

2005 Annual Report – Eastern coyote project in Massachusetts

To: Massachusetts Division of Fisheries and Wildlife

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Wild coyote ecology study in eastern Massachusetts - Letter Permit #046LP01 now called **#003.04LP** (as of 12/16/2003) – we have not received a new permit since that one.

Summary

2005 marked the beginning of the Newton study which takes place in the immediate proximity of the Boston College campus. Two traps are currently in the field at this site as we hope to move from the current pilot phase of the study to a more large scale study, pending available funding. We are still trying to capture coyotes at the north of Boston and Cape Cod study sites but I am waiting to try and secure a job before we invest significant energy in capturing additional coyotes at that site.

Table 1 depicts our trapping effort and capture success at our three study sites. As the data indicates, compared to past years our trapping effort was relatively minimal. Trapping has not been our focus this year as we seek additional funding and I try to secure a job related to this research. Finally, in 2005 I completed my doctoral (Ph.D.) requirements at Boston College by producing the dissertation entitled, “Assessing student learning and interest in eastern coyotes.” This dissertation focused on the educational outcomes of a two week curriculum unit that I developed on coyotes, focusing on our coyote research.

Table 1. A list of our captures from Cape Cod, north Boston (centered around the towns of Revere and Saugus), and Newton during 2005.

	Cape Cod	N. Boston	Newton	Totals
Effort (trap visits)	291	690	NA	
Armed Trap Nights	57	114	76	247
# of Sprung Traps	12	42	18	72
Nothing in trap (but shut)	5	24	2	31
Raccoon	1	9	8	18
Fisher		5		5
Opossum	1	3		4
Skunk			3	3
Crow	3			3
Gray Squirrel			3	3
Red-tailed hawk			2	2
Cat	1	1		2
Coyote			1	1
Red Fox		1		1
Dog	1			1

NA – Not available because do not have all student trap visits during 2005 in Newton.

Of note is the number of “nothings” or shut traps, especially at the north of Boston study site. There are two reasons for this. One, we have 1 large hog trap (literally used to catch hogs in Texas). The trap is not suitable for coyotes as the firing mechanism is poor. A number of smaller animals were trapped and dug their way out, especially raccoons and opossums and possibly fishers. Two, a trap at Belle Isle Reserve (across the bay from Logan Airport) had a lot of coyote and rat activity. Coyotes appeared to trip the trap without ever getting captured (a trap has been there since 2002) and rats occasionally fire the trap then escape through the narrow bars of the trap.

Study Sites:

Summary - We only captured one coyote during our 2005 campaign. It was a 14 pound male pup captured in Newton. We named him Ches after Chestnut Hill and gave him the ID # N0501, with the N representing the Newton study site. He was given an adult-sized collar (circumference = 32.5 cm) which he appears to have grown into perfectly. This pup used a small area of about one square kilometer centered entirely in conservation areas and open space on both sides of Hammond Pond Parkway. He rarely entered residential areas and was alive as of the end of 2005. We occasionally observed him with 1-2 other coyotes including 1-2 adults during the summer (by fall it became difficult to distinguish pups from adults).

Cape Cod coyotes:

At the end of 2005 the only two coyotes with functioning collars were Casper and Sill. These two were two of the original coyotes that I captured on Cape Cod (Casper in November 1998 and Sill January 2000). Casper was displaced from her territory by other coyotes and current lives in a small, couple square mile range, at the former NE part of her old territory. She is approximately 10 years old and I am not aware of another study that has documented the behavior of an old, displaced coyote like her. Sill has recovered him the injury that he had when we re-captured him in 2004. He is still the breeding male of the Marstons Mills pack which consisted of 9 pups (maximum count) and 3 other adults during summer 2005. The group has since been observed at the usual winter pack size of 3-4. No doubt that death of some pups and dispersal of others contributes to the usual wintertime group size of 3-4.

One other collared coyote was tracked towards the end of 2005. Cale was re-located at the Falmouth/Mashpee by the Barnstable County Fairgrounds in November 2005. He had been missing for over a year and was tracked in a few square mile area until his death on 23 December 2005 (see deaths below). It was not known if he was a transient coyote or becoming a resident coyote at the time. His illness and him traveling alone and sleeping under summer houses indicates that he was not part of a pack, at least at the time of his death. It was not determined what killed Cale. An X-Ray revealed 8 pellets (6 in his head, 2 in his shoulder region) lodged in his body, he had a mild case of mange especially on his rear end, and also had extensive chaffing of the collar on his neck. The chaffing was disturbing because there was an appreciable amount of blood below his neck and it formed clumped matted fur. There was also raw flesh exposed forming a groove around his neck where the collar sat. He died when we had a cold week of weather in December with repeated 15-20 degree nights. The collar was also covered with dried blood and had an unpleasant smell indicating an infection took place. The collar fit perfectly with

me being able to put my hand between his neck and the collar – this is the standard way (not too tight or too loose) that we attach collars. I talked with the lead biologist at Telonics (company in Arizona where we buy the collars) and he has not heard of this before. He thinks that it could have been an infection like a hot spot that dogs get. He thinks that the coyote had underlying problems that affected his skin (like mange or other parasites). The fact that he might have been a transient coyote for a number of years might have contributed to his poor health. Again, the collar was fitted like all the other coyotes that we have collared. Putting a looser collar might have made it unsafe for the coyote (too loose) and it might not have affected the degree of chaffing observed.

The final coyote that was tracked on the Cape during (the early part of) 2005 was Snour. He was quite clearly a transient male as he had been sporadically located since his November 2003 capture. He appeared to travel throughout the Cape, as evidenced by being found in West Barnstable on 24 January 2005 just after the blizzard of '05 (3 feet of snow feel), then being shot by a coyote hunter 16 February, 56 km away in North Welfleet.

Other coyotes were recovered during 2005 from the Cape. See dead coyote section.

There are potential up to five other coyotes on the Cape (coyotes Hap, Sly, Kett, Tiny, and Cake) that are alive and collared but the batteries on their collars are dead. An additional two have implants but no ear tag and thus would not be identifiable unless someone skinned the coyote and found the implant. None of these coyotes have ever been recovered. In addition, coyotes Carm and Gash were both shot and killed in their well-established territories in West Barnstable and Mashpee, respectively. More information is provided on them in the dead coyote section (Table 2).

North Boston coyotes:

After locating Fog in the town of Dartmouth (95.3 km dispersal from Revere) in November 2004, we continued to track her in that area in 2005. We saw her with a red colored coyote a number of times and she appeared to establish a territory there as she gave birth to an uncounted number of pups in a heavily wooded area near Dartmouth High School. On 23 June 2005 I found her dead. She hadn't been tracked in 3 weeks and her body was too decomposed to determine the cause of death.

Coyotes Maeve, Jet, and Cour (breeding female, breeding male, and collared associate, respectfully) maintained a small range about one square mile range in the cemeteries bordering the towns of Revere, Malden, and Everett. They were tracked through winter and spring and recorded remarkably low levels of activity during the winter storms. We suspected that people were feeding them and they minimized their energy output to survive the winter. However, they all died within a week of each other at the end of March/early April 2005. After conducting expensive necropsies, we determined that they were poisoned with a second generation poison Brodifacoum, which is the active ingredient in poisons such as d-Con. These coyotes internally bled to death and appeared to be deliberately poisoned judging how they died within a week of each other and all had high levels of poisons in the samples that we tested. Monitoring of the group ended after these poisonings took place. Collared coyote Jem dispersed in mid-December

2004 and has not been located since. Her whereabouts is unknown but assumed to be not near the north of Boston area.

Dead Coyotes

As evidenced by Table 2, a number of coyotes (most collared) died during 2005. A summary of these deaths will be presented below Table 2.

Table 2. Dead coyotes recovered during 2005.

Date	Sex	Cause of death	Comments
2/23	Female	Shot	Collared breeding coyote Gash was shot in her long time (at least 4 years) range at the Mashpee/Falmouth line. Was pregnant at time of death.
2/16	Male	Shot	Transient coyote Snour was shot in north Welfleet by a coyote hunter.
2/28	Male	Shot	Breeding Coyote Carm was shot by a coyote hunter along with a second unrecovered coyote, probably his mate.
3/29	Female	Car	Yearling coyote in Belmont, Mass. killed by car (37 lb). DNA sample given to me from Belmont ACO John Maguranis.
3/27	Female	Poison	Maeve dead in Everett from poison Brodifacoum.
3/31	Male	Poison	Jet (mate of Maeve) dies from same poison
4/3	Male	Poison	Cour (son of Jet and Maeve) dies from same poison.
6/23	Female	Unknown	Collared coyote Fog dies down in Dartmouth. Body too decomposed to determine cause of death.
12/23	Male	Undetermined	Transient coyote Cale had a number of ailments including pellets in his head, mange on his hind end, and severe chaffing around the collar.

The number of coyotes that were shot was disturbing. Coyotes on the Cape seemed to be targeted in February when a considerable amount of snow blanketed the region. Hunters using predator calls near fresh tracks, called in all 3 of the shot coyotes on the Cape. Future help from Fish and Wildlife, like not allowing hunting in our Barnstable study area, would be beneficial to our project if we can secure long-term funding.

In addition, the poisoned coyote pack was also disturbing. We contacted the Environmental Police but are not aware if the case was ever solved or not (it would be difficult we were told by the EPO). Increased public education efforts and efforts to limit the easy of buying poisons should be priorities to prevent the wrong people from getting these dangerous household poisons.

Captive coyotes - Permit # 052.02LP

The captive coyote project took a negative turn in February when Cane and Caon (the two breeding females) got in a fight at the Stone Zoo. They were separated with one staying with

the remaining male coyote, Lupe. The zoo since restricted my access to the coyotes. We had a meeting on 13 July with members of MDFW about the situation and on 29 September with zoo staff but both of these meetings did not result in access to the coyotes. Thus, the study is, frustratingly, not being continued currently as protocols to observe the coyotes from outside the fence would require a drastic shift in methodology and protocols.

Manuscripts (peer-refereed or peer-reviewed)

Below is a list of all manuscripts (in journal, in press, and under review) currently associated with our coyote project. As usual we will forward copies of our manuscripts as they become available.

Way, J. G. 2005. Assessing student interest and learning in eastern coyotes. Ph.D. Dissertation, Boston College.

Way, J. G. In press. Survival of 8-week-old wild eastern coyote pups following the death of their mother. *Northeast Wildlife*.

Way, J. G., and R. L. Proietto. In press. Record size female coyote (*Canis latrans*). *Canadian Field-Naturalist*.

Way, J. G., I. M. Ortega, and E. G. Strauss. 2004. Movement and activity patterns of eastern coyotes in a coastal, suburban environment. *Northeastern Naturalist* 11(3): 237-254.

Way, J. G., I. M. Ortega, and P. J. Auger. 2002. Eastern coyote home range, territoriality and sociality on urbanized Cape Cod. *Northeast Wildlife* 57: 1-18.

Way, J. G. 2002. Radio-collared coyote crosses Cape Cod Canal. *Northeast Wildlife* 57: 63-65

Way, J. G., and J. Horton. 2004. Coyote kills harp seal. *Canid News* 7.1 [online].
URL: http://www.canids.org/canidnews/7/Coyote_kills_harp_seal.pdf

Way, J. G., and E. G. Strauss. 2004. Old-aged coyote in an urbanised landscape. *Canid News* 7.2 [online]. URL: http://www.canids.org/canidnews/7/Old_aged_coyote.pdf

Way, J. G., P. J. Auger, I. M. Ortega, and E. G. Strauss. 2001. Eastern coyote denning behavior in an anthropogenic environment. *Northeast Wildlife* 56: 18-30.

Way, J. G. 2003. Description and possible reasons for an abnormally large group size of adult eastern coyotes observed during summer. *Northeastern Naturalist* 10(3): 335-342.

Way, J. G., I. M. Ortega, P. J. Auger, and E. G. Strauss. 2002. Box-trapping eastern coyotes in southeastern Massachusetts. *Wildlife Society Bulletin* 50(3): 695-702.

Please note that we also have a number of other publications in preparation and/or under review at various journals. For convenience, I just include published papers herein. If desired, please contact me regarding other papers or papers that MDFW might be interested in

collaborating with us on. Thanks!

Miscellaneous

We are still collaborating with Brad White's lab in Ontario (Natural Resources DNA Profiling and Forensics Centre) to determine the genetic origin of the eastern coyote. We have submitted over 50 samples of coyotes from eastern Massachusetts and are still eagerly awaiting the results of the lab.

Finally, I still maintain the website (<http://www2.bc.edu/~wayjo>) that describes our captive and wild coyote research, although I do not update it as frequently as I once did. It is intended to be used by the general public, personnel associated with our research, scientists, and other interested people. Please feel free to visit or make a link from your MassWildlife website, if desired. Importantly, there is a pdf link of all of our peer reviewed publications if needed.