

Surface Water Ambient Monitoring Program Quality Assurance Program Memorandum

(Approved by the Interim SWAMP Coordinator)

To: SWAMP Round Table

From: Beverly H. van Buuren, SWAMP Quality Assurance Officer and
Peter R. Ode, SWAMP Bioassessment Lead Scientist

Date: September 17, 2008

Re: Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP
Bioassessments

On May 21, 2007, the SWAMP Quality Assurance (QA) Officer and SWAMP Bioassessment Coordinator issued interim guidance for all SWAMP-funded bioassessment projects defining QA requirements for several key elements of SWAMP's Bioassessment Program. This memorandum, effective September 17, 2008, amends the May 2007 document with updated guidance on macroinvertebrate sample collection.

If you have any questions regarding this guidance, please contact the SWAMP QA Officer, Beverly H. van Buuren at (206) 297-1378, or via email at bvanbuuren@miml.calstate.edu or the SWAMP Bioassessment Lead Scientist, Peter Ode, at (916) 358-0316, or via email at pode@ospr.dfg.ca.gov.

Macroinvertebrate Sample Collection

The previous SWAMP policy (Ode 2007, <http://www.swrcb.ca.gov/swamp/biocastreams.html>) was to collect two field methods under most circumstances: a targeted habitat method ("targeted riffle composite", or TRC) and a systematic representation of multiple habitats in a reach ("reachwide benthos", or RWB). Recent published and unpublished analyses (Gerth and Herlihy 2007, Rehn et al. 2007, Mazor et al. 2008) provide evidence that RWB and TRC methods can produce generally comparable results across a broad range of settings within California. Based on these analyses, SWAMP is now adopting a single field method in MOST streams statewide. However, because the comparability data are equivocal in some settings, SWAMP policy includes two specific exceptions.

SWAMP-funded bioassessments shall adhere to the following guidelines:

1. In most regions of the state (see exceptions listed in 2 and 3 below), SWAMP funded programs shall collect bioassessment samples using the RWB method (sometimes referred to as multi-habitat or MH).

2. SWAMP programs shall continue to collect both TRC and RWB samples in environmental settings where method comparability results are equivocal. While SWAMP will define specific criteria for these settings in a future guidance memo, the current interim policy is to collect both methods at high elevation pool-dominated streams (>2000 m elevation, >80% pool reaches, boulder cascades).
3. SWAMP programs shall employ a modified version of the RWB in large, low-gradient streams dominated by sandy bottoms (e.g., low gradient coastal streams, large Central Valley streams). The modification is to collect subsamples at 0%, 50%, and 100% of stream width instead of 25%, 50%, and 75% of stream width) to ensure collection of marginal habitats.
4. SWAMP programs may choose (at their discretion) to continue to collect a second method at any site where additional sampling data is likely to produce complementary information.

The SWAMP Bioassessment Program will establish a Technical Advisory Committee (TAC) to provide additional guidance on the following topics:

1. *Refined criteria for defining when the exceptions described in 2 and 3 above should be applied*
2. *Analytical considerations for combining RWB and TRC datasets or applying data collected with one method to an indicator (e.g., index of biotic integrity (IBI) or observed/expected (O/E) model) derived from another method*

References

Gerth, W.J., and A.T. Herlihy. 2006. The effect of sampling different habitat types in regional macroinvertebrate bioassessment surveys. *Journal of the North American Benthological Society* 25:501-512.

Ode, P.R. 2007. Standard operating procedures for collecting macroinvertebrate samples and associated physical and chemical data for ambient bioassessments in California. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) Bioassessment SOP 001.

Rehn, A.C., P.R. Ode and C.P. Hawkins. 2007. Comparisons of targeted-riffle and reach-wide benthic macroinvertebrate samples: implications for data sharing in stream-condition assessments. *Journal of the North American Benthological Society* 26: 332-348.

Mazor, R.D, K. Schiff, A.C. Rehn, P.R. Ode and K. Ritter. 2008. Bioassessment tools in novel habitats: An evaluation of indices and sampling methods in low-gradient streams in California. *In preparation*.