

# Prototype to Determine the Environmental Sustainable Freshwater Aquarium



## Zoology

**KEYWORDS :** Prototype, Environmental Sustainable, Freshwater Aquarium.

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### ABSTRACT

*Fresh water aquarium maintenance has become a popular household hobby worldwide. Today lots of environmental resources are being utilized such as water, live feed, plants and electricity for lightning, filtration, aeration etc for maintaining a fresh water aquarium. Today various environmental issues are getting surfaced. One solution to many environmental issues is environmental sustainable development. The outcome of the present research work is a prototype table that can be utilized to determine environmental sustainability of a freshwater aquarium. The prototype table is a first of its kind developed and no references are available for such a kind of research anywhere. So this prototype table must be considered as a baseline for further research and development in this area.*

### INTRODUCTION

The word Aquarium was used first time by Philip Henry Gosse in 1854. The fish keeping hobby is a multi - million dollar industry throughout the world. Today keeping of fresh water fishes in an aquarium has become a popular household hobby worldwide. According to latest statistics there are around 60 million aquarists worldwide and in United States, aquarium keeping is the most popular hobby next to stamp collection. (C. S. Tharadevi and K. V. Jayashree, 2012)

For maintaining a fresh water aquarium lots of environmental resources are being utilized such as water, live feed, plants and electricity for lightning, filtration, aeration etc. Today various environmental issues are getting surfaced. One solution to many environmental issues is environmental sustainable development. It is a development that meets the needs of the presence without comprising the ability of future generations to meet their own needs. (Rachel Emas, 2015)

The present research paper aims in developing a prototype table to determine whether a particular freshwater aquarium is environmentally sustainable or not.

### MATERIAL AND METHODS

A prototype table to assess the environmental sustainable freshwater aquarium is generated by observing a full fledge operational freshwater aquarium. The various resources utilized or put in the aquarium are placed in the parameters column of the table. The various characters of each parameter are subdivided and specified in another column under the heading characters. The next column demonstrates as how each and every character is being treated and corresponding scores are being shown. According to the treatment the appropriate score must be marked in the final score column which must be summed at the end. The final score helps us to determine whether the freshwater aquarium is environmentally sustainable or not.

### RESULT

Table No. 1 Prototype to assess the Environmental Sustainable freshwater aquarium

Parameters	Characters	Scores to be allotted	Final Score
<b>Transport</b>	Use of transport for purchasing commodities for aquarium	More than once a week = 2 Less than once a week = 1 No use of transport = 0	
	<b>Food</b>	Type of feed given to fishes	Live feed = 0 Home or self processed = 1 Packed or processed feed = 2
Duration of feed given to fishes		Twice daily = 0 Thrice daily = 1 More than thrice daily = 2	

<b>Energy usage</b>	Electronic Aerator	Continuously working = 2 Few hours daily = 1 No aerator used = 0	
	Lights in aquarium	Continuously working = 2 Few hours daily = 1 No lights = 0	
	Electronic feed dispenser	Electronic feed dispenser used = 1 No electronic feed dispenser used (Manual feeding) = 0	
	Electronic filter	Electronic filter used = 1 No electronic filter used = 0	
<b>Water Consumption</b>	Water in aquarium	More than 5 litres = 2 Just 5 litres = 1 Less than 5 litres = 0	
	Water replacement	Daily = 3 Alternate Day = 2 Twice a week = 1 After or more than 7 days = 0	
Plants	Plants in aquarium	Natural plants = 0 Artificial plants/No Plants = 1	
Size	Size of aquarium	1 feet x 1 feet = 0 2 feet x 2 feet = 1 More than above size = 2	
Sum of Final Scores		(min. 0 and max. 20)	

Final Score 0 to 9 = Good! Very little resources are utilised by your aquarium. Hence the aquarium is environmentally sustainable.

Final Score 10 = Fair! Your aquarium is on the verge of utilising more resources. The resource utilization can be cut down so that the environmentally sustainable status can be achieved by your aquarium.

Final Score 11 to 20 = Bad! Additional resources are utilised by your aquarium. Hence the aquarium is not environmentally sustainable.

### CONCLUSION AND DISCUSSION

The outcome of the present research work is a prototype table that can be utilized to determine environmental sustainability of a freshwater aquarium. The prototype table is a first of its kind developed and no references are available for such a kind of research anywhere. So this prototype table must be considered as a baseline for further research and development in this area.

**REFERENCE**

- C. S. Tharadevi and K. V. Jayashree, (2012), Home Aquarium, Saras Publication, Pg. No. 1 – 3. | • Rachel Emas, (2015), The Concept of Sustainable Development: Definition and Defining Principles, United Nations, Pg. No. 1 – 3. |