

Ecological impacts of climate change in Polar Regions

Principal organizers

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Session description

The suite of environments and anthropogenic modifications encountered in Polar Regions provide key opportunities to improve our understanding of the potential consequences of climate change and biological species invasions on terrestrial and marine ecosystems. In these regions, long-term monitoring data are undertaken by several research groups through the support of the French Polar Institute (IPEV) and ZA Antarctique et Subantarctique (ZATA). These investigations are milestones in our understanding of the ecological impacts of global changes at the different scales of Polar biodiversity. Cross-disciplinary approaches are employed to infer direct and indirect impacts of changing climate and invaders at different levels of trophic interactions. At the individual scale, thermally-induced plasticity of Polar ectothermic animals should be sufficient to buffer temperature elevation predicted by warming scenarios. Meanwhile, it has been demonstrated unequivocally that the story is not that simple. Physiological responses can greatly differ among species, and thus, should not be extrapolated, and indirect effects of climate changes on co-varying environmental factors must be considered. Investigating population scale will inform on migratory behavior, as well as phenotypic and genetic variation for the above mentioned traits. At the community scale, the dynamics in species replacement can be accelerated by climate change; native species suffer more from changes, and more particularly from summer droughts, than invasive ones, and as such, they are more driven to extinction. In this symposium, we are inviting contributions that assess the effects of climate changes on Polar organisms at their different levels of organization.

Speakers

- [Thomas Saucède](#) (Université de Bourgogne Franche-Comté), Ecoregionalisation of the southern ocean and the robustness of species distribution models in the context of climate change
- [David Gremillet](#) (CEFE), Arctic seabirds versus climate change: a scientific epos across the North Atlantic
- [Jerome Fort](#) (LIENS-La Rochelle), Spatial ecotoxicology under climate change: tracking mercury contamination across arctic marine food webs
- [David Renault](#) (ECOBIO-Rennes), The implications of climate change for native insects and insect invasion potential at the subantarctic islands
- [Damien Roussel](#) (LHENA-Lyon), Mitochondrial phenotypic flexibility in king penguins: influence of nutritional status and marine life
- [Thierry Boulinier](#) (CEFE) & Karen McCoy Host-parasite systems in polar areas as models to explore inter-specific dynamics in spatial contexts