

2004 Annual Report – Eastern coyote project in Massachusetts

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Wild coyote ecology study in eastern Massachusetts - Letter Permit #046LP01 now called **#003.04LP** (as of 12/16/2003)

In addition to our Cape Cod and north Boston study sites, we have finally (after a year plus of planning) just begun (December 2004) a third study in the Newton (Boston College) area. This study will focus our educational and science efforts at capturing coyotes as close to the Boston College campus as possible. Two traps are currently in the field but they haven’t been set for capture yet. Table 1 depicts our trapping effort and capture success at our two study sites. A former student at Boston College helped us out in trapping on the Cape from October 2003 – April 2004; most of our other effort has been at the North Boston study site. All animals were captured in box traps except for one coyote that we captured using a ground based netlauncher in Everett, Mass.

Table 1. A list of our captures, both on Cape Cod and in North Boston (centered around Revere and Saugus) during 2004.

	Cape Cod	North Boston	Totals
Raccoon	13	19	31
Opossum	4	2	6
Skunk	2	2	4
Coyote	3	6	9
Crow	1	0	1
Red Fox	0	1	1
Fisher	0	8	8
Turkey vulture	0	2	2
Starling	0	1	1
Nothing in Trap (but shut)	1	16	17

Table 2. The following is a list of all of the coyotes captured during the study in 2004. BN refers to Boston north coyotes (centered around Revere). No prefix in front of ID number refers to Cape Cod coyote.

Date	Coyote	ID#	Wt.(lb)	Social status & sex	Comments
1/20	Cale	0401	31.8	Dispersing	Skinny, long, & lanky

				/transient male	
3/11	Casper	9804	55.3	Resident breeding female	Fourth capture starting in Nov. 1998; very heavy
3/12	Notch	BN 0401	33.5	Unknown Male – possibly yearling	Had mange and escaped its rehab clinic – not collared
4/13	Fog	BN 0402	30	Dispersing/transient male	Captured in Revere. Found in Nov. in Dartmouth – 60 miles away
5/17	Maeve	BN 0404	32	Resident breeding female	Part of Cemetery group in Everett
5/20	Sill	0003	29.3	Resident breeding male	Originally captured Jan. 2000 (9 mo. old 37 lb pup); had hole in leg this capture
6/29	Jet	BN 0403	35	Resident breeding male	Maeve's mate. Only coyote captured by netlaunching
8/26	Jem	BN 0406	22	Juvenile female	Daughter of Jet and Maeve; dispersed Everett home range in Dec. 2004
9/15	Cour	BN 0405	27	Juvenile male	Son of Jet and Maeve; probably will be a resident associate helper coyote for Maeve's spring 2005 litter

All were given radio-collars except for Notch, which escaped the rehabilitation clinic (in Hingham; New England Wildlife Center) where we hoped to have it recover from mange. We did not collar it so do not know its whereabouts. It was originally captured at Pine Banks Park in Malden.

Cape Cod coyotes:

Casper was one of the original coyotes that I captured on Cape Cod. She was always large and is possibly the heaviest female coyote ever documented anywhere (see publications below). She has maintained her territory for at least 6.5 years and possibly more in Cummaquid in NE Barnstable.

Cale, along with Snour (captured in 2003) both are transient males that were sporadically located during 2004. No doubt they traveled throughout the Cape and occasionally returned to the Barnstable area where I could locate them. I received reports of a collared coyote in the vicinity of Orleans about 2 months after I last tracked Snour heading east in NE Barnstable.

Sill was captured with an injury. He is the breeding male of a group in the Marstons Mills area of west central Barnstable. He was either shot or attacked by other coyotes, as he had an open wound in his left rear leg. We treated the infection and released him. It turns out he is the leader of a group of at least two other adults (including his mate) and raised 7 pups during summer 2004.

Other Cape Cod coyotes monitored during 2004 included Cake (Female) and Carm (Male) (both originally collared in 2002). Both of their collars expired at the end of 2004 with them being successful reproductive breeders of their respective groups in Centerville and West Barnstable. Interestingly, their combined home range is the size of Jog's original territory – he is probably Carm's father. Possibly with the death of Jog (he was hit by a car in June 2002) instead of fighting for the territory, the two groups (composing 3-4 adults each) just divided the original one via the mid-Cape highway. The data is particularly intriguing with the possibility that killing coyotes (especially resident breeders) can actually increase coyote numbers due to increased immigration into the area.

There are potential up to five other coyotes on the Cape that area 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.

North Boston coyotes:

The capture of Fog finally allowed us to track a healthy coyote in our urban north Boston study. However, we quickly found that she was a dispersing coyote as she was found in very urban sections of Chelsea, east Somerville and Cambridge. We tracked her throughout north Boston from the Middlesex Fells Reservation to Revere and south to Medford and Somerville until April 30. At 3-4 AM she traveled under the Zakim Bridge, entering the Charlestown section of Boston, before bedding down in a small abandoned railroad yard south of the MBTA train station on the west side of route 93 and north of the Fleet Center. That night she traveled west and bedded down just east of the Fresh Pond Mall in Cambridge before disappearing again until November when I was contacted by a resident in south Dartmouth (SW of New Bedford) that he was seeing a collared coyote. I drove down and verified that it was her. This location is 59.3 miles (95.3 km) from her capture location in Revere. She remains in that location with other coyotes and may possibly become a breeding female this spring. Incidentally, this location is actually closer to our Cape Cod study site.

After Fog dispersed we captured a lactating breeding female in the Everett and Malden cemeteries (Maeve). Incidentally, Fog was in these cemeteries a couple of nights but bedded down in bizarre places (highly urban areas) during 3 days. No doubt she was avoiding Maeve's group. We captured Maeve's mate (named Jet) using the netlauncher. He was the first and only coyote that we have captured using this method. They had four surviving pups during the summer (possibly a fifth was seen in mid-May). She used man-made structures (including cement next to a canal and mausoleums and gravestones) in addition to two naturally dug dens. We saw them regularly and captured 2 of their pups in the same box trap a few weeks apart (names Jem and Cour). This group used a remarkably small area of about 1 square mile, considerably smaller than any of the coyotes that we have monitored on Cape Cod. In addition to those 6, there was possibly a third adult with them during the summer and fall. All coyotes (6 or 7) remained on the

territory until late fall 2004. Jem dispersed in December but we could not track her movements because her collar is very weak. Cour, the male pup collared, usually travels with at least one of the parents and will most likely delay his dispersal to help raise next spring's pups. The coyotes (3 collared and 1-2 remaining on territory) still inhabit the small territory and are fed by people. However, they are not aggressive towards anyone. We have intensely tracked this group, collecting well over 1000 locations in 6 months of tracking them.

Table 2. Dead coyotes recovered during 2004.

Date	Sex	Cause of death	Comments
Jan. 2	Male	Shot	Collared coyote (Slot, captured in 2002) shot and left to rot near Sandy Neck Beach. A very red colored coyote
Mar 4	Female	Vehicle	From Sandwich; collected DNA - ~40 lbs
Apr 4	Female	Vehicle	35 lb female from Cotuit (Barnstable)
Sep 9	Male	Vehicle	Centerville – probably one of Cake's offspring

Captive coyotes - Permit # 052.02LP

No new coyotes were obtained from the wild. I currently only visit the three coyotes from the Stone Zoo: Lupe (male), Cane (female), and Caon (female). They remain on exhibit at the Stone Zoo while Trans (male) and Late (female) have been moved to the Franklin Park Zoo. I do not have access to these coyotes at Franklin Park for zoo management reasons. Future correspondence on those 2 coyotes should be with Zoo NE, not Jonathan Way, if information is needed on them.

I visit the three coyotes regularly (5-6 days per week) and collect behavioral, morphological and socialization data on them (see manuscripts below). They are also a critical element of our educational programs and research.

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., I. M. Ortega, and E. G. Strauss. 2004. Movement and activity patterns of eastern coyotes in a coastal, suburban environment. *Northeast 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: in press.

- 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.
- Way, J. G. Hand-rearing a litter of eastern coyotes. Under Review. International Zoo Yearbook.
- Way, J. G. Survival of Orphaned 8-week old wild eastern coyote pups. Under Review.
- Way, J. G., D-L M. Szumylo , E. G. Strauss. An ethogram developed on captive eastern coyotes. Under review. Canid News.
- Way, J. G. A synthesis of eastern coyote (*Canis latrans* var.) taxonomy: what is known and what needs to be done? Under Review. Journal of Wildlife Management.
- Way, J. G., and R. L. Proietto. Possible record size female Coyote (*Canis latrans*). Under Review. Canadian Field-Naturalist.
- Way, J. G. Socialization of wild and captive eastern coyotes to a researcher. Under review.
- Way, J. G., et al. Activity patterns of a captive group of eastern coyotes. In preparation
- Way, J. G., et al. Social behavior of a captive group of eastern coyotes. In preparation.
- Way, J. G. and D. Szumylo. Standing over behavior in eastern coyotes. In preparation

ADDITIONAL PUBLICATIONS

- Way, J. 2005. Life at a Cape Cod coyote rendezvous site. Proceedings of the 10th annual Cape Cod Natural History Conference (abstract).
- Way, J. 2004. The Ecology of Eastern Coyotes on Urbanized Cape Cod. Proceedings of Defenders of Wildlife's Carnivore Conference (abstract).

- Way, J. 2004. Preliminary results of a captive eastern coyote study. Proceedings of Defenders of Wildlife's Carnivore Conference (abstract of poster).
- Way, J. 2003. Eastern coyote ecology on urbanized Cape Cod, Massachusetts. Proceedings of the 59th Northeast Fish and Wildlife Conference (abstract).
- Way, J. 2002. Eastern coyote behavior on Cape Cod. Proceedings of the 7th annual Cape Cod Natural History Conference (abstract).
- Way, J. G. 2001. The eastern coyote: documenting the habits of one of Cape Cod's newest residents. Conservation Perspectives, the online journal of the New England Chapter of the Society for Conservation Biology. <http://www.nescb.org/epublications/spring2001/coyotes.html>.
- Way, J. 2001. Eastern coyote ecology on Cape Cod. Proceedings of the 6th annual Cape Cod Natural History Conference (abstract).
- Way, J. G, and I. M. Ortega. 2000. Ecology of eastern coyotes on suburban Cape Cod, Massachusetts. Proceedings of the 80th annual meeting of the American Society of Mammalogists, University of New Hampshire, Durham (abstract #29).
- Way, J. G. 2000. Ecology of Cape Cod coyotes. Masters Thesis. University of Connecticut, Storrs. 107 pp.
- Way, J. 1998. Coyote research on Cape Cod. Massachusetts Wildlife 4:25-27.
- Way, J. 1998. A scientific investigation of Cape coyotes. Barnstable Patriot. 24 September.
- Way, J. G. 1996. Baseline data on the interactions of a population of white-tailed deer, eastern coyote and red fox inhabiting a barrier beach ecosystem on Cape Cod, Massachusetts. Honors Thesis, University of Massachusetts, Amherst. 35 pp.

PRESENTED RESEARCH PAPERS AT PROFESSIONAL CONFERENCES

- Cape Cod Natural History Conference (2001, 2002, 2005)
 Defenders of Wildlife Carnivore Conference (2004)
 Northeast Fish and Wildlife Conference (2003)
 American Society of Mammalogists 80th Annual Meeting (2000)

Miscellaneous

We are 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 eagerly await

the results of the lab.

Finally, I have regularly updated the website (<http://www2.bc.edu/~wayjo>) that describes our captive and wild coyote research. 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 for public consumption!