

TABLE OF CONTENTS

EXECUTIVE SUMMARY	vii
ACKNOWLEDGMENTS	x
Chapter 1 - INTRODUCTION	1
How This Report is Organized	1
The Gap Analysis Program Mission	1
The Gap Analysis Concept	1
General Limitations	3
The Study Area - A Brief Discription of the State of Georgia	3
Chapter 2 - LAND COVER CLASSIFICATION AND MAPPING	6
Introduction	6
Land Cover Classification	6
Methods	7
Land Cover Map Development – First Iteration	7
Land Cover Map Development – Second Iteration	18
Results	26
Accuracy Assessment	30
Accuracy Assessment Results	35
Limitations and Discussion	36
Chapter 3 - PREDICTED ANIMAL SPECIES DISTRIBUTIONS AND SPECIES RICHNESS	39
Introduction	39
Mapping Standards	39
Methods	39
Results	42
Species Richness	42
Accuracy Assessment	55
Limitations and Discussion	65
Chapter 4 - LAND STEWARDSHIP	67
Introduction	67
Mapping Standards	68
Methods	68
Results	75
Limitations and Discussion	77
Chapter 5 - ANALYSIS BASED ON STEWARDSHIP AND MANAGEMENT STATUS	79
Introduction	79
Land Cover Analysis	79
Vertebrate Distribution Analysis	82
Limitations and Discussion	85
Chapter 6 – CONCLUSIONS AND MANAGEMENT IMPLICATIONS	86
Chapter 7 – PRODUCT USE AND AVAILABILITY	88
How to Obtain the Products	88
Minimum GIS required for Data Use	88
Disclaimer	88
Metadata	89
Appropriate and Inappropriate Use of These Data	89
LITERATURE CITED	91
GLOSSARY	96

GLOSSARY OF ACRONYMS.....	102
APPENDICES	105
Appendix A - Error Matrix for First Iteration of Land Cover	105
Appendix B - Error Matrix for Second Iteration of Land Cover	106
Appendix C - Vertebrates Modeled During Georgia GAP	107
Appendix D - List of Reviewers and Other Contributors to Vertebrate Models.....	116
Appendix E - Vertebrate Species Habitat Affinities and Models	117
Appendix F – Sources Cited for Vertebrate Models.....	225
Appendix G – Vertebrate Distribution Maps.....	273
Appendix H - Gap status of vertebrate species.....	274
Appendix I - List of Example GAP Applications	288

LIST OF FIGURES, TABLES AND MAPS

FIGURES

Figure 2.1	The path and row numbers of 14 LANDSAT scenes that cover the state of Georgia.....	8
Figure 2.2	Procedures in creating first iteration land cover.....	11
Figure 2.3	Grouped land cover classes and percentages of total area of Georgia.....	26
Figure 4.1	Land Ownership of Georgia Conservation Lands.....	77
Figure 4.2	Protection Status of Georgia Conservation Lands.....	77
Figure 5.1	Percent of predicted vertebrate distributions on GAP status 1 or 2 Lands, by taxa.....	82

TABLES

Table 2.1	Acquisition dates for 42 LANDSAT scenes available to the GA-GAP project.....	9
Table 2.2	LANDSAT 5 TM sensor characteristics.....	9
Table 2.3	List of classes in first iteration of land cover.....	14
Table 2.4	List of classes in second iteration of land cover.....	18
Table 2.5	Summary of availability of classes for editing between first and second iterations of land cover.....	23
Table 2.6	Summary of the use of topographic modeling in classifying vegetation.....	24
Table 2.7	Types of land cover mapped, their area in hectares, and percent of the state's total area represented by cover type.....	27
Table 3.1	Amphibian species richness by cover type.....	43
Table 3.2	Breeding bird species richness by cover type.....	44
Table 3.3	Mammal species richness by cover type.....	45
Table 3.4	Reptile species richness by cover type.....	46
Table 3.5	Total species richness for species analyzed by GA_GAP, by cover type.....	47
Table 3.6	Survey areas with wildlife species lists used in the Georgia GAP vertebrate distribution model accuracy assessment.....	57
Table 3.7	Georgia GAP vertebrate distribution model accuracy assessment by species survey area.....	58
Table 3.8	Georgia GAP bird species assessed by Breeding Bird Survey records.....	62
Table 4.1	Assignment of GAP status by management authority and conservation type.....	73
Table 4.2	Land Area by Managing Authority and GAP Status.....	76
Table 5.1	Land cover types by protection status.....	80

MAPS

Map 1.1	Georgia's Physiographic Provinces.....	5
Map 2.1	Georgia 18 Class Landcover, 1998.....	17
Map 2.2	Georgia 44 Class Landcover, 1998.....	29
Map 2.3	Ecoregions and Flight Line for Accuracy Assessment One.....	33
Map 2.4	Ground Points Used for Accuracy Assessment Two.....	37
Map 2.5	Points Used for Accuracy Assessment Statewide.....	38
Map 3.1	Amphibian Species Richness.....	50
Map 3.2	Breeding Bird Species Richness.....	51
Map 3.3	Mammalian Species Richness.....	52
Map 3.4	Reptile Species Richness.....	53
Map 3.5	Total Species Richness.....	54
Map 3.6	Georgia GAP Vertebrate Distribution Model Accuracy Assessment Survey Tracts.....	56
Map 4.1	Georgia Land Stewardship.....	70
Map 4.2	Protection Status of Georgia Conservation Lands.....	72