

# Natural History of Lynx



Lynx are listed as Threatened throughout their range in the contiguous U.S. under the Endangered Species Act.<sup>i</sup> Lynx are listed as Endangered in New Brunswick under the New Brunswick Species at Risk Act and in Nova Scotia under the province's Endangered Species Act.<sup>ii</sup>

## Lynx in Arizona

While lynx are not native to Arizona,<sup>iii</sup> the species has been confirmed in the state as a result of a reintroduction program in southern Colorado (Fig. 1). Between 1999 and 2006, the Colorado Division of Wildlife released 218 wild-caught lynx into the San Juan Mountains of southwestern Colorado in an effort to establish a viable population.<sup>iv</sup>

The lynx were released with very high frequency (VHF) and/or satellite transmitters from which locations, mortality, reproduction, habitat use and movement patterns were documented. One mortality event was detected and multiple satellite location points from an unknown number of lynx were detected in northwestern Arizona.<sup>v</sup>

While researchers are no longer tracking the lynx restored to Colorado, it is likely that multiple lynx had dispersed into Arizona.

## Physical characteristics

Lynx are medium-sized, stocky felids, or cats, native to North America. They have long legs, large, well-furred paws that enable them to traverse across deep, fluffy snow, long tufts on their ears, and

short, black-tipped tails.<sup>vi</sup> Their coat is very thick, giving these cats a larger appearance. Lynx are typically buff-gray with silver or bluish frosting in winter and brownish during the summer months.<sup>vii</sup> They have unspotted or lightly spotted limbs and underbellies.<sup>viii</sup>

Adult males average 22 pounds in weight and 33.5 inches in length and females average 19 pounds and 32 inches.<sup>ix</sup> They can live up to 16 years in the wild but rarely live past 10 years of age.<sup>x</sup>

Lynx are very similar in appearance to

bobcats and can be easily misidentified, especially in areas where the two species co-exist. Lynx are typically taller and slightly larger than bobcats, though there is a significant overlap in size. Their tail is shorter than a bobcat's, with a completely black tip. Bobcat/lynx hybrids have been recorded in Maine, Minnesota and New Brunswick.<sup>xi</sup>

## Habitat & range

Lynx are habitat specialists, meaning they prefer specific habitats, including dense boreal and coniferous forests. Their

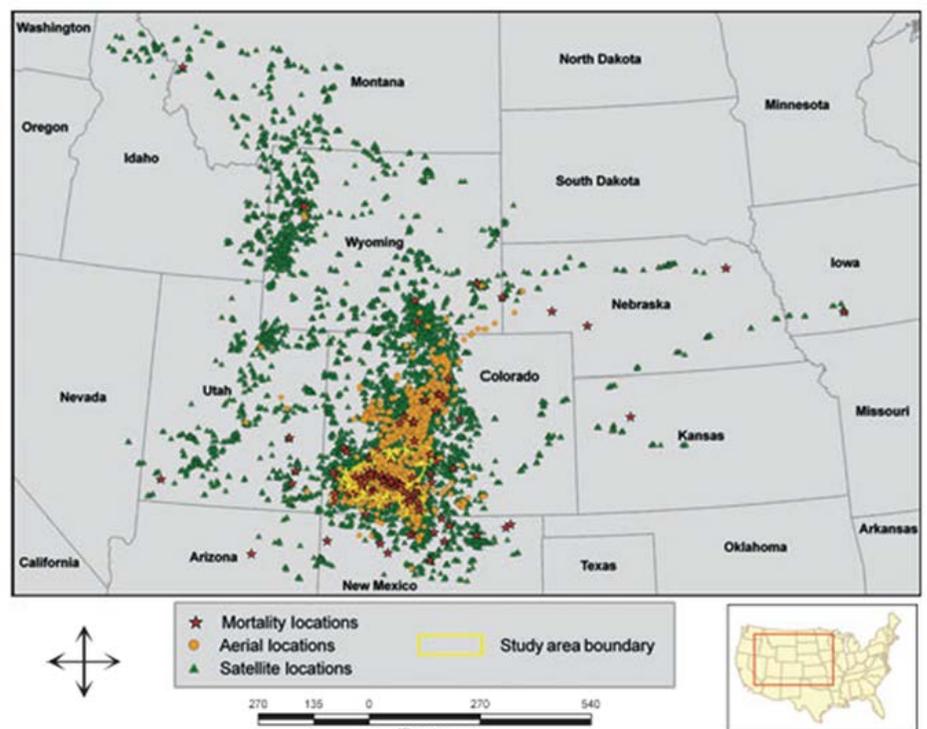


Figure 1: Lynx reintroduction program, post-release locations (Devineau, O., et al. 2010)

habitat preferences match those of their primary prey, the snowshoe hare, in the majority of their range.<sup>xii</sup>

Lynx are well adapted for snow and ice but avoid open habitat and are not often found in modified habitat such as agricultural land or heavily forested areas. They can survive in a wide range of altitudes, from sea level to more than 13,500 feet.<sup>xiii</sup>

**Home range:** A lynx's home range is a fixed area that includes necessary resources for life, such as hunting opportunities and denning sites with dense cover where mothers can rear their kittens.<sup>xiv</sup>

Lynx maintain large home ranges, averaging 15 to 50 km<sup>2</sup> (approx. 5.8 to 19.3 sq. miles)<sup>xv</sup> The size of their home range varies depending on abundance of prey, gender, age, season, and the density of lynx populations. When densities of prey decline, lynx enlarge their home ranges to obtain sufficient amounts of food to survive and reproduce.<sup>xvi</sup> Males tend to have larger home ranges than females.

Spatial behavior varies considerably depending on hare availability.<sup>xvii</sup> Lynx tend to be solitary and territorial but range overlap with neighboring lynx is common. Male home ranges tend to overlap with multiple female ranges. Average lynx densities vary considerably, ranging from 1-45 cats per 100 km<sup>2</sup> including young.<sup>xviii</sup>

**Geographic range:** Lynx are widely distributed in North America, including in most of south of the tree line, making up about 80% of the species' range, and most of Alaska making up almost 14% of the species' range (Fig. 2).<sup>xix</sup> Lynx can also be found within the contiguous U.S., in forested area of the Rocky Mountains, Cascades and Blue Mountains, Great Lakes region, and northern New England.

Lynx remain extirpated from regions of their historic range, including Prince Edward Island and mainland Nova Scotia in Canada and certain U.S. states, including Oregon, New York, Wisconsin, and Michigan.<sup>xx</sup> They have been successfully reintroduced in

Colorado, with individual cats dispersing into New Mexico and Arizona.

## Prey types & hunting methods

Snowshoe hares account for up to 97% of lynx diet, with an average consumption rate of one hare every one to two days.<sup>xxi</sup>

Lynx tend to have a more diverse diet during periods of low hare numbers as well as during summer and autumn months.<sup>xxii</sup> Lynx in the southern portion of their range tend to have a more diverse diet year-round, as snowshoe hare are less abundant or entirely absent (e.g. in Arizona) in these regions.

Other prey species include red squirrels and other rodents, small birds and game birds.<sup>xxiii</sup> Ungulates, such as deer and elk, are not a significant prey source, although lynx will scavenge on carrion of ungulates. Lynx will, on occasion, prey on juvenile ungulates such as caribou calves in Newfoundland after the hare population crashed.<sup>xxiv</sup> Lynx rarely kill livestock or poultry.

The lynx's long legs and large feet make it highly adapted for hunting in deep snow.<sup>xxv</sup> Hunting typically occurs during dawn, dusk and at night. Lynx are capable climbers and swimmers but hunt almost exclusively on the ground.<sup>xxvi</sup> They tend to follow well-used hare paths and ambush prey. Lynx will occasionally cache prey by

covering it with snow or leaves.

## Rearing of young

Lynx strongly follow a seasonal pattern for breeding, typically mating from March to early April and sometimes into May. Gestation lasts 63 to 70 days and females give birth from May to early July.<sup>xxviii</sup> Lynx will give birth to large litters, averaging four to five and as many as eight kittens. Litter size and age of reproduction are highly dependent on prey availability but females become sexually mature at 10 months of age and usually first breed at 22 to 23 months of age.<sup>xxix</sup>

Lynx kittens become independent between 10 and 17 months of age and will disperse from their natal areas. Males tend to disperse widely and settle far away. Females will often establish home ranges close to their mothers and maintain intermittent, amicable contact with them throughout their lives. Researchers have observed mothers associating with their grown daughters and will hunt together as well as share kills.<sup>xxx</sup>

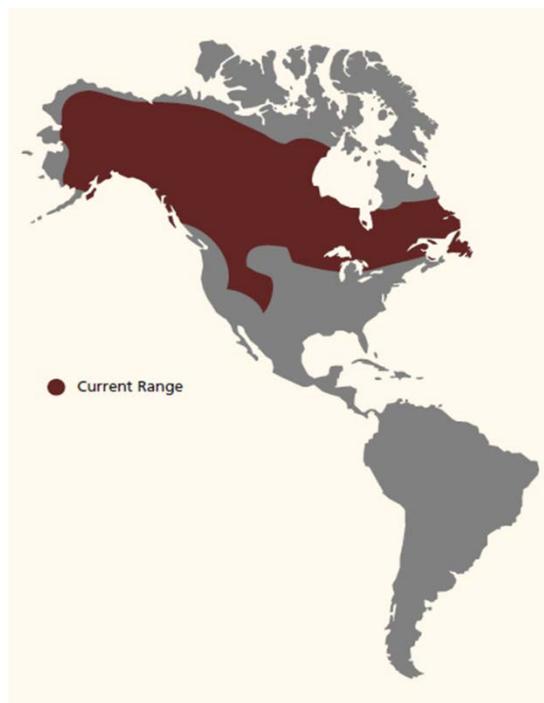
## Threats to survival

Habitat loss, fragmentation and degradation are the main threats to lynx survival. Deforestation is especially problematic as climate change threatens suitability of habitat and prey availability in southern ranges.

Additionally, in Alaska and parts of Canada, trapping lynx for the fur trade is a significant threat and is the reason for their historic wide-spread extirpation. Lynx are vulnerable to overhunting, especially during periods of hare decline. At least 11,000 lynx are legally killed each year in Alaska and Canada.<sup>xxxi</sup>

In the contiguous U.S., lynx are protected from trophy hunting and trapping but continue to be threatened by poaching, habitat loss and roadkill. Incidental trapping in states that allow trapping of other wildlife, especially bobcats, is also a significant threat. Starvation during winter months as well as predation by other carnivores are also threats to survival.

Figure 2: Current lynx range



<sup>i</sup> U.S. Fish and Wildlife Service. 2017. Canada Lynx (*Lynx canadensis*). Environmental Conservation Online System. Retrieved from <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A073>.

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- <sup>ii</sup> Vashon, J. 2016. *Lynx canadensis*. The IUCN Red List of Threatened Species 2016: Retrieved from <http://www.iucnredlist.org/details/summary/12518/0>.
- <sup>iii</sup> Mckelvey, K.S., et al. 2000. History and distribution of lynx in the contiguous United States. In: L.F. Ruggiero, K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey and J.R. Squires (eds), *Ecology and Conservation of Lynx in the United States*, pp. 207-264. University Press of Colorado, Boulder, Colorado.
- <sup>iv</sup> Devineau, O., et al. 2010. Evaluating the Canada lynx reintroduction programme in Colorado: patterns in mortality. *Journal of Applied Ecology* 47:524-531.
- <sup>v</sup> Devineau, O., et al. 2010.
- <sup>vi</sup> U.S. Fish and Wildlife Service. 2017.
- <sup>vii</sup> Hunter, L., and P. Barrett. 2011.
- <sup>viii</sup> Ibid.
- <sup>ix</sup> U.S. Fish and Wildlife Service. 2017.
- <sup>x</sup> Hunter, L. 2015.
- <sup>xi</sup> Ibid.
- <sup>xii</sup> Ibid.
- <sup>xiii</sup> Hunter, L. 2015.
- <sup>xiv</sup> Hansen, K. 1992. *Cougar: The American Lion*. Northland Publishing, Flagstaff, AZ
- <sup>xv</sup> Vashon, J. 2016.
- <sup>xvi</sup> U.S. Fish and Wildlife Service. 2017.
- <sup>xvii</sup> Hunter, L., and P. Barrett. 2011.
- <sup>xviii</sup> Vashon, J. 2016.
- <sup>xix</sup> Hunter, L. 2015.
- <sup>xx</sup> Vashon, J. 2016.
- <sup>xxi</sup> Sunquist, M. and Sunquist, F. 2002. *Wild Cats of the World*. University of Chicago Press.
- <sup>xxii</sup> Hunter, L. 2015. *Wild Cats of the World*. Canada Lynx. Bloomsbury USA, pp.146-151.
- <sup>xxiii</sup> Hunter, L., and P. Barrett. 2011. *Carnivores of the World*. Canada Lynx, *Lynx canadensis*. Princeton University Press, p. 34.
- <sup>xxiv</sup> Bergerud, A.T. 1983. Prey switching in a simple ecosystem. *Scientific American* 249(6): 130.
- <sup>xxv</sup> U.S. Fish and Wildlife Service. 2017.
- <sup>xxvi</sup> Hunter, L. 2015.
- <sup>xxvii</sup> Hunter, L., and P. Barrett. 2011
- <sup>xxviii</sup> Hunter, L. 2015.
- <sup>xxix</sup> Hunter, L., and P. Barrett. 2011
- <sup>xxx</sup> Ibid.
- <sup>xxxi</sup> Ibid.