

## Data Entry for NYTU Resource Information System (RIS)

**THIS IS A RESTRICTED AREA**  
**USE IS LIMITED TO TROUT UNLIMITED MEMBERS IN NEW YORK STATE**  
**UID & PASSWORD ARE ASSIGNED TO EACH CHAPTER PRESIDENT**  
**AUTHORIZED USERS MUST CONTACT THEIR PRESIDENT TO RECEIVE UID & PW**

### Data Entry: Core Area, Evaluations (SVAP, FR, DE levels) & Interventions (projects)

- I. **Core Data Area (shared with SVAP, FR, DE):** The intent is to collect relevant baseline information once. Once entered, this shared data section relates to any level. Although much of the data collection is self evident, several items deserve explanation.
- **Hydrologic Regions:** USGS divides NY into the following Hydrologic regions: 1, 2, 3, 4, 4a, 5, 6, 7. Check the USGS Hydrologic map to locate your stream.
  - **Watershed Code:** NYS is also divided into the following major drainage areas:

Long Island (LI)	Lower Hudson (LH)	Mohawk/Hudson (M/H)
Upper Hudson (UH)	Champlain (CH)	St. Lawrence (SL)
Raquette (RA)	Oswegatchie/Black (O/B)	Delaware/Susquehanna (D/S)
Ontario (ON)	Oswego (OS)	Genesee (GE)
Erie/Niagara (E/N)	Alleghany (AL)	Chemung (CH)

Check the **NYS Major Watershed Map** to determine the location of your stream.
  - **Locator Code:** (derived from Vt. ANR Geomorphic Assessment Handbook, Phase 1, pp 12-13)

**Ground rules for labeling reaches:**

    1. Consistently define reaches from downstream to upstream on the main stem first as "M1, M2, M3" – using major tributaries & changes in sinuosity/valley slope as significant break points.
    2. Similarly, number major tributaries as T1, T2, T3 .... From downstream to upstream along the main stem.
    3. Individual reaches on major tributaries are labeled T1.1, T1.2 & so forth.
    4. Minor tributaries of the mainstem or of major tributaries are labeled -S1, -S2 tacked on to the mainstem reach number (eg. M1-S1) or the major tributary number (eg. T1.2-S1)
    5. Mark segments on your maps & label. (USGS & Delorme)

**Latitude & Longitude Coordinates:**

    1. This is very easily obtained from a GIS unit, from computer mapping tools, or using a latitude/longitude ruler to read directly from a recent USGS map.
    2. Record as in this example: 44 deg - 17' - 00" N for longitude, an 73 deg-17'-30"W for latitude, for downstream & upstream limits. (Note that the upstream limit of one reach is the downstream limit of the next reach, so it is really most important to indicate the downstream limits of all reaches.)

**Verbal Description:** Accurately & concisely describe the reach so anyone can find it.  
Example: 6.2 mi East of Battenville along Rt 22 (or an intersection, or a bridge), reach begins at tributary entering on the South bank.
  - **Drainage area in sq mi:**
    1. Draw watershed limits onto a USGS map
    2. Transfer this on to a transparency sheet
    3. Transfer this on to graph paper & tally up squares & convert according to the map scale to square miles. (Alternatively use a land area scale.)
  - **Dominant Substrate:** for SVAP only, visually estimate using an approximation of the Rosgen system—

bedrock = 1 (bigger than a VW bug, > 160")	gravel = 4 (peppercorn to tennis ball .1-2.5")
boulder = 2 (basketball to VW bug, 10.1-160")	sand = 5 (peppercorn to fine grit sandpaper)
cobble = 3 (tennis ball to basketball, 2.5-10.1")	silt = <.062 mm
  - **Channel Form:** use an approximation of the Rosgen system for SVAP only, roughly:

cascades & torrents = Aa, A	meandering meadow = E
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rapids & runs = B  
riffle/pools = C  
braided = D

trapezoidal channels that rarely flood = F  
gullies = G  
DA = anatomosed

Please note that this is a *rough* visual approximation adequate **only** for SVAP. Formal stream classification in the Rosgen system requires actual channel survey & pebble count methods as described in his texts. Rosgen sorting criteria for stream type is **stepwise**: single vs multithread channel → entrenchment ratio → w/d ratio → sinuosity → defined stream type. (Note: slope is only a sorting criterion for subclass!) Use Rosgen's classification flow chart for FR & Detailed Evaluations!)

- **Width:** use the narrowest stable bankfull width taken from a *riffle* for riffle pool systems and from a *run* for step pool systems. (Use Identifying Bankfull State in Forested Streams in the Eastern US video, or Harrelson's Stream Channel Reference Sites: An Illustrated Guide to Field Technique).
- **% Land Use:** this refers to a cross section of the watershed in the section(s) being reported, not just the immediate riparian zone

II. **Reference Reach Candidates:** This is a very important item as in most regions of NY there are relatively few remaining examples of intact stream reaches in NY -- given 200 years of deforestation, agriculture, channel straightening, road & RR building. Reference Reaches provide the optimal form to compare degraded reaches to & the template for restoration work. Having an inventory of Reference Reaches in NY will be invaluable to efforts to protect and restore streams. Please note that your certainty about a given reach being of reference quality grows with each level of assessment – ranging from “potential” to “probable” to “confirmed”.

- On the **SVAP**, potential candidate reference reaches will score 9-10 in the geomorphic cluster, have good pool status (if appropriate for that stream type), a good riparian zone, & a low level of embeddedness (if in the bedrock through gravel groupings).
- On the **Focused Reconnaissance Protocol**, probable candidate reference reaches will have optimal values for the listed geomorphic parameters obtained by using rapid methods outlined in the Field Manual for Brief Assessment Methods of Stream Health.
- On the **Detailed Evaluation Level**, having completed Rosgen levels II & III studies a confirmed reference reach of a confirmed Rosgen stream (reach) type must have “NO” responses under “observed shifts” in the geomorphic cluster.

III. **Stream Visual Assessment Protocol (SVAP)** This tool, developed by NRCS is available online in downloadable format (use Google, search for NRCS+SVAP). We have modified it slightly to fit our “core data needs”, regrouped the assessment items into data clusters (geomorphic, fisheries, water quality and invertebrate), added 2 criteria: “deviation from optimal bankfull width” & “deviation from optimal temperature range”, and provided a more visual format for viewing the profile of assets and problems. Our version of this has been distributed to each NY TU Chapter & is available in PDF format at this site.

- **The NYSCTU SVAP Brief Reference Sheet** located in the Field Manual for Brief Assessment Methods of Stream Health should be used as a field reference when assigning scores to be circled on the data sheet, then later entering directly from the data sheet onto the SVAP section of the RIS. Note that while your data will be entered in numeric form, it will be reported in adjectival form (excellent, good, fair & poor) in the detailed report section.

#### IV. **Focused Reconnaissance Data Summary:**

- **Geomorphic Cluster:** note that the Field Manual provides only geomorphic reconnaissance methods, and that not all of the data collected is required for posting to the RIS. (For description of comprehensive Geomorphic survey methodology please refer to Applied River Morphology, Rosgen (levels 1-4) & Stream Channel Reference Sites: An illustrated Guide to Field Technique, Harrelson et al.
- **Fisheries Cluster:** species present, natural reproduction, stocking rates & frequency should be obtained from your regional DEC Fisheries Office or online.
- **Water Quality Cluster:** pH & turbidity may be available locally or easily measured by you using inexpensive test strips for pH, & calibrated turbidity tubes. Qualitative coliform estimates could be obtained by using a “uricult” kit with EMB agar, or more simply using either inexpensive coliform test kits or PurTest Water Test Kits. (A local physician could help you get uricults, Forestry Suppliers is one

source of a broad range of water testing materials.) Maximum temperature range is easily obtained during a hot spell by checking temps at ~3-4 PM daily over a week.

- **Invertebrate Cluster:** EPT index is a straightforward means of assessing the presence of key sensitive organisms having high requirements for clean, well oxygenated, cold water. Standard EPT counting & recording methodology is appropriate, collecting a sample using an improvised kick screen is OK at this level. ( Two ~4' lengths of dowel with a ~2' length of window screen work fine.) The EPTCO profile is even simpler, being a means of quickly assessing relative populations of major invertebrate groups of interest to an angler. (No attempt to link to water quality in this case, just a quick way to get a feel of what's there, what's not & how abundantly are they represented.) Again an improvised kick net is fine. (Alternatively, flipping over a dozen rocks in a riffle will also give you a fair picture.) If it is very clear from these simple methods that sensitive organisms are richly represented, you need not proceed with exacting methodology required under this cluster in Detailed Evaluations (unless you have a specific need to do so).

## V. Detailed Evaluation Level

### • Geomorphic Cluster

#### • Standard Rosgen methodology (required)

- Obtain: full -- representative cross section, profile, & pebble count (gravelometers are available from Forestry Suppliers); compare with reference reach
- Utilize recent & historic aerial photography to determine alterations in planform
- Do flood frequency analyses for the nearest gage stations & conduct gage station surveys to calibrate your field determined bankfull to gage height & associated discharge from USGS 9-207 records.
- While sediment studies may include suspended sediments & sediments only mobilized near bankfull flows, reporting listed here is of non suspended sediment only.
  - Pavement sampling is done by Wolman pebble count. Report D15, D35, D50, D84. Report if particle distribution is bimodal or unimodal.
  - Determine largest particle size mobile at bankfull by sampling a point bar at a spot midway between thalweg and bankfull elevation and 2/3 down its length. Determine the mean intermediate axis of 6-10 of the largest particles in arms reach. Report as Largest Particle Mobile at bankfull.
  - Aside: [For subpavement sampling needed in channel design work, use Rosgen's procedure: using a bottomless 5 gallon pail & a 1lb empty coffee can, excavate & discard to a depth of 2 maximum rock diameters—then excavate and save an sediments to additional depth of 2 max. rock diameters. Seive sort this sample, weigh & plot by weight on standard pebble count graph. Report d50 subpavement by weight.]
- **Fisheries Cluster:** data in this section should be obtained from the regional DEC Fisheries Office.
- **Water Quality Cluster:** while most of this data should be obtained from DEC, you may elect to initiate additional flow and temperature monitoring studies.
- **Invertebrate Cluster:** check to determine if recent benthic studies are available from DEC. Consider initiating a biomonitoring program utilizing standardized collection procedures if there are indicators of stress on the system. Report results in summary fashion.

**VI. Intervention (Project) summary sheet** – the objective here is to report (& show) what you did, for what indications, using what method, costing how much, requiring how much time, what's its value & how well does it work. By doing this you are documenting TU's effectiveness and sharing your hard earned knowledge to help others in their own stream work. In addition to providing you with quick pick lists, text boxes were included to help you clarify key points.