

2023 Spring Virtual IMPROVE Steering Committee Meeting

Visibility Monitoring Contract Status Brief Update

By Mark Tigges –ARS

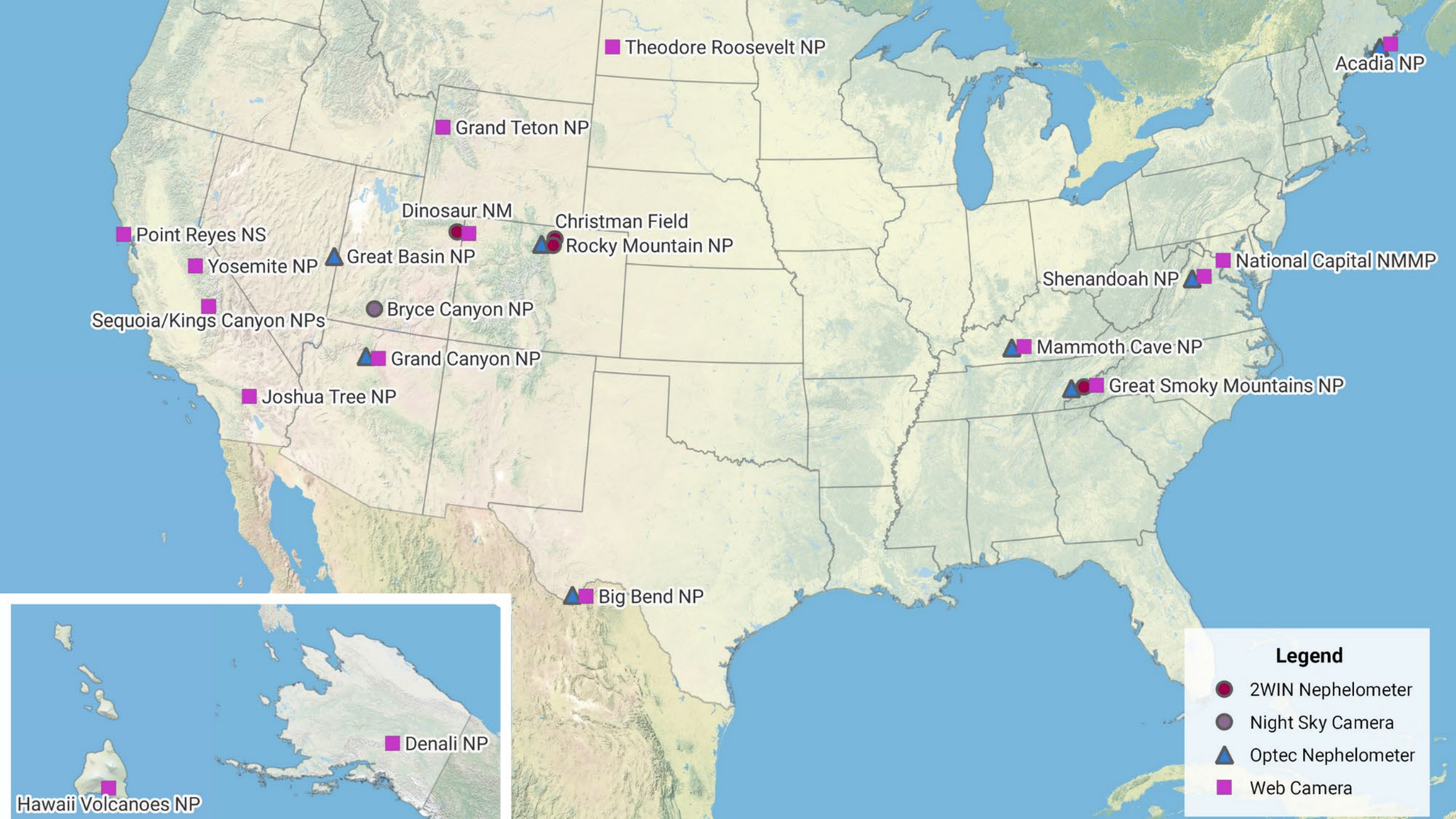
Tony Prenni – NPS ARD

June 8, 2023

New Visibility Contract Year Scope of Work

July 12, 2023 – July 11, 2024

- After 30 years (1993), the 10 Remaining Optec NGN2 Ambient Nephelometers will lose support on July 12, 2023.
- The network funds will be redirected to purchase, integrate and install the Ambilabs Dual Wavelength Integrating Nephelometer at 9 sites.
- Great Basin will be decommissioned.
- Shenandoah may be decommissioned. The local SHEN staff are searching for funds to purchase a 2WIN system.



Legend

- 2WIN Nephelometer
- Night Sky Camera
- ▲ Optec Nephelometer
- Web Camera

New Visibility Contract Year Scope of Work

July 12, 2023 – July 11, 2024

Decommission Optec Sites July 2023

1. Acadia, ME
2. Big Bend, TX
3. Glacier, MT
4. Grand Canyon, AZ
5. Great Basin, NV
6. Great Smoky Mtns, TN
7. Mammoth Cave, KY
8. Mount Rainer, WA
9. Rocky Mountain, CO
10. Shenandoah, VA

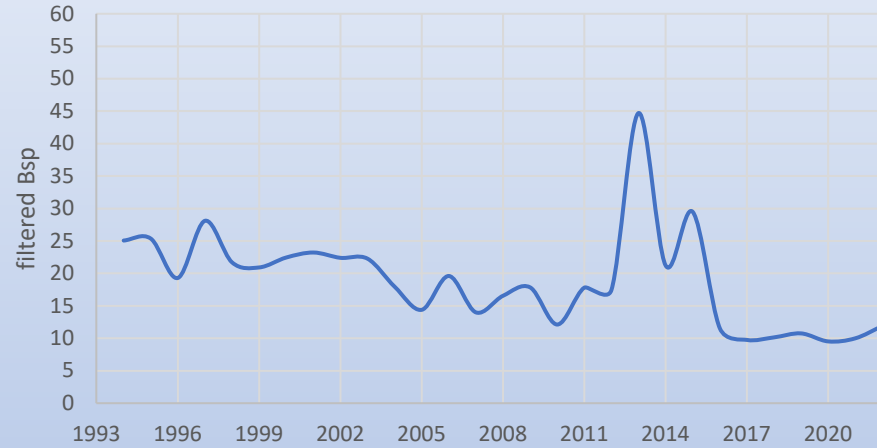
Existing and New Ambilabs Sites July 2024

1. Acadia, ME
2. Big Bend, TX
3. Dinosaur, CO*
4. Glacier, MT
5. Grand Canyon, AZ
6. Great Smoky Mtns, TN*
7. Mammoth Cave, KY
8. Mount Rainier, WA
9. Rocky Mountain, CO*

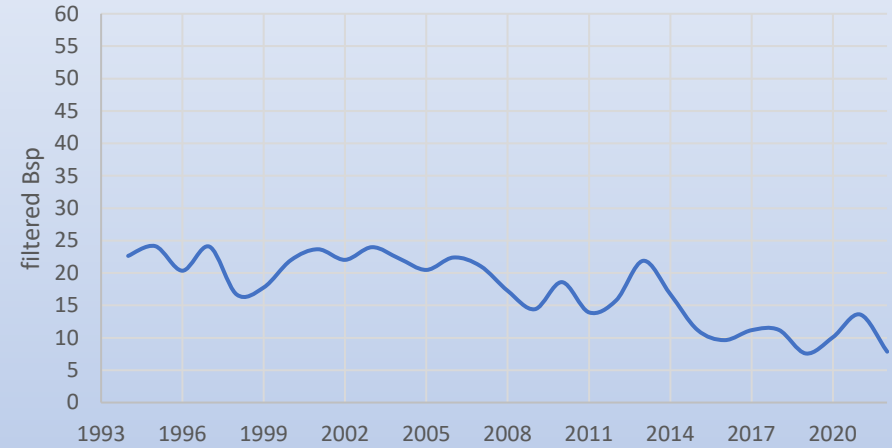
*Ambilabs already operational

30 Years of Optec Data: Acadia Snapshot

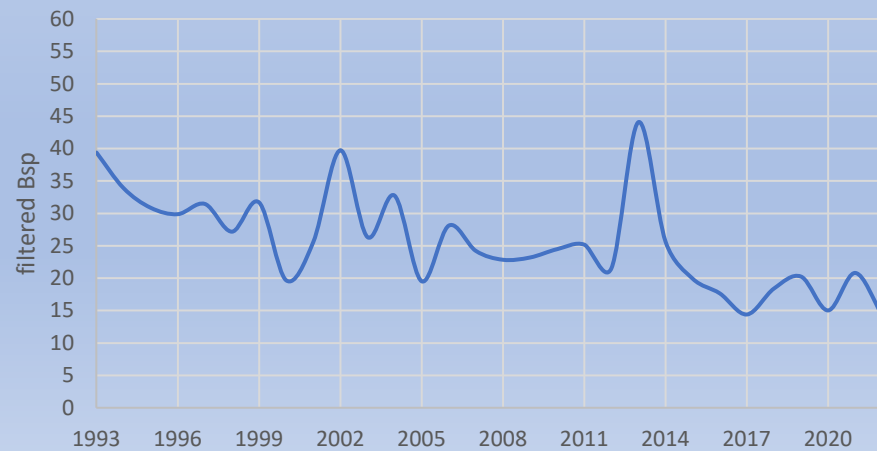
Acadia NP - ACAD1/2 Site
Winter



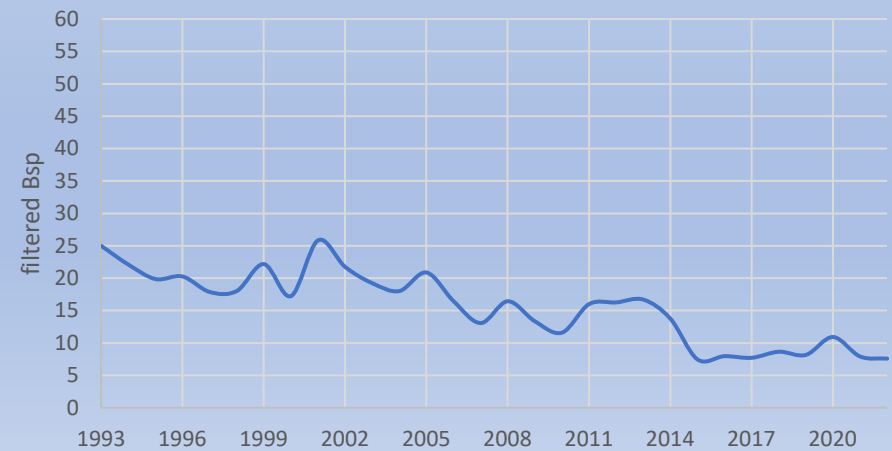
Acadia NP - ACAD1/2 Site
Spring



Acadia NP- ACAD1/2 Site
Summer



Acadia NP - ACAD1/2 Site
Fall

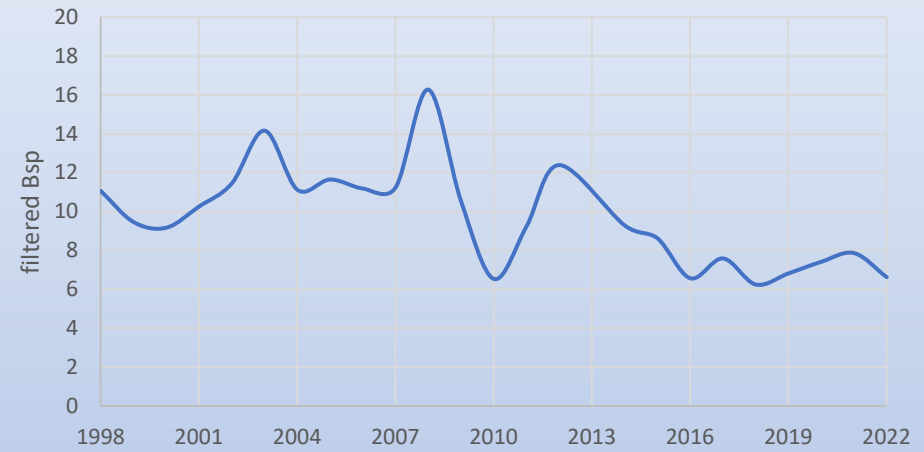


25 Years of Optec Data: Grand Canyon Snapshot

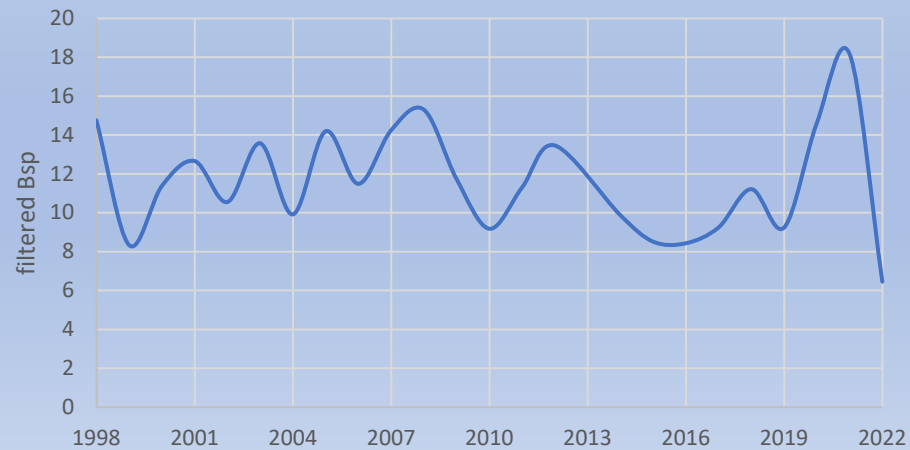
Grand Canyon - HANC1 Site
Winter



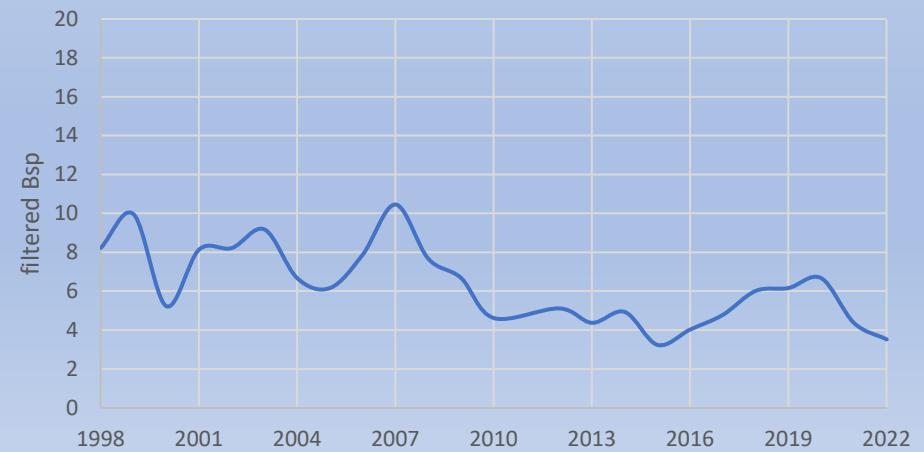
Grand Canyon - HANC1 Site
Spring



Grand Canyon - HANC1 Site
Summer

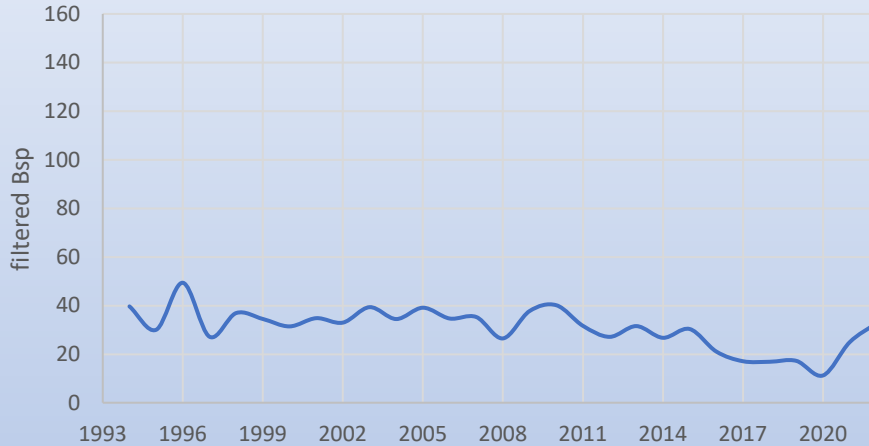


Grand Canyon - HANC1 Site
Fall



30 Years of Optec Data: Great Smoky Mtns Snapshot

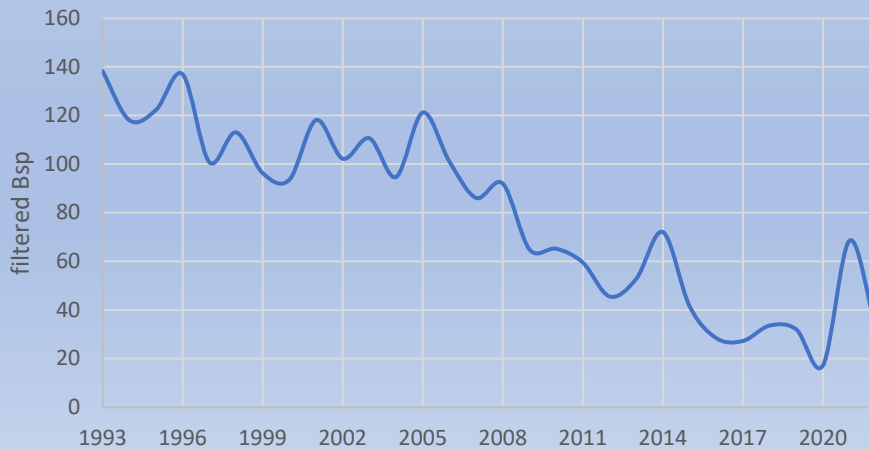
Great Smoky Mtns NP - GRSM1/2 Site
Winter



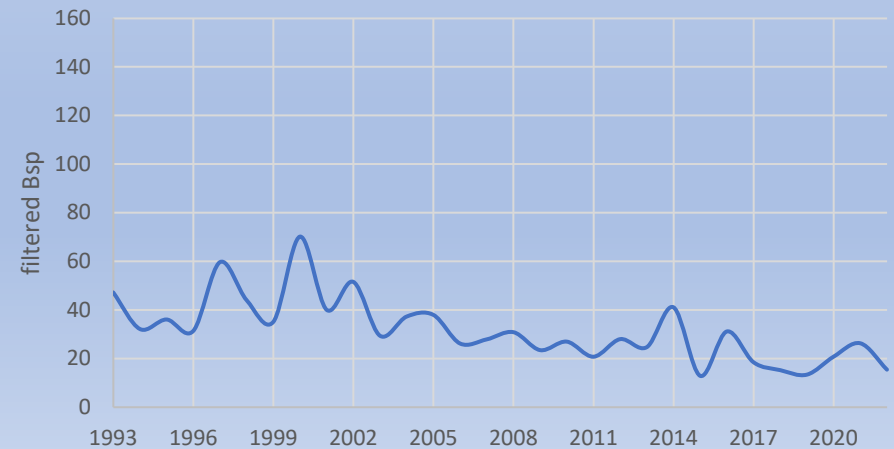
Great Smoky Mtns - GRSM1/2 Site
Spring



Great Smoky Mtns - GRSM1/2 Site
Summer



Great Smoky Mtns - GRSM1/2 Site
Fall



- **New Scene Monitoring & Web Camera Deployment**

Description

- Bosch Ultra 8000MP with 4-13mm Varifocal lens

Old Cannon SLR 12 megapixel



New Bosch Ultra 8000MP 8 to 12 MP



• New Scene Monitoring & Web Camera Deployment

Description

- Bosch Ultra 8000 MP with 4-13mm Varifocal lens

Advantages

- Significantly cheaper to acquire than digital SLR system (computer, camera, support hardware).
- No on-site computer required as is needed with digital SLR.
- Motorized back focus for remote focus adjustment.
- Bosch enclosure available with Power-Over-Ethernet for simplified wiring.
- Significantly lower maintenance expected.
- Easier to install

Disadvantages

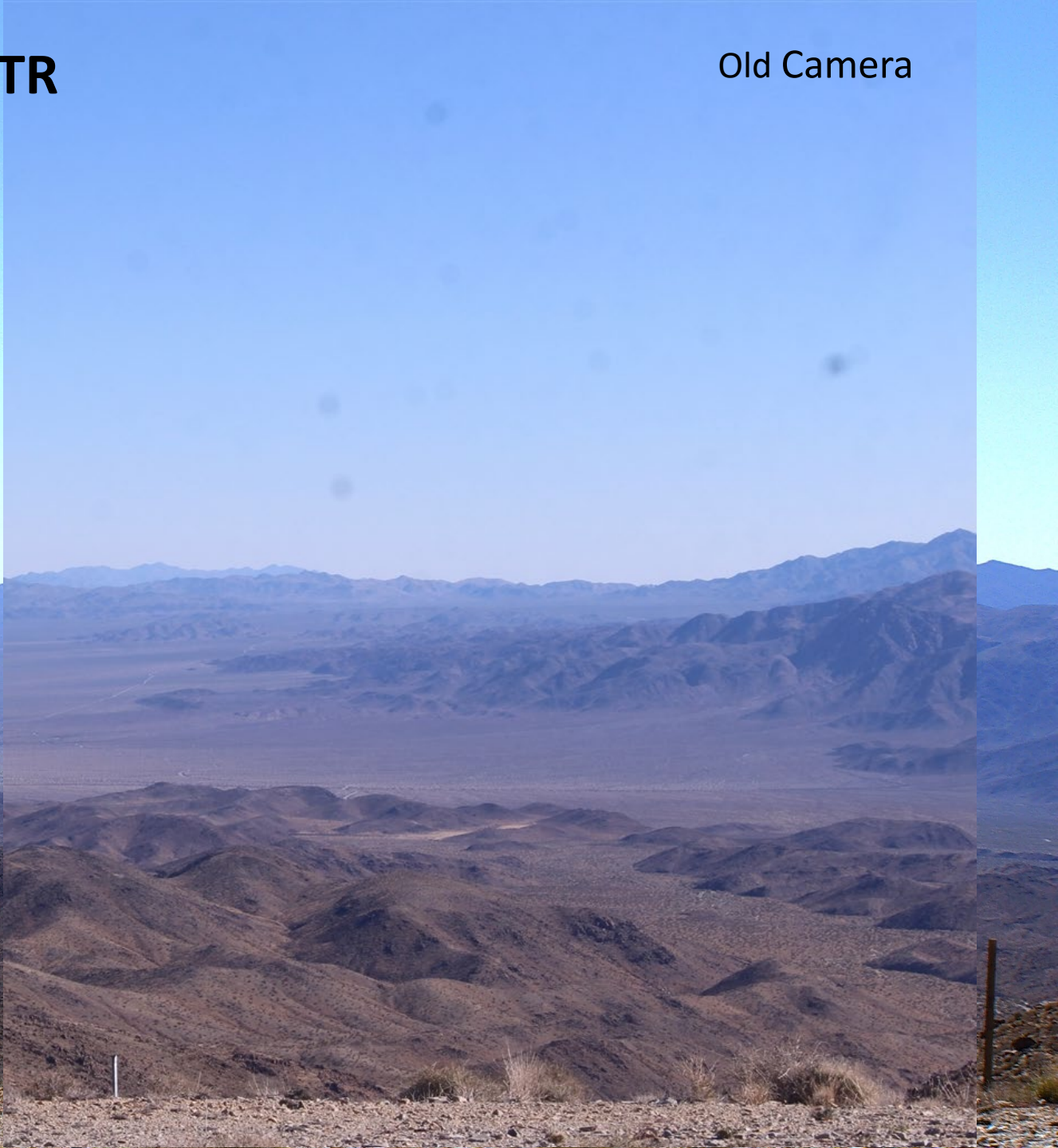
- Primitive color balance technology compared with digital SLR.
- Poor night performance (high gain image noise) compared with digital SLR. Not suitable for urban sites requiring night images.
- Smaller image sensor and lenses mean lower sensitivity and more distortion, especially at wide angles.
- Limited lens selection (limited fields of view) compare to digital SLR lenses.
- Still images cannot be saved on the camera. Images must be polled and saved remotely. No image backup in the event of onsite internet or remote polling failure.
- JPEG only, no raw output.

New Camera



JOTR

Old Camera



New Camera



PORE

Old Camera



Thank you