

DATA COLLECTION AND APPLICATION USING A MODIFIED STREAM VISUAL ASSESSMENT PROTOCOL

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ABSTRACT

In New Jersey, approximately 60 grassroots watershed organizations have formed with aims to restore and protect watershed areas ranging from several square miles to several hundred square miles. At the same time, about 30% of all stream reaches in New Jersey have not yet been assessed and there is a need for inexpensive, user-friendly methods to assess stream health and also improve stewardship within a watershed. While some watershed associations have been conducting successful water quality monitoring programs for years, some of the smaller or newly established groups with limited resources and funding are not yet at the point of extensive chemical and biological monitoring or implementing restoration projects. As such, among the hierarchy of tools used to characterize watershed health, the United States Department of Agriculture (USDA) Stream Visual Assessment Protocol (SVAP) is one method that fills this need (USDA, 1999).

Researchers from Rutgers University have been using, and continue to use, SVAP in collaboration with watershed associations for targeting restoration projects in several New Jersey watersheds as a component of watershed restoration and protection planning projects funded by 319(h) grants. SVAP was modified to include the possible impacts of urban land use, including the possible effects of pipe discharges and stormwater ditches on a stream's stability. Three workshops were conducted to train attendees with the modified SVAP. To better organize incoming data from volunteers, an online data entry system was also established. Based on the GPS coordinates recorded by assessors, corresponding data was brought from spreadsheet format into ESRI's ArcGIS[®] to be projected spatially and for further use an important tool for watershed restoration planning and watershed data analysis.

The authors found that with ease of data organization, available training, and guidance on data interpretation, SVAP is a useful and inexpensive tool that can be used by volunteer organizations and other entities interested in characterizing stream health, inspiring stewardship, educating riparian landowners, and developing watershed improvement projects. With a network of data spanning 700 stream reaches throughout New Jersey, the SVAP tool has become a means to inexpensive stream data collection that can lead to more advanced monitoring methods, prioritization of restoration opportunities, and a mapping network of stream characteristics statewide. Additionally, data are now being analyzed for their correlation potential with land use, environmental characteristics, and watershed characteristics. The findings of this data analysis may help save costs by assessing targeted stream reaches for more meaningful data collection.

REFERENCES

U.S. Department of Agriculture (1999) *Stream Visual Assessment Protocol*; National Water and Climate Center Technical Note 99-1; Washington, D.C.

KEYWORDS

Visual assessment, volunteer monitoring, water quality, channel condition, GIS, watershed restoration and protection, watershed planning, stream restoration.