



Chief of Resource Management- Paul Petersen

Biologist- Eric Kelley

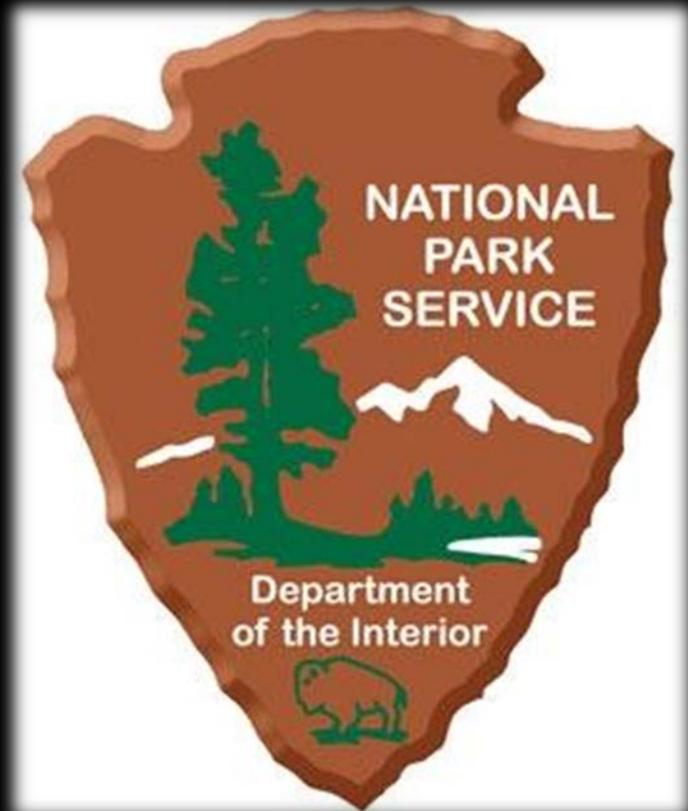
GIS Technician- Jav'ar Henry



National Park Service (NPS)

Mission Statement

The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.



Prince William Forest Park (PRWI)

- Created in 1936 as the Chopawamsic Recreational Demonstration Area
- Renamed in 1948 as Prince William Forest Park

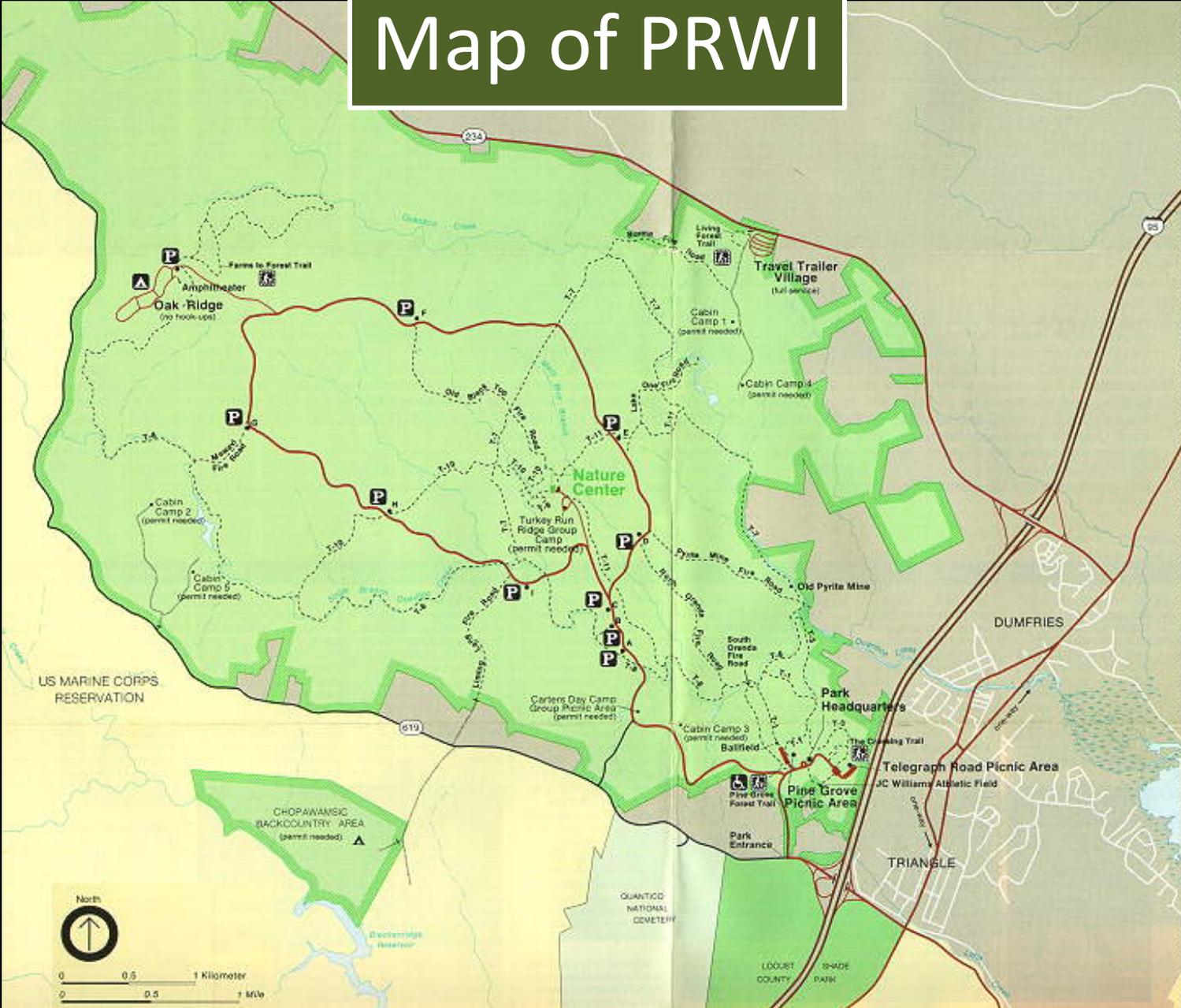


Recreational Opportunities

- 25.13 sq miles (65.09 km²) of land
- 37 miles of trails
- 10 bicycle paths
- Wildlife viewing
- Back country camping
- Full service RV campground
- Tent and rustic cabin camping



Map of PRWI





Projects

Primary Projects

- Used GPS (Trimble) to record historic roads and transferred data to Arc Map GIS 10.1
- Used GPS (Trimble) to plot the location of beaver dams and transferred data to Arc Map GIS 10.1

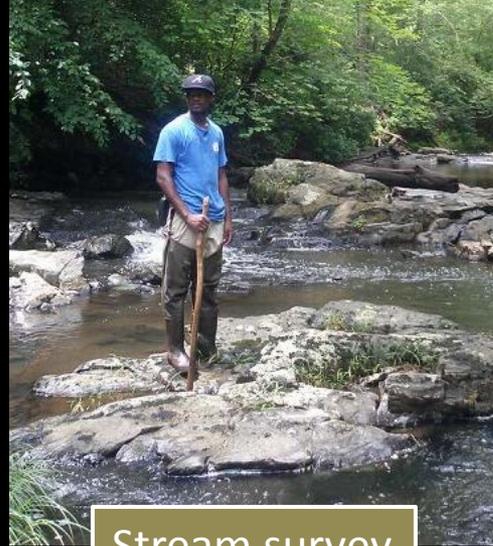
Secondary Projects

- Checked the water quality in streams and lakes for E. coli
- Sprayed for invasive plants species
- Micro-invertebrate sampling
- Stream surveys
- Amphibian surveys
- Bird surveys
- Vegetation surveys

Secondary Projects



Micro-invertebrate sampling



Stream survey



Spraying for invasive plants



Amphibian survey



Vegetation survey



Water quality



Bird survey

Purpose of Primary Project

GPS Old Historic Roads

- To identify old roads that were used by locals for transportation before the 1930's.



GPS Beaver Dams

- To identify beavers dam communities within the park area.



It's just one dam project after another.

GPS Historic Roads

Items needed?



Trimble GPS unit



Charged batteries



Water



Radio

Partner(s)



Receiver



Partner(s)

GPS Historic Roads

In The Field



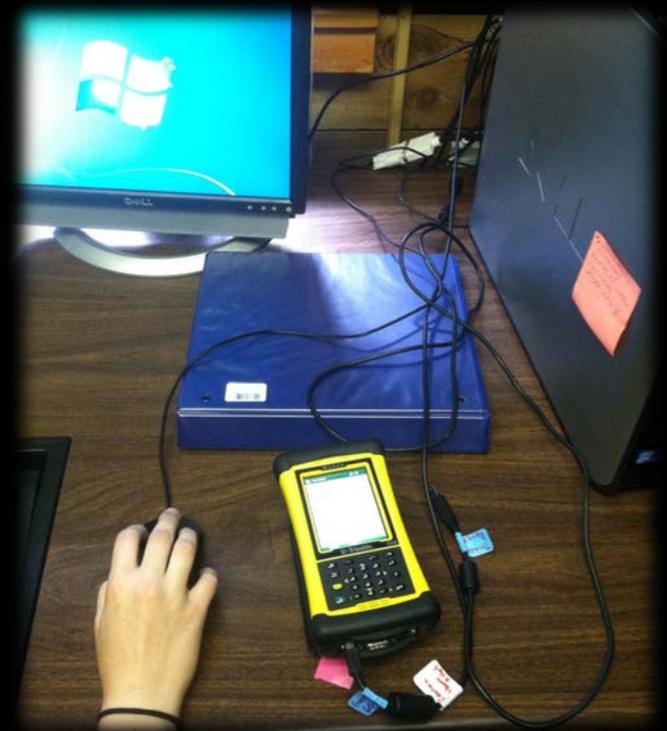
1. Identify historic roads using your better judgment
 - A. Look for large tree or large rock
 - B. Look for a formation of a road with low vegetation
2. Use the GPS to track the historic roads route while walking along it
3. Drink plenty of water
4. Go back to the office and transfer data to the computer

GPS Historic Roads

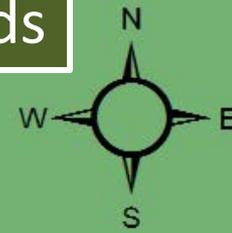
Analyzing Data

- Transfer data from the GPS to the computer using Pathfinder
- Transfer data from Pathfinder to ArcGIS 10.1
- Add the new routes to the original shapefile of historic roads

ArcGIS® 10.1

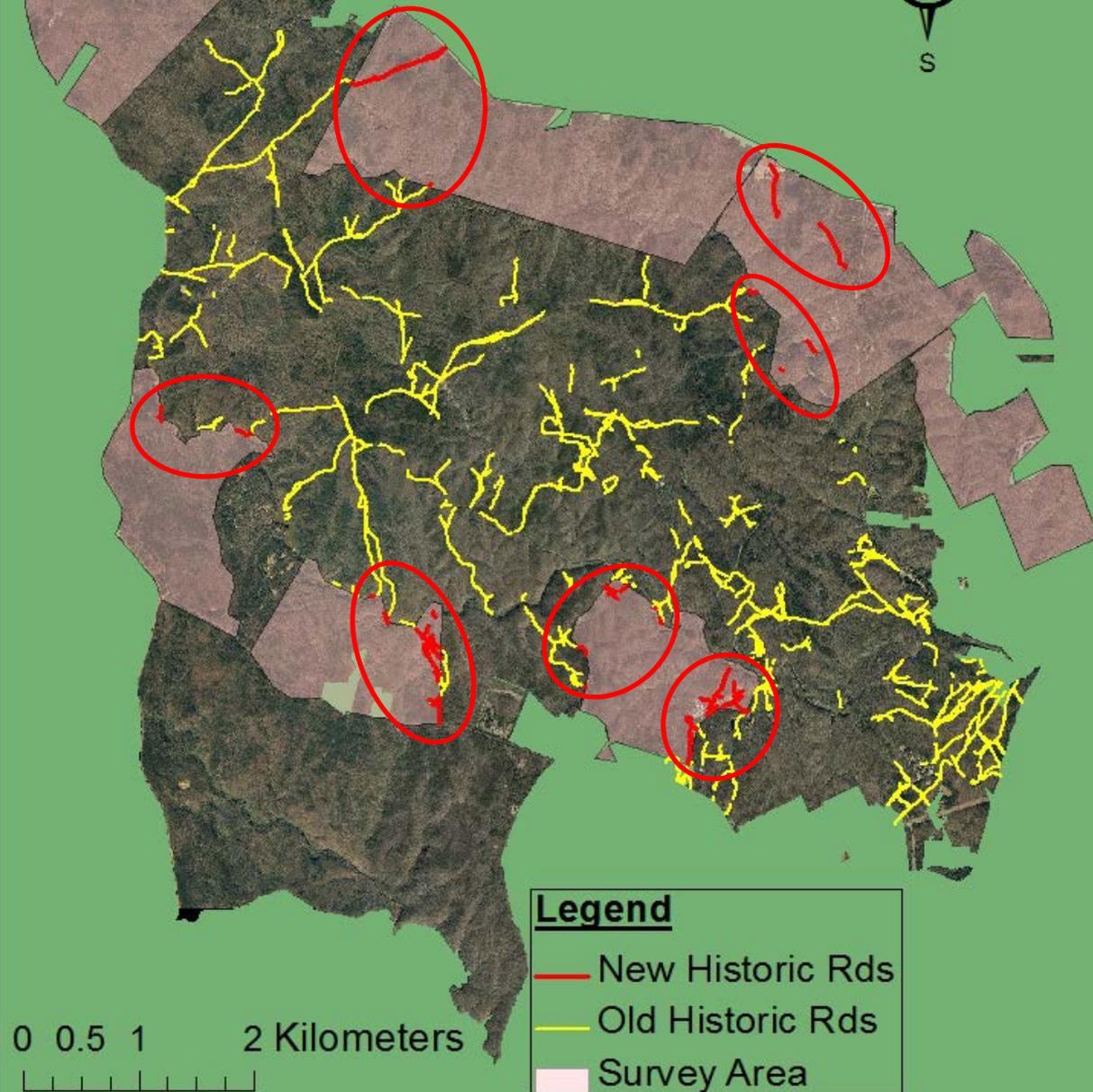


Map of Historic Roads



Data

- Survey area: 15.6km²
- Total amount of historic roads: 67.6km
- Historic roads found in 2013: 8.2km



GPS Beaver Dams

Items needed?



Trimble GPS unit

Charged batteries



Receiver

Radio



Water

Partner(s)



GPS Beaver Dams

In The Field

1. Choose a start and end point in Quantico Creek
2. Walk through the creek while looking for beaver dams
3. Mark at least 10 GPS points of each beaver dam found along the creek
4. Drink plenty of water
5. Go back to the office and transfer data to the computer



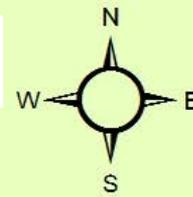
GPS Beaver Dams

Analyzing Data

- **Transfer data from the GPS to the computer using Pathfinder**
- **Transfer data from Pathfinder to ArcGIS 10.1**
- **Add the new points to the original shapefile of beaver dams**



Map of Beaver dams



Data

- 83 total dams in Quantico Creek (31.5km)
- 48 beaver dams in the northern creek (16.7km)
- 35 beaver dams in the southern creek (14.8km)



Conclusion

Historic Roads

Located 8.2km of historic roads throughout the survey area of 15.6km².

Beaver Dams

Located 83 beaver dams throughout 31.5km of Quantico Creek.



Acknowledgements

- National Park Service
- All of Prince William Forest Park including Paul Petersen, Eric Kelley, and Collette Carmouche
- Geological Society of America and Mosaics in Science
- Student Conservation Association (SCA): Alec Craig, Anna Reid, Arielle Johnson, Ben Porter, and Samantha Herbert



Questions Please?

