

The hybridization between wildcats (*Felis silvestris silvestris*) and the domestic cat (*Felis silvestris catus*)

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Some people think that the wildcat is either a nickname for cats like lions and lynxes or that it is a domestic cat that has been released to the wild from humans. But the wildcat is a separate sub-species and can be clearly distinguished both in appearance and genetically.

The European wildcat, *Felis silvestris silvestris*, is bigger than the domestic cat, *Felis silvestris catus*. It has a thick coat and the color is what is called “tabby”. The tail has a pattern of dark rings, and ends with a dark tip, which is typical for the wildcat.

There have been researches on the differences of domestic cats and the European wildcats to find out if, first of all, there is a difference between them and then the risk of hybridization for the wildcat.

In a research from 2001¹ gave the conclusion that it was possible to divide the cats into groups of domestic cats and wildcats. There were a total of 128 cats that participated in the study, and the research took place in Italy. They found clear evidence in the DNA that the cats belonged to different gen pools, one with domestic cats and one with wildcats. One cat that was found along a roadside could not be identified as wildcat or domestic cat, and the conclusion was made that they had found a hybrid. The hybridization was limited and it could only be found at specific geographic locations.

¹ Ettore Randi, Massimo Pierpaoli, Mark Beaumont, Bernardino Ragni and Andrea Sforzi (2001) Genetic Identification of Wild and Domestic Cats (*Felis silvestris*) and Their Hybrids Using Bayesian Clustering Methods. <http://mbe.oxfordjournals.org/content/18/9/1679.full>

However, other studies show that the hybridization is more wide spread than what could be demonstrated in Italy. The statement about the possibility to divide the wildcats and the domestic cats into two groups has also been proven in Portugal². But there, they also found four hybrid species. The analyzer that was used only detected the first generation hybrids with 100% and the second with 91%. More hybrids probably could be notable if the analyze method was more precise.

Discussion

The two studies that have been mentioned shows the same facts about the wildcat and the domestic cat, but then gives different result regarding the hybridization extent. I therefore think the seriousness of the problem is not defined for the whole wildcat species, but for certain places in the world.

In some countries like Portugal, Hungary and Scotland the problem is described as very extensive and will probably lead to more and more hybrids. And because of that it could lead to an extinction of the pure wildcat.

But in Italy there were only a few hybrids. This could be explained by the places they were found. The domestic cat was not able to interfere with the wildcat in the same extent. The reason for that might be a geographical barrier, which in this case works like a separation between two different species, and result in less hybridization. The wildcats live more isolated and the maintaining of “pure” wildcats can be kept.

The result from different countries can therefore both be correct but will not give a good view for the sum of the problem. The wildcat is, in many places, threatened by the cross-breeding and the tricky thing is to find a solution for the hybridization, or do we need a solution?

Hybridization is something that has happened to many species and it is a normal evolutionary outcome. One of the reasons why hybrids occur is to increase their fitness.

It would be interesting to see if the hybrids of wildcats have a higher fitness than the pure domestic- and wildcats. In that case the evolution is going to “create” the most suitable cat for the environment on the expenses of the “pure” wildcats.

In one way, this is a loss for the nature if a species gets extinct. But at the same time it is important to let the nature live its way and because of the constantly changing world, the animals have to find new niches that is more livable for that time.

Except, if this is a result of human population habits, with companion animal and increasing spreading towards bigger areas, it is just another effect of how humans disturb the nature and the other species that live in it. The humans have for thousands of years kept cats as companion animals and the rising number of humans is probably also going to have the same effect on the animals that we have. The domestic cats that are going to wander around free gives a higher risk of hybridization, whether it is for the wildcats benefit or not.

The behavior of the wildcat is different from the domestic cat, which maybe gives them a disadvantage when fighting for territory. The domestic cat has learned to live with humans and therefore they are not as limited as the wildcat. The need of more space to find enough food recourses will perhaps affect the wildcat more than the domestic cat. The cat that is “tamer” can more easily adapt to the increasing human population. This will decrease the wildcat genes in the hybrids and the wildcat will look more and more different from its original appearance.

I think that we have to be stricter with the separation between wild and tame animals, to prevent hybridization of two species that normally would not meet.

All animals play its own part in the nature, and if we start to make bigger changes we might end up with a great loss of the beautiful animals that today is walking on this earth.

References

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