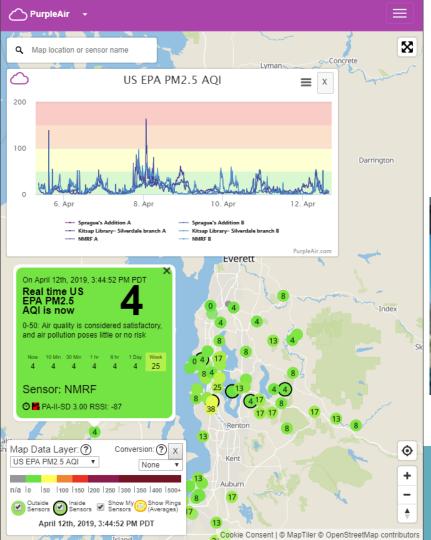
PURPLE AIR INTRO

2019 | NACAA Conference Graeme Carvlin

Purple Air Intro NACAA



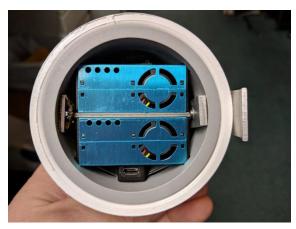
Puget Sound Clean Air Agency



Purple Air Sensor

- Low-cost (\$230)
- Power, wifi
- Require calibration





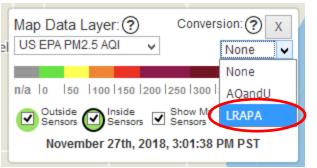
Credit to LRAPA, Lance Giles

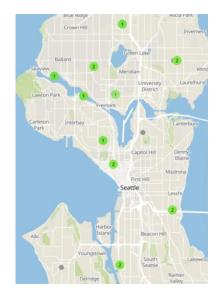


Puget Sound Clean Air Agency

How To Use The Purple Air Website

- <u>https://www.purpleair.com/map#11.1/</u>
- Click on "Conversion" from the drop down menu:



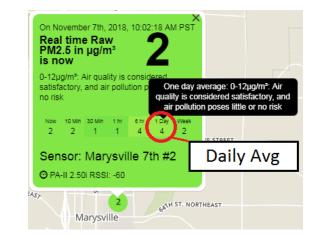


- Select "LRAPA" for the Northwest, AQandU for Utah
- Otherwise, the values are about twice as high as reality
- <u>http://www.pscleanair.org/539/Air-Quality-Sensors</u>



How To Use The Purple Air Website

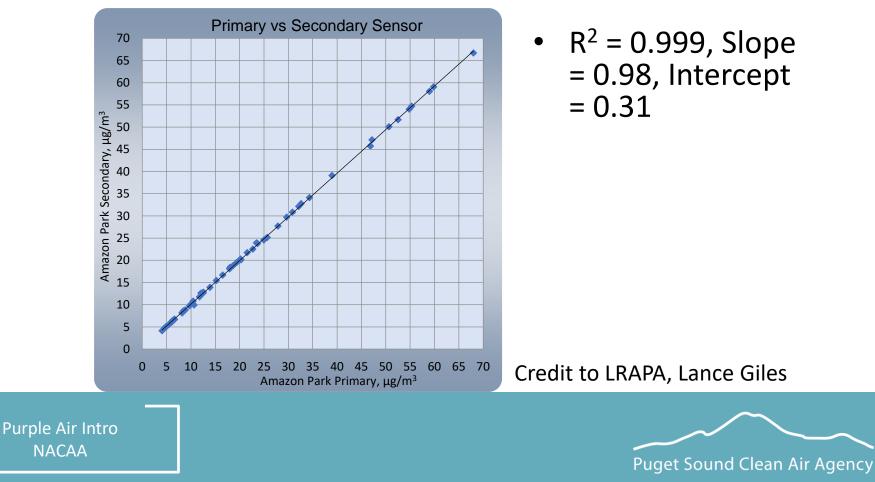
- Click on the site
- Since the AQI is only good for a full day of measurements, you should look at the "1 Day" average (the second from the right)



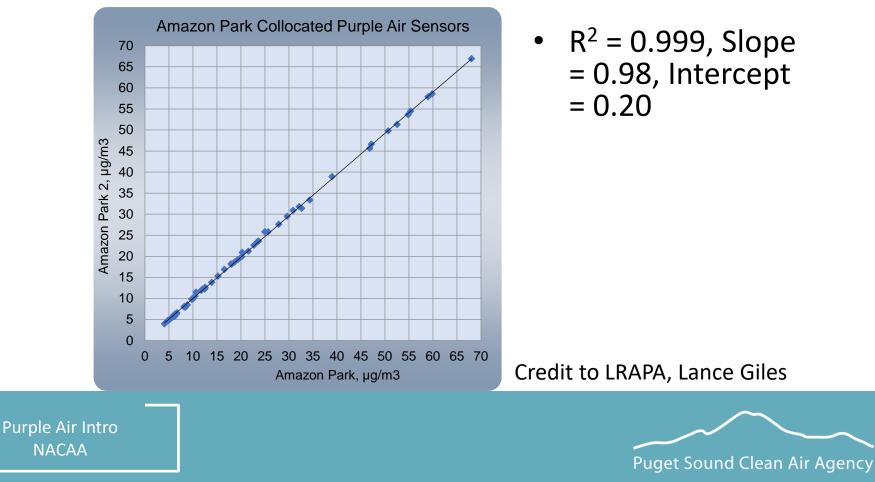
Purple Air Intro NACAA

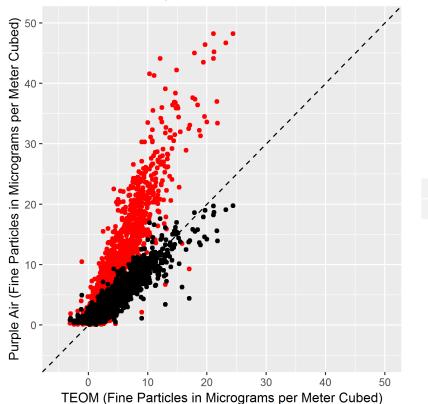


Sensor To Sensor Comparison



Monitor To Monitor Comparison





Uncalibrated Calibrated

Calibration of Purple Air to Bremerton TEOM

- Before calibration, Purple Air reads 2.5x higher than reference
- Calibration bring the Purple Air readings much closer to reference
- This calibration constant varies by particle composition and therefore location
 - 1.7-2.8 in our 4 counties

Purple Air Intro NACAA



Kitsap Study

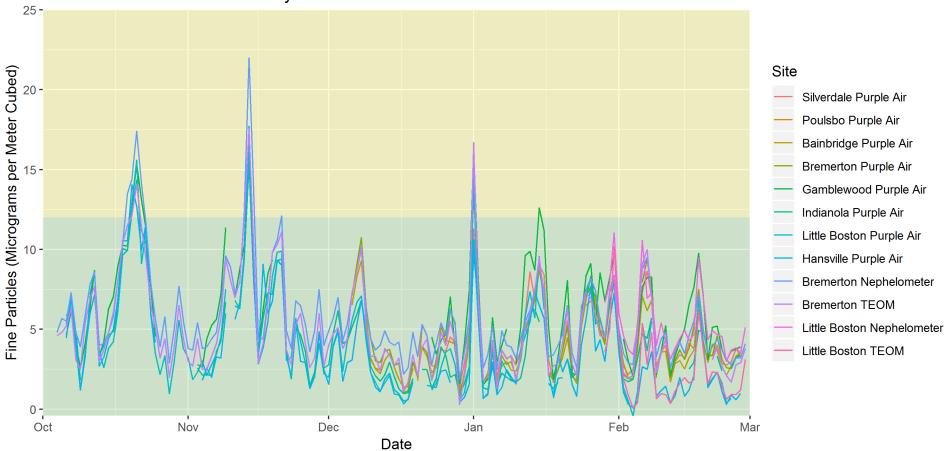
- Are there communities with high levels of wood smoke that our regulatory monitor is missing?
- Pilot Purple Air Sensors at several locations
 - Deployed Oct 2018 to Apr 2019

Purple Air Intro

NACAA

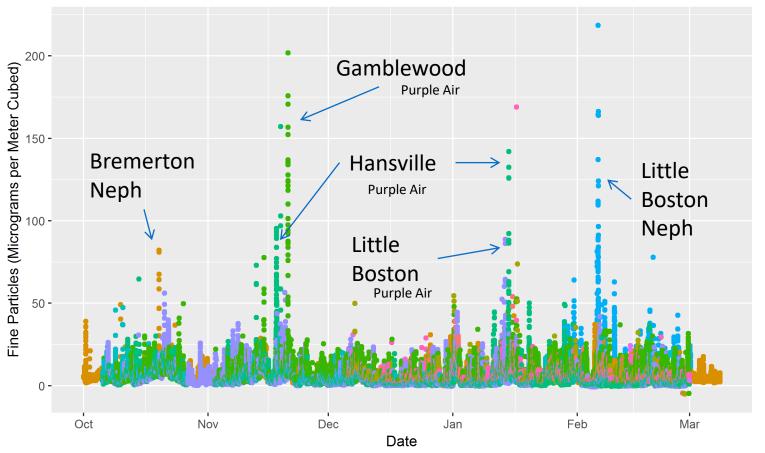
Spread designed to cover large geography





Daily Fine Particle Levels Over Time

Minute Fine Particle Levels Over Time



Site

Bainbridge Purple Air Bremerton Nephelometer

Bremerton Purple Air

Hansville Purple Air

Indianola Purple Air

Gamblewood Purple Air

Little Boston Nephelometer

Little Boston Purple Air

Poulsbo Purple Air Silverdale Purple Air

Sensor Loan Program

- Loan out monitors to community groups and individuals
 - 5x Dylos, 6x Air Beams, 20x Purple Air
- Questionnaire to collect information about monitor use
- Guidance for monitor operation and how to analyze data
 - Appropriate guidance for people of all technical skill levels









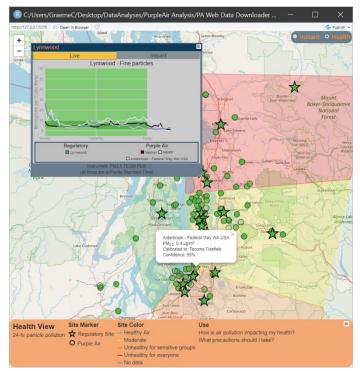
Purple Air Intro NACAA

Air Sensor Web Tools

Sensor Map

Community Reporter

Regulatory and calibrated sensor data



C/Users/GreemeC/Desktop/DetaAnalyses/Distill/Importer/Cleaner - Shiny — 🗆 🔿	
p#127aa1s846 🖉 open in Browser 🛞 🧐 😵 Publik Community Reporter	
Labels	Community Report 10/30/2018
For stationary sensors, like the Purgle Alt, the label should be the name of where the sensor Is located. For sensors used on sensor walks, the label should be the name of the location or date of the walk. Make sure that your labels cover as much of your date as possible. Any date that does not have a label will not be processed. Commit the Speriviene Location or table of the completing this section. Step 1. Add a descriptive label such as a location (e.x. Aubum 12th 50; Step 2. Sketch the sector this label applies to. Step 3. Select the start and end dates for the label. Step 4. Optionally involve the latitude and longitude for your sensor add is in, otherwise skip these boxes. Step 5. Click the Add button. Repeat for the ret of your labels.	Summary Southerness S
Create Label Select Sensor Start Date Image: Creat Date Downtown Souther Sensort 64/01/2013 225 PH Image: Creat Date Image: Creat Date Lat (optimus) Lat (optimus) 122 33510 Adr. Label Sensort Start Date End Date Latitude Remove	sono de la construcción de la co
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processed again. Back OC Process Data & Download Report	Figure 15. Map of PM2.5
	A Second
Sensor data to pdf report	At Test PM2.5 was higher on average from 12am-3am, at 5pm and at 11pm. At Test2 PM2.5 was higher on average from 1am-3am, at 6am and from 3pm-4pm. Test2 didn't have enough data to graph hour of day. (p.1) Data not certified by PSCAA