

# CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	BACKGROUND .....	1
1.2	APPROACH.....	1
1.3	STUDY AREA.....	1
1.3.1	<i>Location</i> .....	1
1.3.2	<i>Environmental Setting</i> .....	4
1.3.3	<i>Regional Context</i> .....	8
<b>2</b>	<b>METHODS.....</b>	<b>12</b>
2.1	REVIEW OF EXISTING INFORMATION .....	12
2.2	EXISTING SITE DATA .....	12
2.3	SURVEY STRATIFICATION AND SITE SELECTION .....	13
2.4	FIELD SAMPLING .....	14
2.5	SITE NOMENCLATURE.....	14
2.6	DATABASE STORAGE.....	15
2.7	TAXONOMIC REVIEW.....	16
2.8	AERIAL PHOTO INTERPRETATION.....	16
2.8.1	<i>Objectives</i> .....	16
2.8.2	<i>Area Mapped and Photography Used</i> .....	16
2.8.3	<i>Air Photo Interpretation and Landcover Classification</i> .....	16
2.8.4	<i>Feature Code</i> .....	19
2.8.5	<i>Non-canopy Features</i> .....	19
2.8.6	<i>Canopy Cover</i> .....	19
2.9	DIGITAL DATA CAPTURE AND MAP COMPILATION.....	23
2.10	VEGETATION CLASSIFICATION.....	23
2.10.1	<i>Existing Vegetation Classification in the Hawkesbury-Nepean Catchment</i> .....	23
2.10.2	<i>Relationships between Vegetation Community Classifications</i> .....	24
2.10.3	<i>Analysis of data</i> .....	24
2.11	DESCRIPTION OF VEGETATION COMMUNITIES.....	25
2.12	MAPPING VEGETATION COMMUNITIES .....	26
<b>3</b>	<b>RESULTS .....</b>	<b>27</b>
3.1	SURVEY SITES .....	27
3.1.1	<i>Sampling Performance</i> .....	27
3.2	AERIAL PHOTOGRAPH INTERPRETATION .....	27
3.2.1	<i>Spatial Accuracy</i> .....	27
3.2.2	<i>Vegetation Cover</i> .....	27
3.2.3	<i>Interpretation Confidence</i> .....	30
3.3	FLORISTIC DIVERSITY AND SPECIES RICHNESS .....	30
3.4	VEGETATION CLASSIFICATION .....	30
3.5	MAPPING DISTRIBUTION OF VEGETATION COMMUNITIES.....	33
3.6	RESERVATION STATUS ASSESSMENT .....	35
3.7	DISTURBANCE ASSESSMENTS .....	41
3.7.1	<i>Disturbance Severity Classes</i> .....	41
<b>4</b>	<b>DISCUSSION .....</b>	<b>45</b>
4.1	PATTERNS IN VEGETATION COMMUNITIES.....	45
4.1.1	<i>Sydney Montane Dry Sclerophyll Forests</i> .....	45
4.1.2	<i>Sydney Montane Heaths</i> .....	46
4.1.3	<i>Freshwater Wetlands</i> .....	46
4.1.4	<i>Rainforests</i> .....	47
4.1.5	<i>Southern Escarpment Wet Sclerophyll Forests</i> .....	47
4.1.6	<i>Southern Tableland Wet Sclerophyll Forests</i> .....	47
4.1.7	<i>Subalpine Woodlands</i> .....	48
4.1.8	<i>Southern Tableland Grassy Woodland</i> .....	48
4.1.9	<i>Tableland Clay Grassy Woodland</i> .....	48
4.1.10	<i>Southern Tableland Dry Sclerophyll Forests</i> .....	48
4.1.11	<i>South East Dry Sclerophyll Forest</i> .....	49

4.1.12	<i>Central Gorge Dry Sclerophyll Forests</i> .....	49
4.1.13	<i>Eastern Riverine Forests</i> .....	49
4.1.14	<i>Western Slopes Grassy Woodlands</i> .....	50
4.1.15	<i>Western Slopes Dry Sclerophyll Forests</i> .....	50
4.2	THREATENED SPECIES AND ENDANGERED ECOLOGICAL COMMUNITIES .....	51
4.2.1	<i>Endangered Ecological Communities</i> .....	51
4.2.2	<i>Threatened Species and Rare or Threatened Plants</i> .....	53
4.3	RANGE EXTENSIONS .....	56
4.4	A GUIDE TO FIELD IDENTIFICATION OF VEGETATION COMMUNITIES .....	58
4.5	MAP ACCURACY .....	60
4.5.1	<i>Sources of Error</i> .....	60
4.5.2	<i>Common Misapplications</i> .....	60
4.6	USING THE MAP AND REPORT .....	60
4.6.1	<i>PVP and Native Vegetation Management</i> .....	60
4.6.2	<i>Fire Management</i> .....	61
4.6.3	<i>Conservation Assessment</i> .....	61
4.6.4	<i>Vegetation Disturbance Assessment</i> .....	61
5	REFERENCES .....	62

## APPENDICES

APPENDIX A: FEATURE CODES, SAMPLING EFFORT AND MAP UNIT ALLOCATION .....	64
APPENDIX B: PLANT SPECIES LIST .....	91

## LIST OF MAPS

Map 1:	Study Area .....	2
Map 2:	Elevation and Physiographic Regions .....	3
Map 3:	Dominant Lithology .....	5
Map 4:	Average Annual Rainfall .....	9
Map 5:	Land Tenure .....	10
Map 6:	Bioregions .....	11
Map 7:	API Data Coverage & Field Traverses .....	17
Map 8:	Vegetation Survey Sites .....	28
Map 9:	API Confidence Classes .....	29
Map 10:	State-wide Vegetation Classes Present in the Study Area .....	36
Map 11:	Disturbance Severity Classes .....	44
Map 12:	Endangered Ecological Communities Listed under the TSC Act 1995 .....	52

## LIST OF TABLES

Table 1.1:	Area of each survey mapping area .....	4
Table 1.2:	Elevation limits and averages for each mapping area .....	7
Table 1.3:	Weather station data for the study area .....	7
Table 2.1:	Existing survey data .....	12
Table 2.2:	Cover abundance scores.....	14
Table 2.3:	Aerial photography interpreted .....	18
Table 2.4:	Visible rock classes .....	21
Table 2.5:	Interpreter confidence classes.....	21
Table 2.6:	API understorey codes .....	22
Table 2.7:	Disturbance severity classes and indicators .....	22
Table 2.8:	Disturbance feature types.....	23
Table 3.1:	Broad mapping features with area and proportion of study area .....	27
Table 3.2:	API confidence classes with area and proportion of study area .....	30
Table 3.3:	Map units described in the study area.....	33
Table 3.4:	Reservation status, clearing loss, regional and statewide vegetation class by map unit.	37
Table 3.5:	Area and proportion of disturbance severity classes .....	41
Table 3.6:	Map unit with proportion of each disturbance intensity class (%) (cells highlighted to show greatest proportion) .....	41
Table 4.1:	Relationship between Endangered Ecological Communities (TSC Act 1995) and vegetation communities described in this report .....	51
Table 4.2:	Relationship between Endangered Ecological Communities (EPBC Act 1999) and vegetation communities described in this report .....	53
Table 4.3:	Threatened species and rare or threatened Australian plants (RoTAPs) .....	53
Table 4.4:	Regionally significant species and subtaxa.....	56
Table 4.5:	Example diagnostic species list.....	59

## LIST OF FIGURES

Figure 2.1:	Canopy Cover Classes.....	19
Figure 2.2:	API Mapping Pathway and Features.....	20
Figure 3.1:	Hierachial Classification of Vegetation Communities .....	32