QOS2016-247-1, 2016
Quadrennial Ozone Symposium of the International Ozone Commission

Re-examination of Ozone Recovery: Lessons Learned

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The WMO/UNEP Ozone Assessments have focused on ozone recovery from the early days of addressing the problem: the 1994 Ozone Assessment presented at least one model showing full recovery ozone by 2020, and other models not showing full recovery by 2050. In 2014, the ozone assessment provided somewhat less bounded conclusion about ozone recovery: "Total column ozone declined over most of the globe during the 1980s and early 1990s. It has remained relatively unchanged since 2000, but there are recent indications of its future recovery."

This presentation will provide a brief overview of the peer reviewed literature that indicated both signs of recovery and the expectations for future recovery. Several different techniques were originally identified as keys to detecting recovery, some of them providing timelines for expected recovery. This presentation will review some of the early statements on recovery and assess the appropriateness the assumptions that went into the earliest estimates of detection. The more recent observations will be examined to see to what extent the assumptions made about ozone recovery made in the early papers on recovery still hold today. More specifically, we will assess if estimates of recovery rates (based on forecasts for abundances of ozone depleting substances), estimates of variability in ozone, temperature and dynamics appropriate for estimating recovery rates. The results of the international collaboration in the ozone community have lessons to offer the larger environmental community with respect to estimating future environmental response and managing expectations appropriately.