



VSP IN SOUTHERN ONTARIO

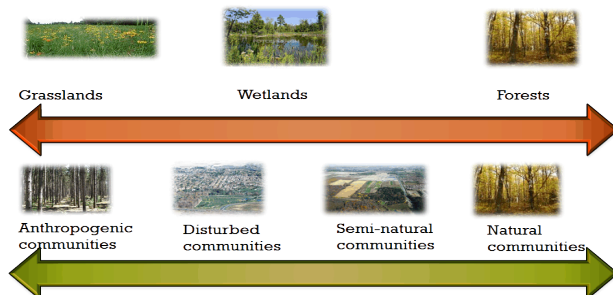
Vegetation Information Needs

Planning, management and conservation actions in settled landscapes of southern Ontario, require diverse information on the extent, composition, structure, and condition of vegetation communities.

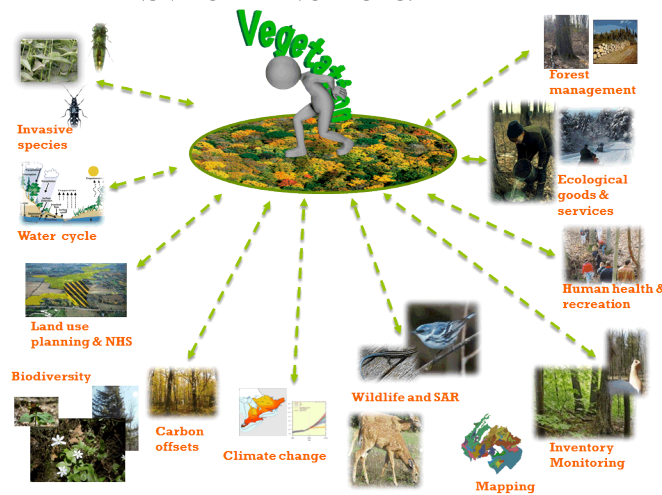
The limited resources available for field sampling demand that any vegetation data collected needs to be multipurpose, adaptive to diverse applications, and applicable at different spatial and temporal scales. In addition, to support adaptive management and planning, field data must be quantitative, standardized, and scientifically rigorous.

VSP combines proven and widely applied vegetation sampling methods. It is designed to integrate field data with spatial and /or remotely sensed information, to support diverse spatial analyses, modeling and mapping applications. VSP is based on a rigorous sampling design, which enables the use of field information for various scientific and practical applications. VSP is also applicable to different vegetation types from forest to grasslands; from natural, semi-natural to anthropogenic communities; and from disturbed, early successional to late-seral communities.

Applicable to different vegetation types



VSP IS A QUANTITATIVE, INTEGRATIVE AND ADAPTABLE METHOD FOR SAMPLING DIFFERENT VEGETATION TYPES IN THE FIELD. IT CAN BE USED FOR BOTH INVENTORY AND MONITORING, AND FOR EITHER SITE-SPECIFIC OR LANDSCAPE-LEVEL APPLICATIONS. IT CAN BE USED FOR SAMPLING FORESTS, WETLANDS AND GRASSLANDS; NATURAL OR ANTHROPOGENIC VEGETATION. IT USES FIXED-AREA METHODS THAT ARE PRACTICAL AND EASY TO IMPLEMENT AND REPLICATE, WHILE BEING SCIENTIFICALLY RIGOROUS. IT PROVIDES MULTIPURPOSE, QUANTITATIVE AND STANDARD INFORMATION THAT CAN BE USED IN A RANGE OF PRACTICAL AND RESEARCH APPLICATIONS.



Field-collected vegetation inventory and monitoring information is necessary to support diverse management, conservation and planning needs.



For more information about VSP:

Faculty of Forestry, University of Toronto
<http://www.forestry.utoronto.ca/Settledlandscapes/VSP/>

VEGETATION SAMPLING PROTOCOL (VSP)



<http://www.forestry.utoronto.ca/Settledlandscapes/VSP/>



VSP INVENTORY AND MONITORING

Inventory and Monitoring

Land development pressures, various human activities, climate change, and invasive species incrementally and over time degrade the composition and structure of natural vegetation and its continuity. Without vegetation inventory and monitoring, individual or cumulative effects of these impacts, will be hard to detect and quantify. VSP plots not only enable defining the status of vegetation, but can also be used for monitoring to detect changes and trends in vegetation composition and structure.

VSP is adjustable in terms of sampling intensity at a site and number of plots. While VSP sets the minimum data requirement when conducting an inventory, it can go beyond the basics and also support a range of different monitoring applications. This is achieved through the modular nature of VSP that enables collecting additional information at a sampled site. The type of the applications and available resources dictate how many plots can be established across an area.

Modular approach

VSP Modules	Inventory	Monitoring
Plant abundance (cover)		
Tree measurements		
Dead standing trees (Snags)		
Lying dead-wood	optional	
Soil, micro-topography & plot surface		
Sub-plots	optional	
Tree health	optional	
Geographic location	X & Y	X & Y*

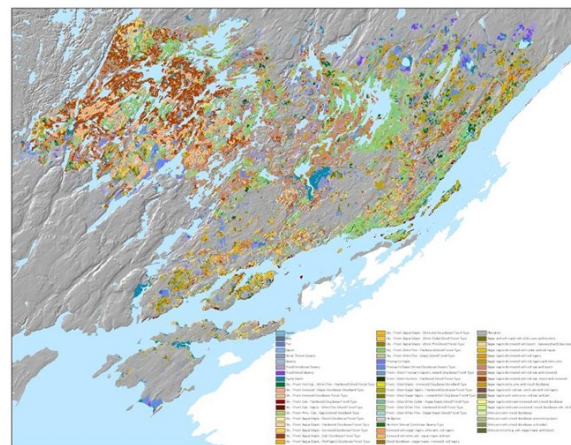
VSP in the field

While data collection standards are rigorous they are easy to implement and not overwhelming for the user. VSP is designed to be practical and easy to carry out in the field.

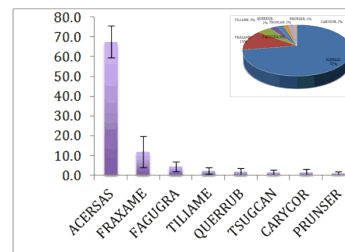


Mapping applications

VSP data can be used to map vegetation in a number of different ways; as point (plot) maps, predictive modeling maps, stand and property maps extrapolated from plot information.



Modeled and mapped forest vegetation for the eco-district 6e10 based on VSP pots.



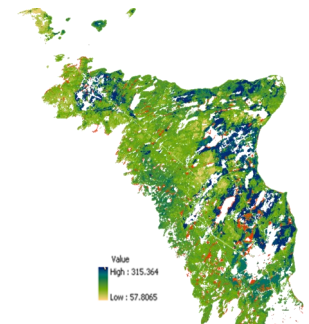
Mean absolute abundance +/- 1 SE

Stands sampled by VSP plots can be mapped and statistically described.

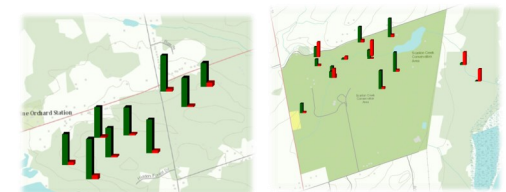
Other VSP applications

VSP has a proven record of over 5,000 plots spread out through about 1/4 of southern Ontario. Some of the many applications of VSP scientifically valid, spatially explicit and multipurpose data, VSP mapping and derivatives are:

- Estimates of ecological goods and services: Biomass and Carbon; Leaf area;
- Biodiversity and floristic quality measures
- Wildlife and SAR habitat protection and planning
- Habitat suitability modeling
- Natural heritage system (NHS) design and planning
- Landscape management and planning
- Environmental assessment
- Invasive plant species monitoring and management
- Forest and vegetation management
- Natural resources status and trend reporting



Aboveground forest carbon estimates for Bruce Peninsula modeled using VSP plots, spatial and remotely sensed information.



Native (green) and non-native (red) species richness by VSP plot.