

# Blue Light, Bad Light

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*We acknowledge the traditional owners of country throughout Australia and the Wadjuk Noongar (Perth) and their continuing connection to land, sea, sky and community. We pay our respects to them, their cultures and to their elder's past, present and emerging.*



## **POLLUTION**

*The presence in, or introduction into, the environment of a substance which has harmful or poisonous effects*

1. Loss of star visibility

3. Glare

5. Ecological

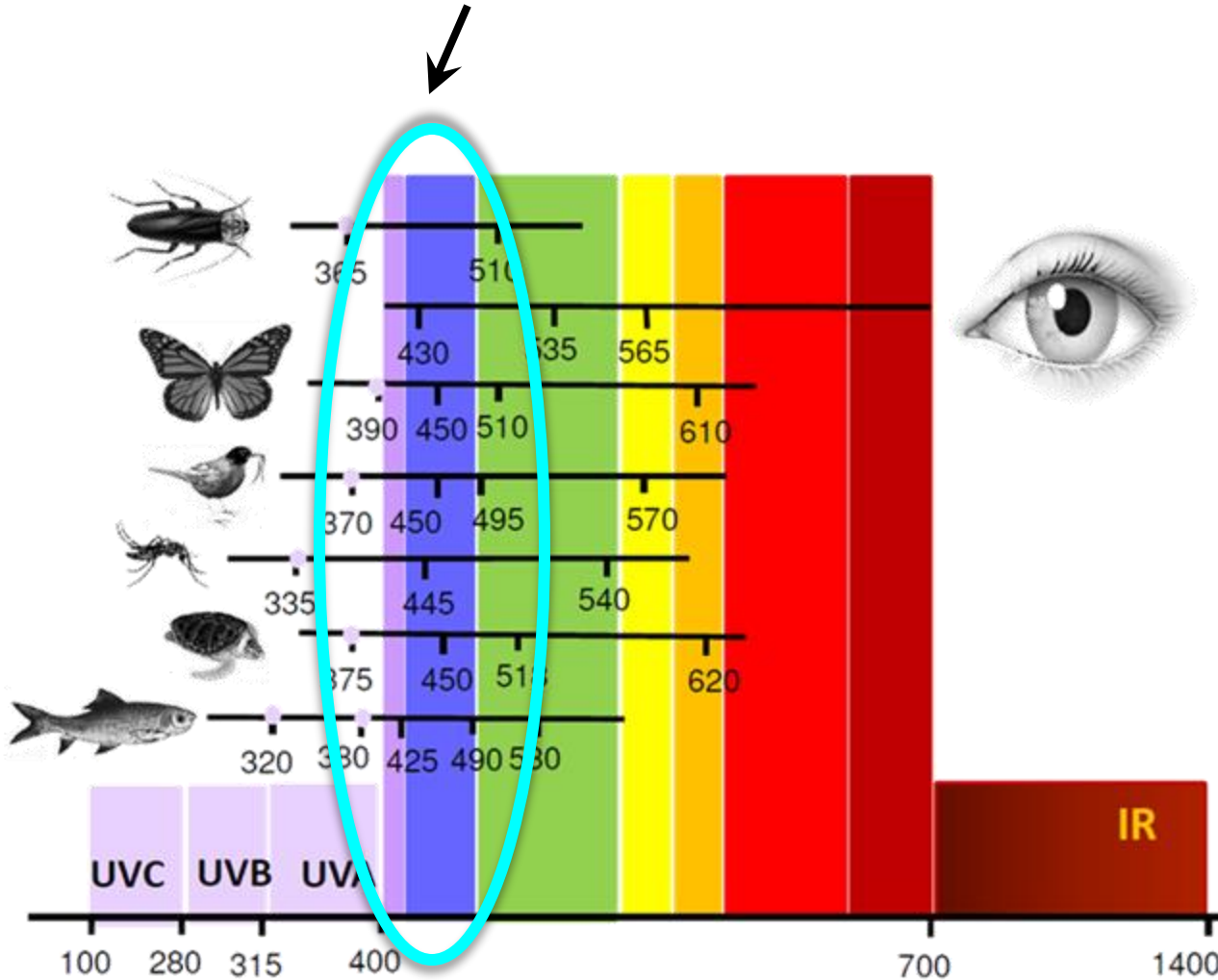
2. Nuisance light trespass

4. Human health impacts

Impacts



Most animals are sensitive to (i.e. can see) **violet/blue** light which:

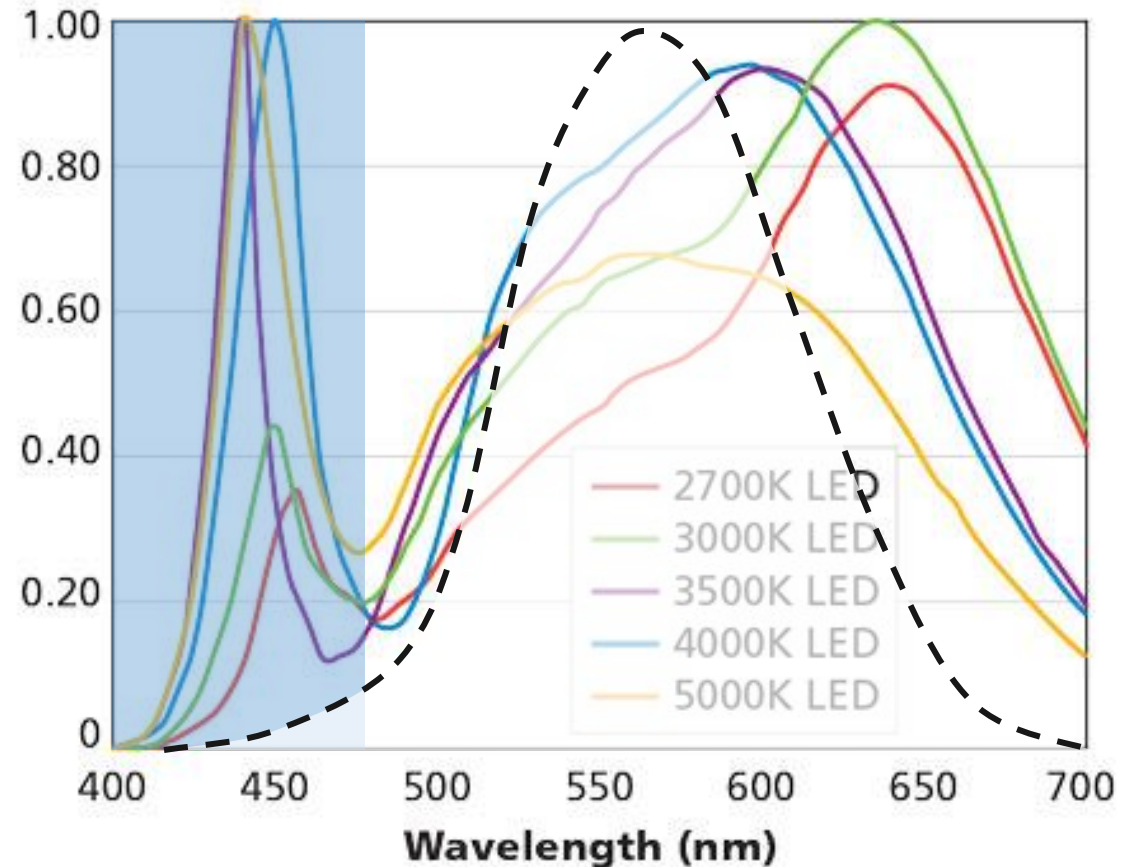


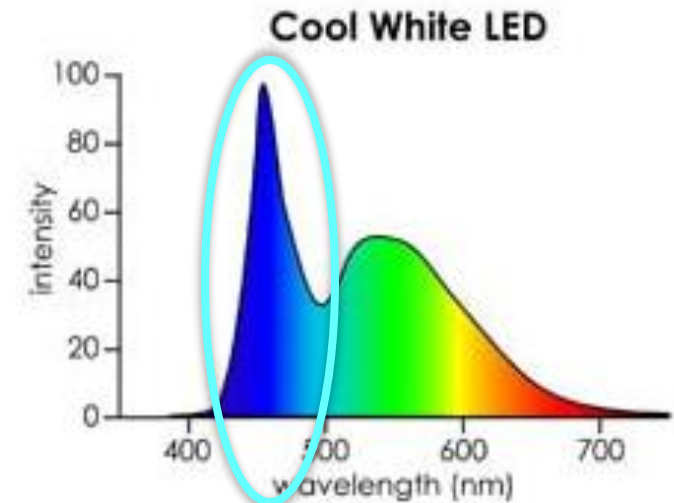
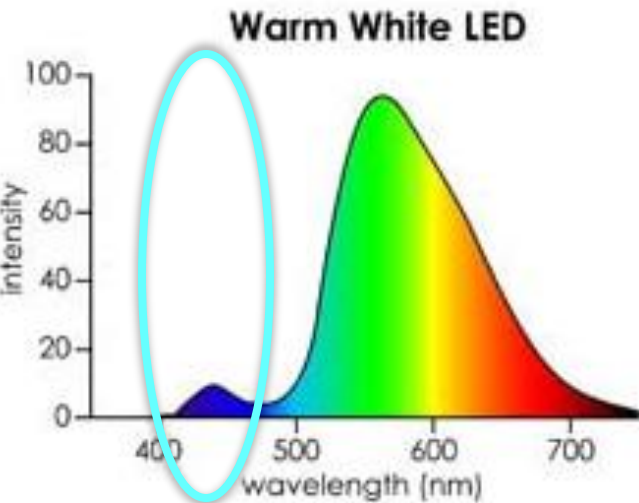
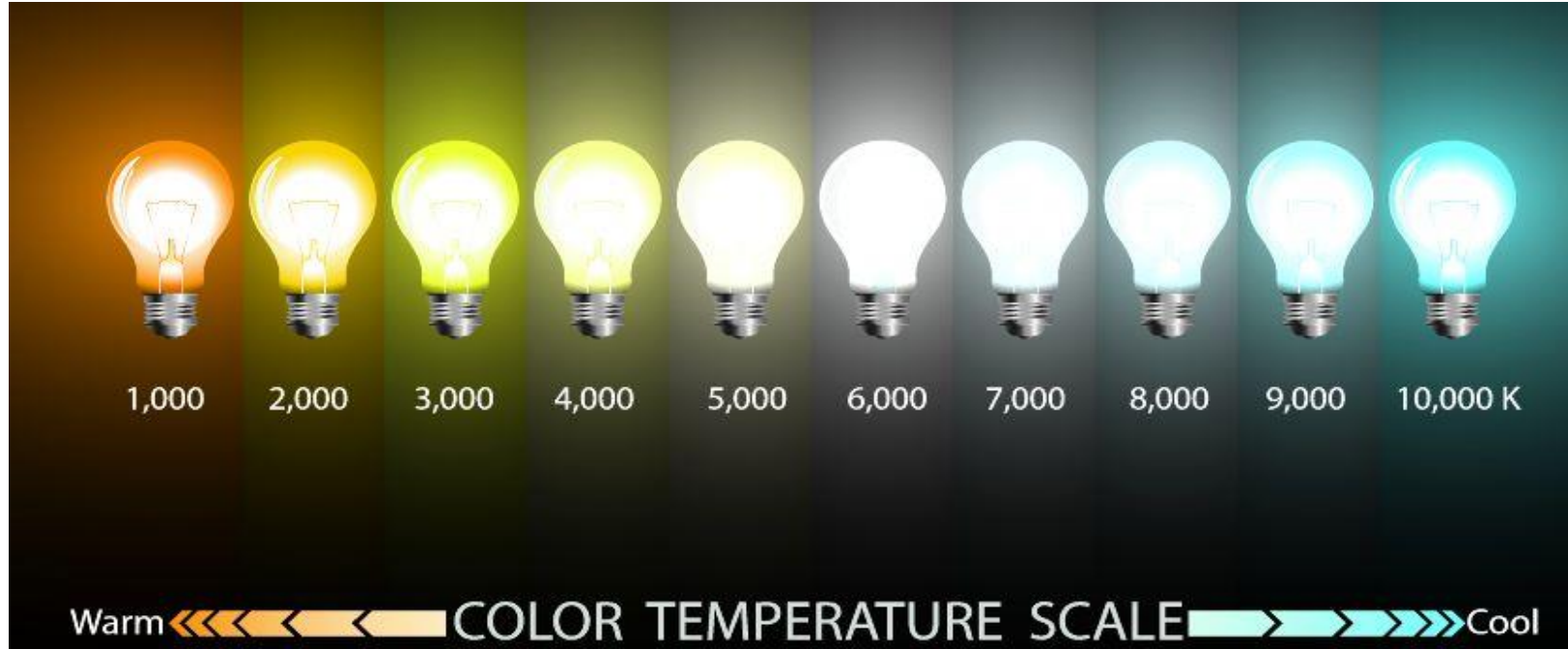
- High energy, short wavelength
- Highly visible under scotopic (dark adapted) vision, i.e. the vision used by nocturnal animals
- Scatters **REALLY** well in the atmosphere causing sky glow
- Strongly linked to physiological and behavioural impacts on wildlife

**Blue light is the 'Bad Boy' of the visible spectrum**

LEDs are now the most common outdoor light type:

- All white LED lights typically contain **blue** light
- Generally, as the CCT colour temperature increases so does the **blue** content
- Little or none of this increase is measured by commercial light meters, denoted by black dashed curve (i.e. **luxmeter, luminance meter**)





# Consequences of ALAN





- ALAN is a pollutant if not managed well
- ALAN is rapidly growing globally, linked directly to LED use
- Every species studied is showing some impact of ALAN
- LEDs contain blue light – generally the whiter the light the more blue in it (>3000 K)
- **Short wavelength blue light is generally the most disruptive to wildlife**
- We need to do more to manage **blue** light for all living organisms







# Questions?



**worley**

