C O N T E N T S

SUMMARY ..... (i)

ACKNOWLEDGEMENTS ..... (vi)

CONTENTS .....(viii)

1. INTRODUCTION 1

2. REVIEW OF ALLELOPATHY IN AQUATIC PLANTS 5

1. Introduction 5

2. Allelopathy between species of phytoplankton 6

3. Allelopathy between aquatic macrophytes and microflora 10

4. Allelopathy between aquatic macrophytes 13

5. Nature of allelopathic compounds 15

6. Conclusion..... 16

3. ALLELOPATHIC POTENTIAL OF EICHHORNIA IN VERNON HOOPER DAM 18

1. Introduction 18

2. Methods 20

3. Results 29

4. Discussion 47

5. Conclusions 50

4. VERNON HOOPER DAM CASE STUDY 51

1. Introduction 51

2. Temporal variation in Eichhornia cover, phytoplankton standing crop and species composition and water quality 58

3. Interaction between hyacinth cover and phytoplankton 99

4. General conclusions 116

5. HARTBEESPOORT DAM CASE STUDY 118

1. Introduction 118

2. Temporal variation in Eichhornia cover, phytoplankton standing crop and species composition and nutrient loading rates 121

3. Effect of Eichhornia cover on the phytoplankton standing crop and species composition of Hartbeespoort Dam 140

4. Conclusions 153

6. PROSPECTS OF USING EICHHORNIA TO IMPROVE WATER QUALITY 154

7. RESEARCH NEEDS 160

8. REFERENCE LIST 162

9. PERSONAL COMMUNICATIONS 174

APPENDIX 1 175