

Phases of Abundance

February 9, 2009 by [Bill Mollison](#) & filed under [Food Forests](#), [Food Plants - Annual](#), [Food Plants - Perennial](#), [Plant Systems](#), [Trees](#)

PIJ #40, June – Aug 1991

Year One: Abundance of Species



When we set out to make a garden on at least 2-5 acres, in the Permaculture mode, we also set out to trial dozens of species, and to select those that thrive in our soil, under the conditions we impose, and in association with each other. Thus, in the beginning, even with generous help from our friends, we have relatively few plants of any species growing, but the basic garden assembly would have at least 300 plants representing some 240 species and 70 or so varieties. It takes a year and about \$800 to put together such an assembly, and when we do so we feel the first sense of abundance, which we could call the rich abundance of species and forms. The yield is modest, more of a contribution to diet than a full diet, but many tree species will later come into production by years 3-6.

Year Two: Abundance of Propagation Material

In year 2, many species begin to demonstrate their fitness for the site. They grow and may divide vigorously. Most show steady endurance, although a few species become sickly and die as a result of drought or heavy rains. Although richness of species is maintained by new plantings, and a few sheltered niches protect more tender species, only precocious plants like bananas, and the annuals give yields.

However, for those vigorous plants that do succeed (sweet potato, comfrey, aracacha, chilicayote, ginger, turmeric, banana), and for plants that can be divided, that grow from cuttings or sets, or from root or rhizome divisions (cassava, pomegranate, sugar cane, lemon grass, and taro), it is now possible to economically set out some hundreds of these individuals relatively cheaply from the 20-50 originals that were trialled.

Because we now use successful ginger and turmeric, for example, as a source of new plants, we also defer yield in favour of increased propagation. By analysing which species are doing well we can spend wisely, buying plants that are most likely to succeed. Also our planting and watering systems can be refined to suit the hardier plants. At the end of the second wet season, a very definite garden is evolving. In the winter before the third wet season we can see an end to buying in plant material of all the species we have set out in the second using our own successful plants for division and

propagation. We have at last achieved (for 20 or so species) an abundance of propagation material lying within the larger system which maintains the abundance of richness.

The second winter season is a good time to assess the whole planting. Now is the time to plan for a low-trouble future, choosing those useful fruits and nuts which resist rainfall extremes and pests, and grow well. A few citrus, guavas, and many bananas or papayas have yielded, as well as the annuals, and there is more real food available also, even if not yet half of the diet.

Thus, at the end of year two, we see our garden is promising a high yield if we increase the numbers of 6-12 important and reliable food trees (mango, lemon, orange, pomegranate, lychee, etc.) and if we make an effort to set out basic and useful food crops that have proven successful (lemon grass, tamarillo, sweet potato, taro, aracacha, ginger, turmeric, Queensland arrowroot). For us at the Permaculture Institute it was the beginning of the 3rd wet season, and a week or so of vigorous effort that resulted in an absolute abundance of banana, aracacha, papaya, sweet potato, taro, lemon grass, turmeric, ginger, tamarillo and cassava. It is no longer necessary to defer yield to assist propagation.

Year Three: Abundance of Yield

By the end of the 3rd wet season, not only are many areas intensively planted and basically self-maintained, but we have enough divisions of ground covers to become commercial, or to sell propagation material or products in year 4. Meanwhile, the contribution of varieties of fruit increases, a few mangoes and citrus are bearing, and by adding 30-90 trees of successful species this (3rd) year we also predict a “commercial” yield of fruits in subsequent years.

I would predict that by year 6 we will have achieved total food supply for the house and as much as we care to harvest for market. We should then be able to see a good family income from products with perhaps 38 important or significant products and 30 or so minor products. Perhaps this final stage, which should persist for the foreseeable future, could be called abundance of yield for exchange or commerce. The annual garden remains, and should always contribute a steady dietary background to our perennials but it is the latter that form the self-maintaining yields that take such a small effort to establish.

Thus, the phases of abundance in tropical – subtropical systems of from 1-2 acres upwards in wet seasons could be:

- Season 1. Establishment of an abundant richness of species for trial.
- Season 2. An abundant source of propagation material is produced.
- Season 3. Several species are sufficiently numerous to provide an abundance of yield.
- Season 4. Yield is excellent, propagation material “unlimited”, and slower species start to produce. Absolute abundance is achieved.
- Season 5 on. Abundant yield from as many as 30 perennials and the same number of annuals is achieved, and can be made to persist for as long as is needed.