

## Birds, lights and the northern prison site – Sarah Lloyd

Anyone who has been up before sunrise has probably heard the dawn chorus, i.e. the simultaneous singing of birds before sunrise. It's a wonderful natural phenomenon that I studied in the forest surrounding my home at Birralee. Several times a week I made a minute by minute note of what species were singing, and the time of their first and subsequent songs.

The dawn chorus is closely related to a bird's reproductive cycle and hormone levels which is why it is especially noticeable in late winter and early spring when birds are preparing to breed. When I started the project in late August 2005 the blackbird-like song of the closely related Bassian Thrush started the chorus at 6:05, 30 minutes before sunrise. (People who share their neighbourhood with blackbirds will notice that they are also early singers.) If I documented the dawn chorus on consecutive days, species would start singing at exactly the same minute each morning! They gradually sang earlier and earlier as the days lengthened, and later as the days got shorter.

In a US study about the impact of artificial night lights on dawn song, researchers compared the behaviour of birds living deep in a forest to those living close to roads with streetlights. Males of several species near streetlights started singing significantly earlier than those in the forest. Early dawn singing is known to indicate a bird's quality to father offspring, so earlier singing because of artificial light falsely indicates a bird's fitness for breeding and may falsely advertise an inferior bird. Females of another species started laying earlier in the season, possibly resulting in chicks being hungry before food is available, i.e. too early for invertebrates, or the availability of nectar, seeds or fruits.

I often hear flocks of migrating Silvereyes flying over our place well before dawn. This raises another concern—the significant impact of 24-hour lighting on migratory birds. Birds use visual clues such as the position of the moon and stars when they migrate. Imagine the distress of teachers and students in the US when they arrived at their well-lit school to be confronted with hundreds of dead birds scattered around the school grounds. It turned out that the birds were migrating from north America to south America and were confused by heavy fog and the illuminated school.

We take dark nights for granted, but in many parts of the world citizens have never seen a starry sky, such is the impact of light pollution. Lighted buildings can attract, confuse and/or kill birds, and 24-hour lighting can have more subtle effects such as interfering with natural timing patterns on which all life depends.

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