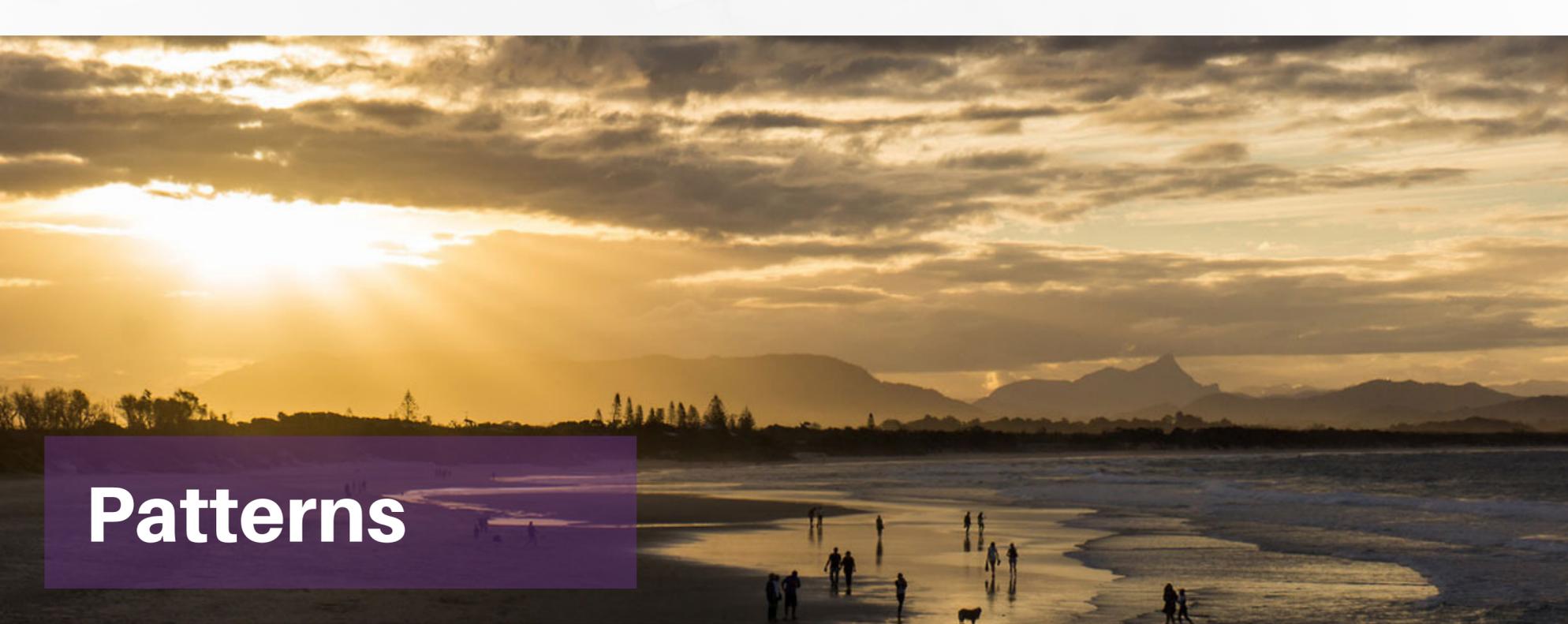




Agrifutures

Permaculture Design Masterclass EBook

2. Design



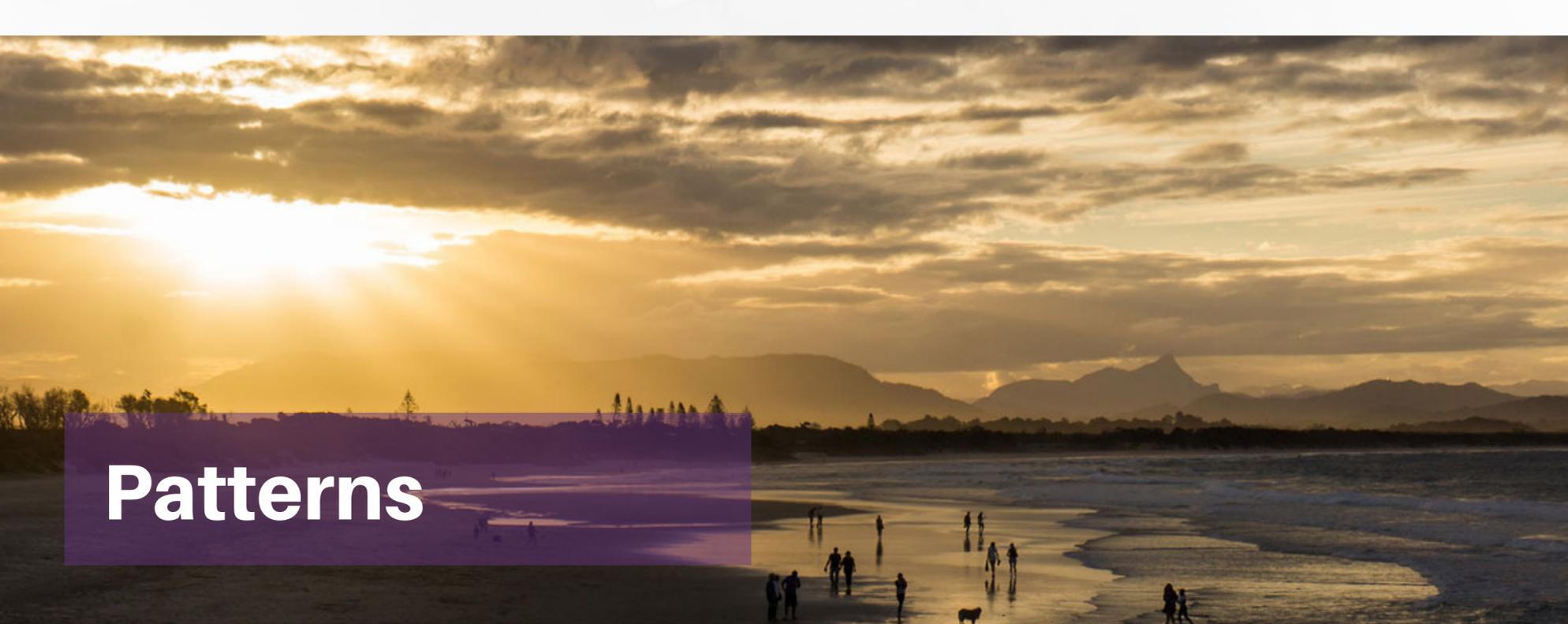
Patterns

The main goal in applying patterns understanding to landscape design is to harmonise with natural processes that are constantly working to build a balanced interaction of diverse elements. This diversity acts to stabilise systems and make them more resilient and healthy and has been an over-arching characteristic living systems have had to re-enforce and stabilise environments for their own self-preservation and continued evolution.

By harmonising with this process the maximum productivity from an farm ecosystem can be obtained. To ensure this productivity leans towards species that have food value to us, constant alternation and refinement of the processes is required. The goal is establishing a balanced and stable agro-ecosystem.

This process guides the assembly of natural systems - which develop into complex, self-regulating assemblies of life that result in the longest storage of energy passing through an ecosystem before it is lost again. Without this storage of energy, it would otherwise quickly pass through an ecosystem and the opportunity for that energy to sustain life would be lost. The more complexity within a system the more opportunity for that energy to be passed between different organisms through beneficial interactions or consumption of each other, resulting in a greater yield from that system.

Because we too want to harvest the greatest yield from a system we benefit from recreating this natural complexity and in so doing result in a diversity of beneficial yields.



Patterns

Through creating a patterned landscape it is of great importance not to lose focus on the function we are trying to achieve within that landscape. Otherwise, patterns can be applied that do not align themselves to the productivity you require. In the same vein patterns should be applied that:

- Resemble the expression of those same elements in nature.
- Are aesthetic and blend with landscape features.
- Increase in productivity and stability over time.
- Can be integrated with other elements to ease maintenance.

We choose a pattern because we understand that it will facilitate a certain function in the ecosystem we are designing and we harmonize that pattern with the patterns we see in the existing landscape.



Principles

Permaculture is often described as a way of seeing and thinking about the world which incorporates a diverse "toolbox" of technologies to the design of sustainable and regenerative habitats for life. Such a broad idea has been further broken down into permaculture principles by one of the founders of permaculture David Holmgren.

The idea of the principles is to provide a set of considerations to guide a permaculture designer. These principles can be used as a checklist for a designer to go through and see what improvements can be made to a system.

Although, at first, the complexity of these principles coupled with the broad objective of permaculture designs can be daunting - with practise and familiarity a new way of seeing the world emerges, often described as the "permaculture lens."



Principles

Two important aspects of a permaculture design is that each elements serves multiple positive functions and that each element has multiple connections with other elements. These two features create a degree of complex stability. This complex stability imitates that found in nature, where systems mature through the collection of beneficial interactions to the point that they create a diverse and stable network of life that can moderate their environment in positive ways that supports the further establishment of life. A permaculture designer makes use of this in establishing a degree of functional complexity within their systems.

The first part of this process is the careful selection of species that will be best adapted to the particular site characteristics encountered at a location. The selection of these species should be guided by careful research of what has been shown to perform well at that site from trials of local farmers, or through research there is indication that they perform well in similar habitats.

An example of this commonly used is the chicken, that can recycle kitchen scraps and use them to produce a nutrient rich manure for addition to their compost materials and creation of hummus rich soil. In addition, the chicken through its foraging action can reduce the number of weeds and pests in an area and when associated with loose compost materials help mix them and speed the decomposition.



Principles

Twelve Permaculture design principles articulated by David Holmgren in his *Permaculture: Principles and Pathways Beyond Sustainability*:

Observe and interact:

Catch and store energy:

Obtain a yield:

Apply self-regulation and accept feedback:

Use and value renewable resources and services:

Produce no waste:

Design from patterns to details:

Integrate rather than segregate:

Use small and slow solutions:

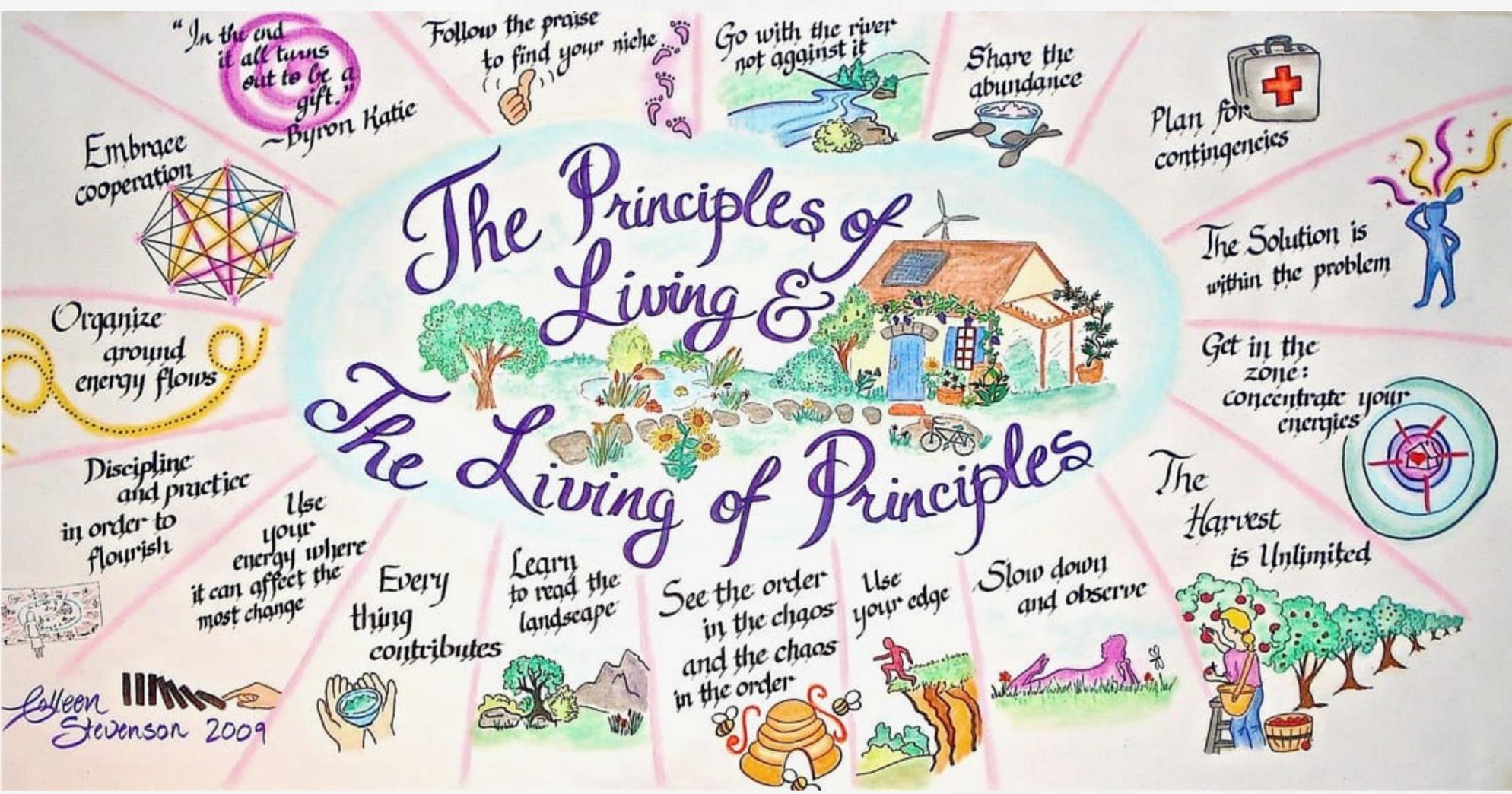
Use and value diversity:

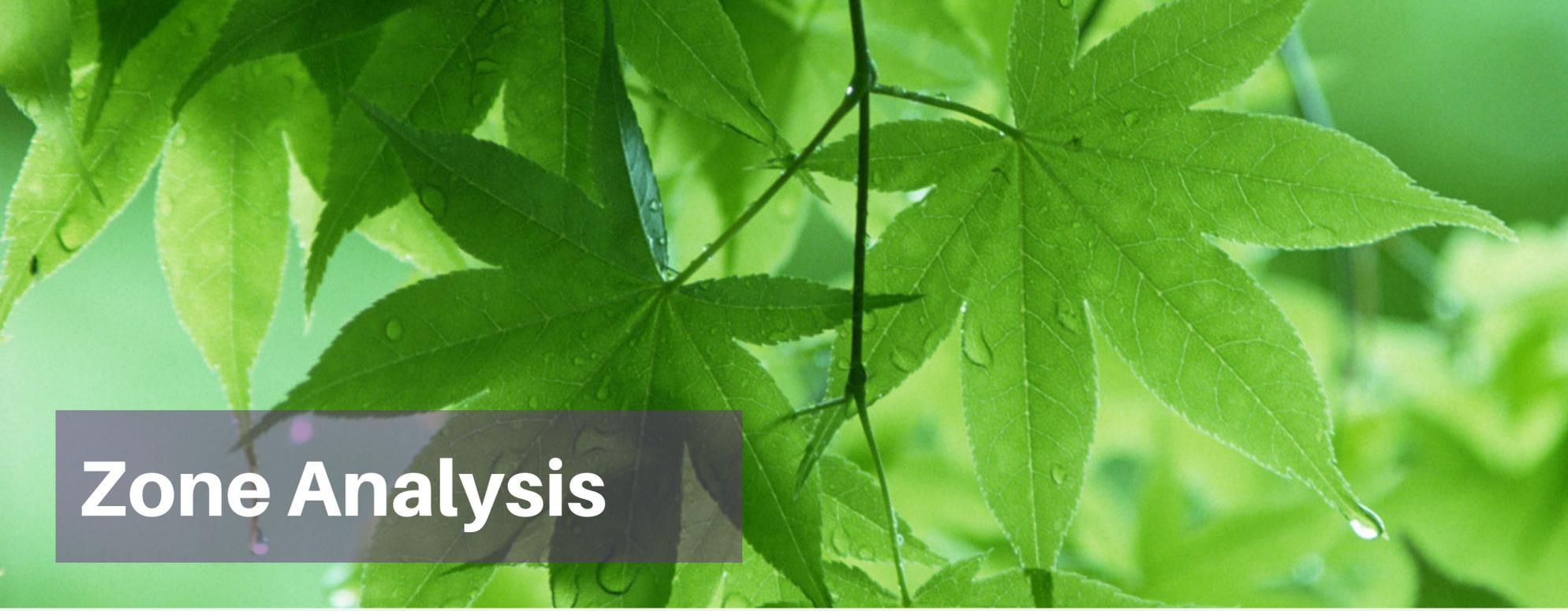
Use edges and value the marginal:

Creatively use and respond to change:



Principles





Zone Analysis

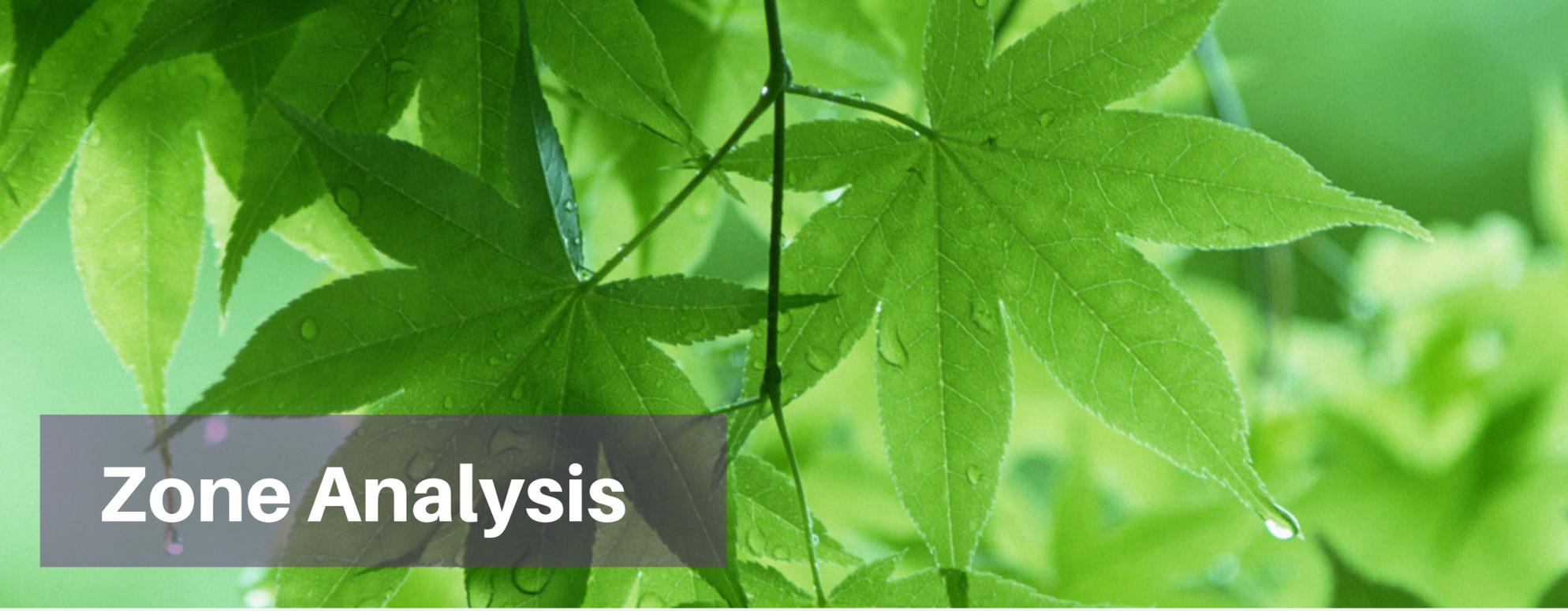
A well designed permaculture site should provide an abundant diversity of seasonal and organic food.

Production systems should include a number of support species that help establish the productive species and can be used as a reusable source of mulch, as a trellis for vines, to create beneficial changes in soil biology, out-compete weeds and help draw nutrients from deep in the subsoil and recycle these nutrients through the soil food chain close to the feeder roots of the productive plants.

Ways to integrate plant and animal species should be sought to help maintain an mid -succession disturbed ecosystem with a variety of edges which will have the most productivity of productive species.

An essential element of permaculture designs is that production systems are suitably matched to landscape features are designed with an awareness of how they change over time to reduce management costs and are inter-connected in beneficial relationships that reflects their natural behaviors.

Look for how systems harmonise with landscape features and provide multiple benefits

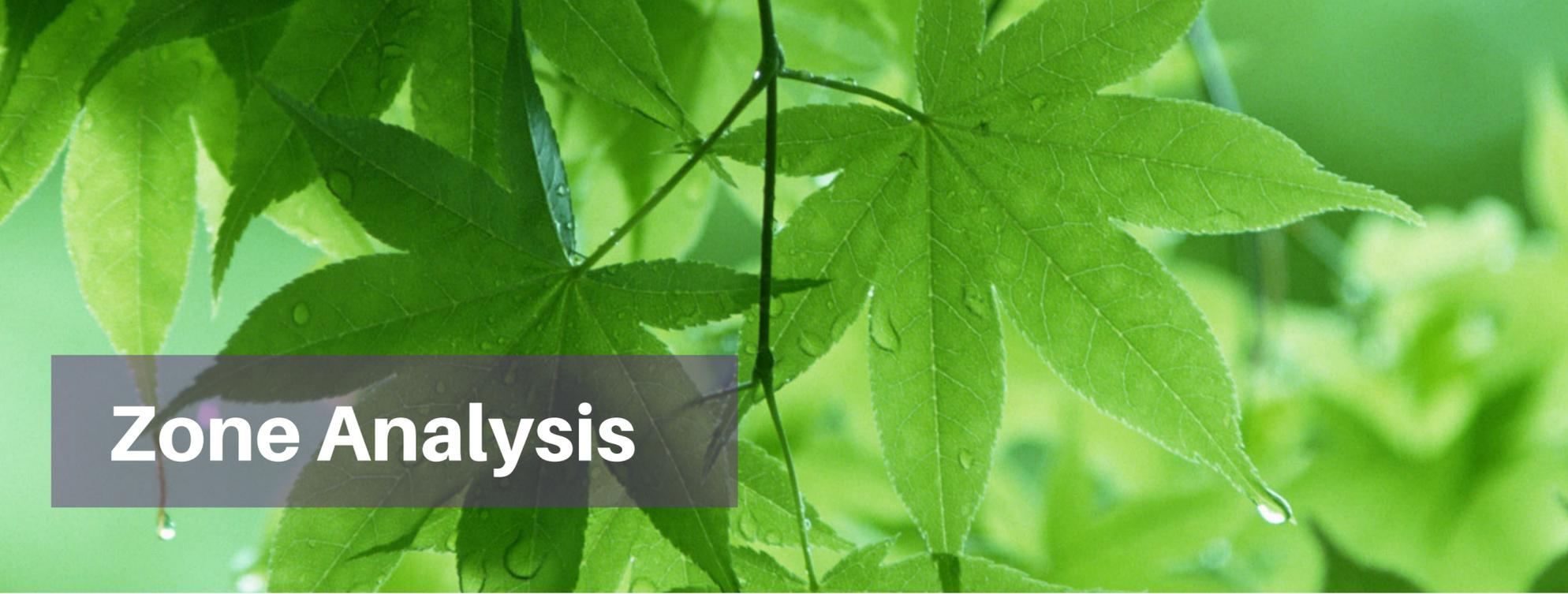


Zone Analysis

Zone planning is a system where the location of an element in a design is determined by how often we need to use the element and how often we need to service the element. This is a basic logical principle, whereby the things you use most often, and the things you have to pay the most attention to, are placed closest to the house in the design. Consequently, the things that are used the least often, or that require little or no attention, are placed furthest away in the design, and things that fall somewhere in between are placed accordingly. By situating the most often used or serviced elements in a design closest to the home, it makes it easier to access them. This means less energy is expended to access them, making for a more energy efficient design.

Zone 1 is the area closest to the house that requires most frequent management and attention. This zone is most expressive of human creative patterns that do not necessarily reflect natural patterns. However, more pleasing designs are often obtained by being guided by natural form and function in the design of these spaces.

Zone 2 is typically 1-5 acres immediately surrounding the house site and most often is used for orchard production. This space is also great for keeping small fowl or even small grazers like sheep if the trees are mature enough.



Zone Analysis

Zone 3 is basically farmland, where the main crops are grown (for personal use and to sell), where orchards of larger trees are located, and where livestock is kept and grazed. Once these areas are established, they only require minimal maintenance and care. Elements that are located in this zone include all the things that require infrequent attention only, such as: orchards of larger trees, main farming crops, pastures and rearing areas for large livestock such as cows and sheep, semi-managed bird flocks, large trees for animal forage – oak trees and nut trees, dams for water storage and drinking water for animals.

Zone 4 is a part wild/part managed, and its main use is for collecting wild foods, timber production, as a source of animal forage, and pasture for grazing animals. The trees in this zone are managed by allowing animals to browse to control new growth, or by thinning (removing) seedlings to select the variety of trees that will be allowed to grow.

Zone 5 is an unmanaged wild natural ecosystem, such as bushland, forest or similar natural area, free of human intervention, interference or control. Zone 5 is a wilderness conservation area, and space that provides us with the opportunity to step down from our role of controlling Nature, to one where we can just witness Nature in its pure form, where we can simply observe the cycles of Nature and learn from what we see. It is the place where we can meditate and reconnect with Nature, and come to understand our place in the world.



Concepts

The aim of concept sketches is to convey a wide range of different design ideas for the zone areas. These ideas can then be talked through with the owner to determine the best way forward to arrive at the most suitable final design. Concepts should be creative and generate a wild host of possibilities for a site. Do this before trying to arrange the elements into a coherent whole. Possibilities are winnowed through an ethical and functional sieve. Rely on principles and methods of design to unveil the design. Distinct ideas emerge through a series of creative ideas.



Designs

Create a functional whole: define species and elements that will anchor the final design. Must sequence the implementation of the elements in a proper order. Principles are displayed and articulated in design and presentation



Implementation

To support your design you should provide guidance as to how to set up production systems and manage them. Your Permaculture landscape design will only succeed if you have the necessary resources to properly implement it. The rate of supply of available labour, skill and cash will determine the character, pace, and priorities of your property plan.

How strong and physically capable are your potential occupants? Though Permaculture systems are low maintenance by design, considerable laboring effort is often required in their establishment. Having to source this from outside the family or household adds considerably to the cost of implementation.

How much of the work can you do yourself? What skills are available in your social network? Can you exchange or barter readily available goods or services for them? What potential is there to capitalize on household skills to create right livelihood?

The availability of cash to fund living expenses and purchase materials and services inputs to the property will largely dictate how and when various aspects of your plan are executed. For this reason early self sufficiency to reduce living expenses should be a priority. Develop your plan well and stick to it, so avoiding expensive and impulsive sidetrack projects that don't align with your property goals and aspirations. Break the implementation of your design into stages, each comprising small do-able steps. Only attempt one stage at a time, and do it thoroughly, before moving on to the next. So where do you begin? Prioritize what stages to attempt first according to the common sense guidelines.