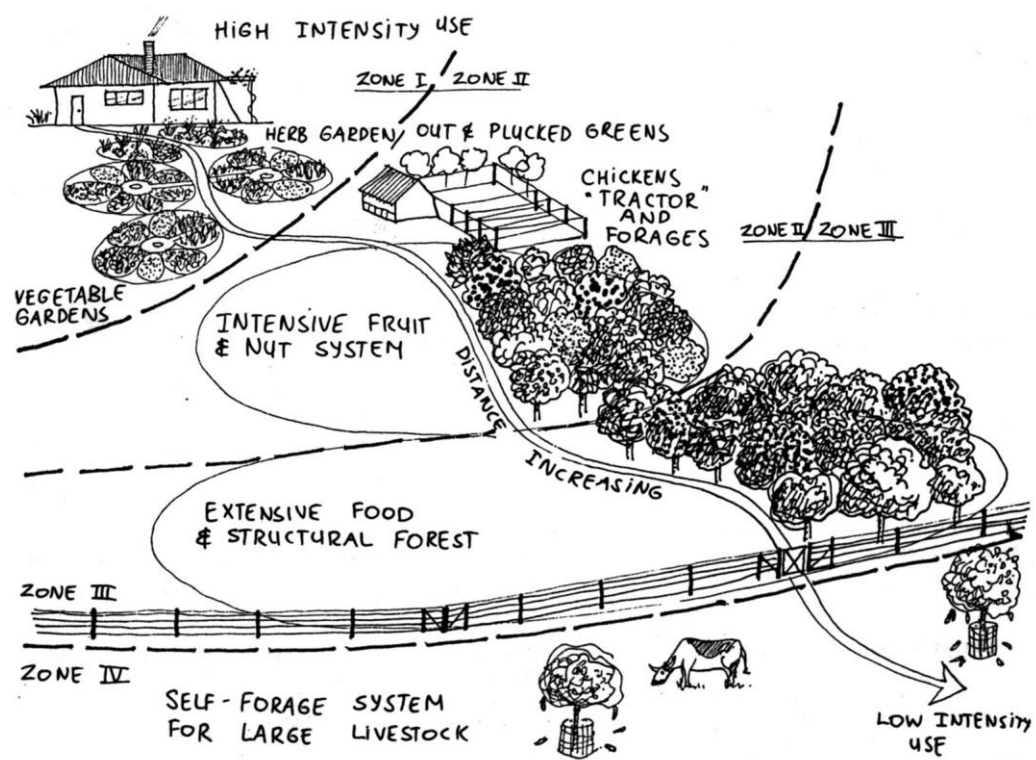


**Zone planning** means placing elements according to how much we use them or how often we need to service them. Diagram from *Introduction to Permaculture*, p.9, fig. 1.2. Table of Key Features from Mars (2003), *The Basics of Permaculture Design*, p. 20, table 3.2



| Zone | Key features  |
|------|---|
| 0    | House or other human living areas.  |
| 1    | Intensive sheet-mulched food gardens, pond, shadehouse, greenhouse, rainwater tank, tool shed. Some fruit trees, such as lemon. Low windbreak around the garden.  |
| 2    | Garden beds. Animals such as chickens or other poultry, earth-worm farm, rabbits or guinea pigs. Aquaculture tanks or ponds. Hedges and trellising utilised for edge effects. Compost heap. Small orchard of fruit and nut trees. |
| 3    | Larger-scale orchards and geese, living mulches, goat pen, bee hives, fodder plants, windbreaks for house, firebreaks.  |
| 4    | Woodlots (long term development), dams, agroforestry (extensive tree culture), shelterbelts, windmills, farm stock. Swales, drains, dams and other water harvesting strategies.   |
| 5    | Wilderness, natural forest or bush. Catchment area and flora and fauna preservation. Wildlife corridors. Forest regrowth. Reforestation.  |

## H2. Catch and store energy.

"Make hay while the sun shines."

By developing systems that collect resources at peak abundance, we can use them in times of need.

## H7. Design from pattern to details.

"Can't see the forest for the trees".

By stepping back, we can observe patterns in nature and society. These can form the backbone of our designs, with the details filled in as we go.

**The key to efficient energy planning is the zone and sector placement of plants, animal ranges, and structures.**

**ZONES**

**SECTORS**

## 3. Principle of Efficient Energy Planning

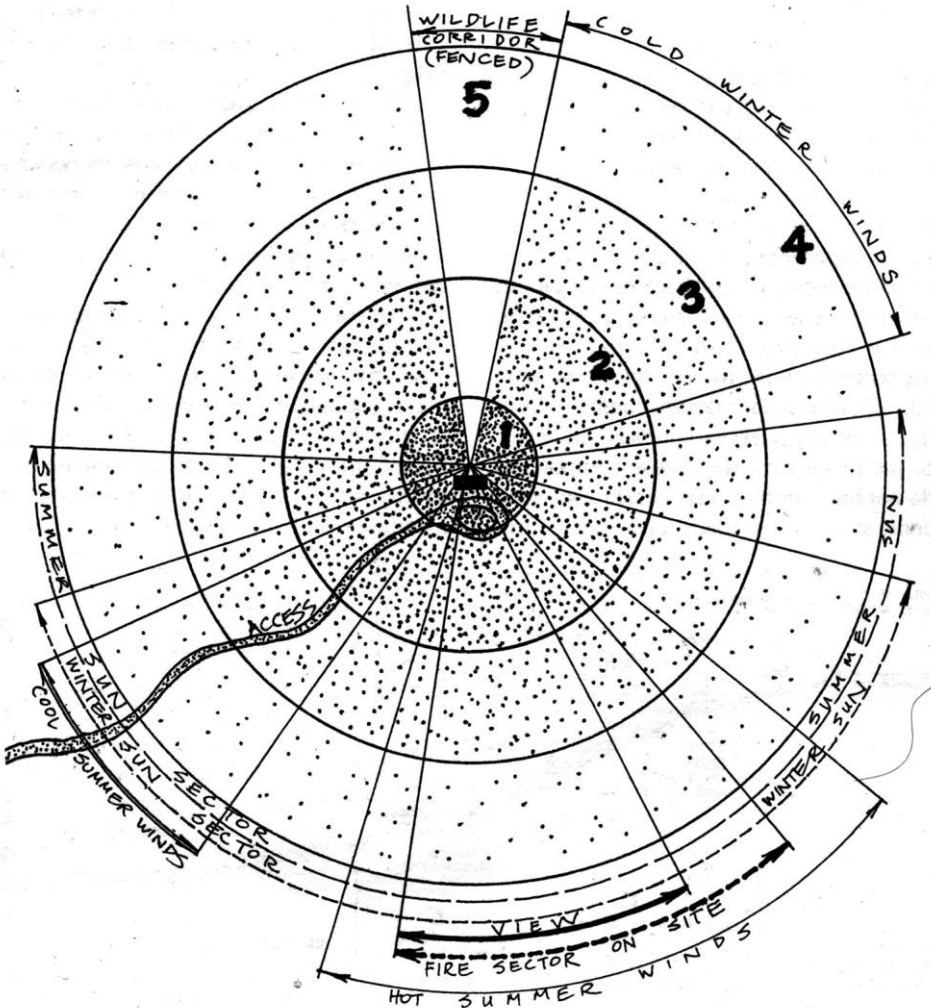


**HOLMGREN**

**SLOPE**

**Slope** is the third aspect to take into account with energy efficient planning. By examining the slope in profile we can identify best placement of such elements as dams, water header tanks, access roads, drains, flood or flow diversions, wastewater, and biogas units, etc. Through using slope to our advantage we can move water using gravity, and place elements so wherever possible we are moving mulch/compost downhill to our garden.

**Sectors** deal with the wild energies, the elements of sun, light, wind, wildfire, and water flow (including flood). These all come from outside our system and pass through it. Possible sectors include; fire danger sector; prevailing winds; damaging winds; screening of unwanted views; winter and summer sun angles; and flood prone areas. Diagram from *Introduction to Permaculture*, p.13, fig. 1.5



Below are the sun sectors for the Townsville region:

