JANUARY 15 – 31, 2020 NATURAL HISTORY NOTES
By Dick Harlow

VERMONT KEYSTONE SPECIES

As we look at Keystone Species, those species that have a significant effect on our natural environment, the question is: What were and are Vermont's keystone species? What animals in Vermont had a disproportionately large effect on the natural environment? Or putting it another way – what Vermont animals played a critical role in maintaining the structure of Vermont's ecological community, thus affecting many other organisms in the community?

Gray Wolf, *Canis lupus*, Photo:JasonBechtel/flickr/cc)

North American Cougar, *Puma concolor cougar*,
Photo by Baranov E/Shutterstock

Historically, Wolves and Mountain Lions (Cougar), yes indeed they were a major part of the Vermont landscape and were the primary Keystone species.

They are the ones that kept the grazing animals under control, e.g. White-tailed Deer and Moose. Upon the arrival of the American Indian they then would be considered in the mix of Keystone species.

Today, besides man, what are our Keystone species? Today the Coyote has taken the place of the Wolf and Mountain Lion! But I have to say the Beaver, a rodent, is also considered a Keystone species.

Man is a poor controller of wildlife. Even though he hunts, he is trying to take what looks to him or her to be the best-looking buck, best rack of antlers or a large doe who very well might be pregnant. The best-looking buck might be the dominant buck of the herd that fertilizes many does. Thus, he transmits his genes to future generations. The Wolf and Mountain Lion primarily would prey upon the weak or unsuspecting, not the strongest or best in the herd. The behavior of predator/prey allowed natural populations to grow and prosper. The wolf pack would take down one animal, feed on that animal, digest and wait before going after another. I don't think we can say man/woman hunt that way.

The Eastern Coyote is a hybrid. When man eliminated major predators from his surroundings the Western Coyote moved east to fulfill a niche left by the elimination or extinction of these major predators.

In a peer reviewed publication in the Northeastern Naturalist, 2010, titled "Genetic Characterization of Eastern "Coyotes" in Eastern Massachusetts" by Jonathan G. Way,

Linda Rutledge, Tyler Wheeldon and Bradley N. White, they found that the Eastern Coyote has genotypes from both Western Coyote and Eastern Wolves only. There was no evidence of domestic dog or gray wolf. Thus, the term Coywolf to reflect their hybrid ancestry, (*Canis latrans* x *Canis lycaon*).

Eastern Coyote, **Coywolf,** hybrid, *Canis latrans x Canis lycaon* Photo by.grandviewoutdoors.com

The Coywolf began to appear in Northern New England in the 1930's and 40's. It now encompasses all of the Northeast. It has adapted and adjusted to both short wilderness spaces and urban habitats.

Is the Eastern Coyote larger than the Western Coyote? Yes, about the size of a small wolf. It is not surprising that this animal has adapted. There is some truth to the saying that graded animals (those offspring of either mixed varieties or mixed breeds) take on many characteristics of each parent. And, others say that graded wildlife are smarter than their parents.

Whatever the case, it is clear that the Eastern Coyote is adaptable, smart and has learned who it can trust and who might harm it.

There are some birds that are similar. For example, crows are rather smart. Crows living in a defined area learn who they can trust and who they can't. This is probably due to being shot at for a long period of time.

We usually think of predators as being Keystone species, but that is not necessarily so.

NORTH AMERICAN BEAVER

North American Beaver, *Castor canadensis*, Photo by coniferous forest.com

An organism that can change the habitat, can change the environment, even on a limited basis, affects many other organisms. Therefore, if the animal provides habitat, food and water for many different organisms, that animal could be called a Keystone species.

The North American Beaver is a good example. When a young male beaver strikes out on its own, he is trying to find a place he can make acceptable to a female. When he comes to a stream that looks promising, he goes about cutting down trees and shrubs

for the wood to make a dam and a lodge for himself and a female. This one animal is creating a pond. The pond is new and now provides new habitat, new life, new food to many organisms. All organisms need water to survive and even though the steam provided water, a pond provides permanent water. If the stream dries up over the summer the water that is trapped in the pond will still provide a livelihood for many wildlife species. Without the Beaver there wouldn't be this micro-habitat for other organisms.

OBSERVATIONS

MAMMALS
Meadow Vole – tunnels and runs.
Red Fox – observed and tracks in the snow.
Coyote – calling, howling, tracks.

Weather Tidbits
Month of JANUARY 1-31, 2020
All Measurements taken at solar noon (1230 EST).
PRECIPITATION

Total Precipitation: 44.4 mm or 1.75 inches for the Month.

Overcast Days: 22 days for the month.