2025 JUNE IMPROVE Steering Committee Meeting

Visibility Monitoring Contract Updates

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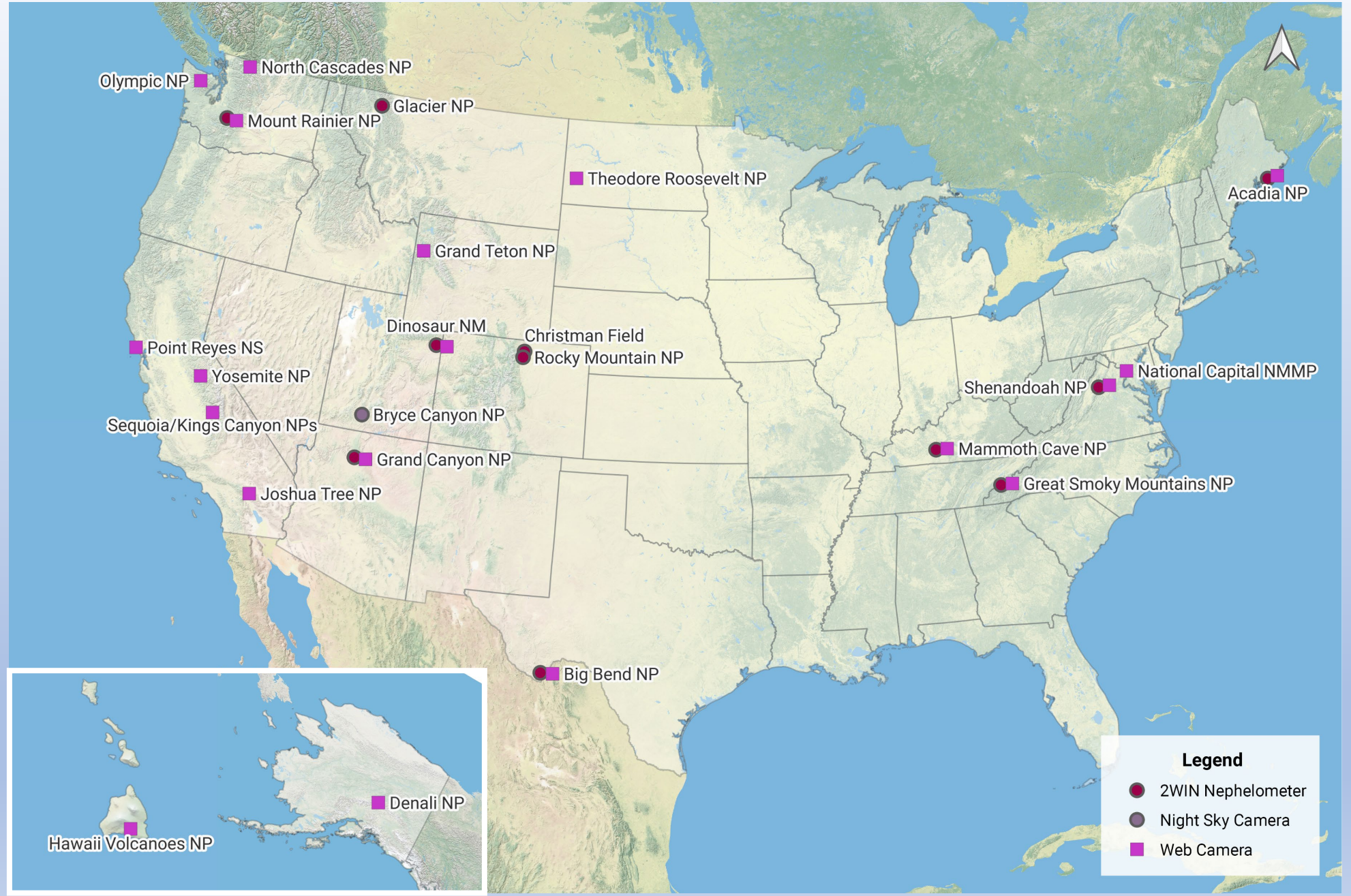
North Cascades NP
Olympic NP
Glacier NP
Mount Rainier NP
Theodore Roosevelt NP
Acadia NP
Grand Teton NP
Dinosaur NM
Christman Field
Rocky Mountain NP
Point Reyes NS
Yosemite NP
National Capital NMMP
Shenandoah NP
Bryce Canyon NP
Sequoia/Kings Canyon NPs
Mammoth Cave NP
Grand Canyon NP
Great Smoky Mountains NP
Joshua Tree NP
Big Bend NP
Denali NP
Hawaii Volcanoes NP
Legend
2WIN Nephelometer
Night Sky Camera
Web Camera

NPS 2WIN Sites

Christman Field Air Strip at CSU for Testing

- Acadia National Park, ME
- Big Bend National Park, TX
- Dinosaur National Monument, CO
- Glacier National Park, MT
- Great Smokey Mountains NP, TN
- Grand Canyon National Park, AZ
- Mammoth Cave National Park, KY
- Mount Rainier National Park, WA
- Rocky Mountain National Park, CO
- Shenandoah National Park, VA

Data Processing and Validation Progress

Part One

- Provide a reasonable visibility metric for the NPS Web Sites
- ARS, Bonne Ford and Tony Prenni working on an algorithm for the on-site data logger.

Part Two

- Validate and Process the data set from the 2WIN
- Establish procedures for daily, weekly and monthly data review
- Submit monthly data files for inclusion in the IMPROVE database

Advantages of Utilizing a Independent Data Logger

- Complete control of calibrations and calibration checks
- More flexible and adaptable on the fly
- 2WIN clock drift is irrelevant
- Data capacity, 2WIN memory holds 30 days, External Data logger holds 7000 days of 1-hour averages
- Data is flagged to exclude calibrations, calibration checks, and maintenance from valid ambient readings (75% rule)
- Calculations are transparent

Special thanks to Bonne Ford at Colorado State University for sharing her work and insights on processing 2WIN data.

Thanks also to Tony Prenni at National Park Service for being available to meet and talk about 2WIN technical issues.

Thanks to Christian Kirk at Air Resource Specialists for sharing his time to write the data logger code and understand the 2WIN measurements and algorithms.

Thank You

2WIN Heat Mitigation

- Left-side panel modified to allow for a cooling fan to push enclosure air into nephelometer electronics.
- Front panel remounted with two-inch standoffs to allow air and heat to escape.
- Filters on environmental enclosure fans were replaced with porous media, improving air flow.
- Sites tested through today are not the dustiest in network (BIBE).
- Experience will help uncover issues with this initial heat mitigation approach.


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COOL AIR
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