

# Insects of Macaronesia

## Effects of light pollution on nocturnal insects



END CAN *Noctua noacki*



END MAD *Xenochlorodes nubigena*



Lepidoptera order constitutes the second-largest order of insects in terms of diversity, which includes butterflies and moths.



Nocturnal Lepidoptera comprise **88-91%** of all Lepidoptera and are more ecologically and taxonomically diverse than butterflies.



Moths play a key role in ecosystem services, they are well-known indicators of habitat quality, and create balanced resilient ecosystems thus they constitute the food base for other animals and perform a crucial role in pollination.



END AZO *Noctua atlantica*



END MAC *Ascotis fortunata*

## Light pollution vs nocturnal butterflies



In addition to facing many of the same pressures as their diurnal relatives, moths are also threatened by factors that are unique to nocturnal lifestyles such as light pollution.



Moths are known to be highly attracted to ALAN and are particularly sensitive to light spectrum between **300 and 400 nm** of wavelength.



Responses to ALAN are very taxon-specific due to the variability in spectral sensitivity among taxa and therefore, the species and/or genera may be affected on a different way.



Certain families of moths are more attracted to short wavelengths than others. For example, Noctuids are more attracted to short-wavelength lights.

## Effects of light pollution on insects

The disruption or suppression of their nocturnal activity, some of them essential nocturnal behaviours for their survival, and death by exhaustion or collision, develop cascading effects on the population of plants and other animals.

## Moths mainly need darkness to thrive!

What mitigation measures can you do to dim the dangers of light pollution?



Raising awareness, sharing the available information



Promote habitat protection and restauration



Support light pollution policies



Make ALAN improvements at home

Moths are the major nocturnal pollinators of flowers, making it fundamental to support this cause by broadening knowledge for nightlife conservation. Better understanding of the impact of different light sources is needed as the importance of ecosystems at night has been long undervalued.