DATA TO DECISIONS
Opportunities & challenges in incorporating satellite data at OR DEQ

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HAQAST6, Pasadena CA
“...to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.”
**FORECASTING**

**OPPORTUNITY**
- Integrate satellite ozone & AOD with ground-based networks and models to improve 1, 2, 3 day forecasts
- Predict hourly PM2.5 and O3 surfaces
- Build capacity at DEQ to leverage data from new satellites (TEMPO, GOES)

**CHALLENGE**
- Column AOD to surface PM2.5
- Spatial and temporal resolution

Daily point forecast for 1, 2, and 3 days out for PM2.5, O3 and stagnation conditions, based on ground-based monitors + models
SMOKE IMPACTS FROM WILDFIRE AND PRESCRIBED BURNS

OPPORTUNITY
As part of a multi-agency team, work to:
• Exceptional events
• Minimize health impacts and build resilience to increasing wildfire events through forecasting
• Proactively prioritize and target response

CHALLENGE
• Multi-agency collaboration
• Integrating multiple, complex data sets (monitors, models, satellite data from multiple instruments – MODIS, OCEO) near-real time
• Validating models

Smoke from multiple NW fires, 13th Aug, 2018
Emission Inventories Verification

OR - Primary PM2.5 Emissions

- Fires - Prescribed: 20%
- Dust: 16%
- Agriculture - Crops & Livestock Dust: 6%
- Fuel Comb - Residential: 3%
- Industrial Processes: 2%
- Waste Disposal: 2%
- Fuel Comb - Gen/Ind/Comm/Inst/Elec: 3%
- Mobile - On-Road: 1%
- Mobile - Non-Road Equipment: 1%

Opportunity
- Improve models – GIGO principle

Challenge
- Verification

Air Team | Oregon Department of Environmental Quality
ASSESSING HEALTH AND ENVIRONMENTAL IMPACTS OF AIR POLLUTION

OPPORTUNITY
- Develop spatially and temporally resolved maps of air pollution to investigate the link between air pollutants and acute and chronic health risks.

CHALLENGE
- Validation