



## What is it?

Resilience is the **ability of a system, for example a species, material, or person, to recover its original state when affected by external factors**. It is the ability to return to who and what you were after a disturbance.

When we talk about resilience in ecology, we mean **the ability of a species, population or ecosystem to buffer, that is, to overcome or counteract the effects of environmental disturbances**. The most resilient species, populations or ecosystems will be those that will be less affected by the same disturbance and will be able to recover before its effects. We understand as a disturbance that **strong change** that occurs in the system in which the species live and that **significantly alters the situation of the habitat or the species**.

In ecological systems, the **resilience mechanisms** or response mechanisms that are generated in the face of a disturbance will be responsible for our systems not disappearing.

## Knowing Resilience

At these times, this is a **very new field** and scientists are still researching how we can **quantify** the resilience of our ecosystems, species and populations. Being able to do this will allow us, not only to better understand how different ecosystems work and their ability to recover from changes, but also to be able to assess the **urgency of action to protect species, populations and ecosystems** if we do not want to lose them. Science is alive, in constant motion and this is an example. We don't quite know how to do it yet, and research groups around the world are trying to find the way!

The ability to respond to and overcome disturbances will depend on the **characteristics of the systems** as well as the **characteristics of the disturbances**. There are systems that are more **fragile** and a certain disturbance can destroy them, and others which are better **able to withstand changes** and will survive this same disturbance. Disturbances can also be different, apart from being of greater or lesser **magnitude** (the alteration is more or less strong), they can be **occasional** or **sustained over time, recurrent**, etc., and this will also affect the capacity the system will have to overcome them.

Disturbances can be **natural** or **anthropogenic**. As an example of disturbances, we have: extreme weather phenomena, a heavy destruction of habitat, the arrival of some new species, a spill of crude oil in the sea, a wildfire, etc.





## Connection with biodiversity

As we have discussed, it is important to **maximize the resilience of our natural systems** because this will reduce the risk of losing them.

And what is the connection with biodiversity? Well, scientific studies have shown that **the more biodiverse an ecosystem, species or population is, the more resilient it is!**

More diversity implies more incorporated information, with diverse characteristics, and this makes us more likely to have the mechanism or knowledge to "overcome" the disturbance.

Ecosystems can be more or less "naturally" diverse. And they are all important. What is important is **that they do not lose biodiversity over time**, because apart from the loss of biodiversity itself, we would be reducing the resilience of the system and that would make it more vulnerable to future disturbances.

## Other sources of information :

➤ [A walk through resilience \(blog\)](#)



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