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THE UNION COUNTY BOARD OF CHOSEN FREEHOLDERS &  
THE RAHWAY RIVER ASSOCIATION  
PRESENT

# BIO-BLITZ 2006

RESULTS & FINDINGS

*Ash Brook Reservation & Golf Course, Scotch Plains,  
Union County, N.J.*



*A 24-hour intensive effort to measure biodiversity & increase ecological  
awareness of our open spaces*

**MARK YOUR CALENDER!**  
**BIO-BLITZ 2007 at WATCHUNG RESERVATION**  
**JUNE 15 & 16, 2007 - 5:00PM TO 5:00PM**

## BIO-BLITZ 2006

### *Why did we do it and what does it all mean?*

On June 23 & 24, 2006, teams of scientists, naturalists and volunteers--totaling 96 people--descended upon the 460-acre Ash Brook Reservation and Golf Course in search of plant and animal life. The Union County park, located in Scotch Plains, offered participants a wonderful opportunity to sample and identify species in eight categories, including: Plants, Fungi, Insects, Aquatic Invertebrates, Fish, Reptiles & Amphibians, Birds and Mammals.



A Bio-Blitz is an effort to identify the different forms of life that can be found in a given location over a 24-hour period, with specialists looking for whatever grows, crawls, swims, flies or walks. The 2006 event, sponsored by Union County and the Rahway River Association, in cooperation with many other organizations, found a diverse collection of flora and fauna—**662 different species**--ranging from mushrooms to oak trees, from ants to coyote and deer, and from bees and butterflies to hawks.

To identify these species, teams of scientists, naturalists, volunteers and park visitors scoured field, forest, river, pond and wetlands, starting at 5:00 p.m. the evening of June 23rd, and continuing until 5:00 p.m. on June 24th. These hardy souls braved muddy conditions and a steady rain. Their goal was not only to identify as many living things as possible, but also to raise awareness of the incredible variety of life that can be found even in an urban park.



To further accomplish these goals, the public participated in workshops and guided walks to observe firsthand what it takes to collect, catalogue and identify species in the outdoor laboratory, demonstration area and exhibit facility known as the Bio-Blitz Central Tent.

## RESULTS:

**Plants:** *Alex Nappi*, export specialist with the U.S. Department of Agriculture, and his Plant Team, despite the inclement weather throughout the event and the team's waterlogged appearance, observed **215** species of plants, covering 83 different families. This number exceeded last year's count and was a tribute to the Team's perseverance and unshakable enthusiasm.



Notable plant species found were: *Ilex verticulata*, winterberry holly, *Ilex opaca*, American Holly, *Asclepia tuberosa*, butterfly weed, *Sambucus nigra*, common elderberry, *Rhododendron viscosum*, swamp azalea, *Amorpha fruticosa*, false indigo, *Iris versicolor*, blue flag iris, *Clematis virginiana*, virgin's bower, *Lilium lancifolium*, tiger lily and *Fraxinus nigra*, black ash. The *Fraxinus nigra* is particularly notable as it seems the name of the Reservation is a reflection of the large presence of ash trees in the area.

Another significant observation is apparent in the section of the reservation know as "Red Hill". Roughly 10,000 years ago, this area supported woodland tundra species of pine, spruce and sedge grasses. The name of this location is attributed to the iron-rich red sediment of glacial deposits estimated to be approximately 20,000 years old. Red Hill thereafter had been transformed into a diverse knoll, bearing plants significant to Native Americans (i.e.: birch, spice bush, edible nut trees, blueberries and other brambles). In particular, Native Americans belonging to the Nanticoke-Lenni, (a migratory division of the Algonquin and possibly the Navasink and Sankhikan tribal bands) were know to be present in the area.

It is also noted that there are diverse native aquatic wetlands plants still flourishing in the reservation and the team observed invasive species present in the park as well.

**Fungi:** *Marc Grobman*, of the New Jersey Mycological Association, led a small team of fungi experts. Although the event was held a bit early in the year for prolific fungi, the determined Fungi Team still found **28** different species of mushrooms.



Familiar favorites included *Auricularia auricular*, Tree Ear, the brown wrinkly fungus that populates hot and sour soup, *Fuligo septica*, which bears the wonderfully descriptive common name of Scrambled Egg Slime, *Lycoperdon perlatum*, the Gem-Studded Puffball, *Ganoderma applanatum*, or *Artist's Conk*, called such because people can draw on it scrimshaw style, plus

several fungi in typical mushroom shapes, as in illustrated versions of Alice in Wonderland, or the produce section of food markets. Visitors to the Fungi Team's table were im-



pressed by the number and variety of the mushrooms on display, and enjoyed picking up a *Megacollybia platyphylla*, a mushroom with a five-inch diameter cap. Its heavy, flexible cap would droop down like a turned-out umbrella, and its large wavy gills would ripple, causing surprised cries of, "Wow! Look at this!"



**Insects:** Dr. Sylvio Codella, of Kean University, led the insect team, with assistance from Fred Virrazzi, of National Bio-diversity Parks, Inc., and Jonathan Smick. The insects and their relatives are the largest group of multicellular organisms on earth. Over one million species have been discovered so far by scientists, and the actual number may exceed five million. This team focused on three of the largest insect groups: Coleoptera (beetles), Lepidoptera (moths and butterflies) and Hymenoptera (wasps, ants, bees and sawflies). 73 species of beetles, including a large stag beetle were collected. Netted or sighted were 36 species of moths and butterflies. Dr. Codella and his team of Kean undergraduates collected 184 species of wasps and their relatives, including many varieties of bizarre, nearly microscopic parasitic wasps. In all, 304 insect species were collected, including miscellaneous finds.

Species of beetles fond of seedheads, grasses and flowers were found in successional habitat. Upland areas are scarce and the Red Hill "pine forest" provided unique diversity for the insect team.

Beetles are phototaxic and were collected at night with light traps, while in the day they were collected with insect nets and observed by sight. Conservation of beetles and many animals would be assisted by reducing light pollution around the Reservation.

**Aquatic Invertebrates:** Liz Crawford, NJDEP Watershed Ambassador, sampled the waterways for small aquatic organisms that are oftentimes used to indicate water quality. 8 species were found, including snails, scuds (a relative of the pill bug) and dragonfly larvae.

**Fish:** Shawn Crouse, from the NJ Department of Environmental Protection, Division of Fish & Wildlife, and his team sampled the Robinson's Branch of the Rahway River, the Ash Brook and the ponds at the Ash Brook Golf Course. The method of sampling included electro-shocking (using mild electrical currents to temporarily stun fish for easy capture and identification). 15 species of fish were sampled, including *Esox americanus*, the redfin pickerel, *Anguilla rostrata*, American eel and *Perca flavescens*, yellow perch. Also found were goldfish, largemouth bass, and black crappie. Species present were typical for the geographic region and habitat types surveyed. Most species are common, ubiquitous, and tolerant of degradation. The goldfish, largemouth bass, and black crappie, are non-native species that have been introduced to NJ, whereas all other fish species found are native to the state.



**Amphibians and Reptiles:** Cathy Eser, from the Staten Island Zoo, equipped with flashlights and headlamps lead her team, (including Trailside Nature & Science Center staff) and members of the general public in kicking off the two-day event with the traditional *Frog Slog*. The wet weather provided ideal conditions for locating the abundant population of green frogs, *Rana clamitans*. The following day, 9 species of reptiles and amphibians were found. Due to the rainy conditions, the reptiles were not out basking and thus hard to locate, however, a number of eastern box turtles, *Terrapene carolina* were found roaming about and one was even found nesting.

**Birds:** Nellie Tspoura, of NJ Audubon, with assistance from Frank Budney, of Friends of Lenape Park, led the Bird Team. The June 2006 bird survey at Ash Brook Reservation, Scotch Plains, NJ was very successful, despite the weather conditions and the late time in the season. In rainy weather, birds typically are not very active, do not sing, and are generally much more difficult to detect. In addition, the end of June is too late to see spring migrants and too early for fall migrants.



Birds breeding locally have already acquired mates, produced young, and are not actively singing. Considering all this, the 57 bird species we recorded is a very good number and reflects the effort of the many volunteers who actively searched for birds in the inclement weather and in all habitats. Of the species recorded, the Barred Owl, *Strix varia*, is State Threatened and breeding Great Blue Heron, *Ardea Herodias* and Veery, *Catharus fuscescens*, are Special concern species, pointing out the fact that the reservation supports habitat for these species.

Some of the interesting species observed included Turkeys, *Meleagris gallopavo* (seen in two locations) and Indigo Buntings, *Passerina cyanea* (seen in three locations). While not necessarily rare, these birds create excitement among birders! In addition Great Blue Heron, Great Egret, *Ardea alba* and Red-tailed Hawk, *Buteo jamaicensis*, were seen. These large charismatic birds appeal to people's sense of wonder and ability to forge a connection with the natural world. Wood Thrushes were heard across all sections, evidence that this species is widespread. Again, while not rare, Wood Thrushes, *Hylocichla mustelina* are considered by many to be indicators of forest health in an urban park. The most unusual bird recorded during the Bio-Blitz was a Marsh Wren,



*Cistothorus palustris*, a species that occurs very seldom in small, freshwater marshes. Finally, we saw family groups of several bird species at each site, usually vocalizing loudly and flitting about. This observation leads us to believe that the reservation offers good quality habitat for birds, where they can reproduce and raise their young successfully.

**Mammals:** Team Leader, *John Goldman*, and his team identified **8** species of mammals, including: chipmunk, *Tamias striatus*, eastern gray squirrel, *Sciurus carolinensis*, white tailed deer, *Odocoileus virginianus*, eastern cottontail, *Sylvilagus floridanus*, coyote, *Canis latrans*, red fox, *Vulpes vulpes*, groundhog, *Marmota monax* and raccoon, *Procyon lotor*. Sand traps were baited with tuna fish scented cotton balls and herbivore grain prior to the event and tracks left in the sand were then identified on the days of the event. Additionally, some species were identified visually.

Red fox and woodchuck were identified by their burrows, while deer were identified by their scat or droppings. The favorite sampling spot was where the creek (river) met the power lines. There, a sand pit indicated the best variety of tracks.

A simple interpretation of these results was that the rainy weather affected the feeding routine, and therefore, remains (tracks/scat) of the mammal species residing in Ash Brook Reservation. Overpopulation of white-tailed deer and the resulting destruction of the understory and herbaceous layers of the park, due to over-browsing and rubbing, may contribute to a lack of diversity in small herbivorous mammals such as rodents.

***SPECIAL THANKS TO ALL OUR TEAM MEMBERS/VOLUNTEERS :***

C.Alexander, D. Arenas, P. Axelrod, B. Baldasare, R. Balsley, A. Blaumeiser, R. Bousquet, Comar Family, K. Dardir, A. Daurio, B. David, A. Deczynski, A. Fitzgerald, Garcia Family, R. Garvey, E. Gast, S. Getberg, S. Glenn, M. Glenn, D. Gomez, A. Gomez, J. Grob, T. Hayden, N. Hayes, , Hellenbrecht Family, T. Hernandez, H. Hoffman, V. Hsu, A. Hsu, K. Inzillo, A Jacus, S. Jandoli, J. Jotz, TJ Karns, TJ Kiefer, TJ Kiernan, R. Kim, C. Knowlton, Y. Kousa, C. Koutouzakis, T. Kowalchyn, B.J. Kowalski, C. Krilowicz, B. Kuntz, R. Kuntz, L. Kuo, T. Lewis, K. Lewis, C. Livres, Magpiong Family, T. Mauro, J. Medallis, W.& B. Meriney, J. Moczerniuk, , Jr, J. Nichnadowicz, J. O'Brien, C. Osterman, R. Osterman, B. Palestis, M. Palmer, H. Parag S. Parr, M. Pepe, K. Raymondi, A. Reuter, Rubino Family, L. Russo, Ryan Family, J. Salerno, A. Salisbury, E. Sánchez, K. Saulnier, P. Sayles, E. Sayles, R. Schnell, V. Schwartz, D. Schwartzberg, K. Shah, D. Smullen, J. Sndyer, K.Snyder, G. Szelc, E. Szelc, D.Talcott, F. Thorne, G. Varney,C. Vecchione, L. Vecchione, C. Wagner, S. Weisbrot, N. Wetlesen, T. Wetlesen, E. White, J. Wylazlowski, S. Yafchak, E. Zboyan, A. Zellner.

***Photographers:***

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Union County Department of Parks, Recreation & Facilities  
Rahway River Association**

**Brooklyn Botanical Garden  
Columbia University  
Friends of Lenape Park  
Kean University  
National Bio-Diversity Parks, Inc.  
NJ Audubon Society  
NJDEP, Division of Fish Game & Wildlife  
NJDEP Watershed Ambassador Program  
NJ Mycological Association  
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The Schumann Fund for NJ  
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Union County College  
Union County Rutgers Extension Service/  
Master Gardeners  
Union County Vocational Technical HS  
US Department of Agriculture, APHIS  
The Watershed Institute  
Wild Birds Unlimited**

*BIO-BLITZ 2006 COMMITTEE & TEAM LEADERS:*

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**Webmaster: Sylio Codella (Kean University)**

**Public Programs & Outreach: Ada Brunner & David Schwartzberg (Restera, LLC)**

**Plants: Alex Nappi (USDA-APHIS)**

**Fungi: Marc Grobman (NJ Mycological Association)**

**Insects: Dr. Sylvio ("Chip") Codella (Kean University)**

**Aquatic Invertebrates: Liz Crawford (Watershed Ambassador)**

**Fish: Shawn Crouse ((NJDEP/DFW)**

**Amphibians & Reptiles: Cathy Eser (Staten Island Zoo)**

**Birds: Nellie Tsipura (NJ Audubon)**

**Mammals: John Goldman**



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