

LIST OF TABLES

Table No.	Title	Page No.
1.	The Water bodies of Periyakulam Taluk chosen for sampling purposes. The minimum and maximum spread of water observed through GIS during the study period	41
2.	Extent of various habitats in Periyakulam Taluk during the two periods. Each value is the average monthly readings of two years (2005 and 2006)	51
3.	Soil temperature of various habitats of Periyakulam Taluk during the period January to June and July to December. Each reading is the average of two years (2005 and 2006)	55
4.	Average soil temperature of various habitats of Periyakulam Taluk from January to December and the deviation from the overall annual average	55
5.	Average soil temperatures of various habitats of Periyakulam Taluk during January to June. Average of two years (2005 and 2006)	57
6.	Average soil temperature of various habitats of Periyakulam Taluk during July to December. Average of two years (2005 and 2006)	57
7.	Moisture content of the soil samples in various habitats of Periyakulam Taluk during January to June and July to December	58
8.	Average soil moisture of various habitats of Periyakulam Taluk from January to December and the deviation from the overall annual average	59
9.	Average soil moisture of various habitats of Periyakulam Taluk from January to June and the deviation from the overall annual average	59
10.	Average soil moisture of various habitats of Periyakulam Taluk from July to December and the deviation from annual average	60
11.	Soil texture analysis of various habitats of Periyakulam Taluk (n = 50)	60
12.	Soil pH of the various habitats of Periyakulam Taluk during January to June and July to December (2005 and 2006)	61
13.	Soil pH of various habitats of Periyakulam Taluk from January to December and the deviation from the annual average	62
14.	Average soil pH of various habitats of Periyakulam Taluk from January to June and the deviation from annual average	62
15.	Average soil pH of various habitats of Periyakulam Taluk from July to December and the deviation from annual average	63
16.	Soil EC of the various habitats of Periyakulam Taluk from January to June and July to December during the two years:2005 and 2006	63

17.	Average soil EC of various habitats of Periyakulam Taluk from January to December and the deviation from the overall annual average of all habitats	64
18.	Average soil EC of various habitats of Periyakulam Taluk from January to June and the deviation from the overall annual average of all habitats	64
19.	Average soil EC of various habitats of Periyakulam Taluk from July to December and the deviation from the overall annual average of all habitats	65
20.	Total nitrogen content of the soil of various habitats of Periyakulam Taluk from January to June and July to December during the two years: 2005 and 2006	65
21.	Average total nitrogen content of the soil of various habitats of Periyakulam Taluk from January to June and the deviation from the overall annual average of all habitats	66
22.	Average total nitrogen content of the soil of various habitats of Periyakulam Taluk from July to December and the deviation from the overall annual average of all habitats	66
23.	Average total nitrogen content of the soil of various habitats of Periyakulam Taluk from January to December and the deviation from the overall annual average of all habitats	66
24.	Total phosphorous content of the soil of various habitats of Periyakulam Taluk from January to June and July to December during 2005 and 2006	67
25.	Average phosphorous content of the soil of various habitats of Periyakulam Taluk from January to June and the deviation from the overall annual average of all habitats	67
26.	Average phosphorous content of the soil of various habitats of Periyakulam Taluk from July to December and the deviation from the overall annual average of all the habitats	68
27.	Average phosphorous content of the soil of various habitats of Periyakulam Taluk from January to December and the deviation from the overall annual average of all habitats	68
28.	Total potassium content of the soil of various habitats of Periyakulam Taluk from January to June and July to December during 2005 and 2006	69
29.	Average potassium content of soil of various habitats of Periyakulam Taluk from January to June and the deviation from overall annual average	69
30.	Average potassium content of soil of various habitats of Periyakulam Taluk from July to December and the deviation from overall annual average	70
31.	Average potassium content of the soil of various habitats of Periyakulam Taluk from January to December and the deviation from overall annual average	70
32.	The habitat specialities of various species	95
33.	Relative species abundance of anurans in Mixed crop land. Average of 2005 and 2006	97

34.	Relative species abundance of anurans in Coconut grove. Average of 2005 and 2006	98
35.	Relative species abundance of anurans in Mango grove. Average of 2005 and 2006	99
36.	Relative species abundance of anurans in Fallow lands. Average of 2005 and 2006	99
37.	Relative species abundance of anurans in Water bodies. Average of 2005 and 2006	100
38.	Occurrence of anurans in different habitats of Periyakulam Taluk. Average of 2005 and 2006	101
39.	Top five dominating species of anurans in different habitats of Periyakulam Taluk	102
40.	Anuran distribution pattern in different seasons in Periyakulam Taluk. Average of 2005 and 2006	103
41.	Average density per ha per month of anurans in various habitats of Periyakulam Taluk. Average of 2005 and 2006	114
42.	Community coefficient values	115
43.	Niche breadth score of anurans in various habitats of Periyakulam Taluk	116
44.	Niche overlap scores of anurans in Periyakulam Taluk	118
45.	Microhabitat preferences of anurans (%)	121
46.	Micro habitat niche breadth	121
47.	Mean morphometrics of anurans in Periyakulam Taluk. Average of 2005 and 2006	122

LIST OF FIGURES

Fig. No.	Title	Page No.
1.	Location of Periyakulam Taluk	29
2.	Various anuran habitats chosen in Periyakulam Taluk- sample map	30
3.	Mixed crop land having different crops	32
4.	Diagrammatic representation of a mixed crop mosaic land	33
5.	Coconut grove	33
6.	Mango grove	34
7.	Fallow lands	34
8.	Water bodies	34
9.	The grid map designed for the study	36
10.	Measuring the temperature and humidity	43
11.	Experimental design for visual encounter survey.	44
12.	Snout-vent length with Dial caliper	47
13.	Weighing with Pesola balance	47
14.	Periyakulam Taluk - Extent of anuran habitats (Terrestrial) during January 2005	52
15.	Periyakulam Taluk - Extent of anuran habitats (Terrestrial) during July 2005	53
16.	Percentage occurrence of the extent of the anuran habitats of Periyakulam Taluk during the period January to June and July to December. Average of two years (2005 and 2006)	54
17.	Monthly temperature of the soil in different habitats of periakulam Taluk. Average of two years (2005 and 2006)	56
18.	Periyakulam Taluk - Water spread area during January 2005	71
19.	Periyakulam Taluk - Water spread area during July 2005	72
20.	Monthly temperatures of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	73
21.	Monthly pH values of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	74
22.	Monthly electrical conductivity of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	74
23.	Monthly chloride content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	75
24.	Monthly bicarbonate content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	75
25.	Monthly sodium content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	76

26.	Monthly potassium content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	77
27.	Monthly calcium content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	77
28.	Monthly magnesium content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	78
29.	Monthly dissolved oxygen content of the water bodies of Periyakulam Taluk. Average of 2005 and 2006	78
30.	Average air temperature for the year 1997 - 2006 in Periyakulam Taluk	79
31.	Average air temperature for the year 2005 - 2006 in Periyakulam Taluk	79
32.	Average monthly humidity for the year 1997 - 2006 in Periyakulam Taluk	80
33.	Average monthly humidity of Periyakulam Taluk. Average of 2005 and 2006	80
34.	Average monthly rainfall in Periyakulam Taluk. Average of 2005 and 2006	81
35.	Average rainy days in Periyakulam Taluk. Average of 2005 and 2006	81
36.	Average Wind speed of Periyakulam Taluk. Average of 2005 and 2006	82
37.	<i>B. melanostictus</i>	83
38.	<i>B. melanostictus</i> indicating Parotid gland and warts	83
39.	<i>B. scaber</i>	84
40.	<i>B. scaber</i> indicating Spiny warts and Parotid gland	84
41.	<i>K. taprobanica</i>	85
42.	<i>M. ornata</i>	86
43.	<i>U. systoma</i>	87
44.	<i>H. tigerinus</i>	87
45.	<i>H. tigerinus</i> showing longitudinal folds	88
46.	<i>H. tigerinus</i> showing pointed snout	88
47.	<i>E. hexadactylus</i>	89
48.	<i>L. limnocharis</i>	90
49.	<i>T. breviceps</i>	91
50.	<i>T. breviceps</i> showing blunt snout	91
51.	<i>E. cyanophlyctis</i>	91
52.	<i>E. cyanophlyctis</i> showing vocal sacs	92
53.	<i>H. crassus</i>	92
54.	<i>P. maculatus</i> showing discs on the fingers	93
55.	<i>P. maculatus</i>	94
56.	Species abundance in Periyakulam Taluk. Average of 2005 and 2006	96
57.	Cluster analysis showing relationship between habitats	102
58.	Anuran species richness in different habitats of Periyakulam Taluk. Average of 2005 and 2006	104

59.	Species richness in Mixed crop land of Periyakulam Taluk. Average of 2005 and 2006	105
60.	Species richness in Coconut grove of Periyakulam Taluk. Average of 2005 and 2006	105
61.	Species richness in Mango grove of Periyakulam Taluk. Average of 2005 and 2006	106
62.	Species richness in Fallow lands of Periyakulam Taluk. Average of 2005 and 2006	106
63.	Species richness in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	107
64.	Margalef's index in various habitats	108
65.	Margalef's index in different periods	108
66.	Shannon's diversity index in various habitats. Average of 2005 and 2006	109
67.	Shannon's Diversity in different periods. Average of 2005 and 2006	110
68.	Shannon's Diversity in different months in the study area. Average of 2005 and 2006	110
69.	Evenness index in different habitats. Average of 2005 and 2006	111
70.	Evenness value in different periods. Average of 2005 and 2006	111
71.	Evenness index in different months. Average of 2005 and 2006	112
72.	Relative dominance of species during January to June	112
73.	Relative dominance of species during July to December	113
74.	Interaction of species and habitat during January to June. PCA - Principal component analysis values average of 2005 and 2006	119
75.	Interaction of species and habitat during July to December	120
76.	Relationship between species abundance (y) and soil temperature (x) in Mixed crop land of Periyakulam Taluk. Average of 2005 and 2006	124
77.	Relationship between species abundance (y) and soil temperature (x) in Coconut grove of Periyakulam Taluk. Average of 2005 and 2006	125
78.	Relationship between species abundance (y) and soil temperature (x) in Mango grove of Periyakulam Taluk. Average of 2005 and 2006	126
79.	Relationship between species abundance (y) and soil temperature (x) in Fallow lands of Periyakulam Taluk. Average of 2005 and 2006	127
80.	Relationship between species abundance (y) and water temperature (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	128
81.	Relationship between species abundance (y) and water pH (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	129

82.	Relationship between species abundance (y) and water EC (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	130
83.	Relationship between species abundance (y) and chloride (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	131
84.	Relationship between species abundance (y) and bicarbonate (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	132
85.	Relationship between species abundance (y) and sodium content (x) in water bodies of Periyakulam Taluk. Average of 2005 and 2006	133
86.	Relationship between species abundance (y) and potassium content (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	134
87.	Relationship between species abundance (y) and calcium content (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	135
88.	Relationship between species abundance (y) and magnesium content (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	136
89.	Relationship between species abundance (y) and dissolved oxygen (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	137
90.	Relationship between species abundance (y) and air temperature (x) in Mixed crop land of Periyakulam Taluk. Average of 2005 and 2006	138
91.	Relationship between species abundance (y) and air temperature (x) in Coconut grove of Periyakulam Taluk. Average of 2005 and 2006	139
92.	Relationship between species abundance (y) and air temperature (x) in Mango grove of Periyakulam Taluk. Average of 2005 and 2006	140
93.	Relationship between species abundance (y) and air temperature (x) in Fallow lands of Periyakulam Taluk. Average of 2005 and 2006	141
94.	Relationship between species abundance (y) and humidity (x) of Mixed crop land of Periyakulam Taluk. Average of 2005 and 2006	142
95.	Relationship between species abundance (y) and humidity (x) in Coconut grove of Periyakulam Taluk. Average of 2005 and 2006	143
96.	Relationship between species abundance (y) and humidity (x) in Mango grove of Periyakulam Taluk. Average of 2005 and 2006	144
97.	Relationship between species abundance (y) and humidity (x) in Fallow lands of Periyakulam Taluk. Average of 2005 and 2006	145
98.	Relationship between species abundance (y) and rain fall (x) in Mixed crop land of Periyakulam Taluk. Average of 2005 and 2006	146
99.	Relationship between species abundance (y) and rain fall (x) in Coconut grove of Periyakulam Taluk. Average of 2005 and 2006	147
100.	Relationship between species abundance (y) and rain fall (x) in Mango grove of Periyakulam Taluk. Average of 2005 and 2006	148

101. Relationship between species abundance (y) and rain fall (x) in Fallow land of Periyakulam Taluk. Average of 2005 and 2006	149
102. Relationship between species abundance (y) and rain fall (x) in Water bodies of Periyakulam Taluk. Average of 2005 and 2006	150
