

Spatially and Temporally Representative Data

(Handout #3 for September 13)

You can mark this up and turn it in to us at today's workshop.

On representative stations

Draft in recent email:

Water quality standards and criteria are set to protect the attainable uses for each water body. Sample sites are located to be characteristic of major hydrologic areas of the water body and located where the criteria can be attained. Often the most representative sites for water sample collection are in areas of good flow or circulation. For biological sampling, all habitat types are sampled for characteristics of the fish community, while optimal available habitat, for example cobble substrate riffles, are sampled for benthic macroinvertebrates. The assessor will consider and use judgment in determining if sites are representative of a segment and if it is appropriate to apply criteria to the data.

Revised draft:

Water quality standards and criteria are set to protect the attainable uses for each water body. Sample sites used for ambient water quality monitoring are located in areas determined to be characteristic of major hydrologic portions of the water body and where the criteria are expected to be attained under typical conditions. Often the most representative sites for water sample collection are in areas of good flow or circulation. For biological sampling, all habitat types are sampled for characteristics of the fish community, while optimal available habitat, for example cobble substrate riffles, are sampled for benthic macroinvertebrates. The assessor can use judgment in determining if sites are representative of an assessment area and if it is appropriate to apply criteria to the data.

On temporal representativeness

Draft in recent email:

The assessment must use a sample set that is temporally representative of conditions in the assessment area. One way of ensuring that a data set is temporally representative is to use data routinely scheduled over several years, with approximately the same intervals of time between sampling events. This routine sampling plan results in monthly or quarterly sample data sets which are considered temporally representative of long-term conditions.

In some instances where water quality has dramatically improved or declined recently, only the more recent and representative data set may be used for the assessment. These changes in water quality could be due to identified permanent changes in pollutant loadings, such as a new treatment facility, implementation of best management practices, or hydrologic changes.

Samples from monitoring projects that are determined to bias the data set will be considered and excluded, such as data collected as part of a complaint investigation, equipment test, or a focused short term special study. Data from sampling projects targeted to high flow or runoff conditions should be reviewed to determine if they bias the assessment data set. Such data can be used to add a narrative for the water body assessment, but in general, should not used in calculations for determining use support or delisting.

Revised draft:

The assessment must use a sample set that is temporally representative of conditions in the assessment area. One way of ensuring that a data set is temporally representative is to use data routinely scheduled over several years, with approximately the same intervals of time between sampling events. This routine sampling plan results in monthly or quarterly sample data sets which are considered temporally representative of long-term conditions. As a result these datasets should not be biased towards a particular short-term, adverse condition which may have existed and affect the assessment outcome.

In some instances where water quality has dramatically improved or declined recently, only the more recent and representative data set may be used for the assessment. These changes in water quality could be due to identified permanent changes in pollutant loadings, such as a new treatment facility, implementation of best management practices, or hydrologic changes.

Samples from monitoring projects that are determined to bias the data set will be excluded, such as, data collected as part of a complaint investigation, equipment test, or a focused short term special study. Data from sampling projects, targeted to high flow or runoff conditions should be evaluated to determine if they significantly bias the assessment data set. Such data can be useful and should be considered to see if they can add to a narrative for the water body assessment, but when reasonably determined to bias the data set, should not used in the calculation for determining use support or delisting.

Alternate revised draft for last paragraph:

Samples from monitoring projects that are determined to bias the data set will be excluded, such as, data collected as part of a complaint investigation, equipment test, or a focused short term special study targeting specific conditions. Data from sampling projects, targeted to high flow or runoff conditions should not be evaluated for assessment. Such data can be used to add to a narrative for the water body assessment, but, in general, should not used in the calculation for determining use support or delisting.