

Discipline: Biological invasions: ecology and management of exotic species

Professor: Margarita Patricia Florencio Diaz

Hours: 30h / 2 credits

Aims:

At the end of the discipline, I encourage the students to acquire deep knowledge about the invasion process, the possible effects of exotic species on native biodiversity and its relationships with the ecosystem functioning, from a perspective of global change.

Summary:

Biological invasions are not always succeeded, which depends on the invasion process. It is necessary to know the different phases of the invasion process to properly understand the exotic effects on the native communities, and make decisions about management and conservation. All the exotic species have not the same invasiveness, i.e., the same potential of invasion, neither all the ecosystems have the same invasibility, i.e., they are not similarly invaded. The colonization of exotic species is a dynamic process that may depend on the degree of anthropogenic disturbance and climatic change. Different strategies of invasion can lead to different responses of the native species facing invasions. These interactions can ultimately affect the ecosystem functioning.

Program:

1. Exotic species and terminology. The invasion process.
2. Origins and routes of invasion. Characteristic of invaders and patterns of invasion.
3. Social and economic impacts. Management and conservation.
4. Biological invasions and global change. The cost of anthropogenic disturbances.
5. Interactions between exotic and native species.
6. Biotic homogenization and resistance to invasion.
7. The exotic species in the ecosystem functioning.
8. Study cases about invasions.

Recommended bibliography:

Nentwig W (Ed.) (2007) *Biological invasions* (Vol. 193). Springer Science and Business Media.

Simberloff D, Rejmánek M (Eds.) (2011) *Encyclopedia of biological invasions* (Vol. 3). Univ of California Press.

Davis MA (2009) *Invasion biology*. Oxford University Press on Demand.

Lockwood, J. L., Hoopes, M. F., & Marchetti, M. P. (2007). *Invasion ecology*. Blackwell Publishing Ltd