

Biodiversity monitoring: preliminary results of EMONFUR project in Milano (Italy)

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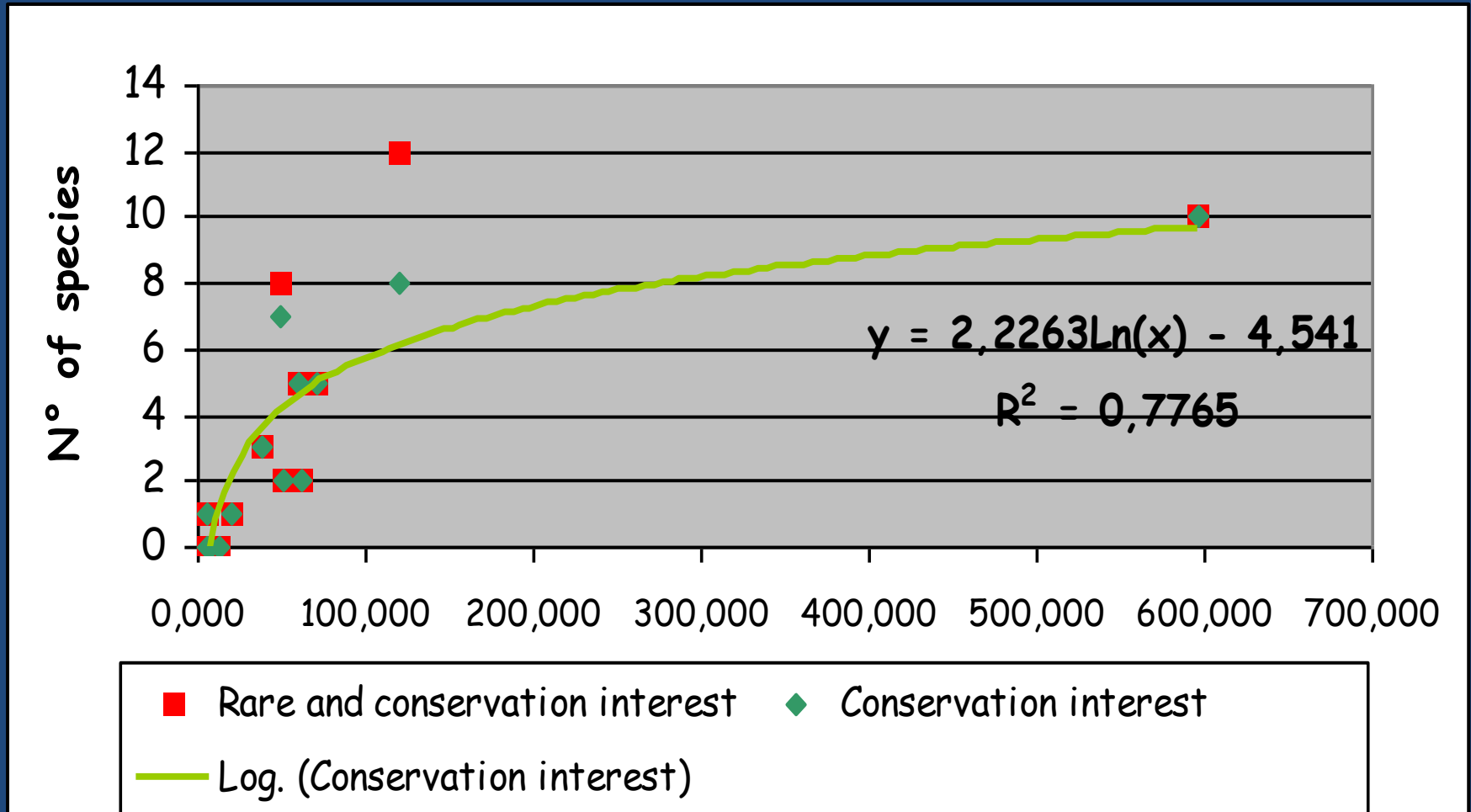
Biodiversity in urban areas



Areas with low
biodiversity value?



Urban parks may have some conservation value



See Sanesi et al. (2009), AUF

Monitoring

“To know to get a decision” (L. Einaudi)

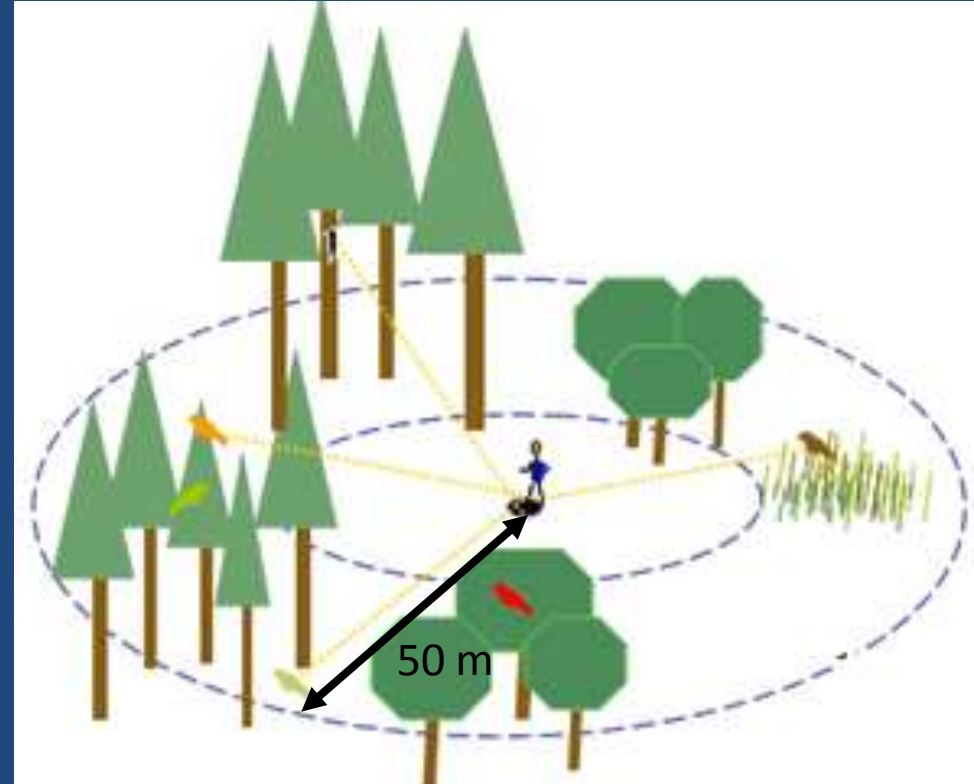
- Key for environmental policies
 - Evaluation
 - Early warning
 - Climate change
 - Pollution
 - Invasive species

Biodiversity - EMONFUR

- Fauna
 - Birds
 - Butterfly
 - Overflies
 - Carabids
- Vegetation and Plants
 - Flora
 - Vegetation
 - Habitats

Birds

- Protocol
- Point counts (breeding birds, 2 times each point)



Butterflies, hoverflies

- Butterflies and hoverflies: transects
- Carabids: pitfall traps



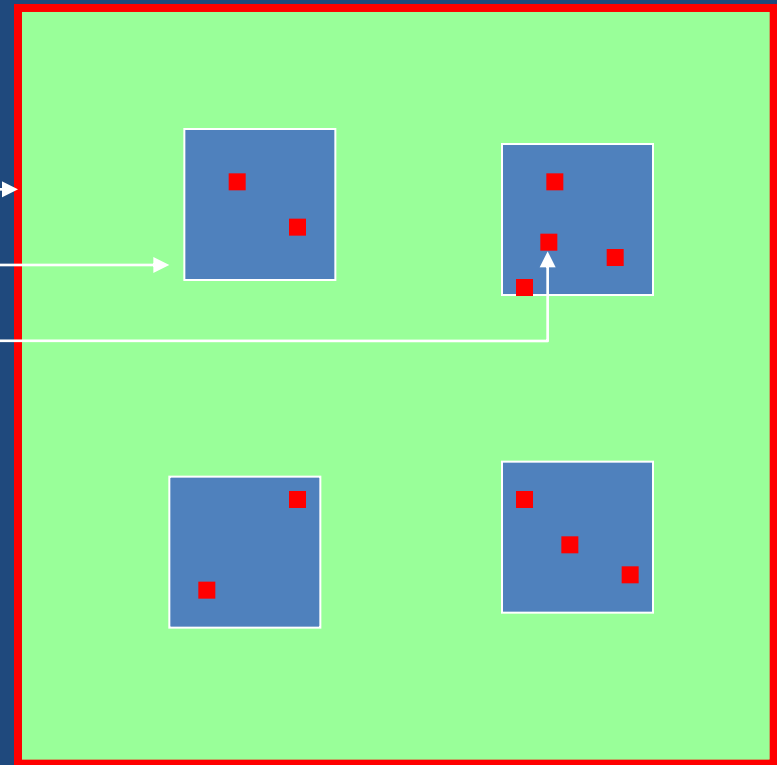
Vegetation

- 3 levels of organization

- LVP (2500 m²)

- MVP (400 m²)

- SMP (40 m²)



50 m

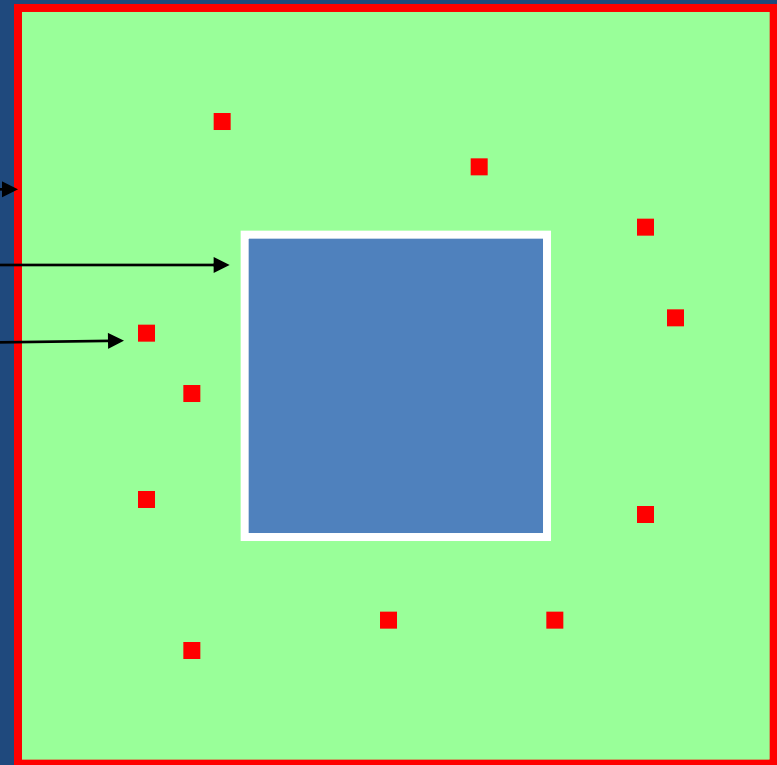
Vegetation

- 3 levels of organization

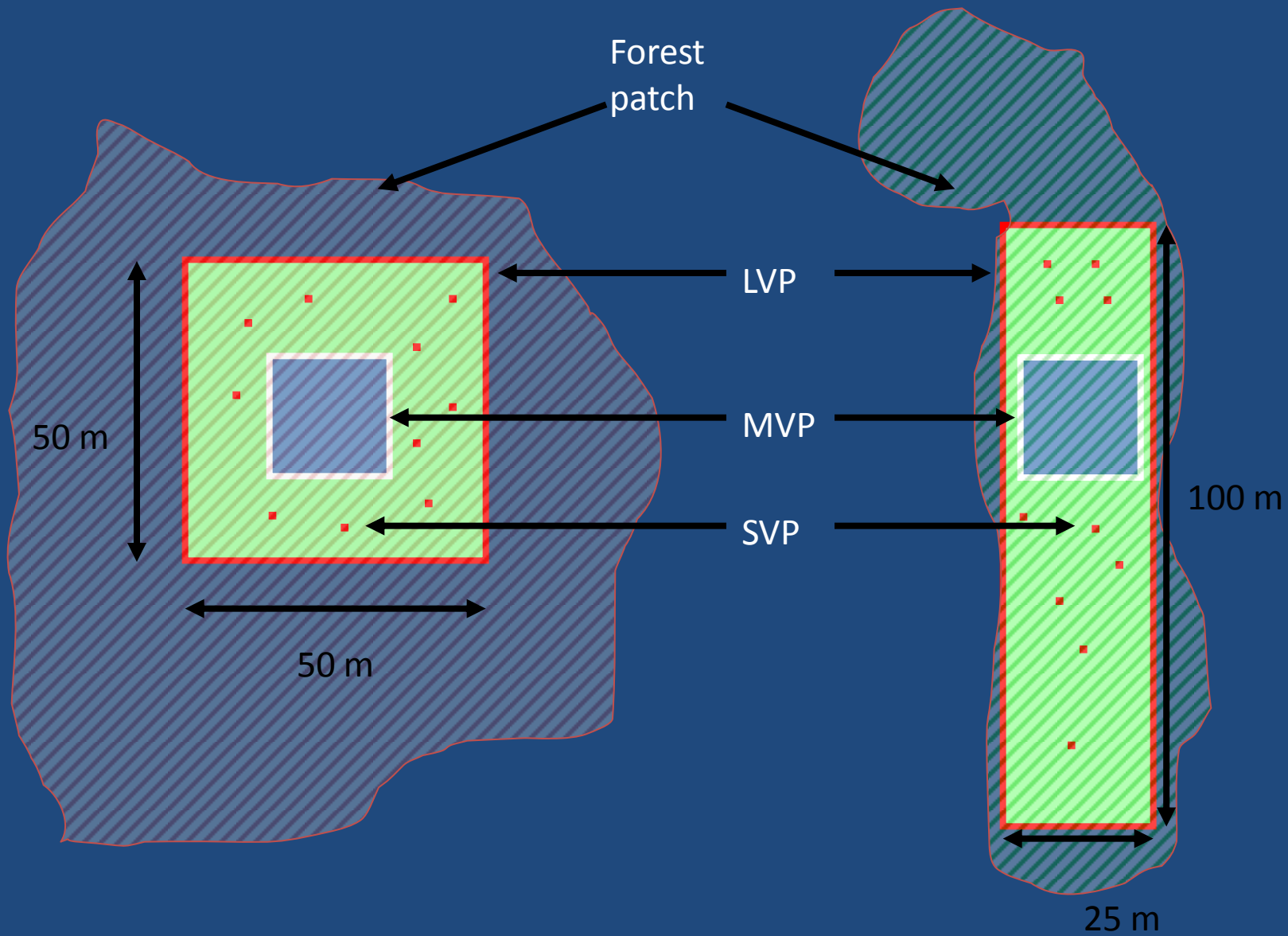
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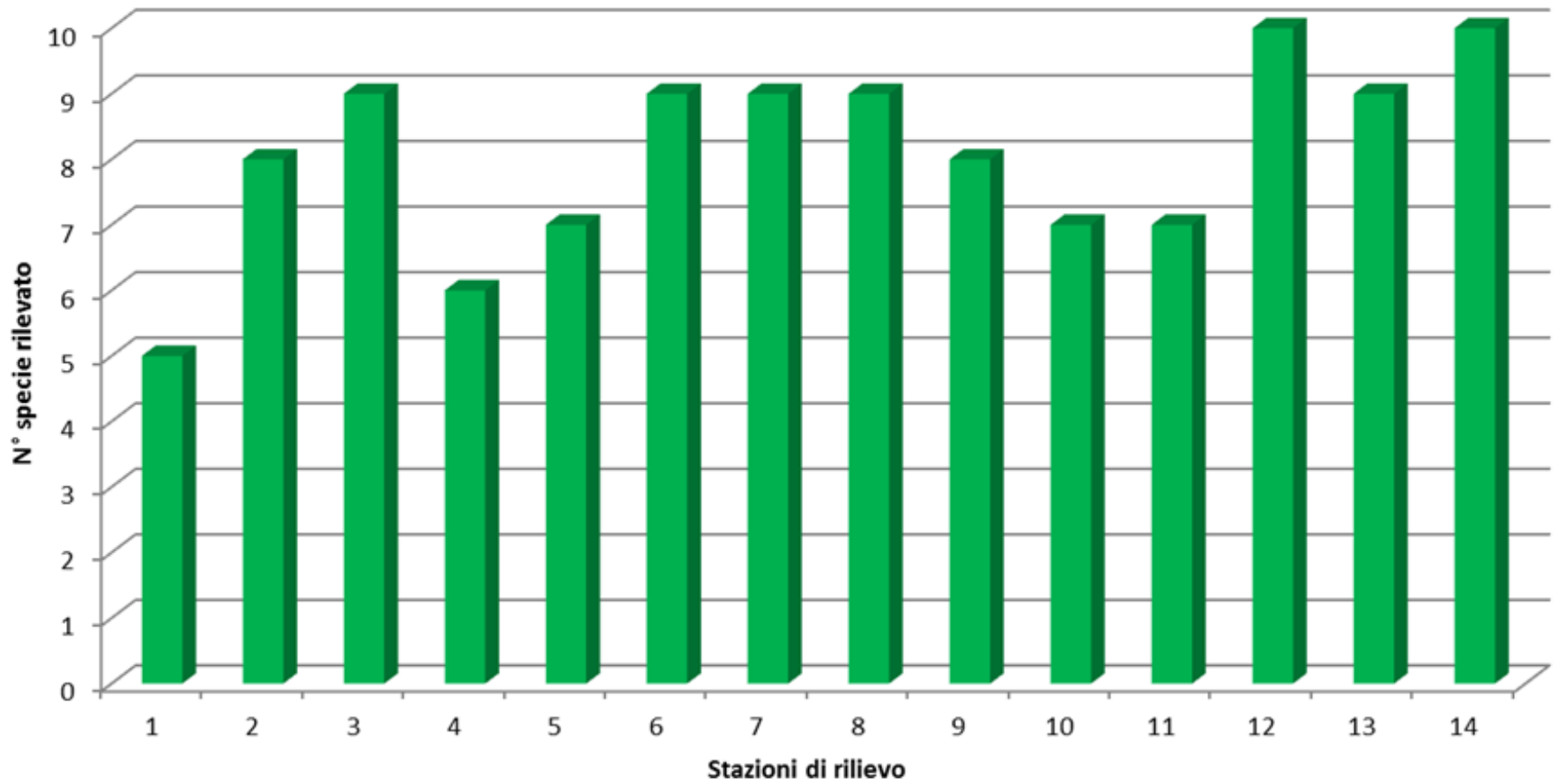
50 m



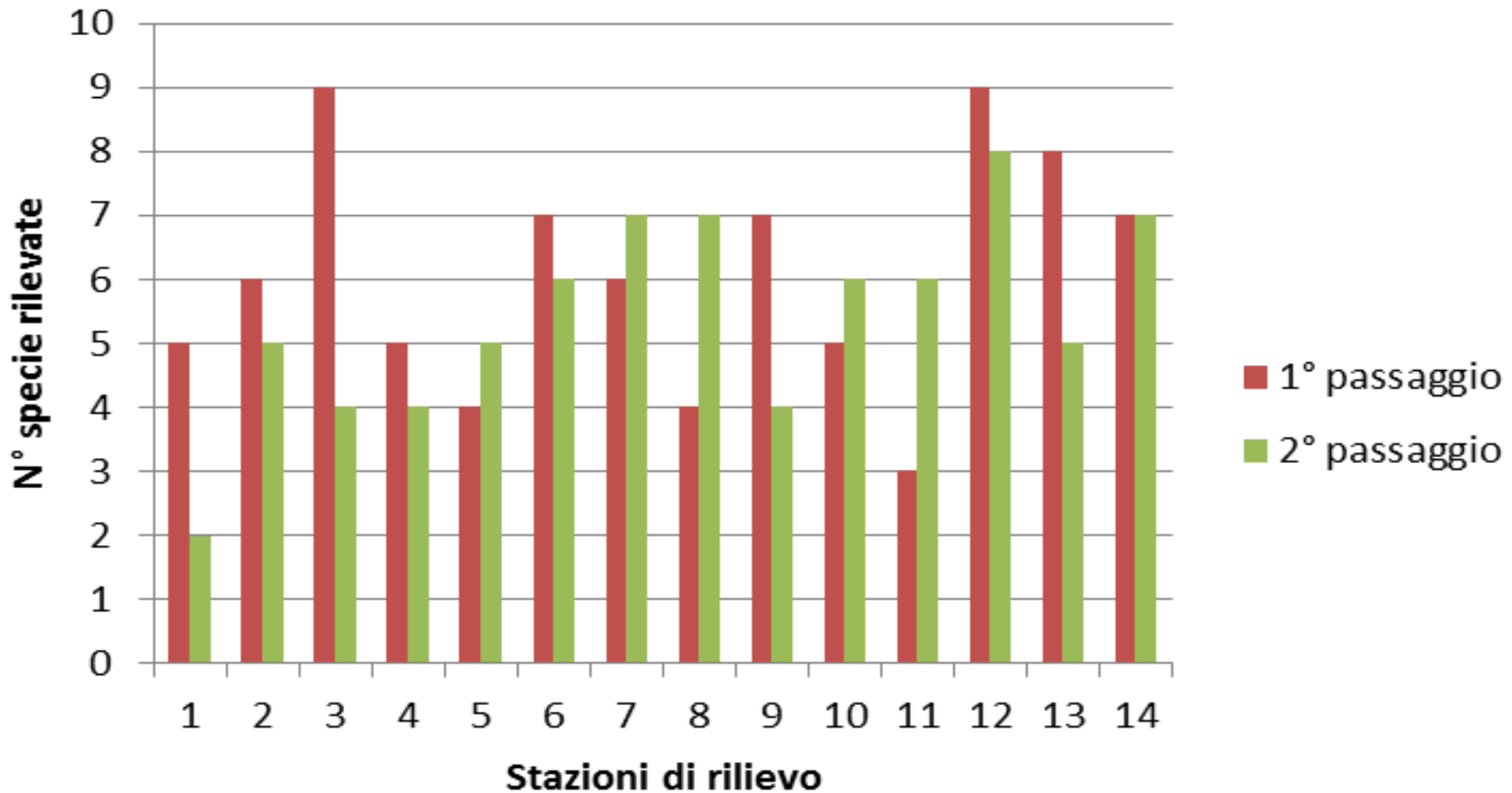
Preliminary results (fauna, birds)

Nome italiano	Nome scientifico	Nome Inglese
Airone cenerino	<i>Ardea cinerea</i>	Grey Heron
Fagiano	<i>Phasianus colchicus</i>	Pheasant
Colombaccio	<i>Columba palumbus</i>	Woodpigeon
Rondone	<i>Apus apus</i>	Common Swift
Picchio verde	<i>Picus viridis</i>	Green Woodpecker
Picchio rosso maggiore	<i>Dendrocopus major</i>	Great Spotted Woodpecker
Rondine	<i>Hirundo rustica</i>	Swallow
Pettirosso	<i>Erithacus rubecula</i>	Robin
Usignolo	<i>Luscinia megarhynchos</i>	Nightingale
Merlo	<i>Turdus merula</i>	Blackbird
Capinera	<i>Sylvia atricapilla</i>	Blackcap
Pigliamosche	<i>Muscicapa striata</i>	Spotted Flycatcher
Codibugnolo	<i>Aegithalos caudatus</i>	Long-tailed Tit
Cinciarella	<i>Parus caeruleus</i>	Blue Tit
Cinciallegra	<i>Parus major</i>	Great Tit
Picchio muratore	<i>Sitta europaea</i>	Nuthatch
Gazza	<i>Pica pica</i>	Magpie
Taccola	<i>Corvus monedula</i>	Jackdaw
Cornacchia grigia*	<i>Corvus (corone) corone</i>	Carrion Crow
Storno	<i>Sturnus vulgaris</i>	Starling
Fringuello	<i>Fringilla coelebs</i>	Chaffinch
Cardellino	<i>Carduelis carduelis</i>	Goldfinch

Preliminary results (fauna, birds)



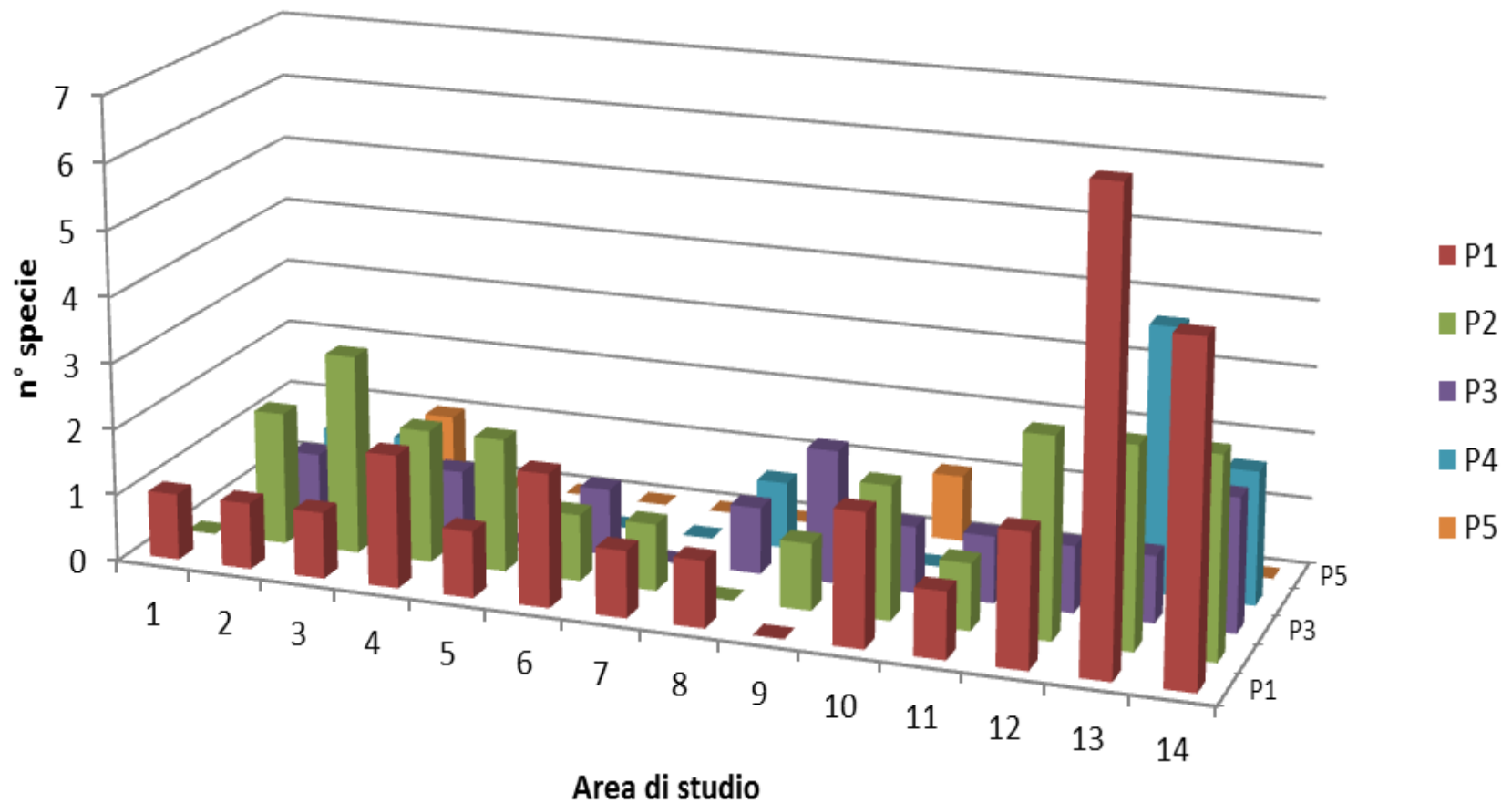
Preliminary results (fauna, birds)



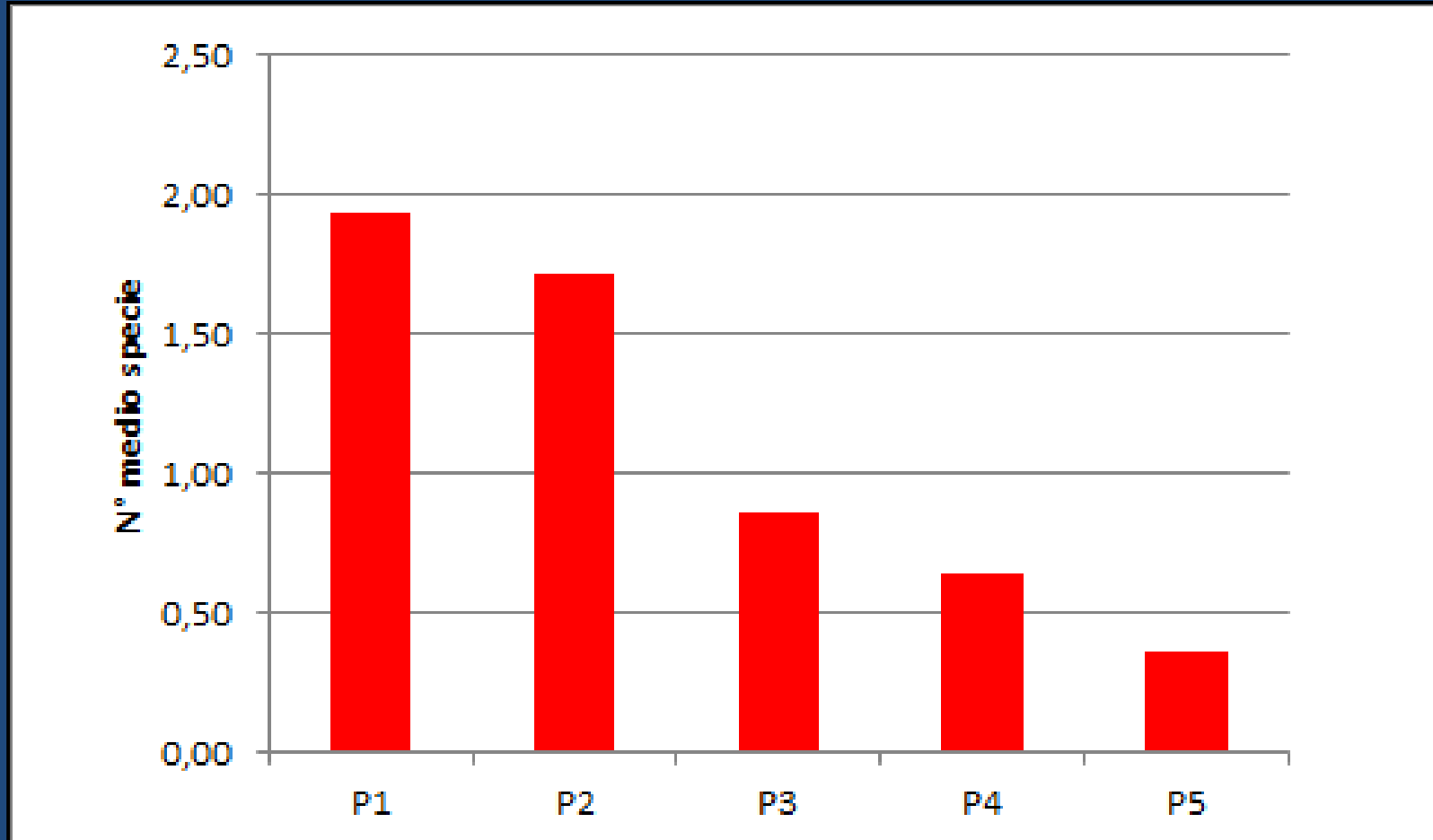
Preliminary results (butterfly)

Argynnis paphia (Linné, 1758)
Aricia agestis ([Denis & Schiffermüller], 1775)
Celastrina argiolus (Linné, 1758)
Colias crocea (Geoffroy, 1785)
Cupido argiades (Pallas, 1771)
Issoria lathonia (Linné, 1758)
Lasiommata megera (Linné, 1767)
Melitaea athalia (Rottemburg, 1775)
Ochlodes venatus (Bremer & Grey, 1853)
Papilio machaon Linné, 1758
Pararge aegeria (Linné, 1758)
Pieris brassicae (Linné, 1758)
Pieris napi (Linné, 1758)
Polygonia c-album (Linné, 1758)
Polyommatus icarus (Rottemburg, 1775)
Satyrium w-album (Knoch, 1782)
Vanessa atalanta (Linné, 1758)

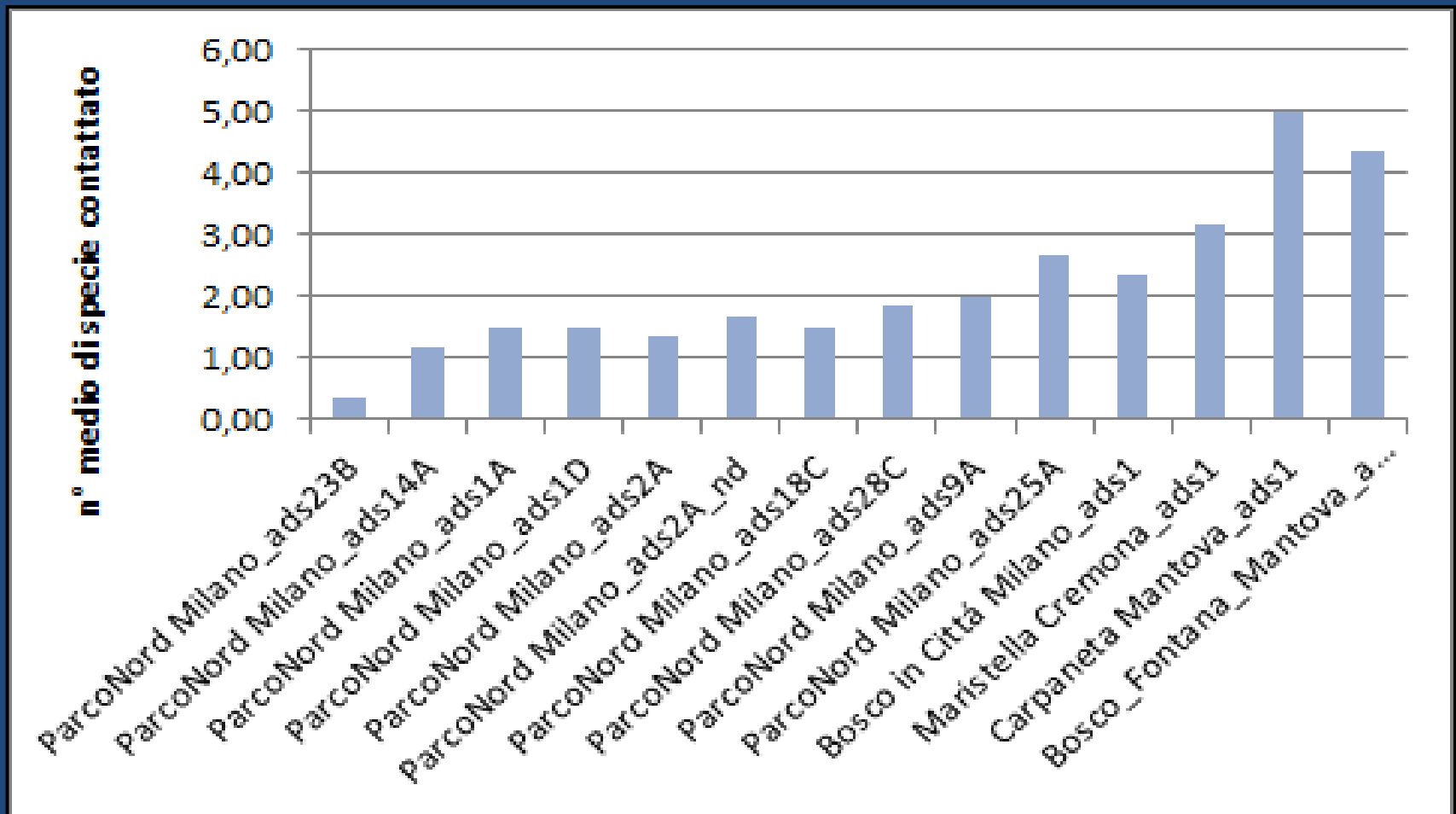
Preliminary results (butterfly)



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Preliminary results (butterfly)



Future activities

- Birds – Link between species abundance and forest structure ...
- Butterflies – Ecogram of butterflies and of each forest plot