



August 10, 2018

On behalf of the Appalachian Mountain Club and our 5,200 members in Maine, please accept our written comments on Maine's involvement in the Ozone Transport Region (OTR).

AMC is the nation's oldest outdoor recreation and conservation organization, and we're dedicated to promoting the protection, enjoyment, and understanding of the mountains, forests, waters, and trails of Maine and the entire Northeast. In Maine, we own and manage 75,000 acres of land in Piscataquis County, and focus our initiatives on outdoor recreation, resource protection, sustainable forestry, and community partnerships. We also operate an outdoor recreation facility in Acadia National Park: Echo Lake Camp.

The health of the outdoor recreationists that we represent and the experiences that drive Maine's \$8.2 billion outdoor recreation economy¹ depends on healthy air quality. **I am writing to respectfully oppose Maine's petition to expand its Ozone Transport Region (OTR) waiver for NOx pollution level requirements and its new waiver request for volatile organic compound requirements.**

Maine's air quality has improved because of implementation of Clean Air Act (CAA) regulations and actions taken at the state level. Specifically, the OTR was formed under the CAA amendments in 1990 to address the regional ozone pollution across a 13-state region, including Maine, by implementing source emission controls. As a member state of the OTR Maine sources of ozone precursor emissions must meet certain limits including:

- Reasonably Achievable Control Technology (RACT) for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for existing sources
- Lowest Achievable Emission Rate (LAER) for new major sources and major modifications

Maine is petitioning EPA to expand the NOx waiver it had previously obtained for northern Maine and obtain a similar waiver for VOC requirements for the entire state, except for 10 municipalities along the coast in York County and for Acadia National Park. AMC urges Maine to keep the whole state under the OTR required emission limits because it will:

- 1) preserve the progress of in-state reductions of air pollution,
- 2) further a cleaner energy future consistently across the state, and

¹ https://outdoorindustry.org/wp-content/uploads/2017/07/OIA_RecEcoState_ME.pdf



3) maintain Maine’s credibility within the OTR to solve the remaining ozone air pollution problems in the state.

The OTR states have seen about a 66% decline in NOx and VOC emissions from 1990 to 2015 which should be celebrated as a success². However, ozone can still reach unhealthy levels in Maine indicating there is still work to be done. Regions of the state had 5 Air Quality Index (AQI) days in 2017 where ozone levels were unhealthy for sensitive groups (orange) and one unhealthy (red) day. Further, the direction of the ozone levels from the previous to the current compliance period is concerning (see Table 1), with only 3 out of the 9 counties seeing an improvement comparing the design value of the period, 2015-2017, to the previous period, 2014-2016. Of most concern is Hancock County, which the latest data indicate it is now in non-attainment of the 2015 ozone national ambient air quality standards (NAAQS) with a design value of 71 ppb, Table 1.

Importantly, Maine’s quintessential summer recreational areas along the seacoast, including Acadia National Park, see the worst air quality. In a recent study of how air quality impacts recreation in National Parks (which included Acadia), authors found a robust, negative relationship between in-park ozone concentrations and park visitation.³ In addition, people exercising outside, children, older adults, and those with respiratory disease are at particular risk from the effects of ozone pollution. AMC’s own research found that healthy hikers can experience reduced lung function when ozone concentrations are elevated⁴. That study, plus many others, indicates the current 2015 ozone NAAQS of 70 ppb is not protective enough for those sensitive to ozone pollution especially when exercising or working rigorously outside.

Table 1. Ozone design values for Maine counties. Source: EPA AirTrends

County Name	AQS Site ID	2014-2016 Design Value (ppb)	2015-2017 Design Value (ppb)	Meets NAAQS?
Androscoggin	230010014	60	59	Yes
Aroostook	230039991	52	52	Yes
Cumberland	230052003	65	64	Yes
Hancock	230090102	66	71	No
Kennebec	230112005	59	63	Yes

² Data from <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data> Emissions from the 13 OTR states have declined from 4864 to 1619 tons for NOx and from 5042 to 1697 tons for VOCs.

³ Keiser, D. G. Lade, I. Rudik 2018. Air pollution and visitation at U.S. national parks. Science Advances,; eaat1613

⁴ <https://www.jstor.org/stable/3433784>

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Knox	230130004	63	64	Yes
Penobscot	230194008	58	60	Yes
Washington	230290019	57	60	Yes
York	230310040	67	62	Yes

The recent draft document *Maine's Ozone Success Story*⁵ by Maine DEP (hereto referred to as the "DEP report") provides technical evidence that Maine contributes little to ozone non-attainment in other states. However, the DEP report shows that there are times that the air masses reaching Maine's Acadia National Park come across the state, see Figure 6a. While this scenario is less frequent than other pathways from the south, and some transport occurs aloft, local emissions can be mixed in and impact Maine air quality⁶. The DEP report shows that ozone pollution events that plague Acadia National Park come from southern New England, the Ohio River Valley, and with less frequency, the Great Lakes Region. A 2018 ozone exceedance at Acadia National Park similarly appears to have been transported from the Mid-West and across the Great Lakes region, moving somewhat aloft but then swooping down as it moved across the state, see Appendix A.

This example points to why Maine should retain a solid place in the OTR to address this interstate transport. The state should not be retracting from this successful program. Instead, Maine should be joining others that have sought a section 176A(a) petition in an effort to add several states to the OTR because they significantly contribute to violations of the 2008 ozone NAAQS. Those states include Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, West Virginia, and a portion of Virginia, all states shown to contribute to Acadia's recent exceedance hours in the DEP report Figure 6 a and b. This section 176A(a) petition was denied by EPA in late 2017, and the Maine DEP report points to EPA's rationale for denying this petition---which was to suggest the states instead use other CAA provisions (section 110 and 126) to address interstate transport. Unfortunately, the current Administration has recently denied 126 petitions by Maryland and Delaware and issued a proposal to close out the Cross State Air Pollution Rule (CSAPR) rule for the 2008 standard, leaving the states without support in meeting NAAQS deadlines. Further, the Administration recently announced a proposal to weaken emission standards for vehicles, a major source of ozone precursor emissions. If Maine pulls portions of the state out of OTR we are not only weakening our voice at the table in interstate negotiations but also risk signaling to other states to follow. If more states weaken their commitment to this

⁵ <http://www.maine.gov/tools/whatsnew/attach.php?id=801214&an=2>

⁶ Michaelsen C., Richardson C., Mullen M., Nichols P., and Johnson A. (1997) The influence of close-range pollution on Maine's air quality during the peak ozone episodes in 1997. Working draft prepared by State of Maine Department of Environmental Protection, Bureau of Air Quality.

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agreement it would further unravel this and other CAA tools aimed at dealing with interstate transport and protection of residents from unhealthy air.

By requesting partial exclusion from the OTR Maine also sets up different regional regulatory schemes which would be troublesome for Maine businesses. Furthermore, it could result in community inequities and increases in local VOC and NOx emissions which have been shown in the past to impact local air quality⁷. It is true that across the state of Maine natural VOC emissions are a much greater source than anthropogenic emissions, as reported by DEP in Table 5. However, anthropogenic VOC emissions likely dominate in an urban area where ozone formation is often VOC-limited. In addition, anthropogenic VOCs, such as benzene, are toxic and therefore would threaten those in the local communities where they are emitted. Nitrogen emissions also contribute to haze, acidic deposition, and eutrophication. Therefore all of Maine benefits by the OTR emissions requirements and the entire state should remain within the OTR, not just a portion of the coast.

As a state in the OTR Maine has a seat at the table to work collaboratively with EPA and other states to address regional ozone pollution. This position is critically important since data indicates that large portions of the ozone pollution affecting Maine is coming from other states. At the same time keeping our own state emissions low has clear benefits for our citizens and visitors.

In conclusion we urge you to revoke the proposed requests for emission waivers and instead help strengthen Maine's commitment to the OTR and work to bring other upwind contributing states into the program.

Thank you,

Georgia Murray
Staff Scientist

Cc:
Marc Cone
Director, Bureau of Air Quality

⁷ Michaelsen C., Richardson C., Mullen M., Nichols P., and Johnson A. (1997) The influence of close-range pollution on Maine's air quality during the peak ozone episodes in 1997. Working draft prepared by State of Maine Department of Environmental Protection, Bureau of Air Quality.

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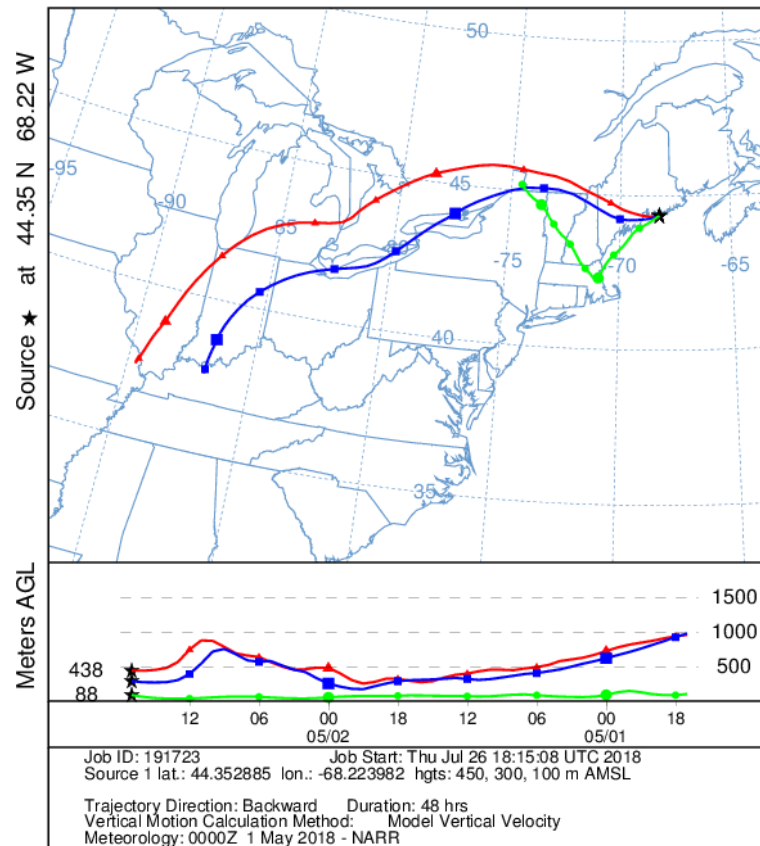
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Appendix A

May 2, 2018 ozone exceedance at Acadia National Park where the maximum 8-hour average for ozone reached 77 ppb. A back trajectory analysis using NOAA READY model NARR 32-km data and 3 start heights of 450, 300, and 100 m above sea level show the source was likely from the Midwest/Great Lakes regions.

NOAA HYSPLIT MODEL
Backward trajectories ending at 1700 UTC 02 May 18
NARR Meteorological Data



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