



Maine Volunteer River Monitoring Program (VRMP)

Appendix H

Sampling Position Requirements (VRMP QAPP-Table 4a)

Program-Wide SAP Appendix

From:

Maine DEP (Maine Department of Environmental Protection). 2009. Maine Volunteer River Monitoring Program [VRMP] - Quality Assurance Program Plan. Doc #: DEPLW-0984. Portland, ME. <http://www.maine.gov/dep/blwq/docstream/vrmp/publication.htm>

Appendix H. Required river/stream sampling and monitoring locations for inclusion in the VRMP (from Table 4a of VRMP QAPP [2009]).

Lateral Position Across a River/Stream

→ Sampling needs to occur in the “center half of flow” so that a flowing, well-mixed, representative sample is collected. The center half of flow is usually close to the middle of the channel, though it sometimes can move away from the middle of the channel, following the thalweg (Figure 2), towards the outside of a river-bend.

→ Samplers need to avoid shore-related features such as:

- eddies
- deadwaters
- shallows
- jetties
- pools (even though parts of the thalweg may pass through them)
- docks (unless they within the center half of flow).

→ To reach the “center half of flow”, volunteers can use a variety of techniques including:

- wading out by foot
- reaching out
- using an extension pole
- using a boat
- sampling from a bridge/culvert using a VRMP-approved water sampling device¹

Vertical Position in a River/Stream

(In all cases, avoid allowing water surface films or “stirred-up bottom sediments” into the sample. Always face upstream when sampling.)

(For Tier 1 Dissolved Oxygen & Temperature)

- For rivers/streams < 3 m in depth, sample at mid-depth.
- For rivers/streams ≥ 3 m in depth, sample at 1-m increments to obtain a vertical profile.

(For Tier 2 Dissolved Oxygen & Temperature as well as any Other Water Quality Parameters)

- For rivers/streams that are non-wadeable, sample at mid-depth (if depth is known) or 1-meter below the surface.
- For rivers/streams that are wadeable, sample at mid-depth or 1 ½ feet below the surface. (Volunteers will specify which depth on their data sheet.)

Longitudinal Position in River/Stream

(when near crossing such as a bridge or culvert)

→ To avoid the possible effects of roads, bridges, or scour pools on water quality, the preferred location to sample is at the upstream end of a bridge or culvert crossing (as opposed to the downstream end) *unless*:

- (1) it is safer to sample at the downstream end;
- (2) the purpose of sampling at the downstream end of the crossing is to include any effects of the crossing on water quality.

→ Be sure to document where the sampling takes place with respect to a crossing, especially on the Site Location Description Form (Appendix 6).

Impoundments

→ Sample as close as possible* to the deepest “hole” (depth) of the impoundment – generally in the vicinity of the upstream side of the dam. Bathymetry maps or sonar equipment can be used to determine river depths. *(Do not risk your safety! Do not get too close to the dam! Do not go into “roped-off” sections of the impoundment.)

¹ See VRMP's QAPP's section 5.2 and also Appendix 2 SOP Cookbook (specifically, “Standard Operating Procedure - Methods for Collecting Water Grab Samples”; SOP-01, Appendix D) for details regarding VRMP-approved water sampling devices.