

# **Intruder ALERT: A survey of five invasive species at FDR Park in South Philadelphia**

2009-2010 AP Biology Class - Mastery Charter Thomas Campus \*

\*Laquonda Adams, Tanerra Barrow, Nicole Bennett, Donheen Boone, Keenan Burton-Sessoms, Catrina Clark, Courtney Elliott, Roy Fearon, Ebony Graves, Regina Griffin, Wanyae Hartsfield, Jasmine Johnson, Huy Kouan, Albert Lee, Jennifer Ngo, Kristie Nguyen, Tony Nguyen, Jennifer Phim, Talisha Ravenell, Jenny Sak, Bijan Welch, Ciara Young, Salma Zeb

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**Sources:** Wikipedia, Invasivespecies.org, invasiveplants.net, [www.invasivespecies-info.gov/plants/mileminute.shtml](http://www.invasivespecies-info.gov/plants/mileminute.shtml), eniwikipedia.org/wiki/persicaria\_perfoliata

## **Abstract**

In the spring of 2010, the Mastery Charter Thomas Campus (MCTC) AP Biology class explored a field on the West side 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**

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, track, football, fishing, bicycling, jogging, and picnicking. The goal of this study is to find the invasive species so that Fairmount Park can extract them and return the park to its original state (marsh land). The park is important because it provides an ecosystem for many organisms such as birds and many fish in the lakes. The invasive species harmed the ecosystem by create competition for the native plants, killing them in the process. The park was built and finished in 1923. The cost of building the park amounted to about \$498,000. Three years later, the 150<sup>th</sup> anniversary was celebrated. In 1935, the golf course was constructed. In 1958, the swimming pool was built. Throughout the 1960s, 30 acres of the park was 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 between 1975-78 roads, tennis courts, parking lots, toilets and facilities for boats were added. But in 1983, the boats were taken away. The swimming pool was closed because of groundwater leakage in 1996; in 2002, the swimming pool was removed and was turned back into wetland.

Invasive species are plants that came from another country and have invaded the area, which makes them not native to the land. An invasive species colonizes a new area. They may affect organisms in their surroundings. The invasive species affect the native plants because they take up room for growing. The invasive species grow so much that less and less native species can grow; this minimizes food for organisms. Last, this may cause species to die out. There are currently five invasive species that we are searching for – Cutleaf Blackberry, Common Reed, Mugwort, Mile-A-Minute, and Purple Loosestrife.

Invasive species are species that are foreign to an area they occupy. They tend to travel due to people, meaning those who have come back from a foreign location have brought along with them the species as well. Individuals never truly know what affect an invasive species will have on another environment. That is why environmentalists are so cautious of their presence in non-native areas. Once an invasive species is introduced into an area such as a park, people immediately purpose solutions to exterminate the invasive species. In most cases, invasive species are malevolent to an area based on statistics and speculation invasive species are a threat to an area since they grow at a very rapid rate and over populate an area. For instance, the rubber vine (*Cryptostegia graniflora*) an invasive species specifically an invasive weed that spreads very quickly is described in “The distribution of an invasive plant in a fragile ecosystem: the rubber vine (*Cryptostegia grandiflora*) in oases of Baja California peninsula”. Rodriguez and his colleagues studied the rubber vine plant in 57 oases. They found that it was present in 22 of the oases which are also 39%. This is similar to our study of the five invasive species in FDR park.



Figure 1: *Persicaria perfoliata* (mile-a-minute)

Credited: Kristie Nguyen 05-13-2010



Figure 2: *Lythrum salicaria* (purple loosestrife)

Credited: Kristie Nguyen 05-13-2010



Figure 3: *Phragmites australis* (common reed)

Credited: Kristie Nguyen 05-20-2010



Figure 4: *Artemisia abrotanum* (Artemisia aka mugwort)

Credited: Kristie Nguyen 05-19-2010

## **Methodology**

The field site was located on Broad and Pattison Avenue in South Philadelphia. 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 quadrant 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 quadrants. Each group measured the borders of their own field site using 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 would come back together, share their experiences and prepare to create the FDR poster.



Figure 5: Field Site (FDR Park)  
Created by Huy Kouan 5-19-2010

## **Results**

In our map, we observed numerous clumps of Purple Loosestrife near Hollander Creek, which is the west side of our study site. Also, we came across many small groups of Purple Loosestrife in the open areas of the site. Plus, Mugwort was spotted in the outskirts of the opposite side of the creek. Common Reed seems 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.

## **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 high elevation.

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.