Data "Sharing"
(and All the Parts to Make That Happen)

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Forum on Observing the Environment from the Ground Up
Washington, DC
March 8, 2016

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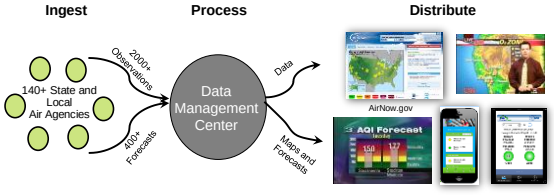
Data "Sharing"

- Instruments
- Communications
- Data validity and data management
- Data products and dissemination
- Decisions

Air Quality – EPA's AirNow Program

AirNow is a national system for acquiring and distributing air quality information in real time



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AirNow Program – Key Issues

- Participation is voluntary "Got to give to get"
- Real-time quality control (QC) Good data = trust
  - 8 methods (max, min, rate of change, etc.)
  - Interdependent checks (buddy)
  - Manual review
  - Operator feedback
- Simple data access
  - API (65% increase, 2014 to 2015)
  - Files
  - Maps
- Growth (scale) and cost

www.AirNowAPI.org

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Upper Air – CEC WindSense

- Improve forecasting in Tehachapi Wind Resource Area
- Partners: UC Davis and AWS True Power
- Network of upper-air instruments
  - Sodars, radar wind profiler, ceilometer, microwave radiometer
- Data for model validation, improvements, and assimilation

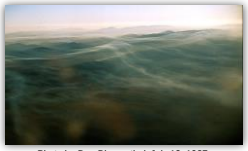

Photo by Don Blumenthal, July 12, 1987.

Radar wind profiler installation.

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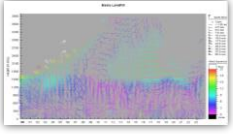
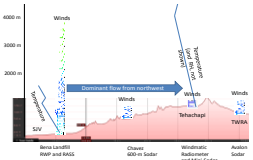
Upper-Air Data – Key Issues

- Long-term viability challenging
  - Expensive instruments – require multiple funders and users
  - Decaying networks (wind profilers for EPA's PAMs program)
  - Data difficult to share and not used to potential
- Many stations are for research – transience makes operational use more difficult
- Private interests – data may not be shared





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Sensor Data (IoT)

- Evaluating sensor performance; beginning to create networks; managing data
- Project example: CA ozone sensor network



Details at: http://www.sonomatech.com/project.cfm?uprojectid=1217

Sensor Networks – Key Issues

- Long-term data quality
- Complex calibration and QC
  - Real-time on 1-minute data
  - Collocation
- Scale issues
  - Logistics
  - Data volume
- Communications
  - Key for QC
  - Critical for completeness

Discussion Points

- Central data management
  - QC
  - Scale
  - Simple data access
- Funding existing remote networks
- Sensors
  - Data quality
  - Data interpretation and application

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