

Section 303(d) List of Water Quality Limited Segments

Methodology Used For Evaluating Regional Water Quality Control Board Recommendations and to Develop the Section 303(d) List

Introduction

This report describes the process by which the State Water Resources Control Board (SWRCB) staff has evaluated and recommended waters for revision of California's Clean Water Act Section 303(d) list of water quality limited segments. This process is intended to apply to only the listing process conducted in 2002. The SWRCB is in the process of developing a listing/de-listing Policy that will provide a consistent approach for adding and deleting waters from future list submittals.

This document provides the description of the methodology used to develop the Section 303(d) list (40 CFR 130.7(b)(6)(i)) and the rationale for any decisions not to use any existing and readily available data and information (40 CFR 130.7(b)(6)(iii)).

Background

Section 303(d)(1) of the federal Clean Water Act (CWA) requires states to identify waters that do not meet applicable water quality standards with technology-based controls alone. Federal regulations also require the identification and priority setting for water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) (40 CFR 130.7(b)). A water quality limited segment is "any segment [of a water body] where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after application of technology-based effluent limitations required by CWA Sections 301(b) or 306."

States are also required to establish a priority ranking of these waters for purposes of developing TMDLs (40 CFR 130.7(b)(4)). The states are required to assemble and evaluate all existing and readily available water quality-related data and information to develop the list (40 CFR 130.7(b)(5)) and to provide documentation to list or not to list a state's waters (40 CFR 130.7(b)(6)).

The SWRCB is required by the Supplemental Report of 2001 Budget Act to in developing a policy to use a "weight of evidence" approach for listing and de-listing waters and to include criteria that ensure that the data and information used are accurate and verifiable.

Overview of Process

The SWRCB will use a weight of evidence approach to evaluate the Regional Water Quality Control Board (RWQCB) recommendations for the 2002 CWA Section 303(d) list submittal of water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) (40 CFR 130.7(b)). The process consists of the following four steps:

1. Identify all existing and readily available data and information used by the RWQCBs to characterize changes to the existing list, new listing, or de-listings. This data and information includes:

- Chemicals/Pollutants of concern
- Pollution
- Exposure pathways
- Response measurements
- Extent of potential impacts
- Sources of potential impacts
- All other relevant data and information sources

2. Identify additional information used to develop the RWQCB proposals. This additional information includes:

- Beneficial uses potentially not attained
- Water quality objectives/criteria
- Antidegradation requirements

3. For new listings or de-listings, compare all data and information used to develop RWQCB recommendations with data strength factors (as described below). For changes to the list (such as a change in the area affected, units, and source) evaluate the rationale on a case-by-case basis.
4. Formulate a recommendation to the SWRCB on each RWQCB listing, de-listing, or change proposal.

Evaluating Data and Information Using Weight of Evidence (Defining Water Quality Limited Segments)

Description

In order to develop recommendations for additions, deletions, and revisions to the CWA Section 303(d) list, the SWRCB staff will evaluate the strength, value, and believability of evidence provided by the RWQCBs.

Definition

The weight-of-evidence approach is the process by which the strength of the data and information are assessed and the measurement endpoints are related to beneficial uses and water quality standards to evaluate whether waters are water quality limited

segments. This approach requires, to the extent possible, that different types of data and information be evaluated together. These types of data and information may include chemical measurements in water, sediment, and tissue; measurements of bacterial indicators; toxicity test results; habitat measurements; biological community measurements; and other data types.

Components of the Weight of Evidence

Measurement endpoints are the lines of evidence used to evaluate attainment of beneficial uses and water quality standards. In general, measurement endpoints should be directly or indirectly linked to beneficial use protection and water quality standards attainment. To be most useful they should be numerical. The weight of evidence approach described in this report is based on and adapted from an approach developed by the Massachusetts Weight-of-Evidence Workgroup (1995). This approach was used because it specifies in writing the major factors that define best professional judgment in evaluating data and information in a weight of evidence framework.

Strength of each measurement endpoint

Confidence in the measurement endpoint may vary depending on the quality of the data available or the manner in which the data is used to determine impairment.

Concurrence among endpoints

More confidence is generally attributed to findings on which there is agreement among multiple measurement endpoints. Less confidence is generally attributed to findings in which the lines of evidence contradict one another.

Strength of Measurement Endpoint Factors

Each of the following factors were used to evaluate and assess the quality and applicability of the measurement endpoints used by the RWQCBs to develop their proposed listings, de-listings, and changes to the Section 303(d) list. All data and information submitted to the RWQCBs has been considered and evaluated (40 CFR 130.7(b)(6)(iii)).

As described in the next section, these factors were used to evaluate and determine the overall confidence in the data and information. For each factor, a qualitative assessment was made of the level of confidence in the measurement endpoint. The level of confidence was assigned "high," "medium," and "low" ratings for each factor. Seriously flawed approaches, data, and information were rejected from further consideration if warranted.

The quality of measurement endpoints were assessed by comparison in order to the following ten characteristics:

1. Extent to which data quality requirements are met

This attribute reflects the degree to which data quality requirements or objectives are designated and are comprehensive and rigorous, as well as the extent to which they

are met. Data quality requirements (DQRs) should clearly evaluate the appropriateness of data collection and analysis practices. If any data quality objectives are not met the reason for not meeting them and the potential impact on the overall assessment should be clearly documented.

High

DQRs are met. DQRs are rigorous and comprehensive (e.g., the requirements of monitoring programs completed by the Southern California Coastal Water Research Project, U.S. Geological Survey, U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program, San Francisco Estuary Institute, the Bay Protection and Toxic Cleanup Program (BPTCP), etc.).

Medium

Some DQRs not met but discrepancies are documented. DQRs are adequate.

Low

Data Collection supported by Quality Assurance Project Plan. QAPP not reviewed, DQRs not assessed or cannot tell if the DQRs were assessed.

Reject from Further Consideration

Data collection not supported by a QAPP.

2. Linkage between measurement endpoint and beneficial use or standard

This attribute refers to the extent to which the measurement endpoint is representative of, and correlated with, or applicable to beneficial uses and water quality standards. If there is no linkage between a measurement endpoint (e.g., a study that may have been performed for some other purpose) and the use or standard of interest, then that study should not be used to evaluate the status of the stated beneficial use. Linkage pertains to similarity of effect, target organ, mechanism of action, or level of ecological organization.

High

Beneficial Use or water quality standard is directly measured and is equivalent to the measurement endpoint (e.g., Aquatic life beneficial uses protected by numerical water quality standards focused on aquatic life protection).

Medium

Direct link between measurement endpoint and beneficial use or water quality standard but the effect measured, target organ, level of ecological organization, or mechanism of action are not the same (e.g., MTRLs).

Low

Link of the Beneficial Use or water quality standard to the measurement endpoint indirectly yielding a weak correlation between the use or standard and the

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measurement endpoint (e.g., using biomarkers to assess protection of biological communities).

Reject from Further Consideration

No link of measurement endpoint to beneficial use or water quality standard. The data and information is not water quality related (40 CFR 130.7(b)(5)).

3. Correlation of stressor to response

This attribute relates the ability of the endpoint to demonstrate effect from acute or chronic exposure to the stressor (i.e., chemical or other pollutant) and to correlate effects with the degree of exposure. As such, this attribute also takes into consideration the susceptibility of the receptor and the magnitude of effects observed.

High

Any adopted numerical water quality objectives or water quality criteria (i.e., the California Toxic Rule (CTR) or National Toxics Rule (NTR)) will receive a “high” ranking in all cases. Significant cause and effect relationship is demonstrated (e.g., Toxicity Identification Evaluation completed).

Medium

Correlation of stressor and response but cause and effect relationship not demonstrated.

Low

Measurement endpoint response to stressor has not been demonstrated in previous studies, but is expected based on demonstrated response in similar stressors. The site or water body is being considered for removal from the Section 303(d) list and there is no correlation of the measurement endpoint and stressor.

Reject from Further Consideration

No correlation of measurement endpoint response to stressor.

4. Utility of measure for judging if standards or uses are not attained

This attribute relates the ability to judge results of the study against well-accepted standards, criteria, guidelines, or other objective measures. As such, the attribute describes the applicability, certainty, and scientific basis of the measure, as well as the sensitivity of a benchmark in determining if standards are met or beneficial uses are attained. Examples of objective standards or measure for judgment might include ambient water quality criteria, sediment quality criteria, sediment guidelines, maximum tissue residue levels, public health guidelines, bacterial standards, biological indices, and toxicity or exposure thresholds recognized by the scientific or regulatory community as measures of environmental harm.

High

Measure is well accepted and has very high levels of certainty and applicability. Strong scientific basis and is sensitive. (e.g., National Academy of Science (NAS))

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tissue guidelines, U.S. Food and Drug Administration (FDA) action levels, U.S. EPA screening values, Maximum Contaminant Levels (MCLs); fish advisories; BPTCP approaches; beach closures and postings; published temperature thresholds; published sedimentation thresholds; Federal agency and other state sediment quality guidelines; DHS bacterial standards; DFG guidelines, etc.) Any adopted numerical water quality objectives or water quality criteria (i.e., the California Toxic Rule (CTR) or National Toxics Rule (NTR)) will receive a "high" ranking in all cases.

Medium

Measure is well accepted but has either limited applicability or certainty. Scientific basis is weak or is insensitive. (e.g., Sediment Apparent Effects Thresholds from other states, MTRLs)

Low

Use of measure is limited and has limited applicability and certainty. Scientific basis is weak or is insensitive.

Reject from Further Consideration

No scientific basis for judging standards or beneficial use attainment. Measure applicability and certainty unknown. Scientific basis is unknown.

5. Water Body-specific Information

Confidence in the monitoring a data and information is increased if it comes from the water body segment under consideration. This attribute relates to how the following four factors reflect the measurement endpoint at the site of interest:

1. Age of the chemical and biological data (data collected at the site within past 5 years for water and 10 years for sediment, tissue, persistent organic chemicals)
2. Environmental data measured at site or in water body
3. Species or indicator present or potentially present at the site
4. Environmental conditions at site taken into consideration (e.g., effects of seasonality, events such as storms, land use practices, etc.)

High

Four separate factors reflect the site.

Medium

Two or three separate factors reflect the site.

Low

One factor reflects the site.

Reject from Further Consideration

No factors reflect the site.

6. Sensitivity of the measurement endpoint for detecting response

This attribute relates to the ability to detect an acute or chronic response in the measurement endpoint. This attribute is expressed as the number of samples to detect exceeded measurement endpoint. Additionally, this attribute reflects the ability of the measurement endpoint to discriminate between responses to a stressor and those resulting from natural or design variability and uncertainty. For water chemistry, the ratings assume the same level of statistical confidence for listing and de-listing.

High

Water Chemistry: When considering whether to list a segment of a water body:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a listing (listing when in fact it should be) confidence level of 95 percent (Lin et al. 2000). Therefore, standards are exceeded in at least 2 temporally independent samples from a sample size of 4. For sample sizes greater than 4, the number of samples that exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 95% listing confidence level).

When considering whether to remove a segment of a water body from the list:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a false de-listing (de-listing when in fact is should not be) confidence level of 5 percent (Lin et al. 2000). Therefore, standards are not exceeded in at least 28 temporally independent samples. For sample sizes greater than 28, the number of samples that may exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 5% false de-listing confidence level).

Bacterial Indicators: The frequency, magnitude, and duration expressed in numerical standards contained in applicable water quality control plans or the California Code of Regulations. If the frequency or duration is not expressed as part of the applicable numerical standards, the measurement endpoint exceeds the geometric mean of 5 or more temporally independent samples.

Beach Closures: On average, one bathing area closure per year of less than one week in duration or more than one bathing area closure per year.

Beach Postings: Greater than 10 percent of days per year of beach postings due to high bacterial indicator densities.

Sediment: 50 percent in 4 or more temporally independent samples.

Tissue: 50 percent in 4 or more temporally independent samples.

Medium

Water Chemistry: When considering whether to list a segment of a water body:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a listing (listing when in fact it should be) confidence level of 90 percent (Lin et al. 2000). Therefore, standards are exceeded in at least 2 temporally independent samples from a sample size of 6. For sample sizes greater than 6, the number of samples that exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 90% listing confidence level).

When considering whether to remove a segment of a water body from the list:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a false de-listing (de-listing when in fact it should not be) confidence level of 10 percent (Lin et al. 2000). Therefore, standards are not exceeded in at least 21 temporally independent samples. For sample sizes greater than 21, the number of samples that may exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 10% false de-listing confidence level).

Bacterial Indicators: Geometric mean met but greater than 10 percent of the samples exceed fecal coliform density of 400 per 100 ml, total coliform density of 10,000 per 100 ml, or greater than 20 percent of samples exceed total coliform density of 1,000 per 100 ml.

Sediment: Repeated response in two temporally independent samples.

Tissue: Repeated response in two temporally independent samples.

Low

Water Chemistry: When considering whether to list a segment of a water body:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a listing

(listing when in fact it should be) confidence level of 80 percent (Lin et al. 2000). Therefore, standards are exceeded in at least 2 temporally independent samples from a sample size of 9. For sample sizes greater than 9, the number of samples that exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 80% listing confidence level).

When considering whether to remove a segment of a water body from the list:

Statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in 10% of the samples, and (3) a false de-listing (de-listing when in fact it should not be) confidence level of 20 percent (Lin et al. 2000). Therefore, standards are not exceeded in at least 15 temporally independent samples. For sample sizes greater than 15, the number of samples that may exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, 10% exceedance probability, 20% false de-listing confidence level).

Sediment: Response in 1 sample.

Tissue: Response in 1 sample.

Reject from Further Consideration

Water Chemistry: Sample size less than 4 samples. For listing, one exceedance for any sample size. For de-listing, any sample size less than 15.

7. Spatial representativeness

This attribute relates to the degree of compatibility or overlap between the study area, locations of measurements or samples, locations of stressors, and locations of ecological receptors and their potential exposure.

High

Samples collected statistically represent the segment of the water body.

Medium

Samples collected in a consistent targeted manner that represents the segment of the water body.

Low

Cannot tell what the samples represent.

8. Temporal representativeness

This attribute relates to the temporal compatibility or overlap between the measurement endpoint (when data were collected or the period for which data are

representative) and the period during which effects of concern would be likely to be detected. Also linked to this attribute is the number of measurement or sampling events over time and the expected variability over time.

High

Samples collected on multiple days during more than one season or more than one event when effects would be expected to be clearly manifested.

Medium

Samples collected in more than one season or more than one event when effects would be expected to be clearly manifested. At least two sampling events.

Low

Samples collected during one season or event. A single sampling event.

Reject from Further Consideration

The majority of samples collected on a single day or during short-term natural event (e.g., a storm).

9. Quantitativeness

This attribute relates to the degree to which numbers can be used to describe the magnitude of response of the measurement endpoint to the stressor. This data characteristic also relates to whether results are objective or subjective.

High

Data are numerical and quantitative.

Low

Multiple non-numeric, direct observations (e.g., objectionable algae growth, oily films, significant trash, non-natural foam, excessive odor, etc.).

10. Use of standard method

The extent to which the study follows standard protocols recommended by a recognized scientific authority for conducting the method correctly. Examples of standard methods are study designs or chemical measures published in the Federal Register of the Code of Federal Regulations, developed by ASTM, or repeatedly published in the peer reviewed scientific literature, including impact assessments, field surveys, toxicity tests, benchmark approaches, toxicity quotients, and tissue residue analyses. This attribute also reflects the suitability and applicability of the method to the endpoint and the site, as well as the need for modification of the method.

High

Well-established, standard protocols used.

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Medium

Standard method not used but its application is substantiated.

Low

Method is not an impact assessment, field survey, toxicity test, tissue residue analysis, indicator of potential human health impacts, chemical or physical measurement.

Determining the Strength of the Measurement Endpoints

For each stressor or line of evidence, the strength of the measurement endpoint will be determined using the following steps:

1. If a stressor or line of evidence has been rejected from further consideration by failing one of the data strength factors, then the all data associated with the stressor for this listing or de-listing will not be used in any decision to list the segment of a water body.
2. Sum the high and medium ratings for each of the data strength factors.
3. If the majority of the strength factors is rated high or medium then the data and information will be used in determining if the segment of the water body is a water quality limited segment.

***Concurrence of Among Measurement Endpoints
(Conclusion of Attainment of Standards or Beneficial Uses)***

All data and information where the majority of the strength of measurement endpoint factors is rated high or medium will be compared to the factors listed below.

The following list of factors provides the mechanism for identifying water quality limited segments using a weight of evidence approach. Water quality limited segments are locations (segments of water bodies or segments) in inland waters, enclosed bays, estuaries, or the ocean where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by Sections 301(b) and 306 of the Clean Water Act (40 CFR 130.2(j)).

A water body shall be placed on the State Section 303(d) list of water quality limited segments if effluent limitations or other pollution control requirements [e.g., Best Management Practices (BMPs)] are not stringent enough to assure protection of beneficial uses and attainment of water quality standards. For the purposes of listing waters, applicable standards include beneficial uses plus numerical and narrative water quality objectives in water quality control plans or policies and antidegradation requirements (including implementation of SWRCB Resolution Number 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR 131.12). Violation of NPDES permit provisions or Waste Discharge Requirements (WDRs) alone does not sufficient reason to list a segment of water body on the Section 303(d) list.

A segment of a water body meeting any one or more of the following conditions is considered to be a water quality limited segment.

1. The segment exceeds numeric water quality objectives or water quality standards for pollutants that are contained in Regional or Statewide water quality control plans, exceeds water quality criteria promulgated as part of the CTR or the NTR, or exceeds MCLs.
2. When a health advisory against the consumption of edible resident non-migratory organisms or a shellfish harvesting ban has been issued by Office of Environmental Health Hazard Assessment (OEHHA) or Department of Health Services (DHS), the segment is automatically be considered to be a water quality limited segment if the chemical or biological contaminant is associated with sediment or water in the segment.
3. Coastal and inland bathing areas have been posted or closed due to high bacterial indicator densities measured in the segment. This factor was used to translate appropriate narrative water quality objectives.
4. Water or sediment exhibits a nuisance (as defined in Water Code Section 13050(m)) measured in the segment. This factor was used to translate appropriate narrative water quality objectives.
5. Water or sediment exhibits toxicity associated with pollutants that is significantly different from the toxicity observed at reference sites or using reference conditions. This factor was used to translate appropriate narrative water quality objectives.
6. The tissue pollutant levels of organisms collected from a segment exceed levels established by FDA for the protection of human health, or NAS for the protection of human health or wildlife, MTRLs, measurement endpoints from other State and Federal agencies, other States, and other countries. This factor was used to translate appropriate narrative water quality objectives.
7. Adverse biological response as compared to reference conditions measured in the environment is associated with pollutants found in resident individuals. Endpoints for this factor include reduction in growth, reduction in reproductive capacity, abnormal development, histopathological abnormalities, and other adverse conditions. Evidence that pollutants are capable of causing or contributing to the adverse condition must be associated with the adverse response. This factor should be used to translate appropriate narrative water quality objectives.

8. Significant degradation in biological populations and/or communities associated with the presence of elevated levels of pollutants and/or habitat alteration. This factor should be used to translate appropriate narrative water quality objectives.

Segments of water bodies that do not meet any of the conditions specified above are not water quality limited segments.

Formulating the Recommendation to the SWRCB

Decision to Add Waters to the List

Water bodies on previous list

All waters on the 1998 CWA Section 303(d) list shall be placed on the list for the 2002 submittal. The pollutant source, area affected, or units may be changed with good cause.

New data and information

If new data and information show that a segment is a water quality limited segment (as described above) then the segment will be added to the list.

Decision to Remove Waters from the List (De-listing)

Natural conditions

If it can be documented that natural conditions would cause a segment of a water body to be considered a water quality limited segment then the segment will be removed from the list. Documentation should address the natural source(s) of the chemical and explain why human causes can be ruled out as the cause of the impairment. Human-caused sources (i.e., "waste" as defined in Water Code Section 13050(d) or "pollution" as defined in Water Code Section 13050(l) and 40 CFR 130.2(c)) can generally be ruled out where the excursions beyond standards would occur in the absence of the human caused sources.

Objectives are revised

If objectives or standards have been revised and the site or water body is no longer a water quality limited segment then the segment will be removed from the list.

De-designation of a beneficial use

A segment will be removed from the list if the beneficial use not attained is de-designated (after U.S. EPA approval of a Use Attainability Analysis) and the segment is no longer considered to be a water quality limited segment.

Faulty data led to the initial listing

If proposed by a RWQCB, a segment will be removed from the list if the listing was based of faulty data. Faulty data include, but are not limited to, typographical errors, improper quality assurance/quality control procedures, or limitations related to the analytical methods that would lead to improper conclusions regarding the water quality status of the segment.

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Water quality standards attained

A segment will be removed from the list if it has been documented that the water quality objectives or standards are being consistently met and beneficial uses are attained based upon an evaluation of all readily available data and information. This evaluation should address foreseeable changes in hydrology, land use, or product use and describe why such changes should not lead to listing as a water quality limited segment.

TMDL approved

A segment will be removed from the list if a TMDL has been approved by the U.S. EPA for that specific segment and pollutant (40 CFR 130.7(b)(4)).

Another enforceable program is addressing impairment

A segment will be removed from the list if there are control measures in place, which are resulting in protection of beneficial uses. Control measures include permits, clean up and abatement orders, SWRCB plans or policies, and Basin Plan requirements that are enforceable and include a time schedule (40 CFR 130.7(b)(1)(iii)).

Decision to excluded waters from the list

Natural conditions

If it can be documented that natural conditions cause a segment of a water body to be considered a water quality limited segment then the segment will not be listed. Documentation should address the natural source(s) of the chemical and explain why human causes can be ruled out as the cause of the impairment. Human-caused sources (i.e., "waste" as defined in Water Code Section 13050(d) or "pollution" as defined in Water Code Section 13050(l) and 40 CFR 130.2(c)) can generally be ruled out where the excursions beyond standards would occur in the absence of the human-caused sources.

Another enforceable program will address impairment

A segment will not be listed if there are control measures in place, which will result in protection of beneficial uses. Control measures include permits, clean up and abatement orders, SWRCB plans or policies, and Basin Plan requirements that are enforceable and include a time schedule (40 CFR 130.7(b)(1)(iii)).

Insufficient data and information to list (Watch List)

A list of segments was created that contain segments that have insufficient data to include or not include on the State's Section 303(d) list of water quality limited segments. This list is called the "Watch List". The watch list is not be a part of the CWA Section 303(d) list but shall be appended to the 303(d) list and provided to the U.S. EPA for information purposes.

Data failing strength factors

Any segment that has been proposed for addition to the Section 303(d) list that does not meet the data strength factors was placed on the watch list.

Sites or Water Bodies Proposed by the RWQCBs

Any sites or water bodies that the RWQCBs have proposed for a Region-specific watch list will be placed on the 303(d) Watch List.

Faulty data

If it is proposed by a RWQCB that a segment is de-listed because of faulty data used in the initial listing and more current data and information are not available, then the segment shall be placed on the watch list.

Priority Setting

A priority ranking is required for listed waters to guide TMDL planning pursuant to 40 CFR 130.7. TMDLs will be ranked into high, medium, and low priority categories based on:

- Water body significance (such as importance and extent of beneficial uses, threatened and endangered species concerns and size of water body)
- Degree that water quality standards are not met or beneficial uses are not attained or threat (such as number of pollutants/stressors of concern, and number of beneficial uses not attained)
- Conformity with related activities in the watershed (such as existence of watershed assessment, planning, pollution control, and remediation, or restoration efforts in the area)
- Potential for beneficial use recovery
- Degree of public concern and involvement
- Availability of funding and information to address the water quality problem
- Overall need for an adequate pace of TMDL development for all listed waters
- Other water bodies and pollutants have become a higher priority

These criteria for setting priorities could be applied in different ways to different water bodies and pollutants. For example, if there is little likelihood of beneficial use recovery even though water quality standards might be exceeded by a large amount, then a lower priority might be given.

References

Lin, P.E., D. Meeter, and X.F. Niu. 2000. A nonparametric procedure for listing and delisting impaired waters based on criterion exceedances. Technical report submitted to the Florida Department of Environmental Protection. 21 pp.
(<http://www.dep.state.fl.us/water/tmdl/docs/Supdocument.PDF>)

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Massachusetts Weight-of-Evidence Workgroup. 1995. Draft report: Weight-of-evidence approach for evaluating ecological risks.
(<http://www.state.ma.us/dep/ors/files/weightev.pdf>)

