient Quant...		0.4	M1	-9999.9	M1	-9	-9	-9	-9
3928	2/10/1999	2/11/1999	UTC	No Precipitation ...				-9999.9	M1	-9999.9	M1	-9	-9	-9	-9
3927	2/9/1999	2/10/1999	UTC	Snow	Clean and Clear			13.1	V0	14.4946	V0	-9	-9	-9	-9
3926	2/8/1999	2/9/1999	UTC	Snow	Clean and Clear			6.4	V0	4.0089	V0	-9	-9	-9	-9
3925	2/7/1999	2/8/1999	UTC	Snow	Clean and Clear			4.6	V0	3.7513	V0	-9	-9	-9	-9
3924	2/6/1999	2/7/1999	UTC	Snow	Clean and Clear			2	V0	0.7015	V0	-9	-9	-9	-9
3923	2/5/1999	2/6/1999	UTC	Mixed	Clean and Clear			12.5	V0	10.6329	V0	-9	-9	-9	-9
3922	2/4/1999	2/5/1999	UTC	[illegible]	[illegible]			[illegible]	V0	[illegible]	V0	-9	-9	-9	-9
3921	2/3/1999	2/4/1999	UTC	Mixed	[illegible]			[illegible]	V0	[illegible]	[illegible]	[illegible]	-9	-9	-9
3920	2/2/1999	2/3/1999	UTC	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	-9	-9	-9
3919	2/1/1999	2/2/1999	UTC	No Precipitation ...				-9999.9	M1	-9999.9	M1	-9	-9	-9	-9
3918	1/31/1999	2/1/1999	UTC	Snow		Insufficient Quant...		0.1	M1	-9999.9	M1	-9	-9	-9	-9
3917	1/30/1999	1/31/1999	UTC	Snow	Clean and Clear			4.2	V0	3.3465	V0	-9	-9	-9	-9
3916	1/29/1999	1/30/1999	UTC	Snow	Clean and Clear			3.2	V0	2.6266	V0	-9	-9	-9	-9
3915	1/28/1999	1/29/1999	UTC	Snow	Clean and Clear			13.9	V0	6.8747	V0	-9	-9	-9	-9
3914	1/27/1999	1/28/1999	UTC	Snow	Clean and Clear			6.4	V0	4.0411	V0	-9	-9	-9	-9
3913	1/26/1999	1/27/1999	UTC	Mixed	Clean and Clear			6.5	V0	6.1916	V0	-9	-9	-9	-9
3912	1/25/1999	1/26/1999	UTC	No Precipitation ...				-9999.9	M1	-9999.9	M1	-9	-9	-9	-9
3911	1/24/1999	1/25/1999	UTC	No Precipitation ...				-9999.9	M1	-9999.9	M1	-9	-9	-9	-9
3910	1/23/1999	1/24/1999	UTC	No Precipitation ...				-9999.9	M1	-9999.9	M1	-9	-9	-9	-9

Parameter	Value	Flag
pH	4.63	V0
Conductivity	17.5	V0
Acidity	-9999.9	M1
Sulfate as SO42	0.9287431	V0
Ammonium as NH4	0.48166...	V0
Nitrate as NO3-	2.213405	V0
Cl	0.213	V0
Ca	0.032	V0
K	0.019	V0
Mg	0.006	V0
Na	0.09	V0
F	-9999.9	M1

Public Data Release w/DOIs

A new global assessment of precipitation chemistry and deposition has been published. See: https://doi.org/10.5281/zenodo.3981435.



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Atmospheric Environment

Volume 93, August 2014, Pages 1-2

Preface

A global assessment of precipitation chemistry and deposition of sulfur, nitrogen, sea salt, base cations, organic acids, acidity and pH, and phosphorus

Robert Vet (Guest Editor), Richard S. Artz (Guest Editor), Silvina Carou (Guest Editor)

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https://doi.org/10.1016/j.atmosenv.2013.11.013

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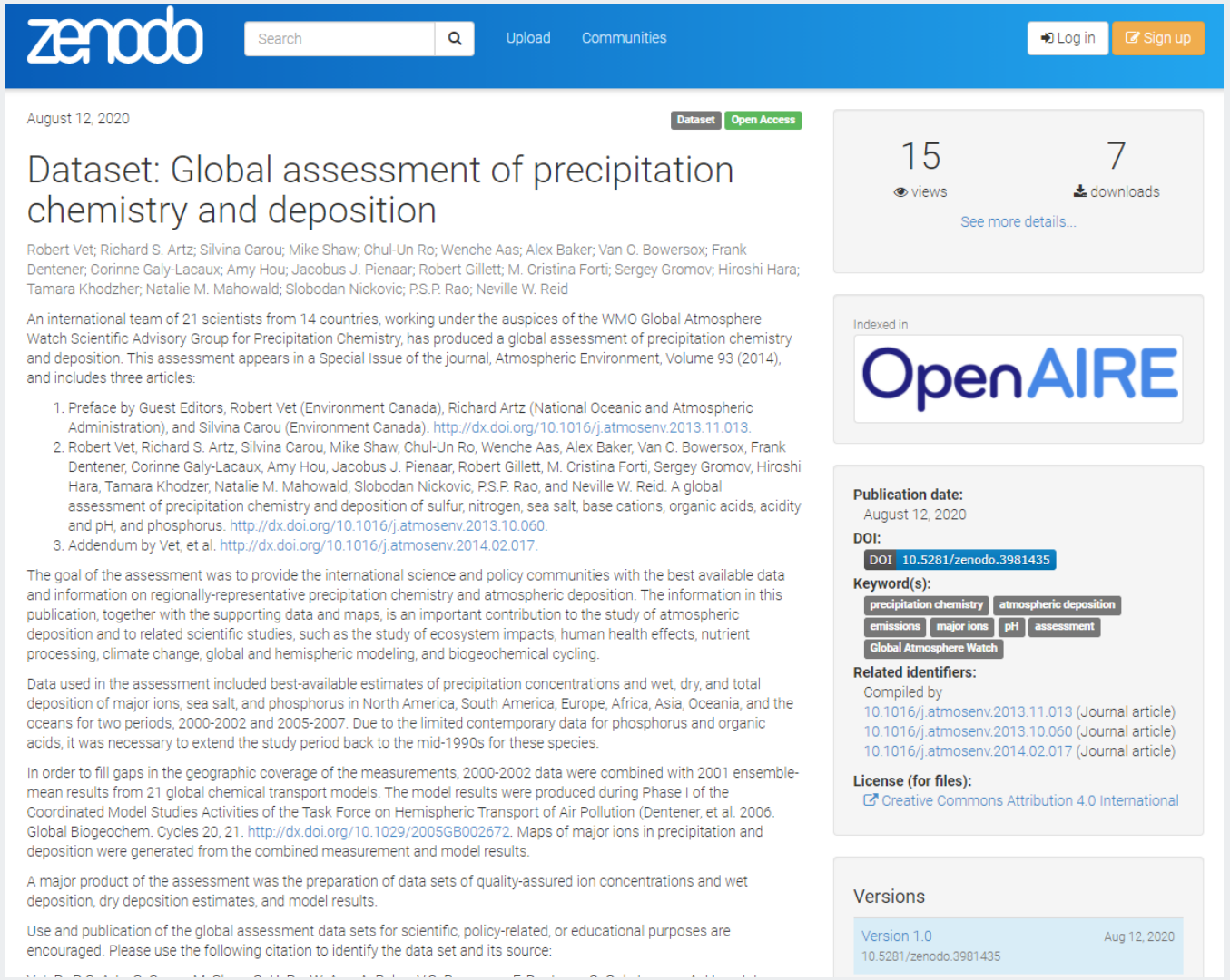
Investigating and assessing the chemical composition of precipitation and atmospheric deposition is essential to understanding how atmospheric pollutants contribute to contemporary environmental concerns including ecosystem acidification and eutrophication, loss of biodiversity, air pollution and global climate change. Evidence of the link between atmospheric deposition and these environmental issues is well established. The state of scientific understanding of this link is that present levels of atmospheric deposition of sulfur and nitrogen



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August 12, 2020

Dataset

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Dataset: Global assessment of precipitation chemistry and deposition

Robert Vet; Richard S. Artz; Silvina Carou; Mike Shaw; Chul-Un Ro; Wenche Aas; Alex Baker; Van C. Bowersox; Frank Dentener; Corinne Galy-Lacaux; Amy Hou; Jacobus J. Pienaar; Robert Gillett; M. Cristina Forti; Sergey Gromov; Hiroshi Hara; Tamara Khodzher; Natalie M. Mahowald; Slobodan Nickovic; P.S.P. Rao; Neville W. Reid

An international team of 21 scientists from 14 countries, working under the auspices of the WMO Global Atmosphere Watch Scientific Advisory Group for Precipitation Chemistry, has produced a global assessment of precipitation chemistry and deposition. This assessment appears in a Special Issue of the journal, Atmospheric Environment, Volume 93 (2014), and includes three articles:

1. Preface by Guest Editors, Robert Vet (Environment Canada), Richard Artz (National Oceanic and Atmospheric Administration), and Silvina Carou (Environment Canada). http://dx.doi.org/10.1016/j.atmosenv.2013.11.013.
2. Robert Vet, Richard S. Artz, Silvina Carou, Mike Shaw, Chul-Un Ro, Wenche Aas, Alex Baker, Van C. Bowersox, Frank Dentener, Corinne Galy-Lacaux, Amy Hou, Jacobus J. Pienaar, Robert Gillett, M. Cristina Forti, Sergey Gromov, Hiroshi Hara, Tamara Khodzer, Natalie M. Mahowald, Slobodan Nickovic, P.S.P. Rao, and Neville W. Reid. A global assessment of precipitation chemistry and deposition of sulfur, nitrogen, sea salt, base cations, organic acids, acidity and pH, and phosphorus. http://dx.doi.org/10.1016/j.atmosenv.2013.10.060.
3. Addendum by Vet, et al. http://dx.doi.org/10.1016/j.atmosenv.2014.02.017.

The goal of the assessment was to provide the international science and policy communities with the best available data and information on regionally-representative precipitation chemistry and atmospheric deposition. The information in this publication, together with the supporting data and maps, is an important contribution to the study of atmospheric deposition and to related scientific studies, such as the study of ecosystem impacts, human health effects, nutrient processing, climate change, global and hemispheric modeling, and biogeochemical cycling.

Data used in the assessment included best-available estimates of precipitation concentrations and wet, dry, and total deposition of major ions, sea salt, and phosphorus in North America, South America, Europe, Africa, Asia, Oceania, and the oceans for two periods, 2000-2002 and 2005-2007. Due to the limited contemporary data for phosphorus and organic acids, it was necessary to extend the study period back to the mid-1990s for these species.

In order to fill gaps in the geographic coverage of the measurements, 2000-2002 data were combined with 2001 ensemble-mean results from 21 global chemical transport models. The model results were produced during Phase I of the Coordinated Model Studies Activities of the Task Force on Hemispheric Transport of Air Pollution (Dentener, et al. 2006. Global Biogeochem. Cycles 20, 21. http://dx.doi.org/10.1029/2005GB002672. Maps of major ions in precipitation and deposition were generated from the combined measurement and model results.

A major product of the assessment was the preparation of data sets of quality-assured ion concentrations and wet deposition, dry deposition estimates, and model results.

Use and publication of the global assessment data sets for scientific, policy-related, or educational purposes are encouraged. Please use the following citation to identify the data set and its source:

15 views

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Indexed in OpenAIRE

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Keyword(s):
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Versions

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Next Steps

- Online Updates to OSCAR System
- Appreciate support from Drasko Vasiljevic in accessing online system
- Still having difficulty of insufficient access rights to online system