

# Vliv lesních cest na druhové složení rostlin v přilehlém lese



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## Does the effect of forest roads extend a few meters or more into the adjacent forest? A study on understory plant diversity in managed oak stands

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### ABSTRACT

Roads are recognised as having different ecological roles such as barrier, corridor or habitat, but the spatial extent of road effects on plant communities in forests remains unclear. We studied the effect of forest road distance on plant understory diversity at 20 sites in young and adult oak stands in a French lowland forest with a long history of management and road construction. All vascular and bryophyte species were collected at five distances ranging from the road verge to 100 m into the adjacent forest stand. We analysed species composition, individual species response, a priori life-history traits response – life form, habitat preference and dispersal mode – and environmental indicator values in relation to road distance and stand age. Plant composition strongly differed between road verge and forest interior habitats. The main road effect extended less than 5 m into the forest stand. A third habitat was detected at the forest-road edge resulting from the road effect on light and soil conditions, and from edge-specific topography. Non-forest species were almost absent from the forest interior. In contrast, many bryophytes and several vascular plants kept away from the road. We identified a posteriori six species groups that better explained the variability of plant response profiles than a priori life-history traits. Plant response to road distance was also dependent on stand age: some species colonised from the road into the forest interior in young stands following regeneration cutting, while other species displayed the reverse pattern in adult stands once canopy closed above the forest road. Even if the depth of forest road effect measured in lowland managed stands was narrow, building of a new forest road has non-negligible effects on plant population dynamics. Forest managers should take into account the impacts of roads on biodiversity, since the expected intensification of silviculture in response to global changes is set to accentuate the effect of forest roads. We recommend further study on the role of dispersal by vehicles (i.e. agestochory) in road effects.

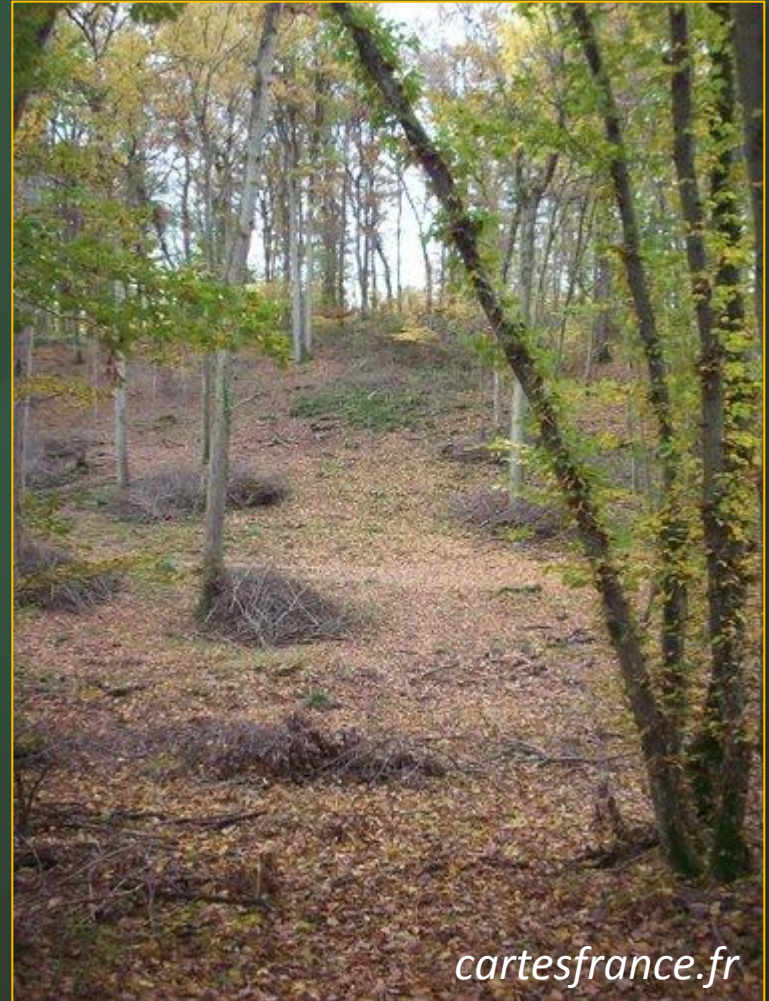


# CO VÁS ČEKÁ

- použitá ekologická terminologie
- uvedení do problematiky
- studovaná plocha a design pokusu
- výsledky a důsledky studie

# VYSVĚTLENÍ TERMÍNŮ

- střední les
- ekotonální efekt



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# PROČ TAKOVOU STUDII DĚLAT

- CESTY → bariéry, koridory, habitat
- zvyšuje se množství i využívání cest
- prostorový efekt neznámý
- studie pouze v lesích s krátkou dobou hospodaření

# STUDOVANÁ PLOCHA

nížina

oceánské klima

od r. 1670



historie cest

**historicky střední les**

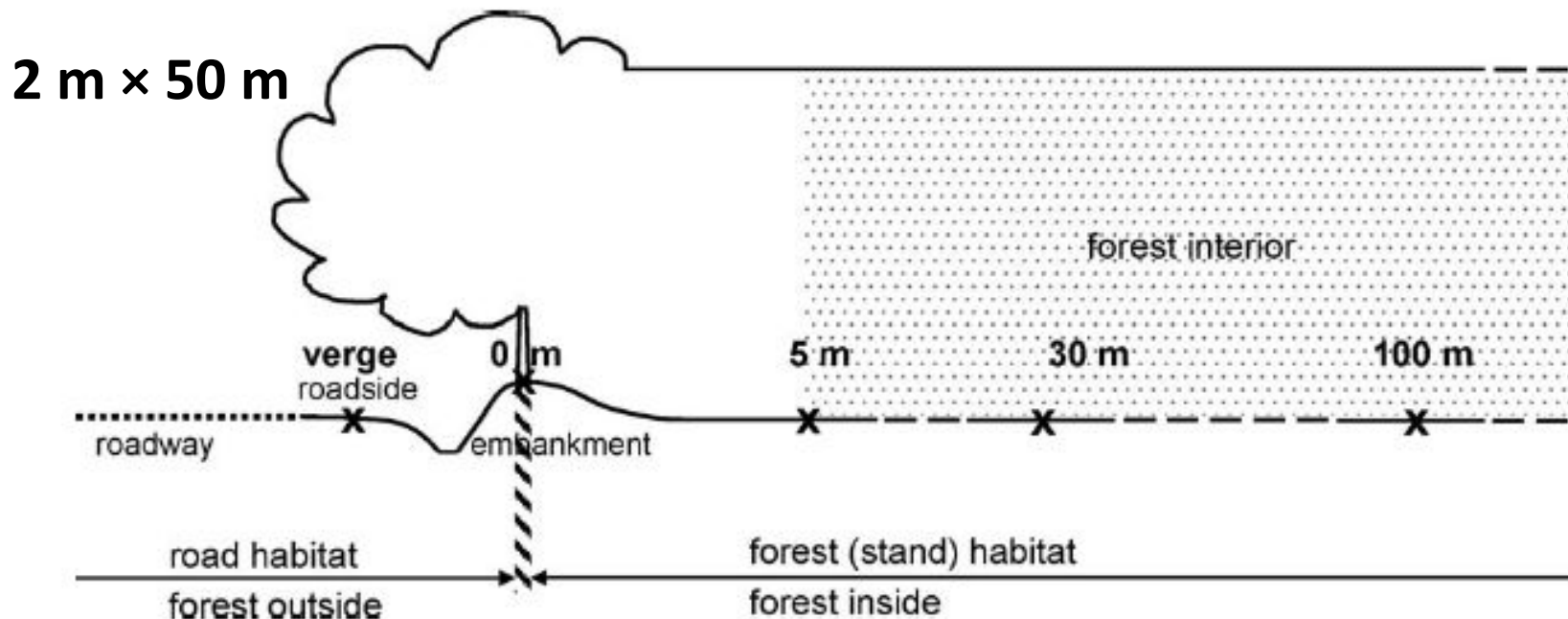
výstavky – dub zimní (*Quercus petraea*)  
pařezina – habr obecný (*Carpinus betulus*)





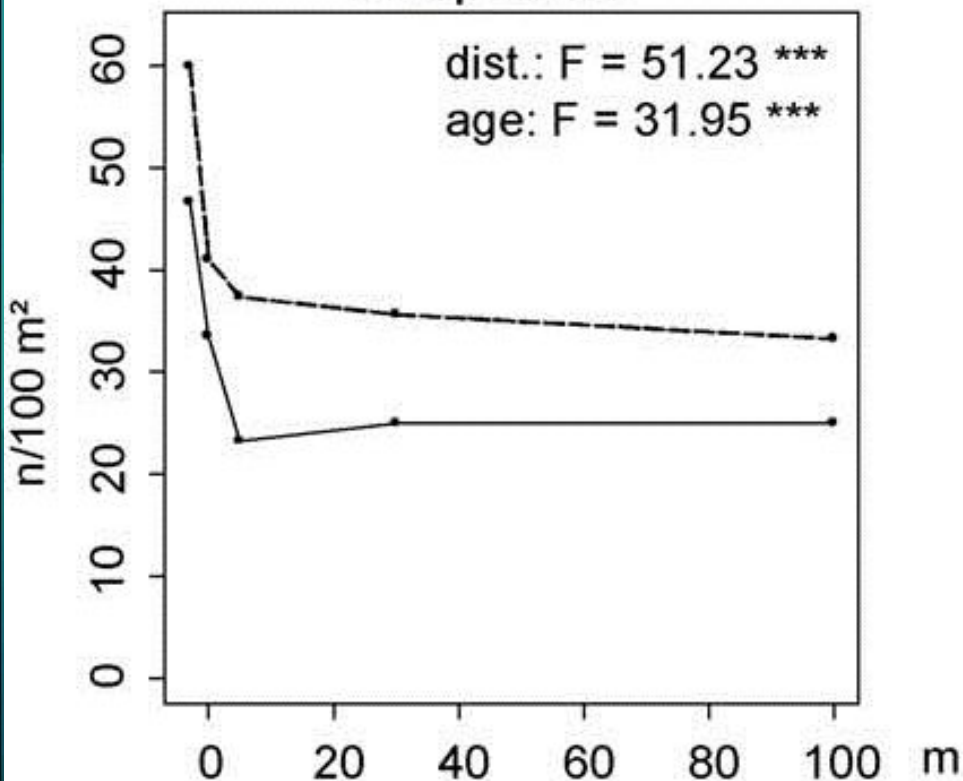
# METODIKA

- 20 lokalit v mladých (20-40 let) a starých (>90 let) porostech dubu

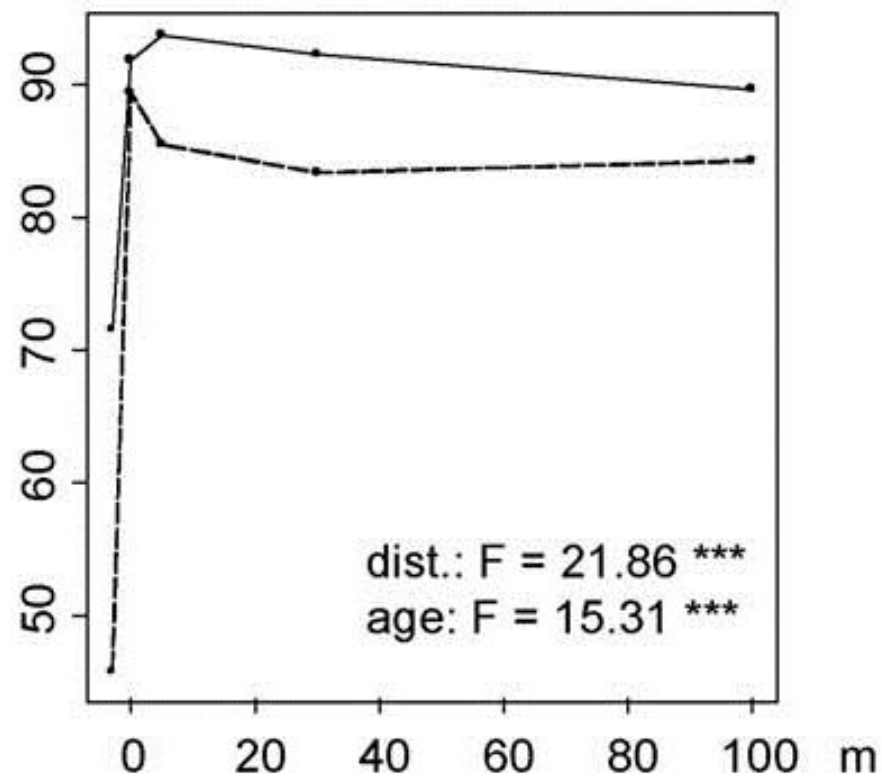


# VÝSLEDKY

all species



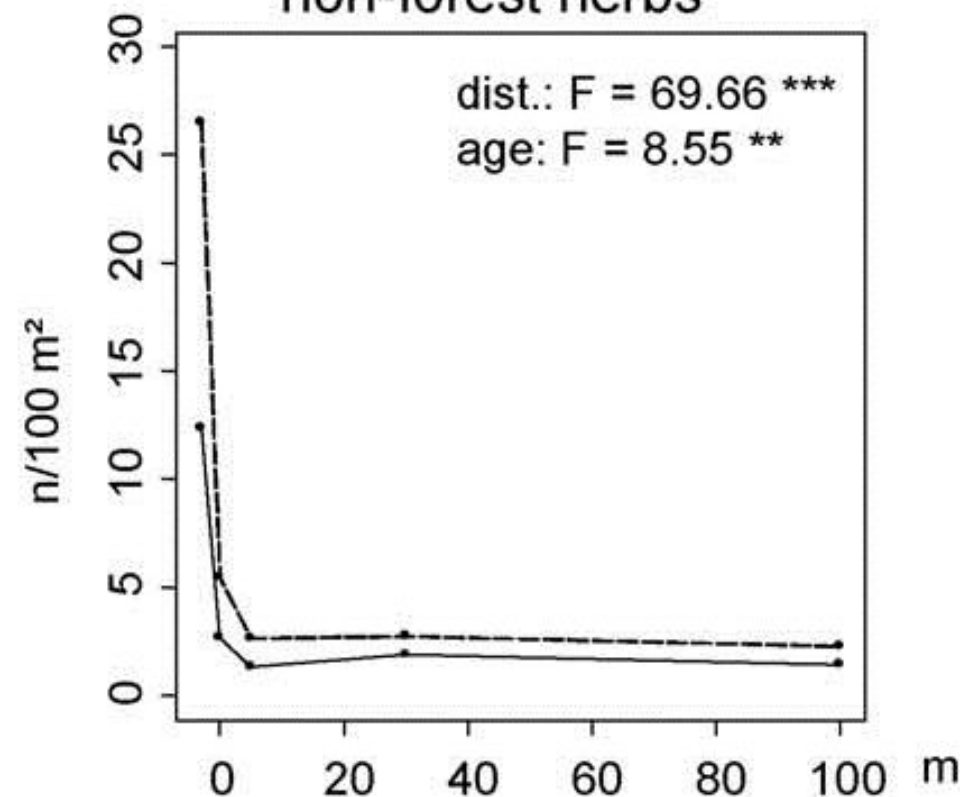
mean plot canopy cover



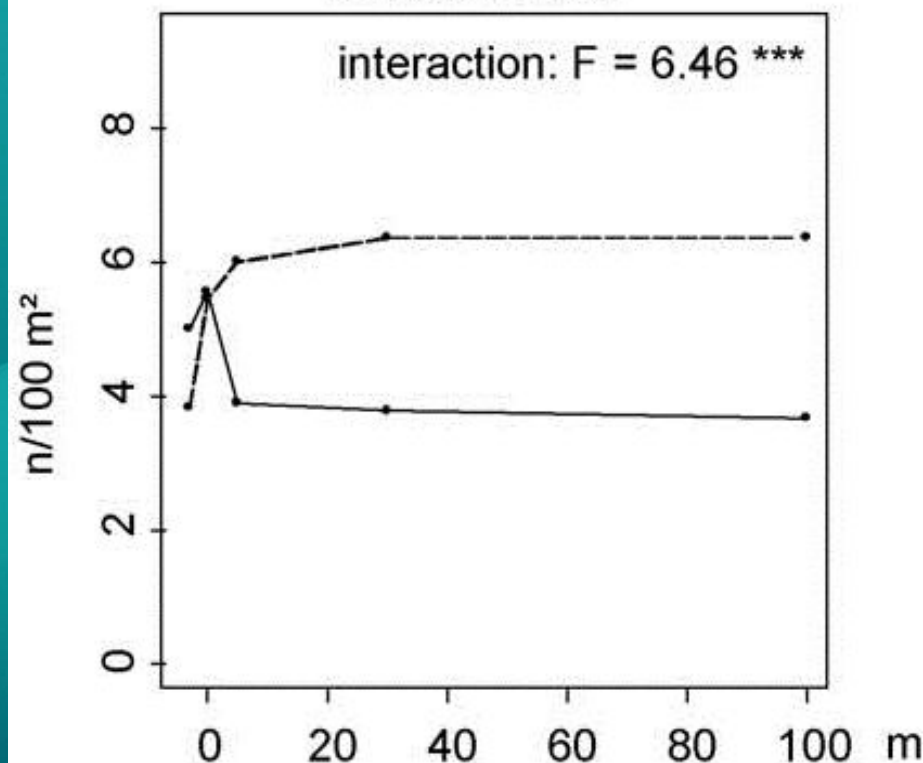


# VÝSLEDKY

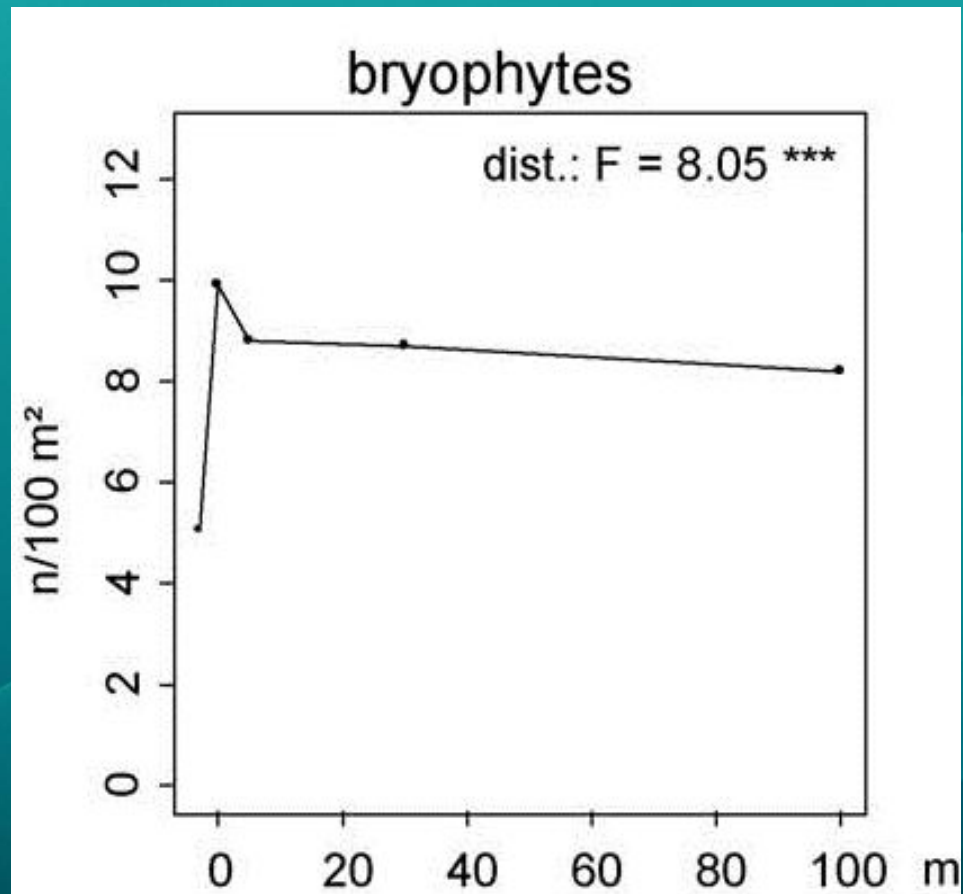
non-forest herbs



forest herbs



# VÝSLEDKY



# DŮSLEDKY A DALŠÍ VÝZKUM

- hlavní efekt cesty neproniká hluboko
- druhy častěji v mladých porostech
- změna klimatu a vyšší potřeba paliva
  - rozšiřování nelesních druhů
  - odstranění nejméně konkurenceschopných lesních druhů
- chybí zhodnocení velmi mladých porostů



A photograph of a lush green forest. The scene is filled with numerous thin, vertical tree trunks, likely birches, rising from a dense carpet of green undergrowth. The foliage is vibrant and fills the upper half of the frame, creating a sense of depth and a canopy effect. The lighting is soft and even, highlighting the various shades of green.

# Děkuji za pozornost

Všechny použité grafy byly převzaty z prezentovaného článku

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