

## TABLE OF CONTENTS

Acknowledgements	ii
Certificates	iii-iv
Abstract	v-xi
Table of Contents	xii
List of Figures	xiii-xv
List of Tables	xvi
<b>Chapter 1 .....</b>	<b>1</b>
<b>Coal Seam Fires: Issues Involved.....</b>	<b>1</b>
1.    Coal seam fires: issues involved.....	1
1.1    Environmental impacts of coal seam fires.....	2
1.2    Significance.....	5
1.3.    Scope of the study.....	5
1.4.    Objectives of the study.....	6
1.5.    Methodology .....	7
1.6.    Organization of the thesis.....	10
<b>Chapter 2 .....</b>	<b>11</b>
<b>Literature survey.....</b>	<b>11</b>
2.    State Of The Art.....	11
2.1.    Causes of occurrence of the CSF.....	12
2.2.    CSF monitoring and mapping methods.....	13
2.3.    CSF monitoring with remote sensing.....	14
2.4.    RS - GIS techniques for delineation of CSF area .....	16
2.5.    International approach for the CSF monitoring.....	20
2.6.    CSF research in India and JCF.....	24
2.7.    LULC and CSF.....	25
<b>Chapter 3 .....</b>	<b>27</b>
<b>Image Analysis.....</b>	<b>27</b>
3.1.    Identification of Research area for field study.....	29
3.2.    Existing geo conditions mapped in JCF.....	33
<b>Satellite Image Analysis</b>	
3.3.    NDVI.....	41
3.4.    Cumulative distribution function .....	50
3.5.    Classification parametric techniques -image segmentation.....	68
3.6.    Principal Component Analysis .....	80
3.7.    Validation of model.....	81
<b>Chapter 4 .....</b>	<b>83</b>
4.0 Results and Discussions.....	83
<b>Chapter 5.....</b>	<b>96</b>
5.1 Conclusions.....	96
5.2 Future Scope.....	98
<i>References.....</i>	99