

The Copy-Cats of the Longleaf Pine Forest

(bolded words in text indicate key words and concepts)

Student Information:

The venom of the **coral snake** is similar to those found in the cobras of India. Although this snake has no rattles like the rattlesnake its colors are very bright and attracting to other animals walking around the woods looking for food. The red, black and yellow colors of the coral snake symbolize to other animals to "stay away, I'm trouble". On the other hand, the **scarlet** and **scarlet king** snakes have no poisons (called **non-venomous**). However, both of these non-venomous snakes are able to avoid these same hungry animals because they look like the **venomous** coral snake. Scientists call this "mimicking". You can tell the two snakes apart by looking at their colored bands and remembering, "red next to black is a friend of Jack but red next to yellow will kill a fellow". However, it is important to treat all snakes with respect and observe them from a safe distance.

Teacher Information:

Besides the concept of species **mimicry**, there are a few other important ideas that can be drawn from this picture. Mimicry is only one **defensive mechanism** that plants and animals have evolved to protect themselves from predators. Some plants and animals have actually developed toxins as a predator deterrent. Although used primarily for the capture of prey, the coral snake has neurotoxins that may also serve for its protection. The tiny pine **scorpion** packs a strong punch if you happen to be stung by him. **Poison ivy** (far left in picture) contains oils that act to irritate the skin if you happen to come in contact with it. The stinging nettle (middle right in picture) has small hair-like filaments which create a painful stinging sensation when they come into contact with skin. The deer briar (top-right in picture) has a slightly different mechanism of deterring predators. Though it contains no chemical skin irritants, a walk through a patch of this plant often leaves one scratched and bleeding from tough thorny projections.

Downed woody logs (called **coarse woody debris**) play an important role in the longleaf pine forest. When a dead tree is still standing (called a **snag** by scientists and a **widowmaker** by foresters), it may be host to a myriad of various species of plants, animals and insects. Pine and black turpentine beetles, termites and other invertebrates feast of the decaying wood of the snag. In turn, woodpeckers and other critters feed on these beetles. Woodpeckers often **construct** cavities in snags for roosting and nesting. These cavities are usually only used for one year by the woodpecker. After abandonment, these cavities may become **dens** for flying squirrels, screech owls, bluebirds, wood ducks and a host of other animals. When the tree falls, it will become home to dozens of different species. Often times, many reptiles (such as snakes and lizards) seek refuge in these downed trees.

With fire creeping along the ground every few years, this woody habitat is in constant flux. Fire ignites these logs causing them to smolder for days or sometimes even weeks depending on the weather, e.g., with low humidity logs burn faster. The pile of ashes where the log once laid can have become so hot during the fire that the soil may become temporarily devoid of important nutrients (like nitrogen). During times such as this, native beans like the butterfly pea (upper left in picture) play an important role in the **nutrient cycling** by taking nitrogen from the atmosphere and replacing it to soil. In addition, the butterfly pea needs fire to help crack the seed coat and assist in **germination**.

Key Words and Concepts: coarse woody debris, construct, coral snake, defense mechanism, den, germination, mimicry, non-venomous, nutrient cycling, poison ivy, scarlet snake, scarlet king snake, scorpion, snag, venomous, widowmaker.