Geobotany and Conservation Biology Study on *Prunus lusitanica* L. Iberian populations.

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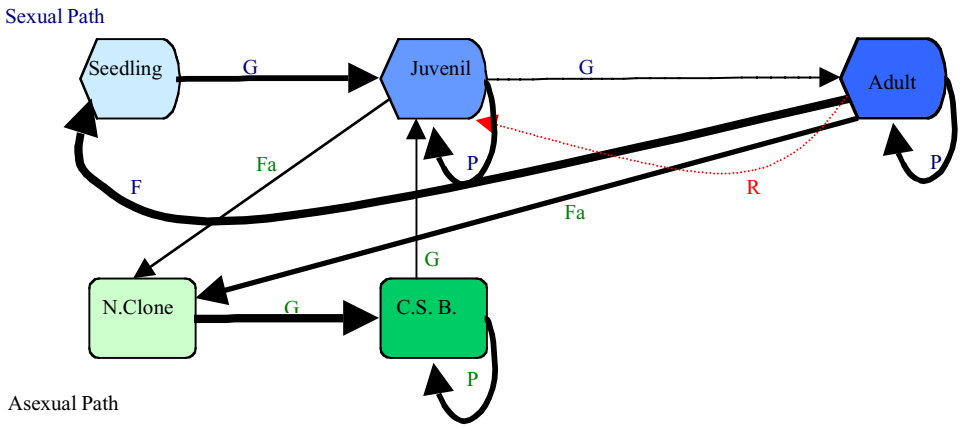
Prunus lusitanica is a rare evergreen tree species related to subtropical Tertiary Flora. It grows in evergreen laurel forests on humid windward sides of the Canary Islands. Extant populations are also fragmented in the Iberian Peninsula where they grow together with deciduous riparian species along mountain streams. These populations are considered finicolous (in its limit range). In order to understand how the Iberian populations persist, we have surveyed the population's size. Then, we are undergoing a detailed qualitative and quantitative analysis of its life cycle in two populations.

The total number of *Prunus lusitanica* individuals is nearly to 30.000 -it is much larger than expected -. On the contrary, it occurs in no more than 16 areas, where only a few sites present more than 1000 individuals. Respect to its life cycle, among other topics, we explore the population dynamics, considering differences between vegetative and sexual fecundity. It recruits from seedlings but it also possesses the ability to grow clonally since vegetative reproduction occurs by basal shoots and layering shoots. The later reproductive mode seems to be more successful for its population persistence. It does not present seed bank and seedling recruitment is rare whereas clone shoots show a much higher survival rates resulting in the production of numerous stems from a single stump i.e. a sprout-bank.

Figure 1. *Prunus lusitanica* L. **Life Cycle**



Seedling: New individual from seed, < 1year
N. Clone: New Asexual Clonal Individuals < 1 year
C.S. B.: Clonal Sprout Bank > 1 year
Juvenil.: ≥ 1 year & without Sexual Reproduction
Adult: individual with Sexual Reproduction

P: Probability of remaining within the same Stage Class
G: Growth or Recruitment inter Stages-classes
R: Return to the Stage before
F: Fertility, Sexual Reproduction mode
Fa: Fertility, Asexual Reproduction mode

However, several factors, such as herbivore predation and summer droughts, apparently reduce fertilities, growth and survival rates. For a comprehensive understanding, *Prunus lusitanica'* life cycle has been addressed

by a simple model (Fig. 1) and its demography is simulated based on stage-structured matrices. The preliminary two-year results show a much more significant role of asexual vital rates than those of sexual mode for values of the finite rate of increases. The sprout-bank and its growth to following stages appear to be important for population persistence due to sensitivity analysis and population growth tendencies. Therefore, the sprout clone bank could act as a buffer for both temporal variability in environment and demographic stochasticity.

Moreover, density-dependent pattern must be considered to provide a better acknowledge on *Prunus lusitanica* demography, especially regarding on clone dynamic. The preliminary model must be improved to provide a much better idea of *Prunus lusitanica* population dynamics. In fact, new stages have to be considered within both sexual and asexual modes. Furthermore, to achieve a more accuracy demographic modelling, we need much larger series of data about reproductive success, survival, and their variances across the years, as well as large-scale environmental changes and microhabitats effects on these parameters.