

4.0 Introduction to Management Unit Descriptions and Recommendations

This section contains the observations of the condition of the upper Rondout Creek made during the walkover assessment that was conducted in 2008-2009. Detailed descriptions and specific recommendations are presented for the stream length existing from the top of the watershed near Peekamoose Lake, downstream to the Rondout Reservoir. The exception to this is those areas on New York State lands, which are in “forever wild” status and thus are left unmanaged and self-willed. The Rondout mainstem has been organized into 17 Management Units (MUs) defined using physical stream characteristics, historical channel alignments, location of bridges and road infrastructure, and valley characteristics. The major tributaries, including the Rondout headwaters above Peekamoose Lake, will be inventoried in future assessments; the exception is the first portion of Sundown Creek (aka East Branch of the Rondout), which has been included due to the predominant role it plays in conditions on the mainstem at the confluence. This section of Sundown Creek has been designated Management Unit 18.

These MU descriptions provide summary statistics, outline some of the historical conditions relating to current stream function, and describe current morphological conditions (bed and bank form), sediment transport dynamics, general streamside (riparian) vegetation condition, and proximity and arrangement of roads, bridges and culverts. They also briefly address issues related to flood risks, in-stream habitat and water quality. These descriptions were meant to provide landowners and other stream managers information that might be useful in the management of their property for optimum stream health and to guide future policy and program development by regional decision-makers and agency personnel.

The stream feature inventory was conducted during 2008 and 2009. The following is a list of some of the features that were mapped using a handheld Global Positioning System (GPS) unit with 3-5 meter accuracy:

- Eroding banks
- Eroding beds (or head-cuts)
- Depositional bars – point, side, transverse (or diagonal), center bars
- Debris or log jams
- Culvert outfalls
- Revetment types – berms, walls, riprap, dumped stone, log cribbing
- Cross sectional locations
- Grade control features – including bedrock outcrops and dams
- Japanese knotweed colony locations
- Bridges and their abutments
- Clay exposures in the banks
- Spring seeps
- Tributaries

Photographs were taken of each feature significant to overall stream functioning. The information from this assessment was compiled within a series of Arcview Geographic Information Systems (GIS) software shapefiles maintained by the New York City

Department of Environmental Protection (NYCDEP). Sample maps displaying important stream features are provided for each management unit.

Statistics presented for stream features (i.e., % erosion, stabilization, etc.) are representative of stream length within each respective management unit. Where a feature like bank erosion or revetment could potentially occur along neither, one, or both banks of a reach of stream, the percentages of total stream length given for that feature are the percentage for *double the running length* of the management unit. For example, for a 1000 ft of stream, there are 2000 ft of banks; 200 ft. of eroding bank would therefore be presented as 10% of total stream length.

In the summary table at the beginning of each management unit, the first entry is “Intervention Level”. This refers to level of effort suggested for the management activities recommended for each unit. There are four categories: ***Preservation*** indicates that conditions are stable and healthy and should be protected as a reference model to guide management of other units; ***Passive Restoration*** indicates that there may be some indication of instability (e.g., channel bed aggradation or degradation) but that it appears that the stream will recover from disturbance through self-correction and reestablish stability without intervention, and that the appropriate management response is to monitor the reach to track its evolution; ***Assisted Restoration*** indicates that there is sufficient channel instability to warrant active management (e.g., installation of soil bioengineering stabilization practices) but that major channel work is not necessary and management can be effective at the site scale; ***Full Restoration*** indicates that significant instability problems are evident which will require, in addition to biostabilization practices, reach scale channel redimensioning to reestablish effective sediment conveyance.

SEE FIGURES BELOW

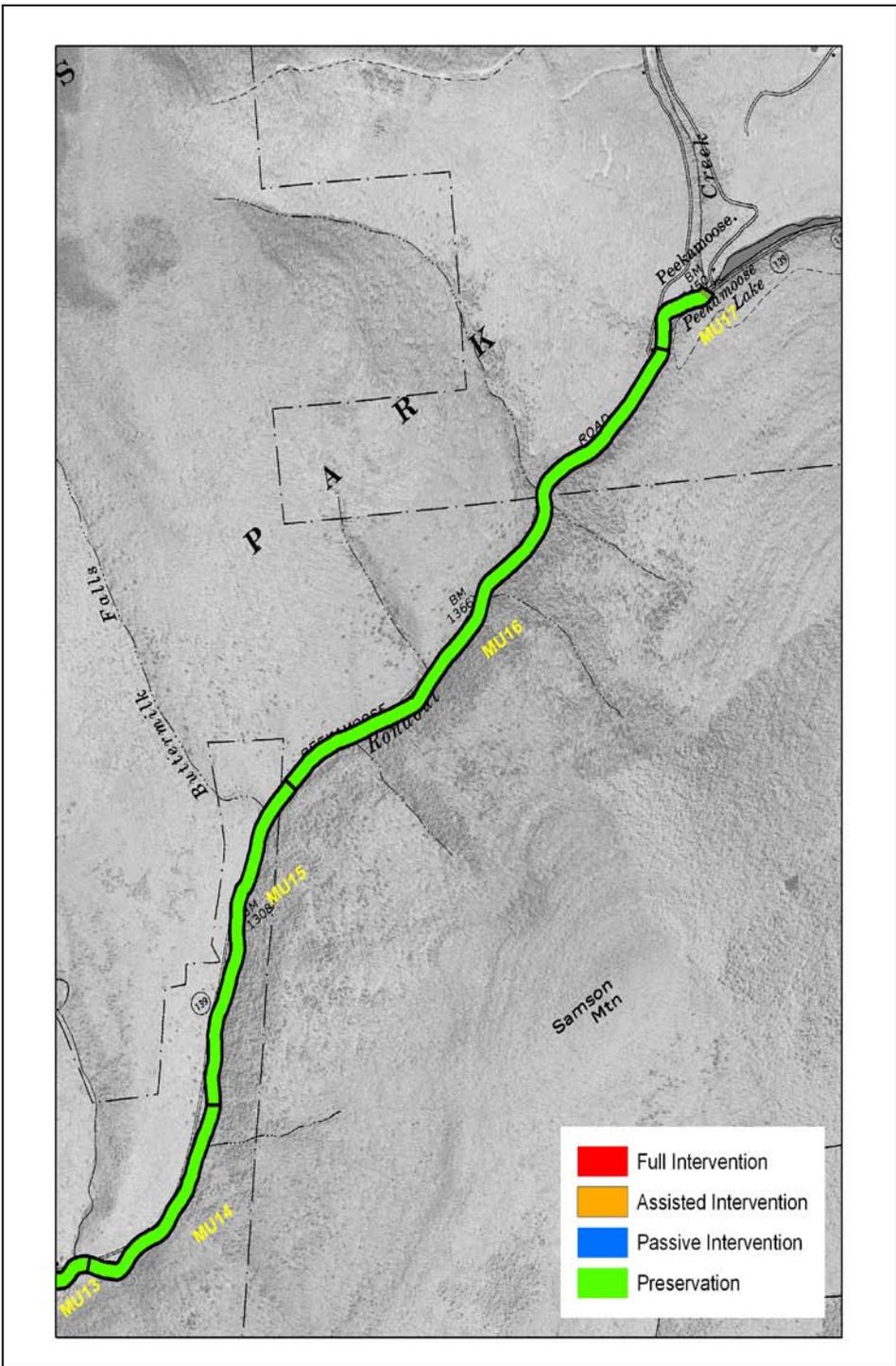


Figure 1

This intervention level map begins at a private bridge crossing the outfall of the Peekamoose Lake dam where it enters the Rondout Creek, and continues downstream approximately 3.25 miles along Peekamoose Road until it passes under a bridge over the Rondout Creek at the trailer field in NYS DEC Peekamoose Valley Camping Area. This map encompasses Rondout Creek management units 17 through 14.

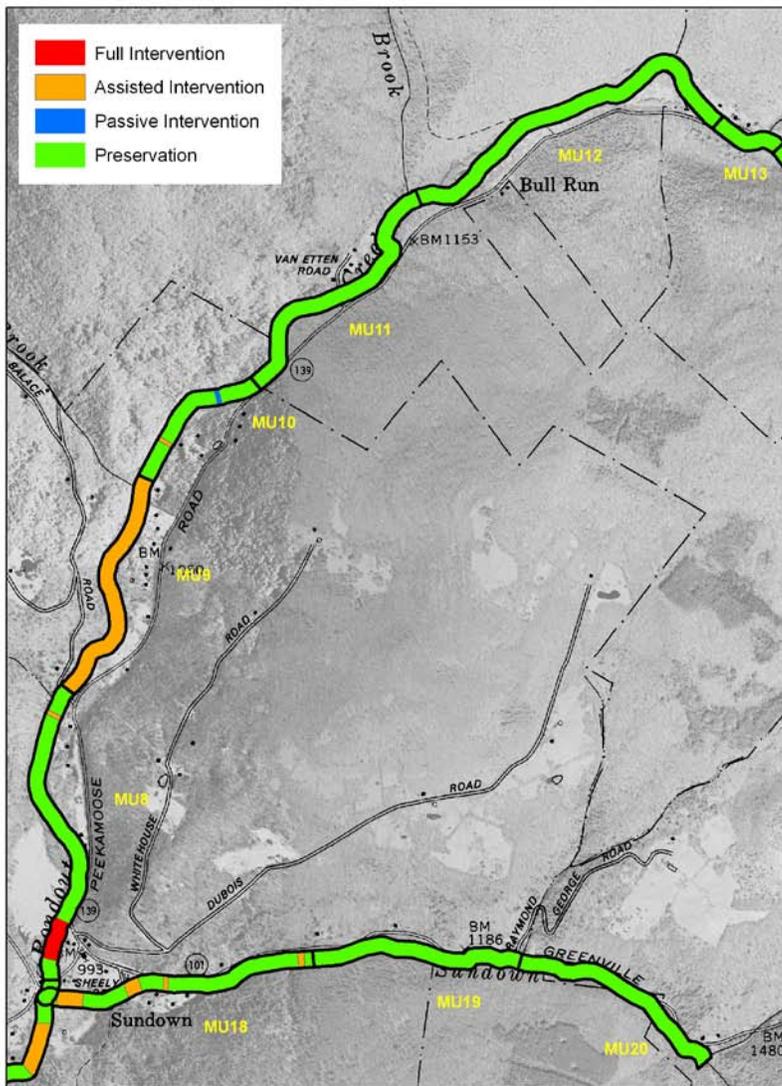


Figure 2

From the trailer field in NYS DEC Peekamoose Valley Camping Area downstream 3.1 miles under the Sundown Bridge on Peekamoose/Sundown Road including lower sections of Sundown Creek for 1.8 miles up Greenville Road. [Rondout Creek Management Units 8-13 and Sundown Creek Management Units 18-20].

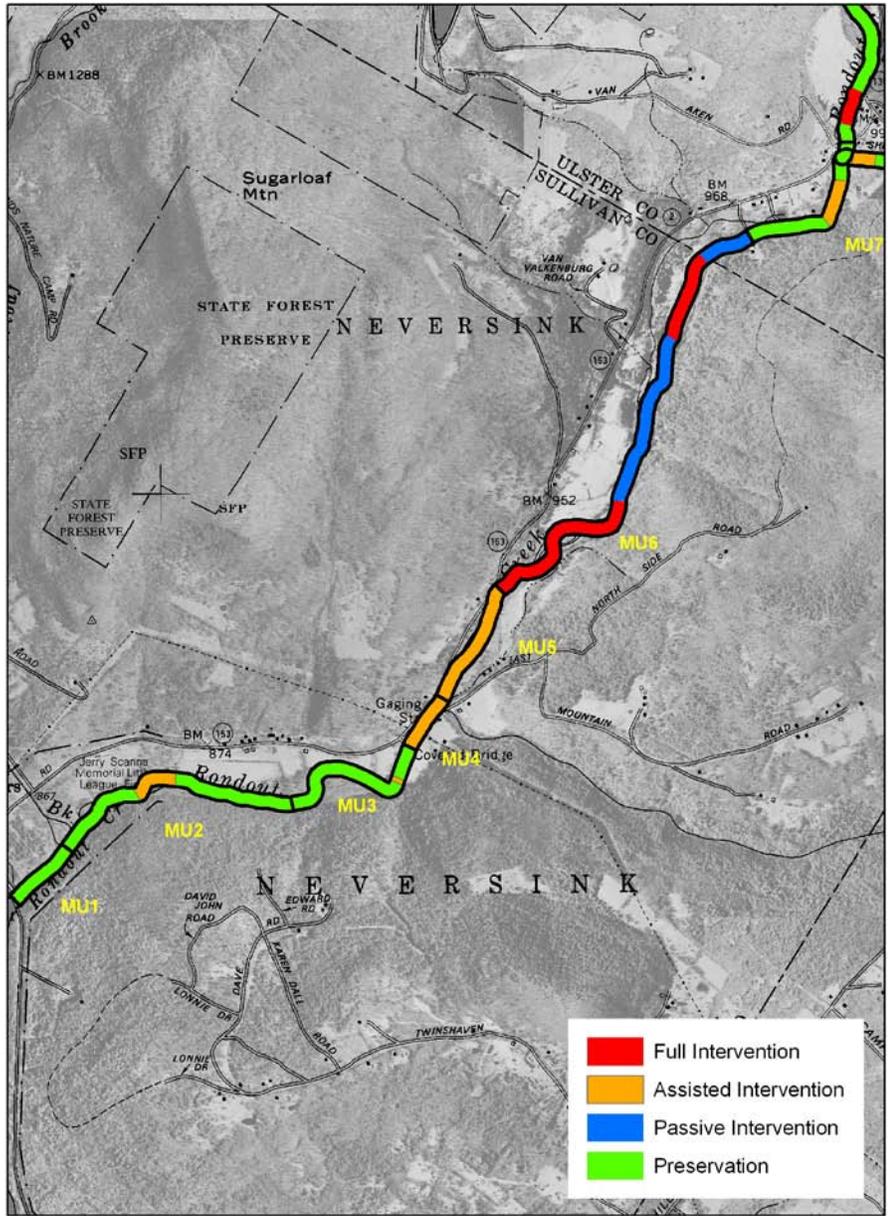


Figure 3

This intervention level map begins at the Peekamoose/Sundown Road Bridge where the Sundown Creek enters in the Rondout Creek, and continues downstream approximately 3.5 miles along Sundown Road until it empties into the Rondout Reservoir at the Route 55-A Bridge. This map encompasses Rondout Creek management units 7 through 1.

While bank erosion occurs even in pristine settings, much of the bank erosion we see in the Rondout Creek and elsewhere in the Catskills is the result of the way we have managed the stream, the floodplain and roads and bridges in the stream corridor. While they are in the ownership of many individuals, streams are nonetheless integrated systems; because an action in one reach has the potential to create disturbance up or downstream, effective management requires that watershed communities “neighbor up for the common good”. The recommendations in this section of the management plan have taken into consideration conditions, not only at the site of the erosion, but upstream and downstream as well, and the relative significance of each erosion site, its causes and the options for treatment all are best understood and addressed in the context of the entire watershed.

A summary of the recommendations in all Management Units is provided in Section 5.1.

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