

# What Is Wild Type?

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The general definition of wild type today in genetics is what the genetic makeup of the most common phenotype expression in a species. What that means if the average person is five foot nine inches tall and there is a certain set of genes that produce that height then that set of genes would be considered wild type for humans. Our problem today is do we consider the most common expression of all pigeons today or do we look at feral pigeons or do we try and guess what the wild pigeon was like before man started to keep pigeons? I consider wild type in pigeons to be the last choice as what the wild pigeon was like before man got into breeding them and selecting for certain mutations that showed up. All we have to go by are writings and drawings from history. There are none of these drawings and writings from the time before man began keeping pigeons. So this just makes it a guess of what it would be.

The importance of defining what wild type is so we can compare it through breeding test and DNA test to see what is causing certain mutation expressions or phenotypes that are different from wild type. Because DNA interactions and complex biochemistry causing expressions classical breeding test with wild type birds and mutations will probably still be useful for many years to come. In an ideal world we would be able to test expressions in both DNA testing (or molecular genetics) and breeding test (or classical genetics).

Now what is in the makeup of wild type? Most assumptions are it is a blue bar with a white rump for color. There is a lot more to it than just these three things though even in color. Is there any of the darkening factors like dirty or sooty? Was there any other traits like faded or other lightening genes involved? I am assuming that there were none of these because feral populations seem to lose any of these other traits over time in the wild. There have been some studies showing dark checked birds have a better survival rate in large cities. In the time before man started keeping pigeons there wouldn't have been any large cities so I am eliminating checks and dark checks from wild type. There have been studies showing that birds with white rumps have a much higher survival rate against hawk attacks. I put together a little paper on white rump and survival. In the paper I theorize that the white rump causes confusion to a predator from what is called optical flow. Optical flow is a built in reaction an organism has to high contrasting images. The reaction is to hesitate for a second kind like when someone sees a mouse run across the floor in front of them. It is thought it is a reaction to avoid collisions. The high contrasting image is interpolated by the brain as possible objects the organism might collide with. I am guessing the dark terminal tail bars and wing bars are all part of this.

Why the blue color? I haven't seen any studies on predator attack survival rates and color before. Anecdotal evidence has shown me that recessive red and recessive yellow birds are the first birds picked out of a flock during an attack from a hawk. I am assuming that dominate red (ash red) is an easier target for hawks as recessive reds are. Even though ash red is dominate the numbers are never very high in the wild. Brown in pigeons must not be much of an advantage in the wild either or there would be brown expressions in the wild for *Columba livia*.

There are many questions of physical makeup of a wild type. All I have to go by for what a wild type physical makeup would be is looking at other wild pigeon species. Most of the other wild species are on the smaller end of a domestic pigeon and narrow beaks. I would presume they had the body and beak structure similar to Wood Pigeons and Stock Doves. Stock doves are very similar to Rock Doves (wild type pigeons) except for incomplete wing bars and grey rumps in markings and is a wild dove of Europe. Stock Doves differ in having a white bar in the tail like a dominate opal and dark feathers under the wings and a iridescent green feathers on the side of the neck. It is interesting that Wood Pigeons and Stock Doves both produce fertile offspring when bred to a domestic pigeon (*Columba Livia*). By some old definitions of a species that would mean these three species are actually different breeds of the same species.

The photo of the bird below is a bird out of my wild type project. I have a long way to go to get the type and coloration I want for wild type. In genetics in college I was taught that after 25 generations you can consider a line in a species pure bred. I may not ever finish project.



- Size: Length 28–32 cm (11–12.5 in) Wingspan 60–66 cm (23.5–28 in) Weight 250–300 g (10–12 oz). Twelve tail feathers.

I have a long way to go with the type and a few other things in the bird above. The head needs to be smaller, longer narrower beak, more upright stance and a bit narrower wing bars. The white on the outside of the outer tail feathers is an albescent stripe. There is a pied present in this bird because of the one light toe nail.