

Arlington County Deer Survey and Next Steps

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White-tail Deer Background

- White-tailed Deer (*Odocoileus virginianus*) are an important and necessary aspect of wildlife with important wildlife functions when in balance with the surrounding habitat.
- Deer almost disappeared from Virginia by 1930, but there are now maybe more deer than any other time in history, with population estimates of between of 850,000-1,000,000 deer currently, according to the Virginia Department of Wildlife Resources:
<https://dwr.virginia.gov/wildlife/deer/deer-management-program/>
- Through the 1940's to 1980's with restocking efforts, laws protecting deer and favorable habitat, deer have rebounded at an exponential rate in Virginia.



Problems With Overpopulated deer and Ecology

- Deer numbers above the biological carrying capacity can affect the ecology of natural lands.
- Forests do not regenerate, native plants supporting other wildlife suffer, insects and ground nesting birds decline, invasives spread and prosper, and erosion and compaction may also increase when deer numbers are above what the land can support.
- Unhealthy populations not only affect other wildlife, people, but the deer themselves, including making it easier for disease transmissions.



Other Concerns Regarding Deer Overpopulation

- Deer-vehicle collisions
- Damage to landscaped areas and flower beds
- Tickborne illnesses



Deer Survey

- Objective: Provide Arlington County Department of Parks and Recreation with an estimate of the white-tailed deer population for the entire county, where allowed, using Unmanned Aircraft Systems.
- Drone surveys were identified as being most accurate for Arlington County.
- DPR contracted with Steward Green LLC to conduct the surveys.
- Required approval from the FAA, TSA, Secret Service and other Federal entities.
- Steward Green has conducted similar surveys within the Washington D.C. area.



Launch Points in Section A along Military Road

Deer Survey Methods

- Steward Green scouted the County prior to the survey to determine launch sites and determine best routing for obtaining accurate results.
- Arlington County was divided into 11 areas by main roads and highways, totaling approximately 14,098 acres flown (about 22 square miles).
- The infrared heat signatures collected produced a reliable method of counting the deer in analysis by an experienced, skilled technician.
- Steward Green was unable to secure approval to fly over Federal lands



Deer Survey Methods

- Steward Green conducted the deer survey between April 8 and 12th, 2021.
- 65 flight missions all flown between morning twilight and evening twilight.
- Flights were conducted manually to produce the best results, as using this method allows the technician to pause, hover, circle areas, zoom and even change the sensor angle when there are questionable heat signatures.
- Areas are flown systematically, reducing risk of overcounting as groups of deer are identified through the process and noted.
- Thermal imagery was analyzed both in the field and then more thoroughly in the lab to determine accurate heat signatures of minimum, or confirmed, deer counts.



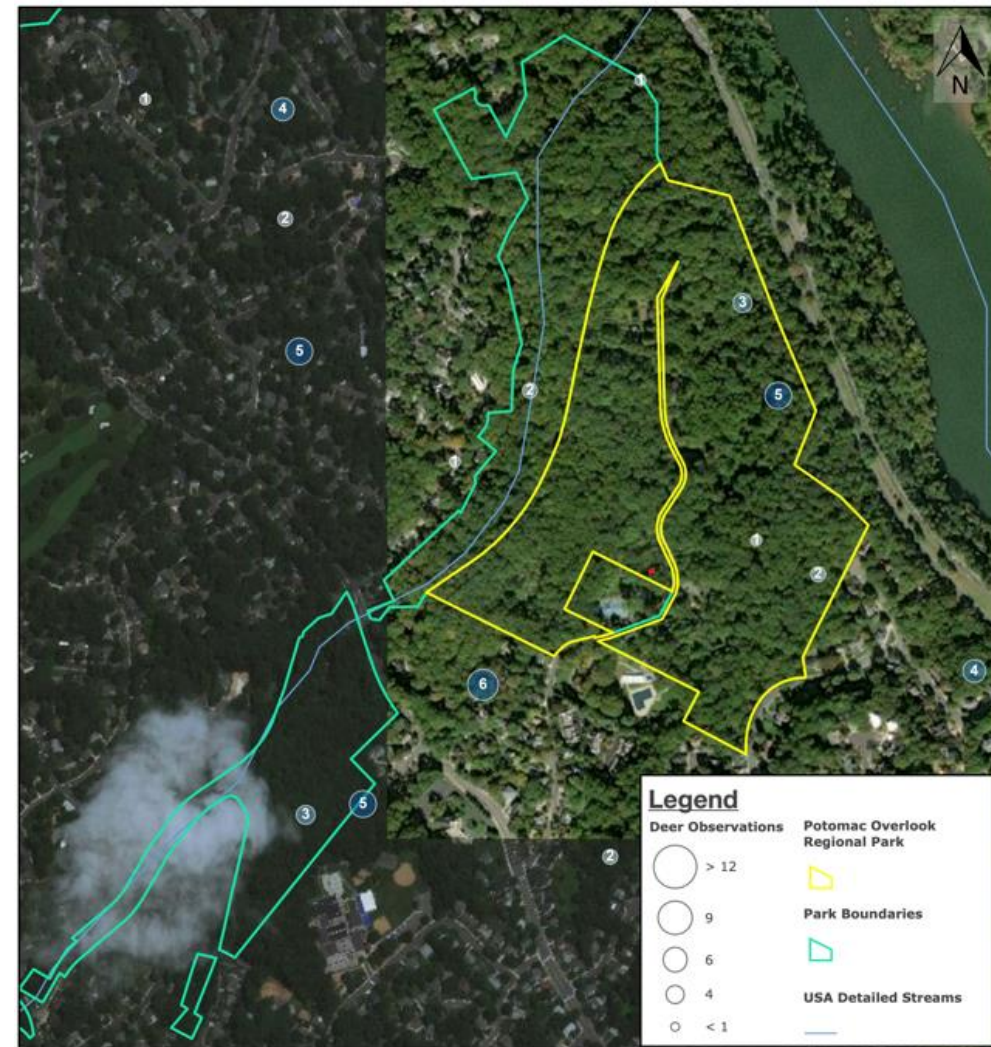
5 deer at Minor Hill



Pedestrians and dog

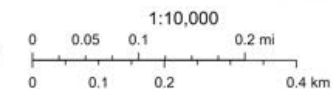
Deer Survey Results

- Arlington has 290 deer at a minimum as surveyed on non-Federal properties.
- 13 per square mile in the County.
- Four sections showed in excess of 20 animals per square mile, higher than most experts agree is healthy for regeneration of native plants.
- Deer densities were not equally distributed with the highest unhealthy concentrations along the wooded areas of Military Road, Army Navy Country Club and along parts of Four Mile Run.
- All seven Natural Resources Conservation Areas are found within these four sections.



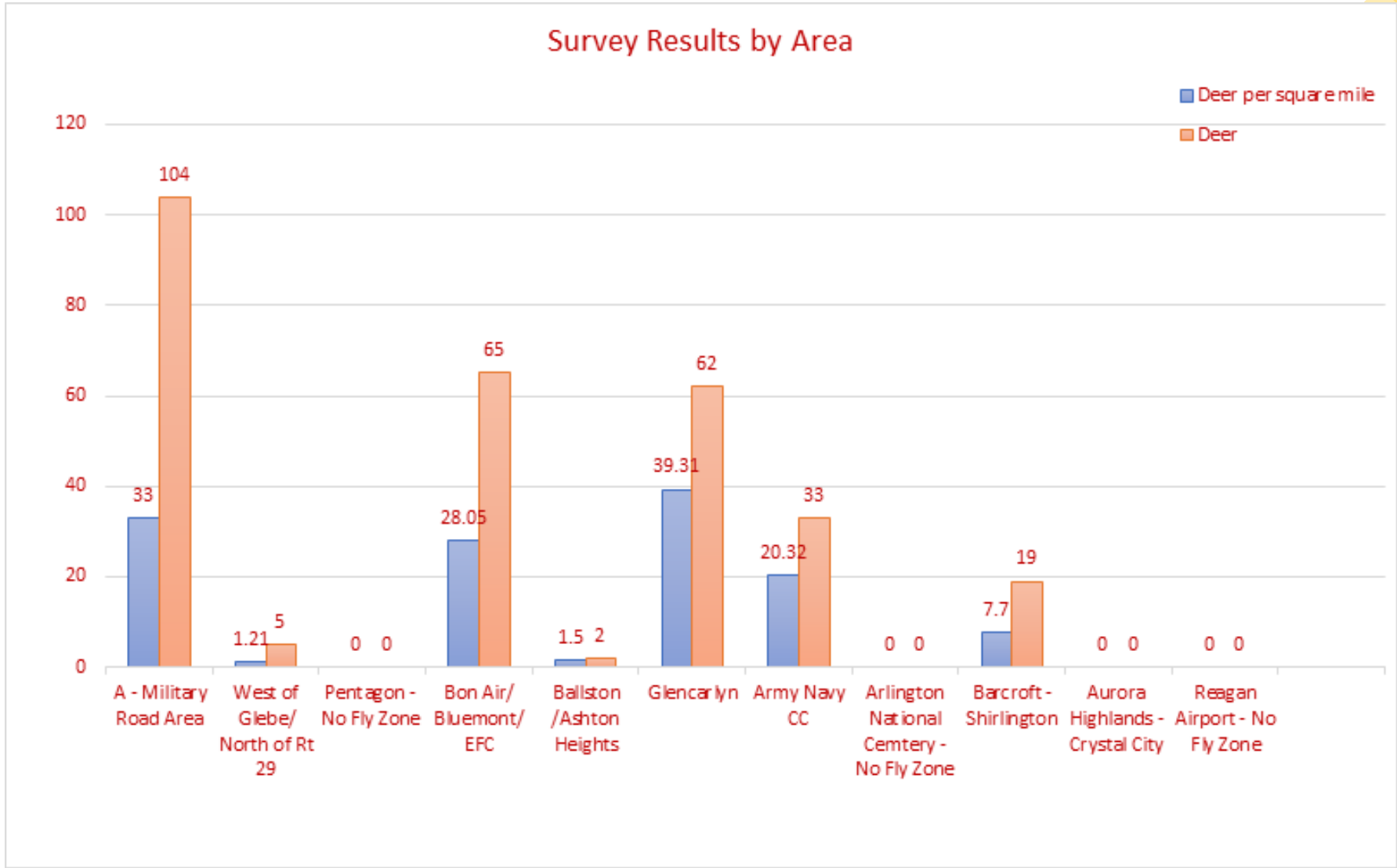
StewardGreen™

Sources: Steward Green; Arlington County, VA; ESRI; Maxar; National Hydrography Dataset - USGS



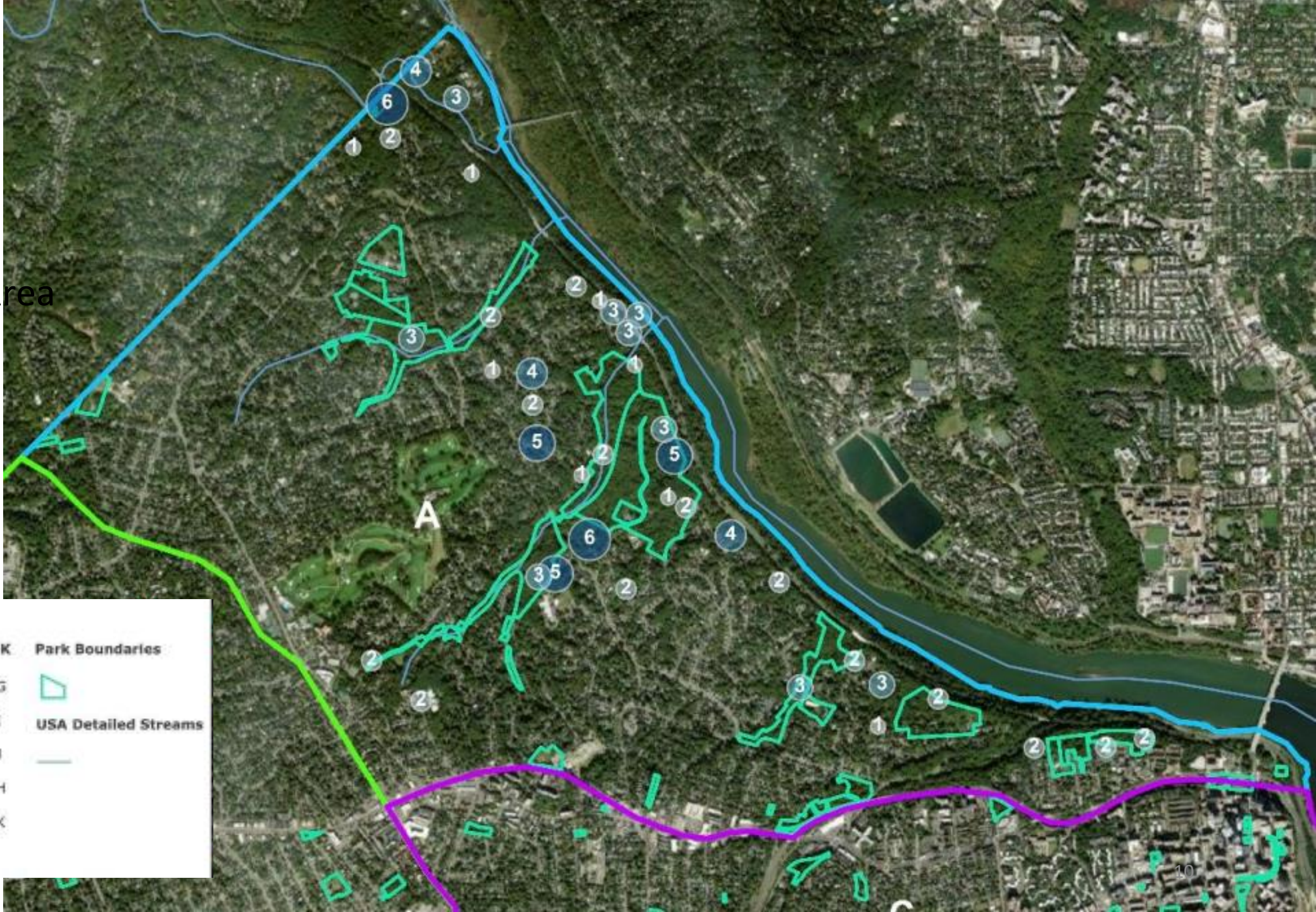
Date of Survey	Total Deer Observed	Deer per Square Mile	Area (Square Miles)	Area (Acres)
April 9, 2021	11	105.62	0.10	66.66

Survey Results by Area



Section A

Military Road Area

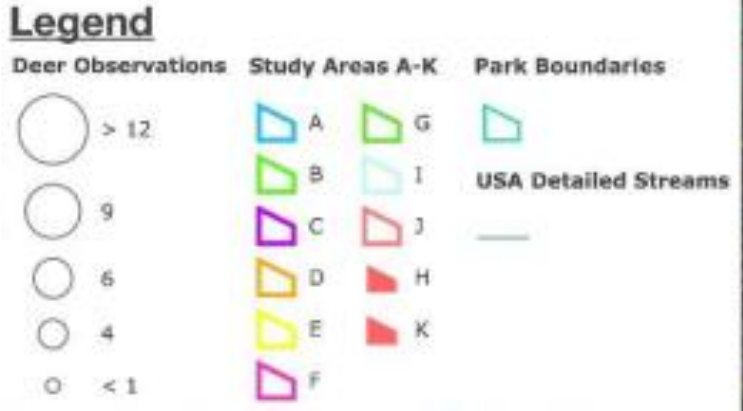
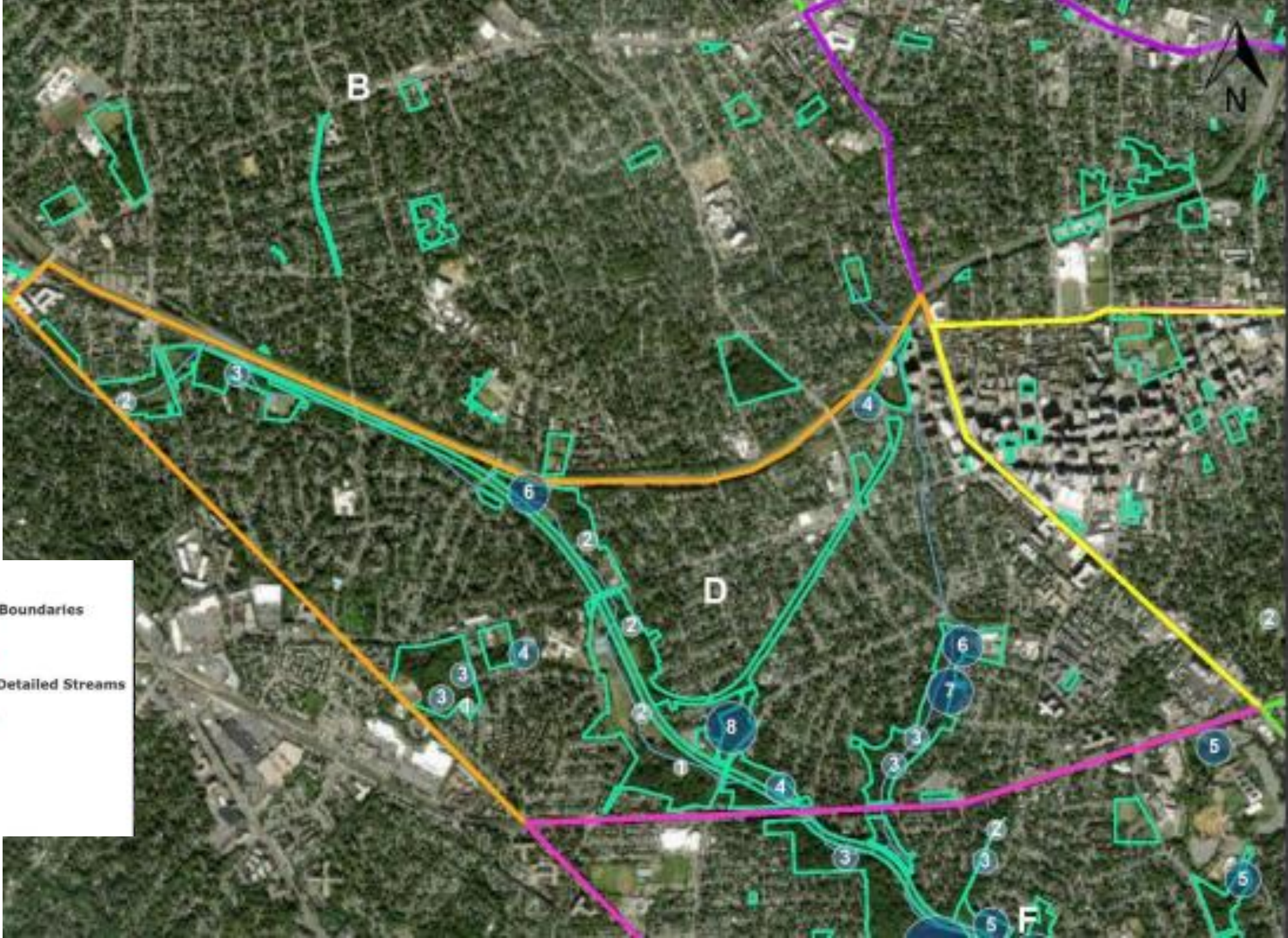


Legend

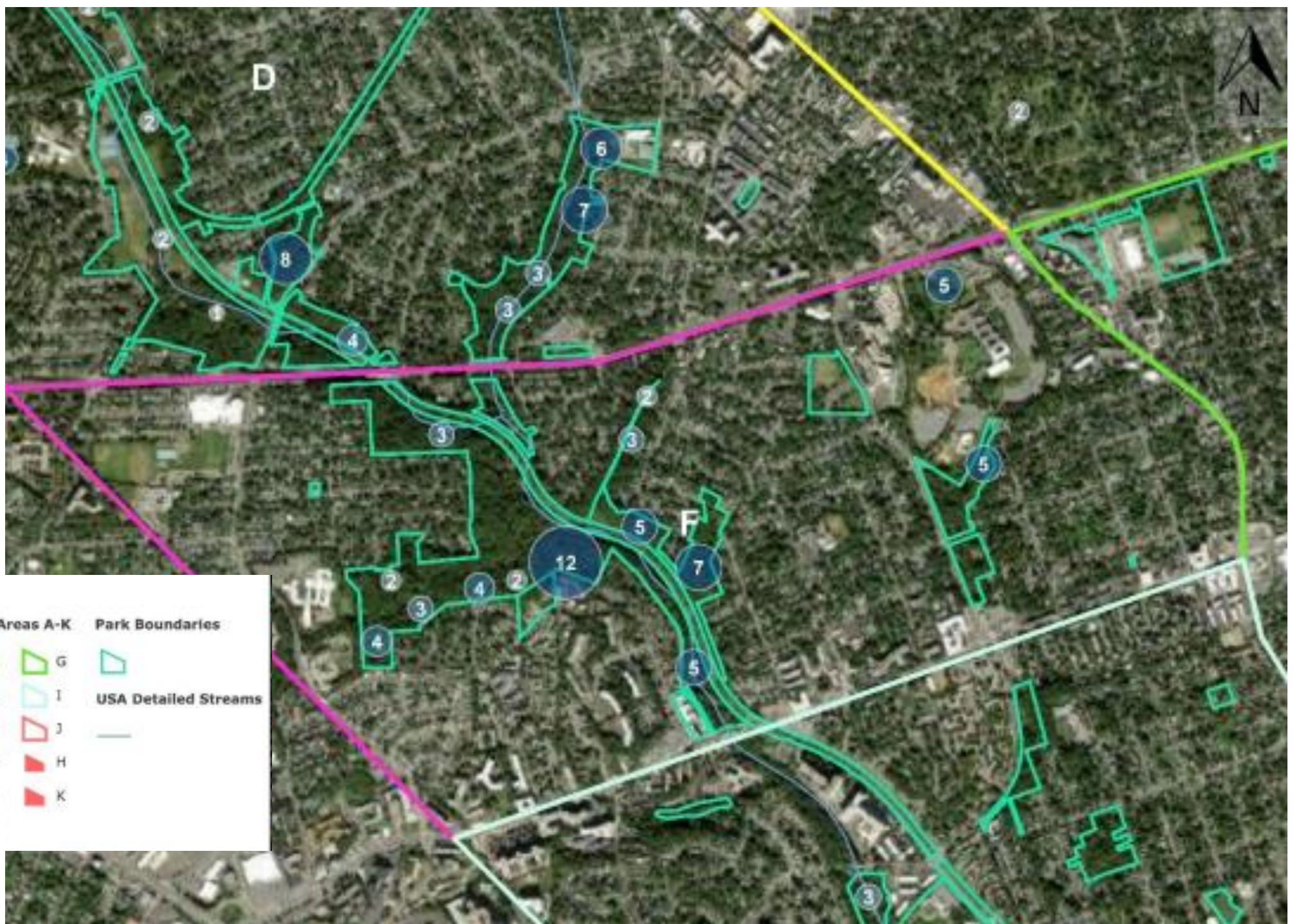


Section D

Bluemont, Bon Air,
East Falls Church



Section F
Glencarlyn



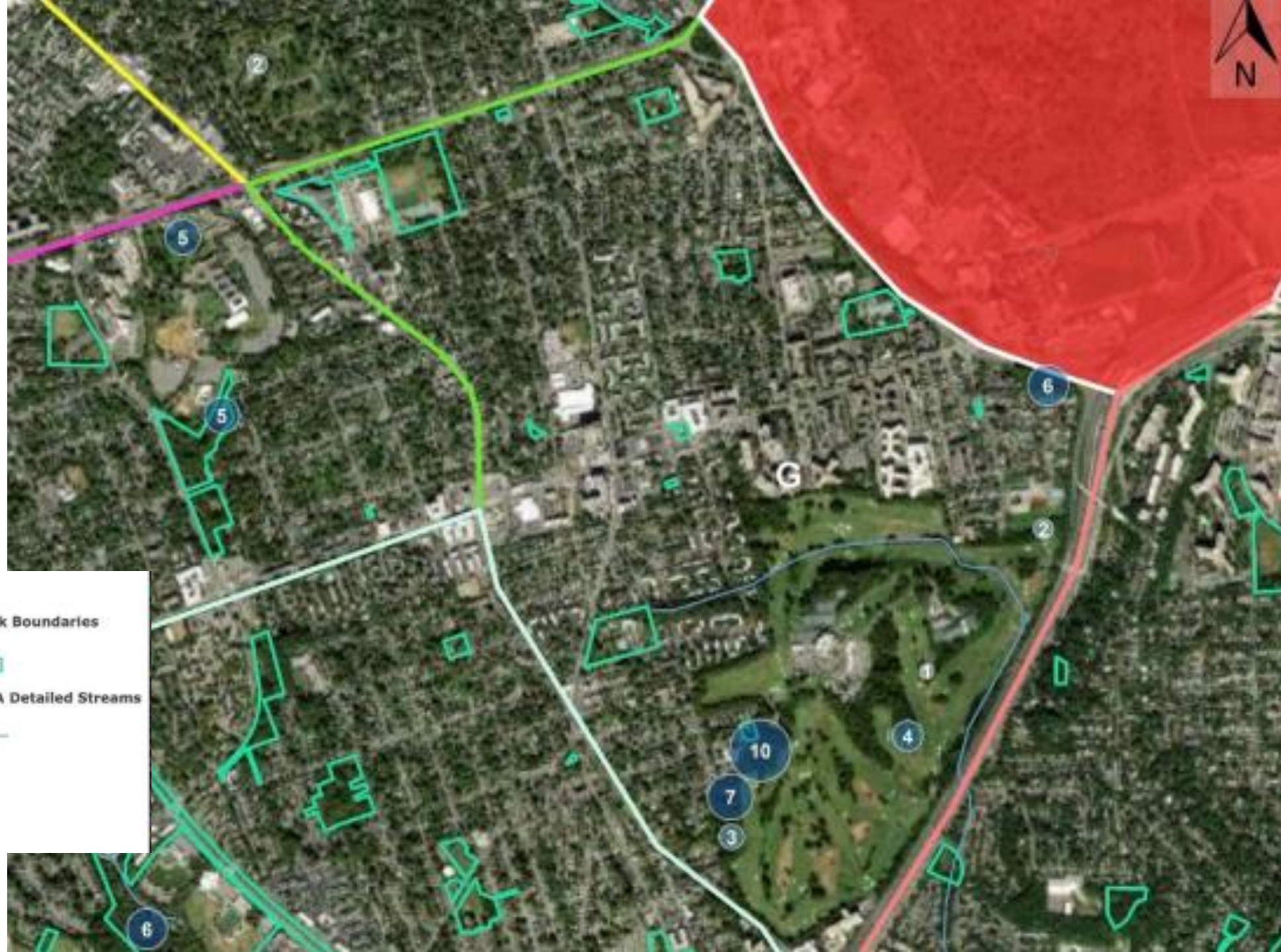
Legend

Deer Observations	Study Areas A-K	Park Boundaries
> 12	A	G
9	B	I
6	C	J
4	D	H
< 1	E	K
	F	

USA Detailed Streams

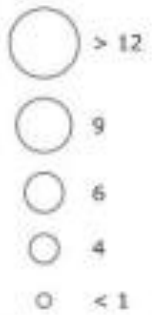
Section G

Army-Navy Country Club



Legend

Deer Observations



Study Areas A-K



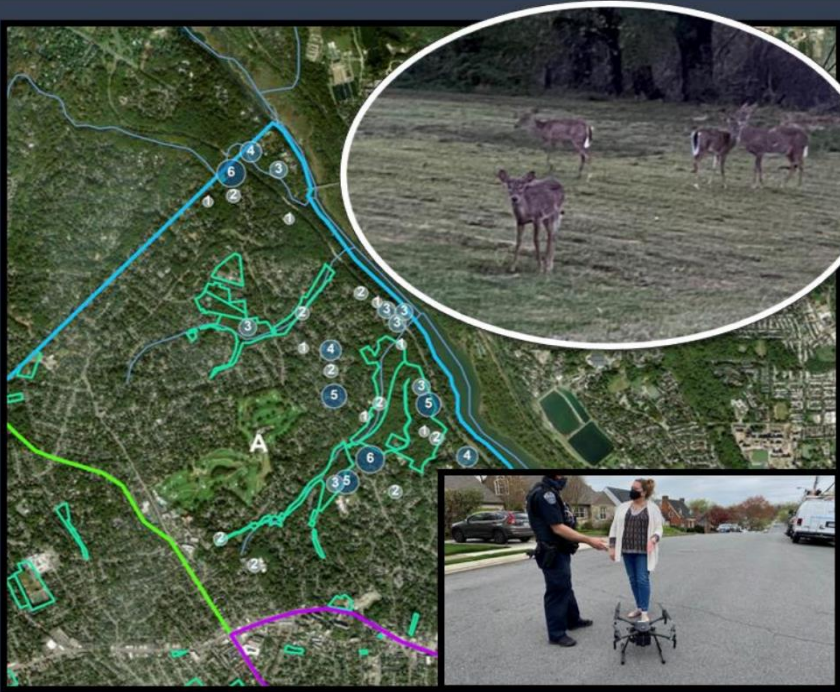
Park Boundaries



Next Steps

- Share Deer Survey Results.
 - NRJAG and FNRC
 - Interested stakeholders
 - Webpage
- Hire a consultant to conduct a Deer Management Assessment.
- Assessment will:
 - Interpret the completed survey,
 - Include public engagement and benchmarking
 - determine if a deer management strategy should be implemented
 - and if necessary develop an implementation plan.
- Present findings and options to the environmental commissions, update county leadership, and the general public.
- Decision on what, if any, options Arlington County will take.

**White-Tailed Deer (*Odocoileus virginianus*)
Population Density Survey using sUAS Infrared:
Arlington County, Virginia- Spring 2021**



The main image is an aerial map of a survey area in Arlington County, Virginia. The map shows a network of roads and green spaces. Several points are marked with numbers 1 through 6, indicating survey locations. A blue line traces a path through the area. An inset oval in the top right shows a photograph of several white-tailed deer in a grassy field. A smaller inset in the bottom right shows a person in a uniform operating a small drone on a paved surface.

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Questions?
