



## FIELD REPORT - New York City Wildlife

### **Project scientists**

Dr. Catherine Burns; Mark Weckel

### **Country**

United States of America

### **Research site / region**

New York, United States (research in natural areas within 100 miles of New York City)

### **Research site latitude / longitude**

40° 43' N 74° 00' W

### **Date field report completed**

14 Jan 2011

### **Period covered**

1 Apr 2010 to 30 Nov 2011

### **Report completed by**

Mark Weckel



Dear Friends,

Both for the good and the bad, coyotes were on the mind of many residents of New York City metropolitan area this year. While coyotes have been moving closer and closer to NYC for the past two decades, it seems that 2010 was the year that residents (and the press) began to take notice.

Much of the reporting centred around the unfortunate coyote attack on two young children in Rye, NY (just north of NYC). However, other stories covered the chance coyote sighting in unlikely areas such as Columbia University campus and the Westside highway in Manhattan. Both examples highlight the fact that coyotes have become increasingly more urban and reinforce the important work that you helped initiate in 2010. It is difficult - if not impossible - to educate the public and promote a peaceful coexistence between humans and coyotes if we do not even have reliable information on where coyotes can be found.

Believe it or not, all the parks you trapped from the Botanical Gardens in the Bronx to VE Macy in Irvington had no concrete records as to whether or not coyotes could be found in those areas. You helped complete the first census of coyotes in lower Westchester County. We could not have done so without your assistance. As you are probably aware, the negative publicity over coyotes prevented us from conducting our camera trap study in the heart of NYC as originally intended. However, I am happy to tell you that we have been invited into the NYC parks to expand our study for 2011. We hope to make this opportunity available to Earthwatch volunteers in the future as we establish a closer relationship with our colleagues in the NYC parks system.

So the study goes on in 2011, unfortunately without the field assistance of dedicated Earthwatch volunteers. Luckily, we have joined with the Mianus River Gorge Preserve, the Queens Zoo, and WildMetro to continue this important work. We do hope to provide you and the public with timely updates on the progress. Thank you for all your help on this project.

Sincerely,

Mark Weckel

Director of Research and Land Management

Mianus River Gorge Preserve

## SECTION ONE

### Top highlight from the past field season

The most exciting - and unexpected - event of the season was the rare opportunity to actually see a coyote! Field supervisor, Anne Toomey, had just finished telling volunteers that they would not see their study animal in the flesh. No sooner did she say this when someone noticed a coyote pup alongside the Henry Hutchinson Parkway as the Earthwatch Team commuted to their study site! Even cooler was the fact that the pup was seen on the section of road where the Parkway bisects Pelham Bay, NYC's largest park. Apparently, coyotes are breeding in the Bronx!

### Non-technical overview of results

Our study had two major objectives: first was to document which parks in Westchester County and New York City had a coyote in 2010 (Figure 1). Second, was to use Geographic Information System (GIS; e.g. computer-aided mapping) to determine if there are any landscape features (e.g. forest type, level of human development) that correlated with coyote occupancy. The second objective is more analytical (and data intensive!) and is currently being investigated by the PI.

To meet our first objective, we used camera trapping - an efficient, non-invasive method allowing researchers to remotely survey large natural areas continuously for long stretches of time. In 2010, we camera trapped 12 parks (Table 1). We captured coyotes on film at six of those parks. One park, Sprain Brook, had to be removed from analysis due to camera theft. Five other parks did not produce any coyote pictures.

Now, the question which we are currently working on is whether those five parks where we did not get coyote photographs 1) actually did not have coyotes or 2) had a coyote but we didn't trap it long enough to be sure. We will provide updates when available.

Table 1. Westchester and NYC parks surveyed by camera traps in 2010

Park	Coyote Photograph*
Wilson Woods	No
New York Botanical Garden	No
Sprain Ridge Park	No
Untermeyer	No
Lenior Preserve	No
Sunnybrook	No
Tibbets	Yes
Saxon Woods	Yes
Nature Study Woods	Yes
Greenburg Nature Center	Yes
Ridge Road Park	Yes
VE Macy Park / Irvington Watershed	Yes

\* Parks without a coyote photograph may have a coyote present. Further analysis is necessary to see if we put in enough trap effort to confidently say these parks were unoccupied.

Figure 1. Map of NYC Coyote Project Study Area

## SECTION TWO

### REPORTING AGAINST RESEARCH OBJECTIVES

#### Results and progress against objectives

Objective: The first scientific study concerning the existence of urban coyotes *Canis latrans* in New York City (NYC)

Short-term goals (3-6 months):

- Determine the presence or absence of coyotes in two of the city's largest parks, Pelham Bay Park and Van Cortlandt Park, both in the Bronx, using camera trap technology, call playback surveys, and trail-transect surveys for coyote signs.
- Evaluate the minimum effort necessary for detecting coyotes in NYC parks, a prerequisite for expanding our studies to other parts of the city.

Intermediate goals (6 months-2 years):

- Continue our research documenting the distribution of this species using the aforementioned techniques and to expand to other Bronx localities that may serve as potential coyote habitat.
- Begin to explore the possibility of estimating coyote abundance using individual voice recognition from recorded responses to playback calls.
- Outreach to the Bronx community – including school children and park enthusiasts – to initiate local citizen science monitoring programs. We will at first include surveys of park visitors and web-based solicitation of alleged coyote sightings to document potential coyote hotspots.

Long-term goals (2-10 years):

- Expand this study to include NYC's other boroughs.
- Further develop our citizen science efforts through partnerships with schools and community groups.
- Generate models of coyote range expansion in urban environments.
- Explore the impacts of coyotes on other wildlife populations.

#### Camera trapping

We successfully documented coyotes in six of the 12 park trapped in 2010. One site, Sprain Brook Park, was removed from consideration following camera theft. Five remaining parks did not have coyotes. We are currently conducting analysis to determine the probability of failing to photograph a coyote at these parks considering it was occupied.

We also found that the type of camera we used in the pilot study had too slow of a shutter speed to consistently photograph coyotes. (e.g., we had many blank photographs owing to the possibility that a coyote or any animal walked past the camera faster than a picture could be taken). In 2011, all cameras will be top-of-the line, high speed remote wildlife cameras.

#### Track surveys

We conducted informal track surveys at all parks we camera trapped. Track surveys were mainly used to guide camera locations.

#### Play-back call surveys

All spring teams (Apr, May, June) experimented with play-back call surveys. These types of surveys aimed to solicit a response from coyotes as an alternative to camera trapping for documenting presence and absence. In addition, we hoped to see if there was enough "information" in coyote calls to distinguish between individuals by voice alone. This technique is being used successfully with screech owls by a team collaborator, Chris Nagy (PhD)

candidate, CUNY; and Wildlife Biologist, Mianus Gorge). Unfortunately, we never had a coyote call back during any Earthwatch attempt. During the summer of 2010, researchers from the Mianus River Gorge conducted 40 systematic call-back trials in an area known to have coyotes. They failed to get any responses from coyotes. Therefore, we chose not to pursue this technique with our fall teams.

## **REPORTING AGAINST MEASURES OF SUCCESS (MoS)**

### **Partnerships**

Earthwatch's support for our pilot coyote project was key to our project's growth especially with regards to partnerships. Currently, we have researchers / doctoral students from the Mianus River Gorge Preserve, WildMetro, and the Queens Zoo on board to continue the study for the next year. Also, we have the permission of Westchester County Parks, New York City Department of Parks and Recreation, the New York Botanical Garden, and numerous NGOs to continue our project.

### **Contributions to conventions, agendas, policies, management plans**

#### **Local**

At this time, we have shared our data with all the nature preserves that have allowed us to conduct our study. None of the organizations we have worked with have formal coyote management plans. Unfortunately, coyotes can be treated as predators allowing individual property owners to request nuisance permits and have coyotes removed from their property. Currently, we are unaware of any such treatment on municipal owned land or on land owned by NGOs. We will continue to work closely with all parties as they begin to draft formal policy on how to deal with coyotes.

#### **Dissemination**

##### Digital

Information on the 2010 coyote project will be made available at: [www.mianus.org](http://www.mianus.org). The entire website is under reconstruction, but updates will be posted by Spring 2011.

### **Developing Environmental Leaders**

As stated earlier, we have made preliminary data available to local resource managers. In addition in the Autumn of 2010, we recruited Jesse Peltz, an undergraduate intern from Purchase College, to work on the coyote camera trap project for his senior thesis. Although he has only been with us for a few short months, he has been a tremendous asset to the team. He is deep into data analysis and is poised to be a contributing author to our first paper. Jesse looks to pursue wildlife biology as a career and has found his experience on the Earthwatch coyote project to be very favourable.

### **Long term impact of project**

At this stage in our research, our coyote research team is concerned with collecting baseline data on coyotes. Nevertheless, it is our ultimate objective to minimize the threat of negative coyote encounters and to advocate for the acceptance of "urban coyotes" in most situations. To that end, as we begin to generate results on this Earthwatch project and related studies, we

anticipate using our work to generate good press for coyotes through research-based education campaigns.