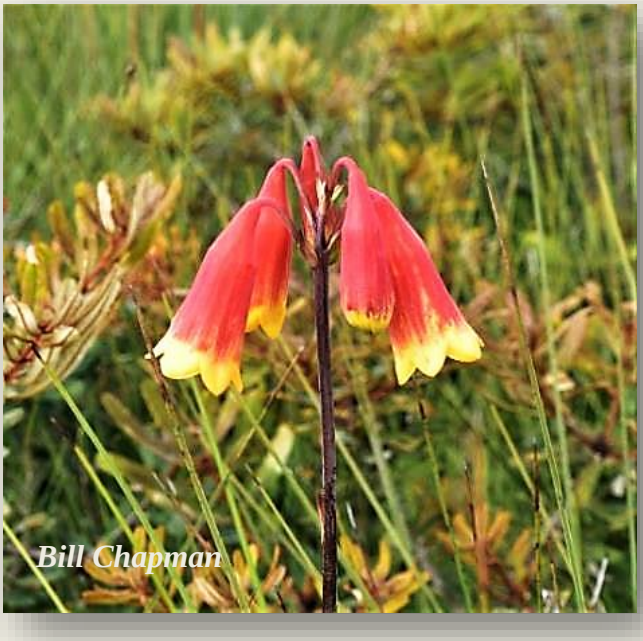
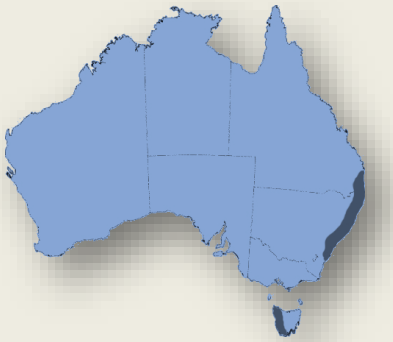
Christmas Bells

Blandfordia

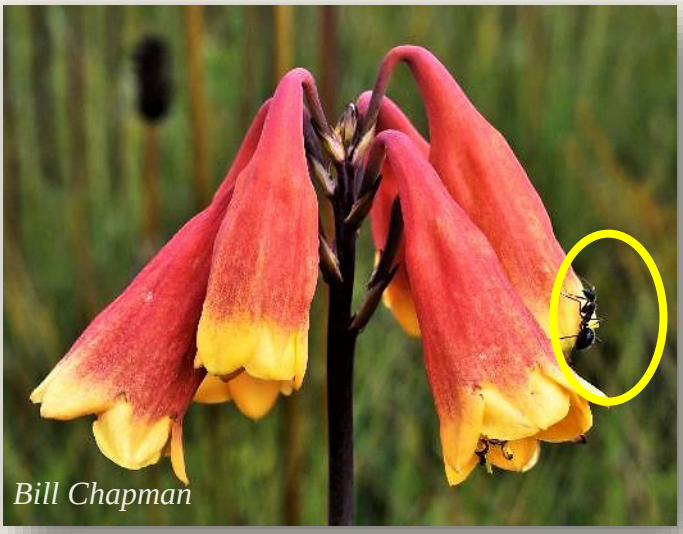


Scarlet and yellow Christmas Bells are iconic Australian native flowers - what more could you ask for at Christmas? Well, it would be great if, were more abundant and conspicuous. There are four species of Christmas Bells, two from coastal heaths on waterlogged, sandy soils in central- and north-coastal NSW, another from south-eastern Queensland and a fourth from Tasmania. They're all commonly referred to as *Christmas Bells* because, surprise, surprise, they flower in December and January.



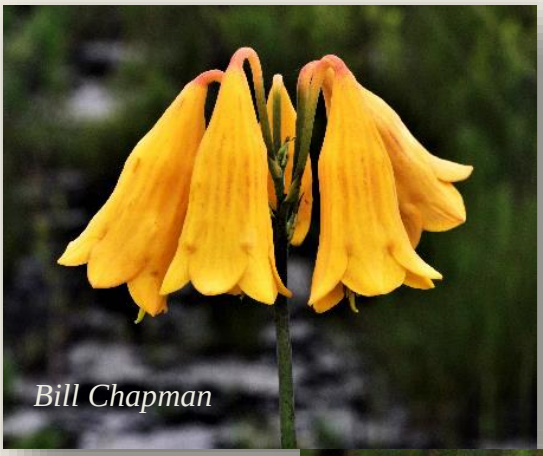
After the horrendous fires of last summer, locals are being rewarded with rich and colourful landscapes of abundant red and yellow Christmas Bells and flowering grass trees (*Xanthorrhoea* species). *Blandfordia grandiflora* is known to produce an abundance of flowers in the first season after bushfire, but recent research and our own observations indicate that flowers are more abundant in the *second* season after bushfire as long as there is adequate rainfall.

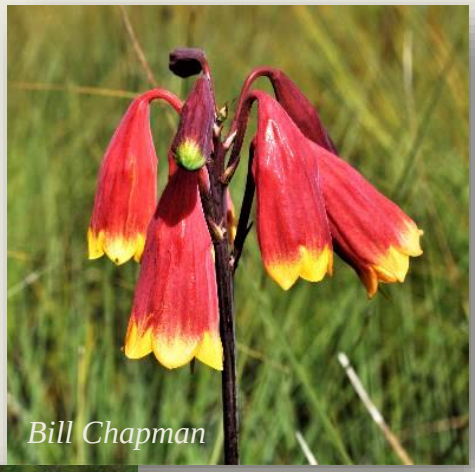
Christmas Bells grow in nutrient-poor sandy soils in extremely unforgiving environments and struggle to compete with other species. Therefore, they flower exceptionally well after bushfires, which reduce competition and release nutrients in the ash.

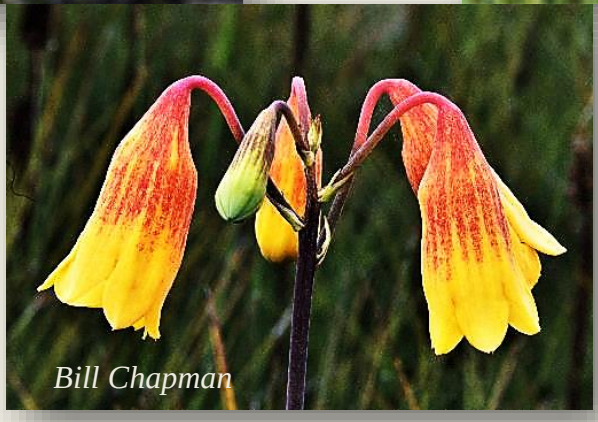


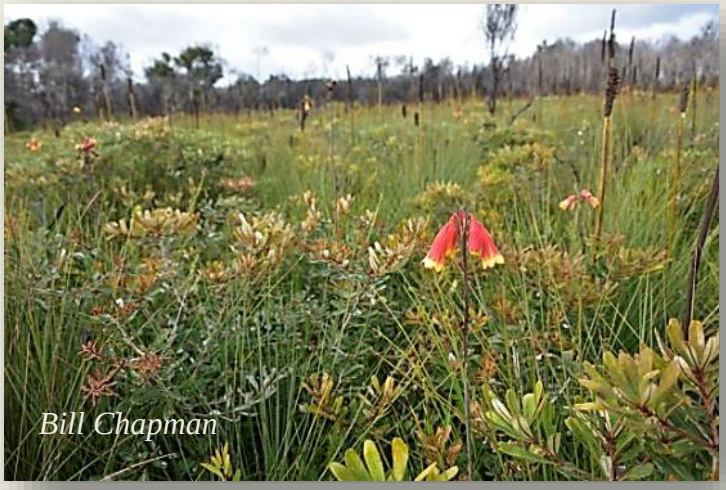
You would think that the bright yellow and red flowers of Christmas Bells would attract bird pollinators, and they do attract honey-eating birds which forage for nectar, but surprisingly, birds are not considered to be significant pollinators. Curiously, flowers of *Blandfordia grandiflora* are self-compatible, but they don't self-pollinate autonomously, but rather rely on worker ants, *Iridomyrmex* sp., to self-pollinate their flowers. Antibiotic secretions from thoracic glands of ants are known to affect the viability of pollen, but in the case of *B. grandiflora*, it seems that the secretions only minimally inhibit pollen viability, so it is believed that self-pollination facilitated by ants may have been an important factor in the evolution of self-compatibility in Christmas Bells.

We tend to think that Christmas Bells are red and yellow but, in fact there is considerable variation in flower colour. In some locations near Port Macquarie on the NSW North Coast, the bells have lost almost all their red colouring and are predominantly yellow.









In older publications you may see Christmas Bells included in the Lily family (Liliaceae) but these days, they are more appropriately included in their own family, Blandfordiaceae. The original Lily family was described in 1789 by French botanist Antoine Jussieu and included *any* herb with 6 flower parts (tepals, or petals and sepals), 6 stamens, and an ovary sitting above the flower base (superior) divided into 3 sections. However, by 1980, the Lily family had grown to include more than 300 genera and 5000 species, and something had to be done. Now, the Lily family has been divided into numerous smaller families, including, in 1985, the Australian endemic family, Blandfordiaceae which is recognised by the 2016 APG IV system of flowering plant classification developed by the Angiosperm Phylogeny Group (APGA).

Angiosperm Phylogeny Group. 2016. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV. *Botanical Journal of the Linnean Society*. **181** (1): 1–20. doi:10.1111/boj.12385.

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Wikipedia: https://en.wikipedia.org/wiki/Blandfordia

Wikipedia: https://en.wikipedia.org/wiki/APG_IV_system

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