Environmental processes and human activities

Statistical methods to study the uncertainty in environmental models for supporting decision making in complex systems are developed. The study of the interactions between humans and the environment is considered, in terms of the impact of human activities on the environment and the effects of environmental changes on human life.

More Information

Dr Clara Grazian

School of Mathematics and Statistics
and UNSW Data Science Hub

T: 02 9385 7475
E: c.grazian@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008

Competitive advantage

- Development of statistical models to study the short-term effect of air pollution on human health in order to predict the number of hospital admissions related to respiratory diseases
- Study of the temporal variation of the short and long-term effect of air pollution on the development of respiratory diseases
- Analysis of spatial processes to model the loss of biodiversity in response to environmental conditions related to air pollution
- Modelling of behavioural changes of species under threat, in order to identify human activities potentially affecting such changes

Impact

- The ability to model the effect of air pollution on hospital admissions for respiratory diseases allows to organise hospitals' responses after a pollution event and to optimise the resources
- The development of novel approaches to model complex systems leading to the loss of biodiversity allows to better identify the causes and develop specific policies

Successful outcomes

- Development of user-friendly software packages to perform the analysis in a broad range of applications and situations

Capabilities and facilities

- Statistical expertise dedicated to the modelling of complex ecological systems
- High-performance computing facilities