



Introduction

WHO? EU-Life project (SelPiBioLife, LIFE13 BIO/IT/000282)
WHEN? 2014-2019
WHAT? application of an innovative forest management technique (selective thinning) along with its effects on soil biodiversity in *Pinus nigra* plantations
WHERE? two mountain areas of the Apennines (Italy)

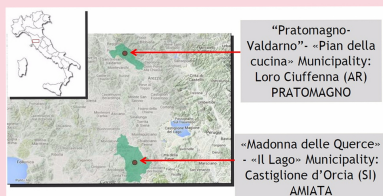


2014

BEFORE
SILVICULTURAL
TREATMENT

AFTER
SILVICULTURAL
TREATMENT

2015 -
2018



SelPiBio in numbers

8 groups of organisms



Materials & Methods

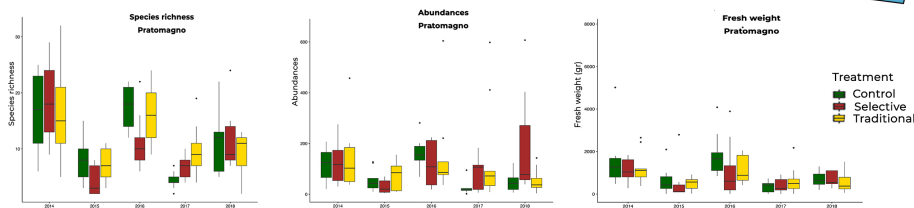
- 27 plots per area of 314 sqm each were randomly selected.
- Sampling of above-ground macrofungi was performed every two weeks in autumn and once in spring.
- In each plot fruit bodies were counted and fresh and dry weighted.
- Richness, abundance and fresh weight are graphically evaluated by boxplots.
- Differences between treatments/single years and years/single treatment were tested by Kruskal-Wallis test and Dunn's test for multiple comparison.
- Turnover of fungal community in all plots/pre and post-treatment was evaluated by Principal Coordinates Analysis (PCoA) on Bray-Curtis dissimilarity matrix.

Aims of the work

What happens in one area, "**Pratomagno**", with mushrooms above ground comparing 1 year before (2014) and 4 years after (2015-2018) the silvicultural treatments (traditional, selective and no-thinning as control)

Over the whole study period, **14064 carpophores**, with a **fresh and dry weight of 103.26 kg and 10 kg** respectively, were observed.

Data analyses



Species richness

- Post-cutting stress with decrease in species richness.
- Main significant intra-annual differences in 2017.
- Main inter-annual differences concerning both thinning treatments ("**Selective**" and "**Traditional**") between 2014 (pre-treatment) and 2015 (first year post treatment).

Abundances

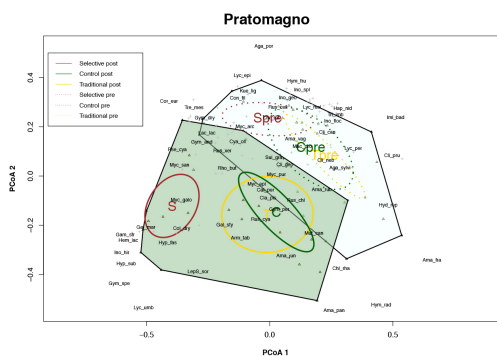
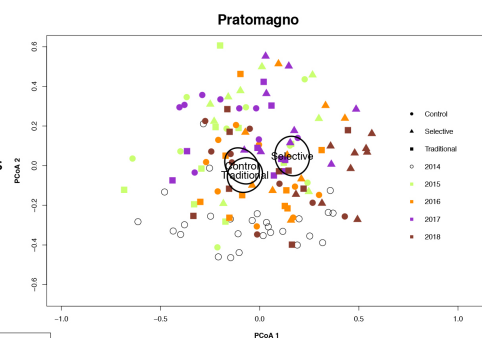
- Quite homogeneous pattern, both considering intra and inter-annual differences.
- Main inter-annual differences concerning "**Selective**" treatment between 2014-2015, 2015-2016 and 2015-2018.
- Significant inter-annual fluctuations in "**Control**".

Fresh weight

- Rather regular trend, without evident peaks or decreases.
- No intra-annual differences.
- "**Control**": most evident inter-annual changes.
- "**Selective**": only one significant inter-annual difference between 2014 and 2015.

PCoA for all sampling years (2014-2018)

"Selective" treatment: switch in terms of species composition, helped in part by an inter-annual variation.



PCoA for 2014 (pre-treatment) and 2018 (post-treatment mid-term effect)

Less marked difference between the reference years (2014 and 2018), but a clear split in terms of specific composition in the "Selective" plots in the last year of monitoring (2018).



Discussion & Conclusions

- Both intra- and inter-annual fluctuations with regards to species richness and abundances.
- 2015: year of switches with deep influence on richness and abundances as a result of post-cutting stress.
- 2017: important year in terms of significant differences: climate impact?
- "Control" also changes enormously over the years, often following the same trends as plots subjected to treatments.
- 4 years post treatment are not enough to appreciate fungal response to forest management.

