

# Summer Sunwanderers

*Heliobates aestivalis*

A closed species by [holy.heretic!](#)

## Rarities

	COMMON	RARE	TROPICAL	MUTATIONS
Coats	Short Coat Longhair Coat			
Colors	Base Colors	Diluted Colors White Dominant No White	Tropical Colors	Lavender Leaf
Patterns	Patterns Pattern Modifiers White Spotting			
Ears	Normal Ears	Rose Ears Rabbit Ears		Curled Ears
Tail	Normal Tail Longhair Tail Bobbed Tail	Lion Tail Rat Tail		
Misc.				<a href="#">Heterochromia*</a>

## Genetics Overview

Sunwanderer genetics are loosely based on a very bare-bones understanding of cat genetics. In this guide, you will find explanations for colors, traits, patterns, and previews of possible mutations! Please keep in mind that *regardless of dominance*, the common or prevalent traits are the ones that *benefit survival*.

When reading this guide, there are a few terms you should be familiar with:

*Genotype* refers to the genetic code stored in the cells of an organism, both visible and hidden.

*Phenotype* refers to the appearance of an organism, only the visible traits.

A *locus* or *loci* is the specific fixed position on a chromosome where a particular allele is located.

An allele is one of two or more alternative forms of a gene.

## How to Read a Genotype

When reading a genotype, it should be laid out in the order of this guide for easy reference! This means a genotype will always be written out in this order:

Coat Length / Black Base / Red Base / Tropical Mod / Dilute Mod / Pattern / Bubble Mod / Spotted Mod / Vanishing Mod / White / Ear / Tail (The eye and leather colors do not have designated alleles, so they are left out of the genotype.)

A completed code might look like this:

LL b1b1 rr Trtr DD Wdwd BuBu sspv VV Wsw n1n3 g2g2 (yellow eyes+orange leathers)

Which describes a Sunwanderer displaying this phenotype:



## Coat Length

Sunwanderers come in two coat lengths! **Shorthair (L)** and **Longhair (I)**.

## Base Colors

Base colors are considered “bases” because they are the main genes that the modifiers will affect. Sunwanderers have two main loci that give them their coloration. The black locus, and the red locus.



## The Black Locus

The black locus, also known as the B locus, hosts four possible color genes. **Black (B)**, **Cocoa (b)**, **Wood (b1)**, and **Sand (b2)**. These are listed in order of dominance, where Black is totally dominant over the other three, and Sand is recessive to everything else.

## The Red Locus

The red locus, also known as the R locus, hosts only two genes. One for **Red (r)** and one for **Not Red (R)**. The Red gene is recessive to Not Red, and can be codominant with the Black gene!

## Base Color Modifiers

Now that our color bases are decided, it's time to add some spice! Next comes the color modifier. There are two loci here, the dilute modifier, and the tropical modifier.

### The Tropical Modifier

The tropical modifier has an interesting effect on certain coat colors. Sunwanderers affected by this gene display bright, flashy versions of their base colors! The dominant allele is the **Non-tropical (Tr)** variant, with **Tropical (tr)** being recessive. The variations are as follows:

Black > Ocean

Cocoa > *No effect*

Wood > *No effect*

Sand > Sun

Red > Citrus

Not every coat color is affected. For those unaffected, they may still carry the gene to pass on to offspring! There have even been reports of strange mutations caused by this gene...



### The Dilute Modifier

The dilute modifier has two possible alleles. **Full Color (D)**, and **dilute (d)**. Dilute is recessive, meaning that it will only show in a homozygous recessive gene. This modifier can affect either color locus, and can even work in conjunction with the Tropical Modifier!



## Coat Pattern

### The Wild Allele

There are three pattern types displayed across Sunwanderers. First, we need to establish if a Sunwanderer displays as **Wild (Wd)** or **solid (wd)**. The Wild allele allows for coat patterning, while the Solid allele displays as a plain coat.

## Coat Pattern Modifiers

### The Bubble Modifier

The Bubble Modifier affects the thickness of the stripes (or spots!) on a Sunwanderer. The **Wild Pattern (Bu)** displays as thin stripes, while the **Bubble Pattern (bu)** causes those stripes to bubble out, appearing more as large blotches.

### The Spotted Modifier

The Spotted Modifier can affect either pattern type, Wild or Bubble, and causes the stripes to break up into spotting. This modifier is either **present (sp)** or **not present (Sp)**.

### The Vanishing Modifier

This modifier, when inherited as a homozygous gene, causes the pattern on the main body to disappear with age! Young Sunwanderers will be born with their pattern, but by the time they reach sexual maturity, their pattern seems to have almost entirely vanished! This allele is expressed as either **Patterned (V)** or **Vanished (v)**.

## White

White spotting in Sunwanderers can display in three ways: **White Dominant (Wd)**, **White Spotting (Ws)**, or **No White (w)**. White Dominant displays dominance over the other two. White covers all other colors and patterns, leaving only a white coat where it presents.

### White Spotting

The amount of white on a Sunwanderer can vary, depending on the inherited genes. This spotting is broken up into two main categories: High White (Ws/Ws) and Low White (Ws/w). High White typically covers more than 50% of the body. Low White typically covers less than 50% of the body.

### White Dominant

If a Sunwanderer inherits the homozygous White Dominant gene (Wd/Wd), they will display as full white. They will still carry the genotype for their patterning and may pass it down to offspring.

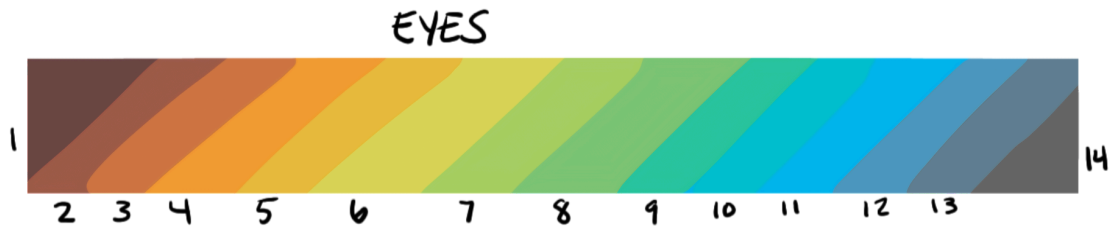
## No White

If a Sunwanderer inherits the homozygous No White gene (w/w), it does exactly what you would expect!

## Eye Colors

Eye color is inherited on a spectrum. At birth, all Sunwanderers have blue eyes. This is due to light reflection, similar to how water or the sky appears to be blue! By sexual maturity, the Sunwanderer's eyes will have transitioned to their adult color.

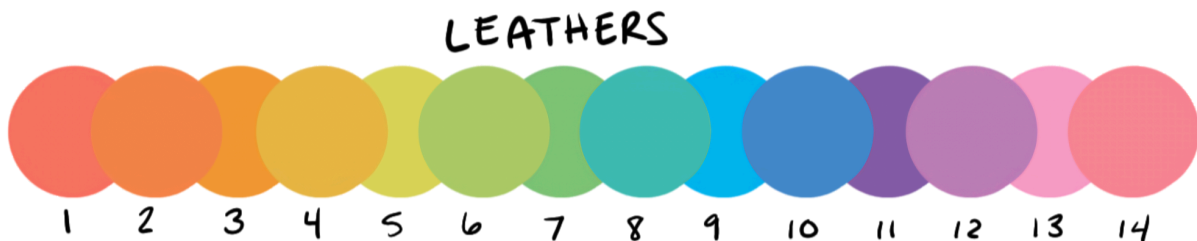
When considering offspring's eye color, we look at the chart below. An offspring's eye color can be anything *between* the parents' eye colors. For example, if one parent has blue eyes and the other has yellow, then the offspring could have yellow, green, or blue eyes.



There are certain exceptions to this, such as in White Dominant specimens. White Dominant Sunwanderers will typically have either green or blue eyes, but they can sometimes exhibit heterochromia. *Heterochromia is not a hereditary trait.* In the case of a parent with heterochromia, find the median color between their eye colors, and use that median color as if it were their eye color.

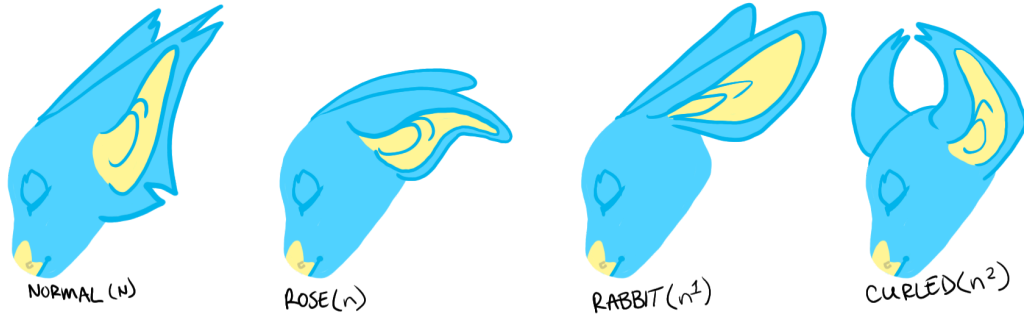
## Leather Colors

A Sunwanderer's leathers are considered to be their nose, inner ears, wing membrane, and paw pads. These colors work similarly to eye colors. **Leathers are affected by the dilute gene!** Find the parents on the scale below, and any offspring may fall between the two parents.



## Ear Types

Below is a chart of the possible ear types, along with their alleles. Remember, the traits are listed in order of dominance, with the capital lettered trait having complete dominance over the others!



## Tail Types

Below is a chart of the possible tail types, along with their alleles. Remember, the traits are listed in order of dominance, with the capital lettered trait having complete dominance over the others!

