

**REPORT FOR VEGETATION INVENTORY OF
VERMONT INSTITUTE OF SCIENCE 'NEW CENTER' SITE,
QUECHEE, VT, 2002**

TABLE OF CONTENTS

Acknowledgements.....	i
Abstract.....	i
I. Introduction.....	1
II. Objectives.....	2
III. Methods.....	3
A. Description of study area.....	3
B. Study resources and techniques.....	5
C. Data analysis.....	7
D. Assumptions.....	7
IV. Results.....	8
A. Delineated Cover Types.....	9
1. Floodplain.....	9
2. Hardwoods.....	15
3. Mixed coniferous/deciduous.....	21
4. Pine1.....	26
5. Pine2.....	31
6. Wetland.....	38
B. Overview.....	44
1. Trees.....	44
2. Lower strata.....	49
3. Non-vegetated cover.....	53
4. Soils.....	55
V. Discussion.....	55
VI. Literature cited.....	62

Figures

Fig. 1. Location of the VINS New Center site.....	3
Fig. 2. Topographical position of VINS New Center site.....	3
Fig. 3. 1993 orthophoto of a portion of the VINS New Center site with location of former trailer sites, former gravel pit, Quechee wastewater treatment facility, and locations of various fences.....	4
Fig. 4. Cover types delineated through orthophoto analysis and plot layout for stratified random sampling.....	5
Fig. 5. Basic plot layout.....	6

Fig. 6. Elevation and aspect of the delineated cover types as laid out on a 1988 USGS topographic map, for referencing cover type descriptions.....	9
Fig. 7. Floodplain cover type with underlying soils and plot locations.....	10
Fig. 8. Hardwood cover type with underlying soils, plot locations, and features of interest.....	15
Fig. 9. Mixed cover type with underlying soils, plot locations, and location of stone fence posts.....	21
Fig. 10. Pine1 cover type with underlying soils, plot locations and location of barbed wire fence.....	27
Fig. 11. Pine2 cover type with underlying soils, plot locations, and location of Rte.4.....	32
Fig. 12. Wetland cover type with underlying soils and plot locations.....	39
Fig. 13. 1939 aerial photo of the study area.....	45
Fig. 14. This 1993 orthophoto of the Quechee area surrounding the VINS New Center property highlights the role of white pine as the matrix community for this area.....	52
Fig. 15. Juxtaposition of 1939 aerial photo with 1993 orthophoto, indicating peninsula of land deposited since construction of dike enclosing Dewey's Pond.....	54
 Tables	
Table 1. Areal coverages of cover types for stratified random sampling.....	8
Table 2. Mean density, basal area and diameter at breast height (dbh) for trees in various cover types.....	46
Table 3. Snags (standing dead trees) in different sections of the study area.....	48
Table 4. Percent cover of tall shrub stratum in various cover types.....	48
Table 5. Percent cover of short shrub stratum in various cover types.....	49
Table 6. Percent cover of herbaceous stratum in various cover types.....	49
Table 7. Mean count of seedlings/saplings in various cover types.....	50
Table 8. Percent cover of non-vegetated surface in various cover types.....	50

Charts

Chart 1. Importance value index of tree species in Floodplain cover type.....	11
Chart 2. Mean percent cover and standard deviation of tall shrub species in Floodplain cover type.....	12
Chart 3. Mean percent cover and standard deviation of short shrub species in Floodplain cover type.....	12
Chart 4. Mean percent cover and standard deviation of herbaceous species in Floodplain cover type.....	13
Chart 5. Mean count of seedlings/saplings of various height classes in Floodplain cover type.....	14
Chart 6. Importance value index of tree species in Hardwoods cover type.....	16
Chart 7. Mean percent cover and standard deviation of tall shrub species in Hardwoods cover type.....	17
Chart 8. Mean percent cover and standard deviation of short shrub species in Hardwoods cover type.....	18
Chart 9. Mean percent cover and standard deviation of herbaceous species in Hardwoods cover type.....	19
Chart 10. Mean count of seedlings/saplings of various height classes in Hardwoods cover type.....	20
Chart 11. Importance value index of tree species in Mixed cover type.....	22
Chart 12. Mean percent cover and standard deviation of tall shrub species in Mixed cover type.....	23
Chart 13. Mean percent cover and standard deviation of short shrub species in Mixed cover type.....	24
Chart 14. Mean percent cover and standard deviation of herbaceous species in Mixed cover type.....	25
Chart 15. Mean count of seedlings/saplings of various height classes in Mixed cover type.....	26
Chart 16. Importance value index of tree species in Pine1 cover type.....	28

Chart 17. Mean percent cover and standard deviation of tall shrub species in Pine1 cover type.....	28
Chart 18. Mean percent cover and standard deviation of short shrub species in Pine1 cover type.....	29
Chart 19. Mean percent cover and standard deviation of herbaceous species in Pine1 cover type.....	30
Chart 20. Mean count of seedlings/saplings of various height classes in Pine1 cover type.....	31
Chart 21. Importance value index of tree species in Pine2 cover type.....	33
Chart 22. Mean percent cover and standard deviation of tall shrub species in Pine2 cover type.....	34
Chart 23. Mean percent cover and standard deviation of short shrub species in Pine2 cover type.....	35
Chart 24. Mean percent cover and standard deviation of herbaceous species in Pine2 cover type.....	36
Chart 25. Mean count of seedlings/saplings of various height classes in Pine2 cover type.....	37
Chart 26. Importance value index of tree species in Wetland cover type.....	39
Chart 27. Mean percent cover and standard deviation of tall shrub species in Wetland cover type.....	39
Chart 28. Mean percent cover and standard deviation of short shrub species in Wetland cover type.....	40
Chart 29. Mean count of seedlings/saplings of various height classes in Wetland cover type.....	41
Chart 30. Mean percent cover and standard deviation of herbaceous species in Wetland cover type.....	42
Chart 31. Distribution of trees (stems/acre) greater than 10cm dbh (diameter at breast height) by dbh class, overall study area.....	44
Chart 32. Importance Value Index for tree species, overall study area.....	45
Chart 33. Comparison of tree basal areas by species and cover type.....	47