Students Perspective of SLC-SOS

Salt Lake City Summer Ozone Study

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About SOS

The Salt Lake City Summer Ozone Study (SOS) campaign was a comprehensive field study aimed at understanding the sources, distributions, and formation mechanisms of ozone and its precursors in Utah's Wasatch Front region. Elevated summer ozone levels in the area pose significant environmental and public health concerns, exacerbated by Utah's unique topography, population growth, and seasonal wildfires.

What did it do?

What the SOS Campaign Did

- Studied VOCs: Mapped sources like volatile organic carbons, biogenic hydrocarbons, petroleum refineries, and wildfires.
- Analyzed NOx and NOy: Investigated emissions from vehicles, industry, and agriculture.
- Monitored Halogens: Focused on emission from point emission sources (industry).
- Characterized Processes: Studied boundary layer dynamics and pollutant transport.
- Assessed Ozone Sensitivity: Modeled ozone response to NOx, VOCs, and halogens.
- Examined Wildfires: Analyzed wildfire impacts on urban ozone levels.

What I learned

.Technical Skills

- Operated and troubleshot radiosonde equipment.
- Analyzed atmospheric profiles to understand pollutants.
- Improved forecasting using meteorological data and models.

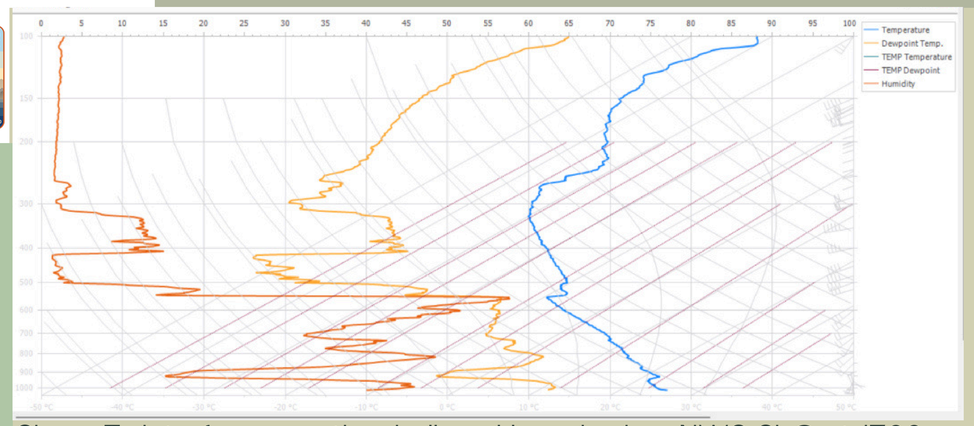
Collaboration and Communication

- Worked with scientists and graduate students.
- Shared findings within the team and with the public.

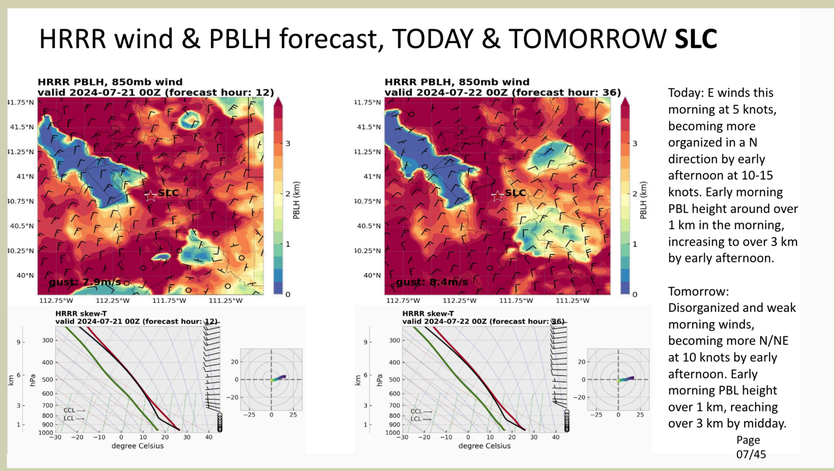
Career Development

- Built skills for careers in meteorology and atmospheric science.
- Applied atmospheric monitoring techniques in real-world settings.

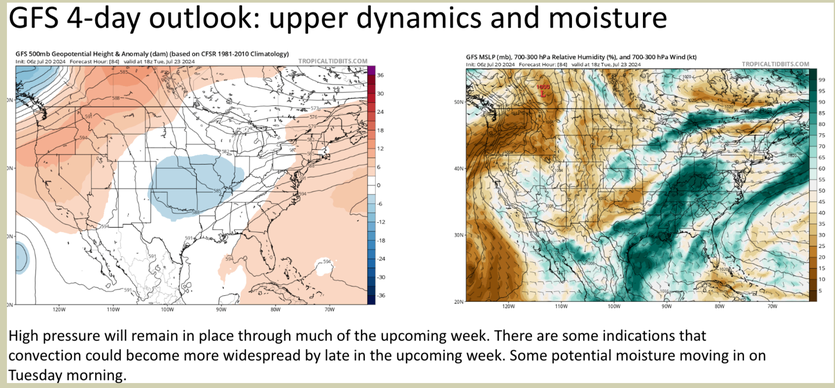
Learning Outcomes



Skew-T data from weather balloon I launched on NWS SLC at 1700 z on July 28'th 2024



HRRR wind and PBLH forecast on July 20'th 2024



Upper Dynamics and Moisture forecast on July 20'th 2024

Key Activities and Experiences

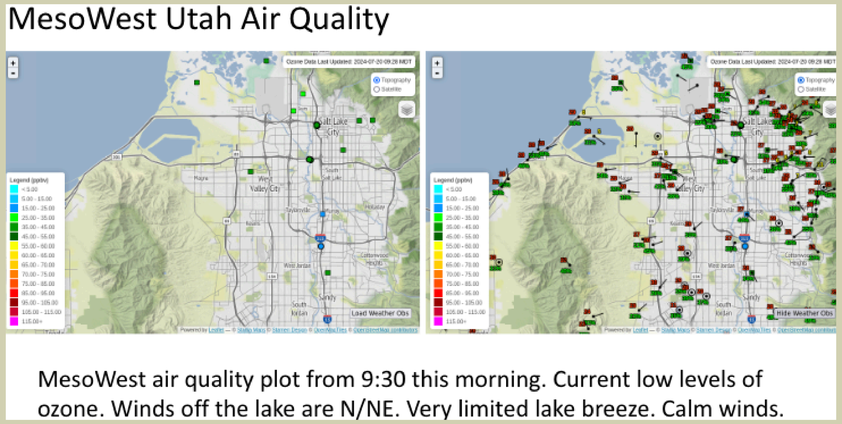
Undergraduates supported the SOS campaign with forecasting and data collection, aiding ozone monitoring efforts.

Key Responsibilities

- Forecasting: Prepared daily weather forecasts and monitored inversions, wind shifts, and wildfire smoke.
- Radiosonde Launches: Conducted daily launches at 11:15 AM MST and analyzed data for boundary layer insights.

Impact

- Support: Provided essential atmospheric data for planning.
- Experience: Applied forecasting and radiosonde skills in real-world settings.
- Teamwork: Collaborated with researchers to adapt to changing conditions.



Interpreted live data in SLC on July 20'th 2024



