

Intruder **ALERT!** : A Survey for Five Invasive Species at FDR Park

By the 2009-2010 AP Biology Class at Mastery Charter Thomas Campus*



Methodology

The field site was located on in the center of FDR Park in South Philadelphia. (See Figure 1.) We divided our class of 23 people into 6 groups of 3-4 people with assigned jobs (Explorer, Sidekick Explorer, Photographer, and Data Collector). Each group was assigned to a section of the field site. Once we arrived at the site where we would be tracking down the invasive plants, we realized that separating the area into parts would make the process go quicker as well as more efficient. We split the area into six smaller sections. Each group measured the borders of their own field site and then informed the whole class of their measurements. The presence of the invasive species was observed from 5/13/2010-5/25/2010. Not only did each group pick two day that they would go to the field, but they also used various methods to record the data. While some groups adhered to strict imaginary rows and columns, others were more flexible with their technique (measuring in zigzag, etc.). In the field, we counted the number of each invasive plant in clumps. The class decided to create a general way of recording how many plants in each species on the maps, showing the field: we would either write 5, 10, or 10 plus. Photographers had to take photos of their group working as well as photos of the invasive plants they found. After each group was finished data collecting, the class came back together, shared their experiences and prepared to create the FDR poster.



Figure 3: Tom Dougherty holding mile-a-minute
Photo Credit: Griffin, Regina, Spring 2010



Figure 4: Laquonda Adams, Albert Lee, and Talisha Ravenell examine purple loosestrife
Photo Credit: Nguyen, Tony, Spring 2010

Results

In our map, we observed lots of purple loosestrife near Hollander Creek, the west side of study site. Also, we came across many small groups of purple loosestrife in open areas of the site. Then, mugwort was spotted in the outskirts of the opposite side of the creek. Common reed seemed to grow in the mid-section of the vicinity along with occasional patches of mile-a-minute. Lastly, in the shaded areas of the site, we found mile-a-minute and mugwort. (See Figure 2.)



Figure 5: Mile-a-minute
Photo Credit: Sak, Jenny, Spring 2010



Figure 6: Common reed
Photo Credit: Sak, Jenny, Spring 2010

Discussion

In our ecology project, we found that the most dominant plant was purple loosestrife. It seemed that purple loosestrife grew most in moist and shaded areas because the greatest distribution of the plants was in this area. Mugwort and common reed seemed to grow in the dryer area of our ecology site. We could tell because it grew in the area that had the most sunlight and higher up. For the removal team, we suggest that they start with the perimeter of the site. This will allow them effectively to remove the majority of the plants and cover the most ground. Some things that might have made our data more accurate would have been if all the groups had a set way of collecting data. For instance, starting at the outskirts of your zone, walking south down to the edge of your block, walking 3 steps over and the walking north to the edge of your zone. This would have allowed the observers to get the most accurate calculations of how many invasive species there are and where they are located.

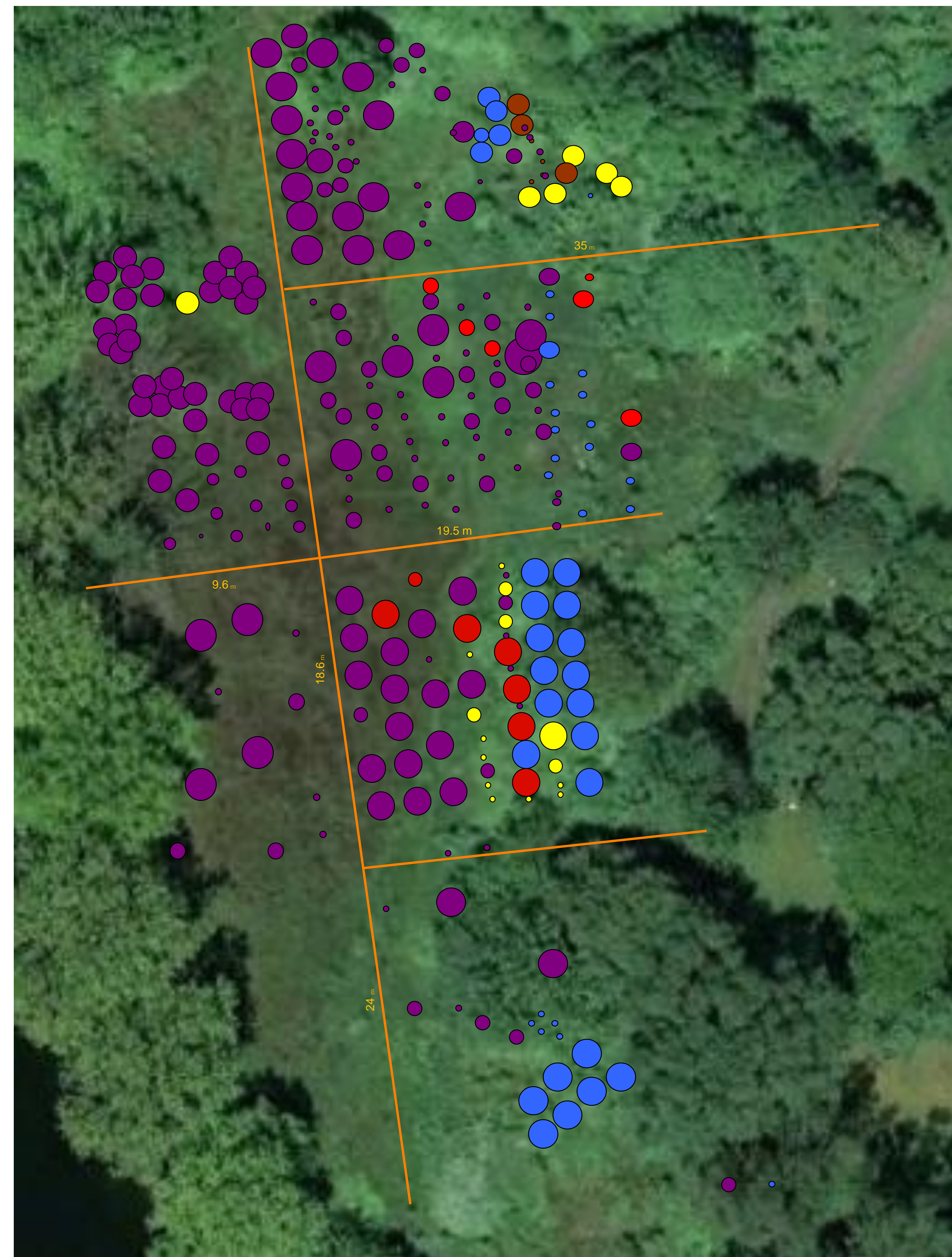


Figure 2: Distribution of five species at one field site at FDR park



Abstract

In the spring of 2010, the 2009-2010 AP Biology class at Mastery Charter Thomas Campus (MCTC) explored a field in the center of Franklin Delano Park (FDR) in Philadelphia to find five species of invasive plants. Our goal was to document the invasive species that were harming the area. We sectioned off the field and in different groups explored the land to count how many of each species of the plants we could find. We found a great amount of each plant in different regions of the area: purple loosestrife near Hollander Creek, patches of mile-a-minute and common reed in the mid-section, and mugwort in the opposite outskirts of the creek. We would further investigate if the climate of different parts of the region is the reason why certain plants grow in certain parts of this area.

Introduction

Invasive species are species that invade an area, pushing out the other species. People are usually the cause of their spreading, such as those who have traveled over seas and brought them back the plant species on their person. Some people are completely unaware of the damaging effects that the invasive species will have on another environment; as a result ecologists are cautious when they encounter one. In most cases, invasive species are a threat because they grow at a pretty rapid rate and overpopulate an area and the original plant species. Once an invasive species is introduced into an area, such as a park, people immediately propose solutions to exterminate the invasive species.

Franklin D. Roosevelt Park is located in Philadelphia, PA. Franklin D. Roosevelt Park is used in many ways such as entertainment, outdoor activities, and exercising. It is currently used for recreation; such as tennis, baseball, and track, football, fishing, bicycling, jogging, and picnicking. The park was built and finished in 1923 and cost about \$498,000. Three years later the 150th anniversary of the United States was celebrated. In 1935, the golf course was constructed and finished. In 1958, the swimming pool was built. Throughout the 1960s, 30 acres of the park were lost to I-95. In 1974, park associates realized that 29,000 people swam at the pool and it was enlarged to 35,500 square feet. Later in the years 1975 to 1978, roads, tennis courts, parking, toilets and facilities for boats were added. In 1983, the boats were taken away. In 1996, the swimming pool was closed because of groundwater leakage; in 2002 the swimming pool was removed and returned into wetland (information from FDR park website). The park is important because it provides an ecosystem for many organisms such as birds and many fishes from the lakes. The invasive species harmed the ecosystem by creating competition for the native plants which affected them negatively. (Information taken from the Fairmount Park web site.)

In the spring of 2010, the AP Biology class at Mastery Charter Thomas Campus was requested by the Fairmount Park Commission to conduct a study on the invasive species that now invaded the park land. We studied five different invasive species: mile-a-minute (*Persicaria perfoliata*), purple loosestrife (*Lythrum salicaria*) common reed (*Phragmites australis*), mugwort (*Artemisia vulgaris*), and cutleaf blackberry (*Rubus laciniatus*). Our job in this experiment was to figure approximately how many of the five species were growing in one section of FDR Park so that the Commission could know where to start and begin to have strategies to extract the invasive species from the park land. The whole goal for this project was to help the Fairmount Park Commission return the park back into the coastal plain forest it once was before the invasive species were introduced before Europeans colonized the area. (See Figures 3 to 6.)

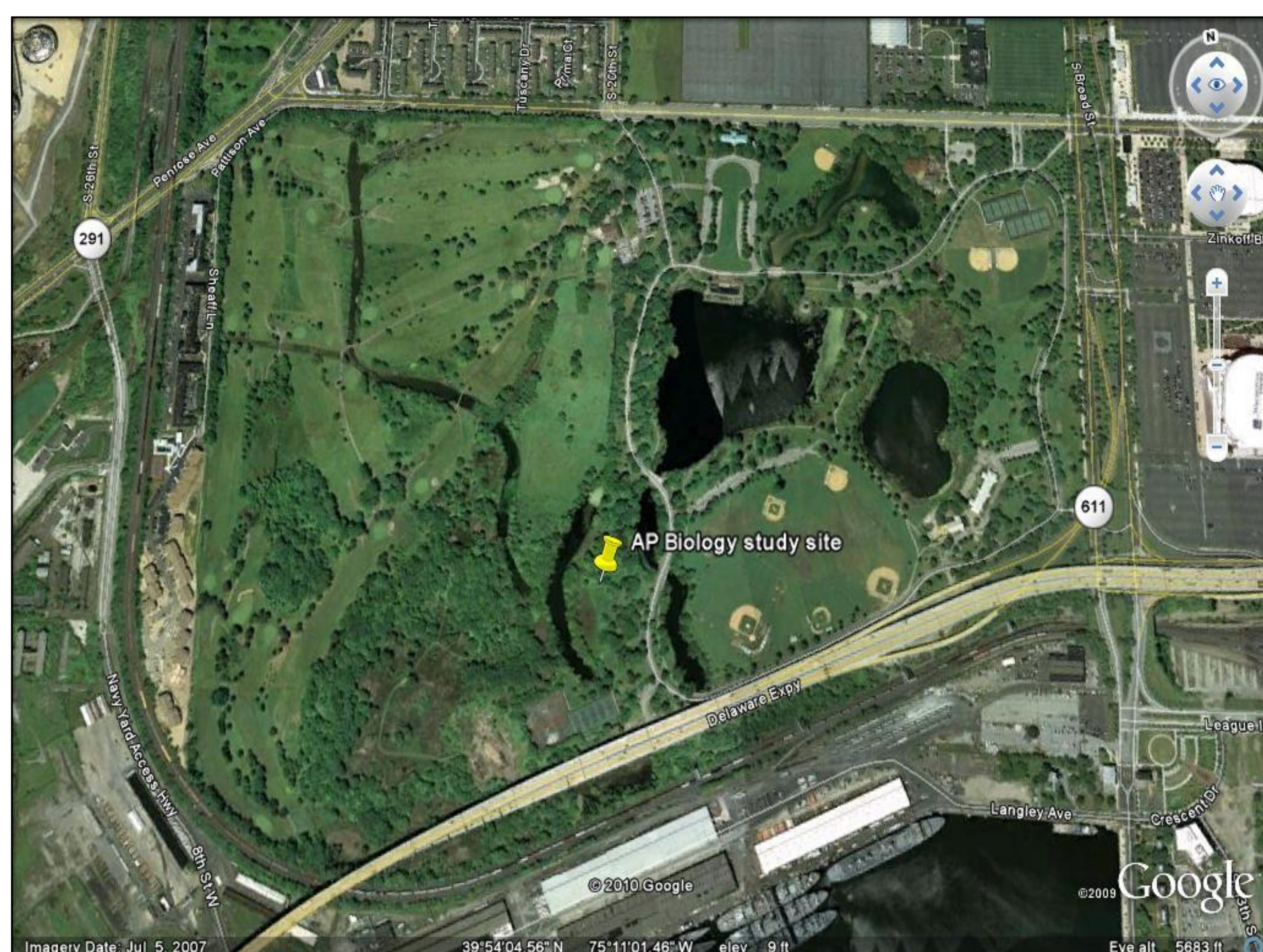


Figure 1: Our study site located at the center of FDR park in South Philadelphia

Acknowledgements

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Sources: Wikipedia, Invasivespecies.org, invasiveplants.net, www.invasivespecies-info.gov/plants/mileminute.shtml, eni.wikipedia.org/wiki/persicaria_perfoliata