FloraBase
the Western Australian Flora

Western Australian Cryptogam Statistics
2015 Cryptogam Flora Statistics

2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

Table 1. Analysis of the size of major cryptogamic groups for various categories of name; data sourced on 1 June 2015.

Category	Fungi	Lichens	Myxomycetes	Algae	Bryophytes	Total
Total names [A]	207	919	160	1,147	205	2,638
Non-current names [B]	68	155	0	38	13	274
Current names [C]	139	764	160	1,109	192	2,364
Species with infraspecies [K]	1	28	0	36	23	88
Current taxa [D]	138	736	160	1,073	169	2,276
Current species [E]	138	723	160	1,065	163	2,249
Manuscript names [F]	0	0	0	0	0	0
Phrase names [G]	0	0	0	0	0	0
Published species [H]	138	723	160	1,065	163	2,249
Published alien species [I]	2	0	0	4	1	7
Published native species [J]	136	723	160	1,061	162	2,242
Estimated species number [L]	140,000 [1]	700 [2]	200 [5]	9,000 [3]	400 [4]	150,300

- The term *taxa* here refers to entities at species level and below
- The term *species* refers only to those entities at species rank

Highlights

A brief comparison of the 2015 data with the previous year (2014).

- the net addition of 60 cryptogam names entered into the Census of Western Australian Plants

database (including 26 synonyms);
- an additional 30 current published native cryptogam species: 0 mosses, 1 fungus, 4 slimemoulds, 9 algae and 16 lichens.

Notes

Only for the lichens, myxomycetes and for the mosses (bryophyta) of the Perth region, could this information be considered adequate or representative of the diversity of the group. For the remaining groups, specialists have provided an estimate of the actual number of species that could be found to occur in WA once adequate field and taxonomic studies have been made.

1. **Fungi** (both macro- and micro-fungi): Pascoe (1991) suggests the ratio of plants to fungi is about 1:10 in Australia, i.e. 25,000 plants (native and exotic), and 250,000 fungi. So, if WA has 14,000 vascular plants, then the estimated number of fungi in WA would be 140,000 (Neale Bougher, pers. comm.).
2. **Lichens** (lichenised fungi): Ray Cranfield (pers. comm.) suggests that even with the recent publication of a State census of lichens (Cranfield, 2004), there are likely to be in the order of another 70 taxa likely to be discovered in coming years.
3. **Algae** (including marine macro- and micro-algae, dinoflagellates, diatoms and freshwater macro-algae): The estimated number of macroalgae occurring in WA is 1,400, given that much of the northwest remains to be explored and we are still uncovering new records/species in all parts of WA (John Huisman, pers. comm.). Huisman goes on to say that “my earlier compilation of diatom/dinoflagellate and other microalgal records for WA included around 600 diatoms and 150 dinoflagellates (the other groups were negligible); marine and freshwater were included. The multiplication factor used by Watson *et al.* (1995) to estimate the world’s algal species was x10, so WA’s microalgae will probably add up to approximately 7,500 spp.” If we also allow around 100 species of freshwater macroalgae, then the putative number of algae will total some 9,000 taxa.
4. **Bryophytes** refers here to the paraphyletic assemblage of mosses, liverworts and hornworts. Streimann & Klazenga (2002) list 212 moss taxa occurring in WA, and M^{c}Carthy (2003) lists 90 taxa of liverworts and hornworts. As these figures are comparable in size to those listed for the Australian Capital Territory (a region one-thousandth the area), we might expect there are a number of bryophytes yet to discover. Conservatively, the estimated number of taxa occurring in WA could be put at 400 (Ray Cranfield, pers. comm.)
5. **Myxomycetes** (slime moulds): After the recent publication of a census of slime moulds (Knight and Brims, 2010) the estimated maximum number of taxa occurring in WA may be put at 200 (Karina Knight, pers. comm.)

References

Biggs, L. and Chappill, J., (2008). An annotated census of the mosses of the Perth Region, Western Australia. *Nuytsia* 18 (1) : 1–30.

Cranfield, R.J., (2004). Lichen Census of Western Australia. *Nuytsia* 15 (2) : 193–220.

Huisman, J.M., Cowan, R.A. & Entwisle, T.J. (1998). Biodiversity of Australian marine macroalgae — a progress report. *Bot. Mar.* 41: 89–93.

Knight, K.J. and Brims M.H. (2010). Myxomycota census of Western Australia. *Nuytsia* 20: 283–307.

McCarthy, P.M. (2003). *Catalogue of Australian liverworts and hornworts.* Flora of Australia supplementary series. Australian Biological Resources Study, Canberra.

Pascoe, I.G. (1991). History of systematic mycology in Australia. *In: History of Systematic Botany in Australasia*. Ed by: P. Short. Australian Systematic Botany Society Inc. pp. 259–264.

Streimann, H. and Klazenga, N. (2002). *Catalogue of Australian mosses.* Flora of Australia supplementary series. Australian Biological Resources Study, Canberra.

Watson, R.T., Heywood, V.H., Baste, I., Dias, B., Gamez, R., Janetos, T., Reid, W. & Ruark, G. (1995). *Global Biodiversity Assessment. Summary for Policy-Makers.* Cambridge University Press, Cambridge, New York, Melbourne. 46 pp.

Compiled by Alex Chapman; last updated on 16 June 2014.

Related content

- Highlights
- Vascular Plant Statistics
- Floristics and Endemism in WA
- New systematic family sequence

Did you notice?

There is a diminishing relationship between figures in subsequent rows of the table, as figures in each category are subtracted from the ones above. For example: in each column: A − B = C.

Highlighted rows

Highlighted rows are the recommended figures if you need:

- to cite the number of known entities in WA (D), or
- a conservative estimate of the number of well-documented species (H).

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