

## **Tables of contents**

<b>Tables of contents</b> .....	i
<b>List of Figures</b> .....	iii
<b>Abstract</b> .....	iv
<b>1. Introduction</b> .....	1
1.1. Fisheries in Sri Lankan Waters .....	1
1.2. Skipjack Tuna Species .....	3
1.3. World's Skipjack Tuna Fishery .....	5
1.4. Skipjack Tuna Fishery in Sri Lanka .....	6
1.5. Climate of Sri Lanka .....	9
1.6. Climate Change Effects on Ocean Fisheries .....	11
1.7. Objective of the Study .....	21
<b>2. Materials and Methods</b> .....	22
2.1. Tuna Fishery Data .....	22
2.2. Environmental Data .....	23
2.3. Statistical Methods .....	24
<b>3. Results</b> .....	27
3.1. Direct Comparison between Fishery and Environmental Parameters	27
3.2. Seasonal Variations .....	29

3.3. Empirical Cumulative Distribution Function Analysis .....	31
3.4. Cross-correlation Function Analysis .....	33
<b>4. Discussion .....</b>	<b>35</b>
4.1. Direct Comparison between Fishery and Environmental Parameters	35
4.2. Empirical Cumulative Distribution Function Analysis .....	36
4.3. Cross-correlation Function Analysis.....	37
<b>5. References .....</b>	<b>40</b>
<b>Acknowledgements .....</b>	<b>51</b>

## **List of Figures**

Figure 1. Skipjack tuna ( <i>Katsuwonus pelamis</i> ).....	4
Figure 2. Map of study area.....	24
Figure 3. Scatterplot of CPUE of skipjack tuna in relation sea surface temperature of Sri Lankan waters.....	27
Figure 4. Scatterplot of CPUE of skipjack tuna in relation sea surface chlorophyll of Sri Lankan waters.....	28
Figure 5. Scatterplot of CPUE of skipjack tuna in relation sea surface height of Sri Lankan waters.....	29
Figure 6. Average temporal variability of sea surface temperature.....	30
Figure 7. Average temporal variability of sea surface chlorophyll.....	31
Figure 8. Results of Empirical cumulative distribution function (ECDF) of environmental parameters and skipjack tuna CPUE.....	32
Figure 9. Cross-correlation coefficients (CCF) of skipjack tuna CPUE and catch data with selected environmental variables. .....	34