Improved mushroom yield models and mushroom-oriented forest management in Catalonia, Spain

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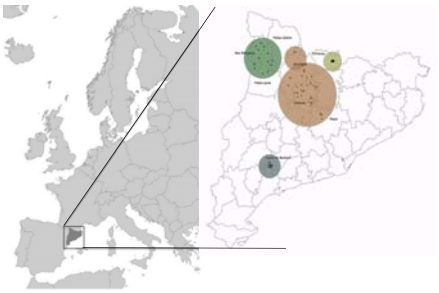
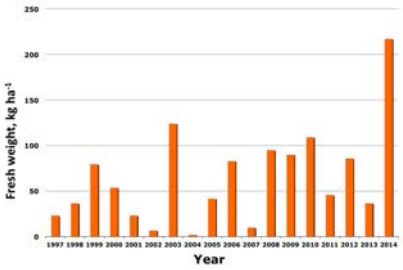
Our long-term mushroom monitoring plots



Forest type	Temporal data series	Range	Stand basal area, m² ha⁻¹	Altitude, m	Mushroom yield, kg ha⁻¹ yr⁻¹ Mindestand	Edible	Total
P. sylvestris	14 years	Min.	1.0	684.0	0.0	0.0	0.0
	1995-2001	Mean	29.8	1197.0	26.3	62.3	91.3
	2007-2013	Max.	38.8	1625.0	280.5	563.0	743.5
P. nigra	12 years	Min.	11.4	397.0	0.0	0.0	0.0
	1997-2001	Mean	27.4	763.6	12.6	42.2	55.2
	2007-2013	Max.	38.8	1040.0	144.2	332.3	365.2
P. halepensis	12 years	Min.	3.44	355.0	0.0	0.0	0.0
	1997-2001	Mean	24.10	548.5	14.8	45.6	53.9
	2007-2013	Max.	41.46	661.0	137.4	403.7	428.6
P. pinaster	6 years	Min.	15.3	594.0	0.0	0.0	0.0
	2008-2013	Mean	38.04	767.3	44.5	74.7	83.5
		Max.	82.3	1015.0	441.7	448.9	449.8
Po-Pn	7 years	Min.	11.3	1030.0	0.0	0.0	0.0
	2007-2013	Mean	24.7	1085.0	30.2	79.8	101.6
		Max.	34.3	1148.0	196.1	410.6	472.1
Pn-Pb	7 years	Min.	17.3	390.0	0.0	0.0	0.0
	2007-2013	Mean	22.9	459.4	4.4	31.8	36.1
		Max.	38.5	577.0	41.4	377.8	405.0

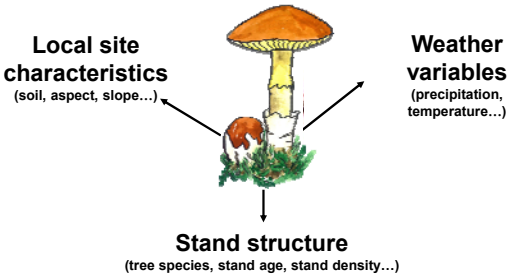
The set of 107 plots (100 m² each) are sampled at 1-week intervals from September to December, by collecting, identifying and weighting all the fruitbodies appearing in the plots.



The continuous yearly records allow us to see the huge variability of the mycological yields.

Which factors are relevant for mushroom productivity?

There is a large number of factors influencing mushroom emergence. The key factors can be classifieds in three main groups



Modelling techniques allow us to identify the most relevant factors affecting mushroom yields. In our IDCS we will improve the existing empirical models in Catalonia by including soil characteristics as predictors.

What is the impact of forest thinning on mushroom yields?

We will inspect the impact of thinning intensity on mushroom yields based on a set of 28 *Pinus pinaster* experimental plots with different basal areas and thinning intensities.

Is it possible to design a silvicultural schedule by maximizing the joint production of both timber and mushroom?

We expect to integrate the updated yield models and thinning effects into stand-level forest management optimization.

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