BORDEAUX POPULATION HEALTH | Research Center - U1219

EPICENE / Epidemiology of cancer and environmental exposures

Incidence of Haematological malignacies in French population living near forest areas: Pilot study

ORAZIO Sébastien

Centre INSERM U1219, Equipe EPICENE

BERGONIE

What is the scientific evidence with regard to the effects of forests, trees on human health and well-being?
Kjell Nilsson, Peter Bentsen, Patrik Grahn, Lærke Mygind
IN SANTÉ PUBLIQUE Issue 1, 2019, PAGES 219 TO 240

International Journal of Environmental Research and Public Health

The Psychological and Physical Effects of Forests on Human Health: A Systematic Review of Systematic Reviews and Meta-Analyses
Int. J. Environ. Res. Public Health **2021**, *18*(4), 1770;

Stress

Hypertension

Mental-Health disorders

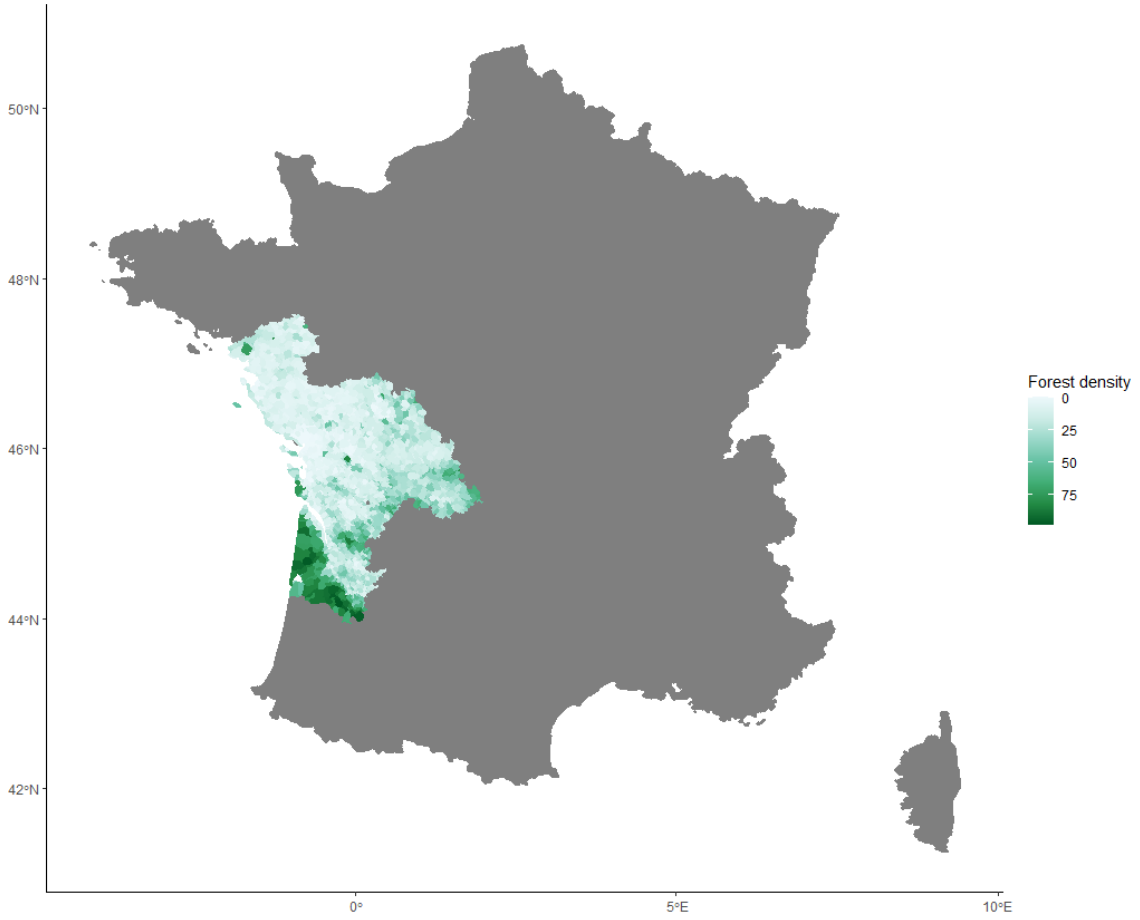
Positive effect of nature-based therapeutic Intervention

Changes immunlogical paramaters

Changes inflammatory paramaters

→ Cancers? Prevent or favorise ?

Haematological Malignancies (HM) risk / living near forest areas



- Ecological design
- 8 French administratives areas covered by a population-based cancer registry
- Period study: 2006 – 2017
- More than 40 000 HM cases
- Proxy of exposure: percentage of forest areas by "COMMUNE" or "IRIS"

Analysis and conclusion

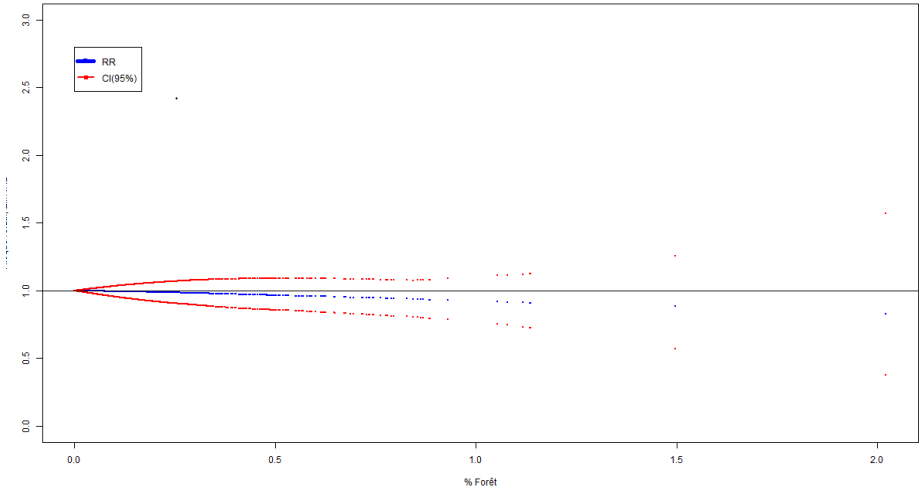
BYM* Model

$$SIR = \frac{O}{E}$$

$$log\left(\frac{E(O)}{E}\right) = \mu + X^T\beta \Leftrightarrow \log\big(E(O)\big) = \mu + X^T\beta + \log(E)$$

$$log(E(O)) = \log(E) + \mu + X^T\beta + \emptyset + \theta$$

*Julian Besag, Jeremy York, and Annie Mollié. Bayesian image restoration, with two applications in spatial statistics. Annals of the Institute of Statistical Mathematics, 43(1) :1–20, 1991.



Conclusion

- Improve knowledge forest human-health
- Determine if technical challenges related to data collection or analysis can be resolved
- Future collaboration will improve our results