



Marine Easy Clean Pty Ltd

A.B.N. 99 4481 2804

**Water consultants**

Manufacturers of



24 Aylesbury Cl

Jandakot

Western Australia 6164

[Tel:+61 89414 8364](tel:+61894148364)

[sales@twca.net.au](mailto:sales@twca.net.au)

[www.marineeasyclean.com.au](http://www.marineeasyclean.com.au)

## HOW TO DESIGN A GOOD LAKE

There are so many things to consider when designing a **pond** or man-made **lake**, **but** creating an eco-system is the most important element as a natural approach will result in reduce maintenance, cost and worry and will be aesthetically and environmental friendly.

It is important to understand that every body of water has its own personality, or unique eco-system, so understanding the requirements of a balanced ecosystem is fundamental to a well-designed man-made lake or pond.

Here is a brief outline of some of the things to consider:

### Location

Low lying land, ensuring that water will naturally drain into the lake frequently and avoid it drying up.

Ensure septic systems are not leaching anywhere near your lake and the surrounding area is conducive to your design.

### Shape

Shape it so it has bends and curves that can be separated by trees and shrubs, this aids the natural eco-system, providing shade and is pleasing for the eye, however water flow is an important factor too so avoid peninsulas and narrow channels. Ensure you have a nature water table.

### Materials

Avoid a retaining wall if you can, it kills a natural habitat. The right mix of rocks and vegetation will protect against erosion, and prevent run off and filter nutrients.

Use clay and avoid man made materials if possible.

### Depth

It is important that the proportion of surface area to depth is considers. Too deep and a lakes oxygen levels will be compromised, too shallow and sunlight creates too much algae.

Ponds and Lakes have two regions: the open water zone, and the deep-water zone (bottom and shore regions.) both regions need to have the right aquatic life for a balanced eco-system.

Fish live in the open water zone and bacteria and other decomposers live in the oxygen-poor deep-water zone. (See temperature)



Marine Easy Clean Pty Ltd

A.B.N. 99 4481 2804

**Water consultants**

Manufacturers of



24 Aylesbury Cl

Jandakot

Western Australia 6164

[Tel:+61 89414 8364](tel:+61894148364)

[sales@twca.net.au](mailto:sales@twca.net.au)

[www.marineeasyclean.com.au](http://www.marineeasyclean.com.au)

## Shoreline

Use the power of plants. Root systems are great at holding soil together. If you choose to use plants, consider planting native species.

Trees not only provide important shade, but oxygen too. Often where a lake has the shade of trees no algae lives.

Have a barrier of grass, keep lawns away from the edge, allow for natural grass around the edges and do not mow it. The grass prevents excessive run off and filters nutrients. Do not use fertiliser on your vegetation around the lake.

## Light and Temperature

You need sunlight for energy for photosynthesis, as light can only penetrate so far this only happens in the upper layer of water.

Shallow lakes will experience problems with weeds and algae because of the abundance of sunlight and warm water. The lower level of water is much colder. As water temperature increases oxygen levels decrease. In summer the temperature between the two layers increase, the temperature difference prevents oxygen getting to the lower levels. The decrease oxygen affects the digestive productivity of decomposer on the bottom.

## Aquatic Plants

Is a vital part of an ecosystem. Use local native plants. They will:

- will root in the muddy bottom
- help keep the water clean by assisting with the biological process
- provide food
- Provide oxygen.
- Tiny free floating plants, like plankton, also create oxygen and serve as food for fish.

## Aquatic Animals

Fish are also important for an ecosystem. You need fish for the open water zone and bottom dwellers. Consult your local fish expert.

## Oxygen

Oxygen is the cornerstone of a health body of water; your whole eco-system revolves around the balance of oxygen creators and oxygen users. A lack of dissolved oxygen results in a chemical reaction that results in the severe decrease in decomposition of waste materials. Too much waste



Marine Easy Clean Pty Ltd

A.B.N. 99 4481 2804

**Water consultants**

Manufacturers of



24 Aylesbury Cl

Jandakot

Western Australia 6164

Tel: +61 89414 8364

[sales@twca.net.au](mailto:sales@twca.net.au)

[www.marineeasyclean.com.au](http://www.marineeasyclean.com.au)

results in poor water quality. In construction design consider; water flow and plant use. You may need to consider aeration systems; these can be topical or submerged.

### **Nutrients**

You must control your nutrient levels as the composing system must be able to cope with the intake volume otherwise your water quality will suffer to the point in the high of summer water can become toxic and diseased.

Avoid the use of fertilisers, septic, stormwater or any other unnatural outside source.

Article by Sandy Cable