

USING ARCMAP TO MEASURE MEANDER MIGRATION OF THE NORMANSKILL RIVER, ALBANY, NY

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A geomorphic assessment was completed along the Normanskill, a tributary of the Hudson River watershed located west of Albany, NY, in order to provide baseline data for long term monitoring of the stream. The assessment of the stream includes an evaluation of bank stability and channel conditions at four locations along the stream and the measurement of meander migration. Using ArcMap, the current and past locations of the stream are mapped and meander migration rates determined. The current location of the Normanskill is established by digitizing aerial photographs and satellite images from Google Earth (2007-2010). The Google Earth time slider tool and historic maps of Albany and Schenectady Counties (Stone & Stewart, 1866) are used to determine short- and long-term rates of meander migration over the last 13 and 144 years, respectively. For meanders that appear to have migrated, the locations of meander loops from the past and present are compared in ArcMap and the measure tool is used to determine rates of meander migration. As an example of meander migration of the Normanskill, at one assessment location the stream migrated towards the south west between 1866 and 1995. At this same location prior to 2001, a rehabilitation effort was completed to restore bank stability. As a result, the meander bend was moved back towards its 1866 position. This project compliments previous ecologic assessments of the stream (May 2010) and helps establish the procedure for long-term assessment of the Normanskill. The data collected now and in the future will be used to monitor geomorphic alterations of the stream.