

Biodiversity & Extinction

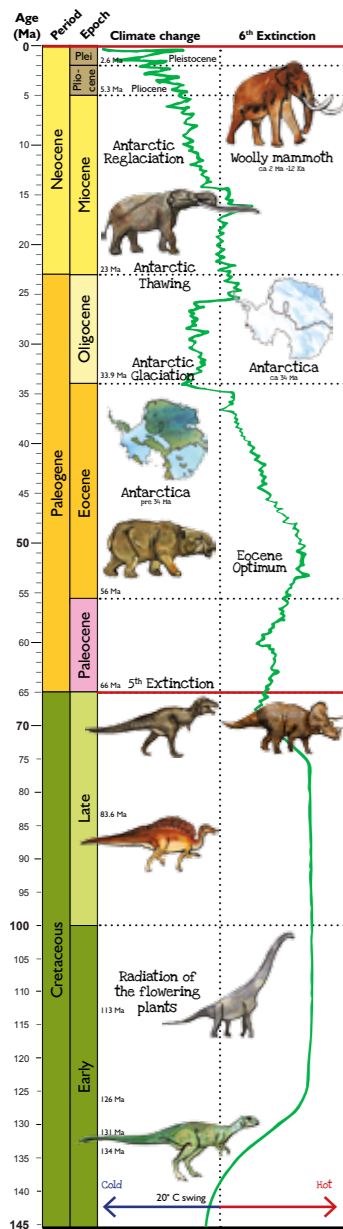
Flowering Plants

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This is **Part 2** of our 12-part series. We explore the stunning richness of the **flowering plants** (angiosperms) and the threat of the Sixth Extinction in decimating that richness.

Flowering Plants Timetree

We show just 30 of the 400 or so families below in our bountiful pantry laden with fruit and veg.



We show bananas, tomatoes and all the other edibles on their 'super-order' branches. Be sure to note that they are not given in their true positions in time. All are of today and, in reality, occupy the crown of the tree.



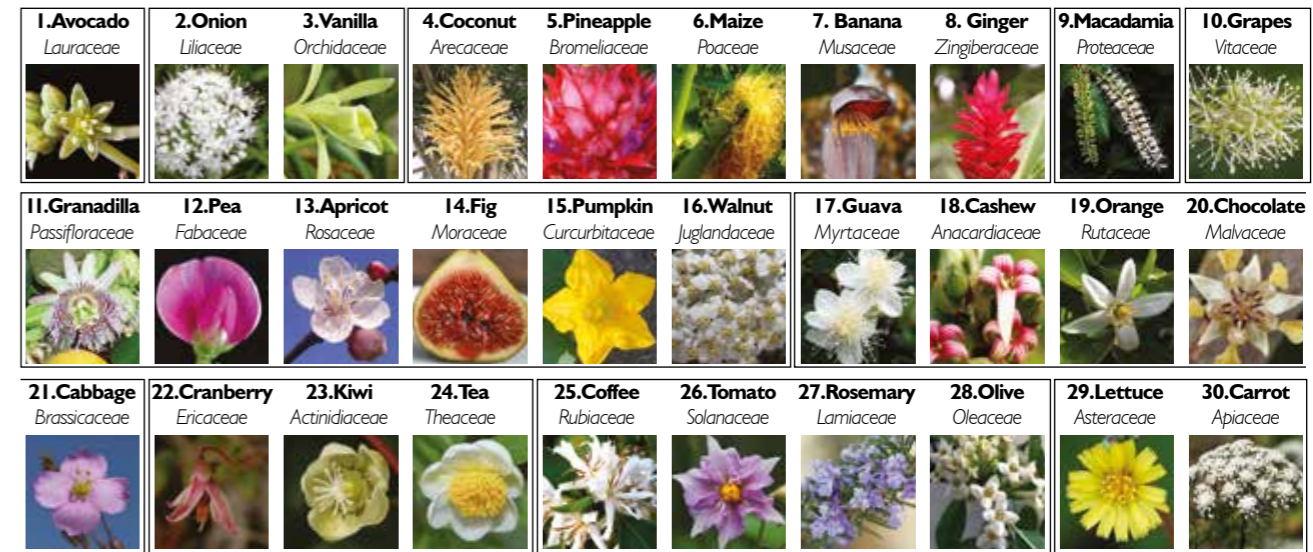
You can visualise it rather like your own family tree, only it's a whole lot older and more abundantly branched. These are just the major branches. These edibles belong in the 30 families seen opposite.

This wonderfully rich flowering-plant tree is around 134 million years old. Today, in its **crown**, are some 270 000 species (twigs) in some 400 families (**branches**). These include everything from trees and shrubs, to herbs and grasses.

The trunk of our Timetree goes back deep into the Cretaceous when the dinosaurs ruled the world. Its **roots** go down a whole lot further still. They find nourishment in the early Triassic, nearly 250 million years ago. The great radiation of new life after the 'Third Global Extinction' at the end of the Permian provided fertile soil.

Diversity in our garden, pots and vases (selection of 30 families)

413 families & 271 500 species of flowering plants are currently recognised. Here are but a small selection.



- It is through their flowers that we recognise the families.
- It is nowadays through their genes that we classify them.

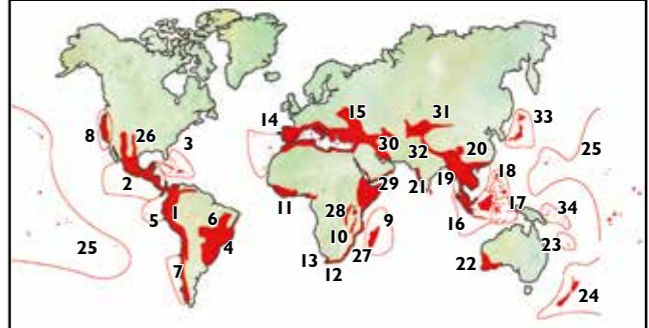
Extinction

	34 Biodiversity Hotspots	Total Species occurring	Endemics	% of remaining habitat
1	Tropical Andes	30 000	15 000	25%
5	Tumbes-Chocó-Magdalena	11 000	2 750	24%
4	Atlantic Forest	20 000	8 000	8%
6	Cerrado	10 000	4 400	22%
7	Chilean Winter Rainfall-Valdivian Forests	3 892	1 957	30%
2	Mesoamerica	17 000	2 941	20%
26	Madrean Pine-Oak Woodlands	5 300	3 975	20%
3	Caribbean Islands	13 000	6 550	10%
8	California Floristic Province	34 488	2 124	25%
11	Guinean Forests of West Africa	9 000	1 800	15%
12	Cape Floristic Region	9 000	6 210	20%
13	Succulent Karoo	6 356	2 439	29%
27	Maputaland-Pondoland-Albany	8 100	1 900	25%
10	Coastal Forests of Eastern Africa	4 000	1 750	10%
28	Eastern Afromontane	7 598	2 356	11%
29	Horn of Africa	5 000	2 750	5%
9	Madagascar & the Indian Ocean Islands	13 000	11 600	10%
14	Mediterranean Basin	22 500	11 700	5%
15	Caucasus	6 400	1 600	27%
30	Irano-Anatolian	6 000	2 500	15%
31	Mountains of Central Asia	5 500	1 500	20%
21	Western Ghats & Sri Lanka	5 916	3 049	23%
32	Himalaya	10 000	3 160	25%
20	Mountains of Southwest China	12 000	3 500	8%
19	Indo-Burma	13 500	7 000	5%
16	Sundaland	25 000	15 000	7%
17	Wallacea	10 000	1 500	15%
18	Philippines	9 253	6 091	7%
33	Japan	5 600	1 950	20%
22	Southwest Australia	5 571	2 948	30%
34	East Melanesian Islands	8 000	3 000	30%
24	New Zealand	2 300	1 865	22%
23	New Caledonia	3 270	2 432	5%
25	Polynesia-Micronesia	5 330	3 074	21%

The clearest way to appreciate the heaviness of our human footprint on Earth is through a quick look at the biodiversity hotspots.

34 Biodiversity hotspots

Some places are especially rich. These are the 34 richest.



- A region is classified as a biodiversity hotspot when:
- It has at least 1 500 vascular plants as endemics, meaning it must have a high percentage of plant species found nowhere else on the planet.
 - It has only 30% or less of its original natural vegetation remaining. In other words, 70% or more has already been destroyed.

There are 34 hotspots around the world. They make up only 2.3% of the Earth's land surface, but have more than half the world's plant species that are found nowhere else.

Let us stop destroying the wilderness around us that has provided the fruit, nuts, veggies, herbs and spices that we enjoy eating so much! Let's save the flowers and colour around us from extinction!



References: APweb 2014, Conservation International 2015, GD Bebeau, GWA 2005, GSA 2013, Mabberley 2008.