



Closing the Gaps in Top-Down Regional Emissions Quantification: Needs and Action Plan

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**presenting for the
Scientific Assessment Panel**

**Part II of the 11th Meeting of the Ozone Research Managers of
The Parties to the Vienna Convention for
The Protection of the Ozone Layer**

On-Line, 21 July 2021



Decision XXXI/3 paragraph 8 at the Thirty-First Meeting of the Parties of the Montreal Protocol

- “To request the Scientific Assessment Panel to work with the Ozone Research Managers at their meeting in 2020 to identify gaps in global coverage of atmospheric monitoring of controlled substances and to provide options on ways to enhance such monitoring as well as exploring options for informing the parties of preliminary information indicating unexpected emissions of controlled substances for the consideration of the Thirty-Second Meeting of Parties and the Twelfth Conference of Parties, in 2020.”
- The recent discoveries of anomalous CFC-11 emissions have shown that the “bottom-up” reporting to the Montreal Protocol is vulnerable to unknown or unreported emissions. This risk exists for all substances regulated under the Montreal Protocol.



In Response to the Request of the Parties a Draft “White Paper” was Presented at ORM-11 Part I



- The ***Closing the Gaps in Top-Down Regional Emissions Quantification: Needs and Action Plan*** draft “white paper” addressing the request of the Parties, written in consultation with members of the ozone research community and the Scientific Assessment Panel, was presented and discussed at ORM-11 Part I, 7-8 October 2020.
- This discussion, as summarized in the ORM-11 Part 1 meeting report ***UNEP/OzL/Conv.ResMgr/11(I)/2***, focused largely on the range of methods for measuring controlled substances in the atmosphere and for modelling their regional emissions. A few minor edits to the draft “white paper” were suggested, the most significant of which was to include sensitivity units for the modelled “footprint” contours for existing observations in Figure 1.
- The document has been revised accordingly and the resulting final version is now posted on the ORM-11 Part II meeting website.



Current Gaps in Regional Coverage: Mapping the Sensitivity “Footprints” of AGAGE and NOAA High-Frequency Measurement Locations

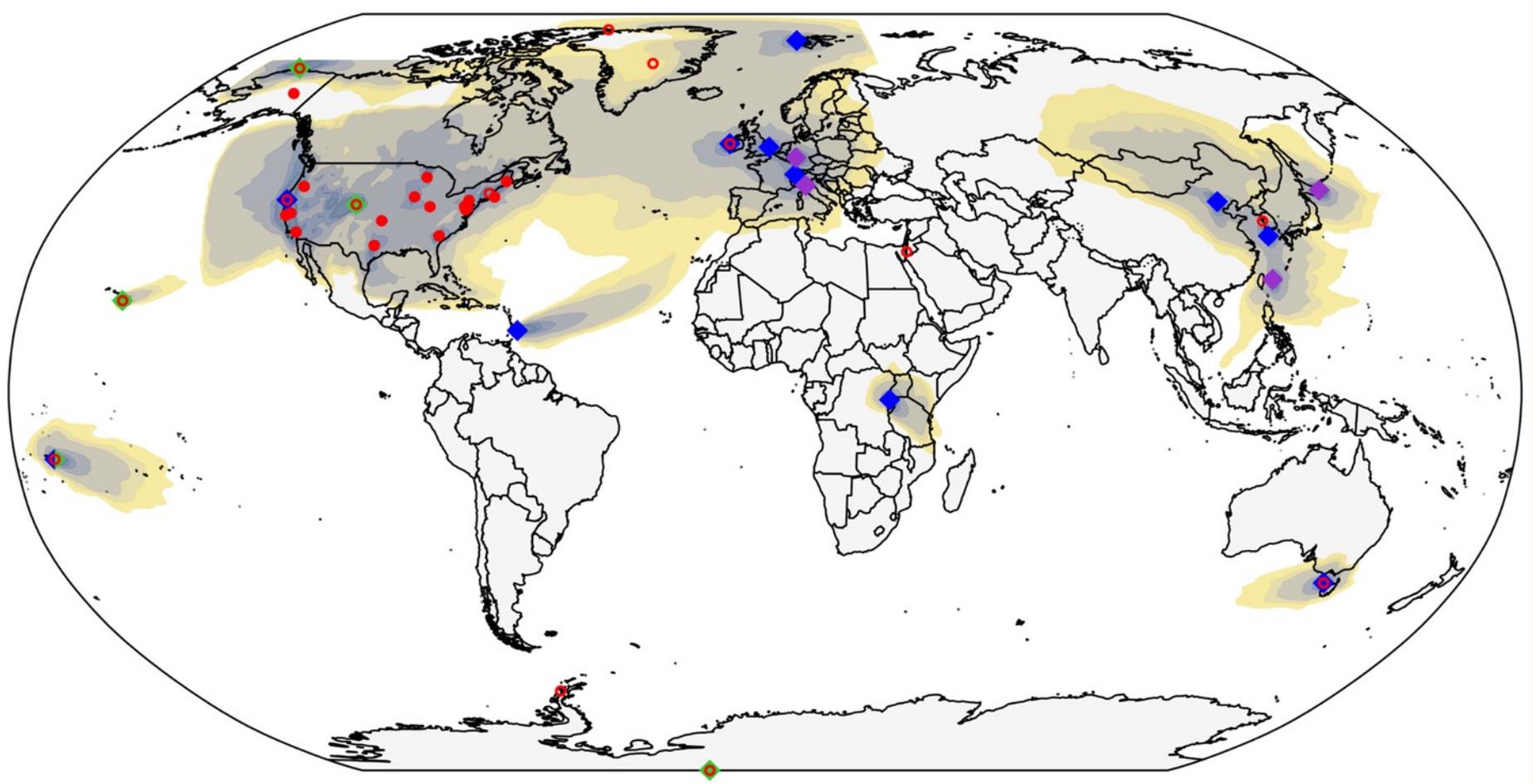


Figure 1 in the “white paper”: NOAA sites are green and red, AGAGE sites are blue and purple. (sensitivity contours at 0.5, 0.75, 1.0, 2.5, 5.0, 7.5 and 10.0 ps/mol, from yellow to gray)



Closing the Gaps: Pilot Project Planning and Implementation



- **Identify optimal new measurement locations:** Observing System Simulation Experiments (OSSEs) provide an objective means of assessing the potential benefits of adding new observing sites to the existing observational networks, as will be discussed by Ron Prinn in the following talk updating his presentation at ORM-11 Part I.
- **Identify sources of pilot project support:** The scale of what can be accomplished will depend upon the availability of financial and infrastructure resources that can assure the 5- to 10-year continuity that is needed to fully realize the benefits of this initiative.
- **Endorsement of the ORM:** The Scientific Assessment Panel seeks the endorsement by the Ozone Research Managers of the final revised “white paper”, so that it may then be considered by the Conference of the Parties.

And one more thing...



Postscript:

Nature, 22 July 2021

Comment piece
inspired by the
Closing the Gaps
“white paper” in
today’s issue...

<https://www.nature.com/articles/d41586-021-01967-z>

Setting the agenda in research

Comment



BIPOLO/AN/APOLLO/SEW IMAGES VIA GETTY

Air conditioners (such as these units in New Delhi) proliferate as nations develop, releasing ozone-depleting and greenhouse gases.

Huge gaps in detection networks plague emissions monitoring

Ray F. Weiss, A. R. Ravishankara & Paul A. Newman

Plug gaps to measure ozone-destroying chemicals and greenhouse gases and verify compliance with Paris and Montreal treaties.

In the decades after the 1987 Montreal Protocol, it seemed everything was on track to restore Earth’s protective stratospheric ozone layer. Then, in 2018, came an alarming discovery: fresh emissions of the forbidden chlorofluorocarbon-11 (CFC-11), which destroys the ozone layer. Its production and use had been banned globally in 2010.

It was a wake-up call. But this surprise will not be the last unless something is done soon

to improve the monitoring of other gases that destroy the ozone layer and cause climate change.

The Montreal Protocol has been hailed as a shining example of a successful treaty: it was universally ratified. Yet, as the CFC-11 incident showed, even the best treaties cannot be upheld, or the best regulations enforced, if compliance by individual parties cannot be assured. Many local and regional air-quality