TITLE 785. OKLAHOMA WATER RESOURCES BOARD
CHAPTER 46. IMPLEMENTATION OF OKLAHOMA'S WATER QUALITY
STANDARDS

SUBCHAPTER 15. USE SUPPORT ASSESSMENT PROTOCOLS

785:46-15-3. Data requirements [AMENDED]
(a) General. In order to determine whether a given beneficial use of a waterbody is supported, scientific data from the waterbody shall be used as prescribed in this Section. Data shall be collected and analyzed in a manner consistent with testing procedures provided in 785:45-1-4 or practices that are institutionally recognized and appropriate for the parameter of concern and documented in accordance with 785:46-15-3(g). All existing data available for a waterbody shall be used in the analysis, subject to the spatial, temporal and other requirements of this Section.
(b) Spatial coverage.
   (1) General for streams. The spatial extent of assessment of use support in terms of stream miles shall be determined after taking into account existing data, spatial distribution of monitoring sites, sources of pollution and influence of tributaries. Major hydrological features, such as the confluence of a major tributary or a dam, may limit the spatial extent of an assessment based on one station.
   (2) Non-wadable streams. Unless it is demonstrated to the contrary, a single monitoring site shall be considered representative of no more than 25 stream miles for non-wadable streams.
   (3) Wadable streams. Unless it is demonstrated to the contrary, a single monitoring site shall be considered representative of no more than 10 stream miles for wadable streams.
   (4) Lakes. The spatial extent of assessment of use support in terms of lake surface acres shall be estimated based on the spatial distribution of monitoring sites having the requisite number of samples, sources of pollution, influence of tributaries and best professional judgment. Arms or portions of lake may be treated separately from the main body of a lake. Unless it is demonstrated to the contrary, a single site shall be considered representative of an entire lake or an arm of no more than two hundred and fifty surface acres in size.
   (5) Spatial limitation for sampling sites. For purposes of this Subchapter, observations, samples, and other data shall not be taken within any regulatory mixing zone.
(c) Temporal coverage.
   (1) General. Observations, samples or other data collected for purposes of assessing use support shall be taken to avoid temporal bias, and seasonality shall be represented in the sampling scheme.
   (2) Streams. Data no older than five years old shall be utilized in assessing use support for a stream unless
      (A) the data available from the preceding five year period is insufficient to satisfy the requirements of 785:46-15-3(d) or other more specific minimum requirements provided in this Subchapter, in which case data older than five years old may be utilized, or
(B) the provisions of 785:46-15-4(b)(3) or 785:46-15-4(c)(3) apply.

(3) **Lakes.** Data no older than ten years old shall be utilized in assessing use support for a lake unless
   
   (A) the data available from the preceding ten year period is insufficient to satisfy the requirements of 785:46-15-3(d) or other more specific minimum requirements provided in this Subchapter, in which case data older than ten years old may be utilized, or
   
   (B) the provisions of 785:46-15-4(b)(3) or 785:46-15-4(c)(3) apply.

(d) **Minimum number of samples.**

(1) **Streams.** Except when (f) of this Section or any of subsections (e), (h), (i), (j), (k), (l), or (m) of 785:46-15-5 applies, a minimum of 10 samples shall be required to assess beneficial use support due to field parameters including but not limited to DO, pH and temperature, and due to routine water quality constituents including but not limited to coliform bacteria, dissolved solids and salts. Analyses may be aggregated to meet the 10 sample minimum requirements in non-wadable stream reaches that are 25 miles or less in length, and in wadable stream reaches that are 10 miles or less in length, if water quality conditions are similar at all sites. Provided, a minimum of 10 samples shall not be necessary if the existing samples already assure exceedance of the applicable percentage of a prescribed screening level.

(2) **Lakes.** Except when (f) of this Section applies, a minimum of 20 samples shall be required on lakes of more than 250 surface acres to assess beneficial use support due to water quality parameters including but not limited to DO, pH and temperature. A minimum of 20 samples shall likewise be required on such lakes for other routine water quality constituents including but not limited to coliform bacteria, chlorophyll a, and dissolved solids. A minimum of 10 samples shall be required on lakes or arms of 250 surface acres of less. Samples may be aggregated to meet the minimum requirements of this paragraph.

(3) **Toxicants.** Notwithstanding any other provision of this Subchapter, a minimum of five samples shall be required to determine that a beneficial use is supported with respect to all toxicants in water. A determination that a beneficial use is partially supported or not supported with respect to toxicants may be made upon less than five samples. Samples may be aggregated consistent with the spatial and temporal requirements prescribed in (b) and (c) of this Section in order to satisfy the minimum sample requirement of this paragraph. Additional samples for the calculation of pH and hardness dependent acute and chronic criteria shall be collected as required by OAC 785:46-5-8.

(1) Except when (f) of this Section applies, or unless otherwise noted in subchapter 785:46-15 for a particular parameter, a minimum number of samples shall be required to assess beneficial use support.

   (a) For streams and rivers, a minimum of 10 samples shall be required.
   
   (b) For lakes greater than 250 surface acres, a minimum of 20 samples shall be required.
   
   (c) For lakes 250 surface acres or smaller, a minimum of 10 samples shall be required.
   
   (d) For toxicants for the protection of the Fish and Wildlife Propagation and Public and Private Water beneficial uses, a minimum of 5 samples shall be
(2) In order to satisfy the minimum sample requirements of this sub-section, samples may be aggregated consistent with the spatial and temporal requirements prescribed in (b), (c), and (d) of this Section.

(3) The prescribed minimum samples shall not be necessary if the available samples already assure exceedance of the applicable percentage for beneficial use assessment.

(4) If a mathematical calculation including, but not limited to, a mean, median, or quartile, is required for assessment, a minimum of ten samples shall be required, regardless of the parameter type.

(5) Additional samples for the calculation of temperature, pH and hardness dependent acute and chronic criteria shall be collected as required by OAC 785:46-5-8.

(e) Application of PQL.

(1) Criteria above PQL.

(A) If sample values are below the PQL for a parameter whose criterion is above the PQL, appropriate nonparametric statistical measures shall be used to determine the reporting value.

(B) For waterbodies identified as impaired on the current 303(d) List or 305(b) Report, if sample values are nondetectable for a parameter whose criterion is above the PQL, then such value shall be deemed to be one-half (1/2) of the parameter PQL.

(C) All sample values that are above the PQL shall be the reported values.

(2) Criteria equal to or below PQL.

(A) If sample values are below the PQL for a criterion which is less than one-half (1/2) of the PQL, then the values shall be deemed to be zero (0) until the first test result above the PQL appears. After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as zero (0) until the next test result appears above the PQL.

(B) For those parameters whose criteria are at least two (2) orders of magnitude below the PQL, evidence considered with respect to assessment of use support shall include fish tissue analysis, biological community analysis, biological thresholds wherever available, or other holistic indicators which are appropriate for the beneficial use in question.

(C) If sample values are below the PQL for a criterion which is greater than or equal to one-half (1/2) of the PQL but less than the PQL, then the values shall be deemed to be one-half (1/2) of the criterion value until the first test result above the PQL appears. After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as equal to one-half (1/2) of the criterion value until the next test result appears above the PQL.

(D) For waterbodies identified as impaired on the current 303(d) List or 305(b) Report, if sample values are nondetectable for a parameter whose criterion is below the PQL, then such value shall be deemed to be one-half (1/2) of the criterion value.
(E) All sample values that are above the PQL shall be the reported values.

(f) **Magnitude of criteria exceedance.**

(1) **General.** The magnitude of exceedance, as well as frequency of exceedances, shall be used in determining beneficial use support. Samples shall be taken only during conditions when criteria apply.

(2) **Toxicants.** If two or more concentrations of toxicants exceed criteria or screening levels to protect human health or aquatic life by two orders of magnitude or more, the associated beneficial use shall be deemed to be not supported.

(3) **Dissolved oxygen.** If more than two concentrations of DO in a stream are observed to be below 2 mg/L in any given year, the Fish and Wildlife Propagation beneficial use shall be deemed to be not supported.

(4) **Other parameters.** The magnitude and frequency of exceedances to be used for determining beneficial use support for parameters other than toxicants and DO shall be as prescribed in the rules elsewhere in this Subchapter.

(g) **Quality assurance.** On and after July 1, 2002, data collected for purposes of use support assessment shall be collected using documented programmatic quality assurance and quality control methods substantially in accordance with those required by "EPA Requirements for Quality Assurance Project Plans", EPA publication no. EPA/240/B-01/003 (March 2001). The sampling and testing methods used shall protect the integrity of the sample and provide detailed documentation of analysis.

785:46-15-4. Default protocols

(a) **General.** The protocols prescribed in this Section shall apply whenever the more specific protocols prescribed elsewhere in this Subchapter do not apply.

(b) **Short-term average numerical parameters.**

(1) Short-term average numerical parameters are based upon exposure periods of less than seven days. Short-term average parameters to which this Section applies include, but are not limited to, sample standards and turbidity.

(2) A beneficial use shall be deemed to be fully supported for a given parameter whose criterion is based upon a short-term average if 10% or less of the samples for that parameter exceed the applicable screening level prescribed in this Subchapter.

(3) A beneficial use shall be deemed to be fully supported but threatened if the use is supported currently but the appropriate state environmental agency determines that available data indicate that during the next five years the use may become not supported due to anticipated sources or adverse trends of pollution not prevented or controlled. If data from the preceding two year period indicate a trend away from impairment, the appropriate agency shall remove the threatened status.

(4) A beneficial use shall be deemed to be not supported for a given parameter whose criterion is based upon a short-term average if at least 10% of the samples for that parameter exceed the applicable screening level prescribed in this Subchapter.

(c) **Long-term average numerical parameters.**

(1) Long-term average numerical parameters are based upon exposure periods of seven days or longer. Assessment decisions shall be based upon the mean of all data meeting the temporal and spatial data requirements described elsewhere in this Subchapter.

(2) A beneficial use shall be deemed to be fully supported for a given parameter
whose criterion is based upon a long-term average if the mean of the sample results does not exceed the long-term criterion.

(3) A beneficial use shall be deemed to be fully supported but threatened if the use is supported currently but the appropriate state environmental agency determines that available data indicate that during the next five years the use may become not supported due to anticipated sources or adverse trends of pollution not prevented or controlled. If data from the preceding two year period indicate a trend away from impairment, the appropriate agency shall remove the threatened status.

(4) A beneficial use shall be deemed to be not supported for a given parameter whose criterion is based upon a long-term average if the mean of the sample results exceeds the criterion or screening level.

785:46-15-5. Assessment of Fish and Wildlife Propagation support [AMENDED]
(a) Scope. The provisions of this Section shall be used to determine whether the beneficial use of Fish and Wildlife Propagation or any subcategory thereof designated in OAC 785:45 for a waterbody is supported.

(b) Dissolved oxygen. For purposes of assessment, listing and reporting under sections 303(d) and 305(b) of the federal Clean Water Act as amended, the procedure for determining use support of the Fish and Wildlife Propagation beneficial use or any subcategory thereof with respect to dissolved oxygen shall be as follows:

(1) Support tests for HLAC streams.
   (A) The HLAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentration below the following season-specific thresholds:
   (i) April 1 through June 15: 4.0 mg/L
   (ii) June 16 through March 31: 3.0 mg/L
   (B) The HLAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be not supported with respect to the DO criterion if more than 10% of the samples across all seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:
   (i) April 1 through June 15: 4.0 mg/L
   (ii) June 16 through March 31: 3.0 mg/L

(2) Support tests for WWAC streams.
   (A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentration below the following season-specific thresholds:
   (i) April 1 through June 15: 6.0 mg/L
   (ii) June 16 through March 31: 5.0 mg/L
   (B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:
(3) **Support tests for CWAC and Trout streams.**

(A) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds:

- (i) March 1 through May 31: 7.0 mg/L
- (ii) June 1 through last day of February: 6.0 mg/L

(B) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:

- (i) March 1 through May 31: 7.0 mg/L to 6.0 mg/L
- (ii) June 1 through October 15: 6.0 mg/L to 5.0 mg/L

(C) The CWAC or Trout subcategory of the Fish and Wildlife Propagation beneficial use designated for a stream shall be deemed to be not supported with respect to the DO criterion if more than 10% of the samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

- (i) March 1 through May 31: 6.0 mg/L
- (ii) June 1 through October 15: 5.0 mg/L
- (iii) October 16 through March 31: 5.0 mg/L

(4) **Support tests for WWAC lakes.** The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if both the Surface and Water Column criteria prescribed in (5)(A) and (6)(A) of this subsection (b) are satisfied. If either of the Surface or Water Column criteria prescribed in (5)(B) or (6)(B) produce a result of undetermined, then the WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion; provided, if either of the Surface or Water Column criteria prescribed in (5)(C) or (6)(C) produce a result of not supported, then the WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion.

(5) **Surface criteria for WWAC lakes.**
(A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if 10% or less of the surface samples across life stages and all seasons exhibit DO concentrations below the following season-specific thresholds:

(i) April 1 through June 15: 6.0 mg/L
(ii) June 16 through March 31: 5.0 mg/L

(B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion if more than 10% of the surface samples across all life stages and seasons exhibit DO concentrations below the upper DO threshold and 10% or less of the surface samples across all seasons exhibit DO concentrations below the lower DO threshold considering the following season-specific ranges:

(i) April 1 through June 15: 5.0 mg/L to 6.0 mg/L
(ii) June 16 through October 15: 4.0 mg/L to 5.0 mg/L
(iii) October 16 through March 31: 5.0 mg/L

(C) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion if more than 10% of the surface samples across all life stages and seasons exhibit DO concentrations below the following season-specific thresholds due to other than naturally occurring conditions:

(i) April 1 through June 15: 5.0 mg/L
(ii) June 16 through October 15: 4.0 mg/L
(iii) October 16 through March 31: 5.0 mg/L

(D) "Surface," when used in this Section, means surface waters or the mixed surface layer, typically represented by a sample taken at least 0.5 m below the surface.

(6) **Water column criteria for WWAC lakes.**

(A) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be fully supported with respect to the DO criterion if less than 50% of the volume (if volumetric data is available) or 50% or less of the water column (if no volumetric data is available) of all sample sites in the lake are less than 2.0 mg/L.

(B) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be undetermined with respect to the DO criterion (if no volumetric data is available) if 50% or more, but not greater than 70%, of the water column at any given sample site in the lake is less than 2.0 mg/L due to other than naturally occurring conditions.

(C) The WWAC subcategory of the Fish and Wildlife Propagation beneficial use designated for a lake shall be deemed to be not supported with respect to the DO criterion if 50% or more of the water volume (if volumetric data is available) or more than 70% of the water column (if no volumetric data is available) at any given sample site is less than 2.0 mg/L.

(D) If a lake specific study including historical analysis produces a support status which is contrary to an assessment obtained from the application of (A), (B) or (C) of (b)(6) of this section, then that lake specific result will control.
(7) **Additional application/exercise when support undetermined.** In instances where application of the tests in this subsection (b) initially produce a result that the pertinent subcategory is undetermined with respect to the DO criterion, such shall be subject to additional investigation that considers diurnal data for further application of such tests in order to resolve the determination of use support.

(c) **Toxicants.**

(1) **Test for Full Support.**

(A) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to any individual toxicant parameter if no more than one of the sample concentrations from the waterbody exceeds the acute criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2.

(B) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to any individual toxicant parameter if not more than 1 sample concentration or not more than 10% of the sample concentrations from the waterbody exceeds the chronic criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D), (E) and 785:45 Appendix G, Table 2.

(2) **Test for Non-Support.**

(A) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to any individual toxicant parameter if more than one of the sample concentrations from the waterbody exceed the acute criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2.

(B) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to any individual toxicant parameter if more than 10% of the sample concentrations from the waterbody exceed chronic criterion for that toxicant prescribed in the numerical criteria for toxic substances in OAC 785:45-5-12(f)(6)(D) and (E) and 785:45 Appendix G, Table 2.

(d) **pH.**

(1) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be fully supported with respect to pH occurring other than by naturally occurring conditions if no more than 10% of the sample concentrations from that waterbody fall outside the criteria range prescribed in 785:45-5-12(f)(3).

(2) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to pH occurring other than by naturally occurring conditions if greater than 10% of the sample concentrations from that waterbody fall outside the criteria range prescribed in 785:45-5-12(f)(3).

(e) **Turbidity.** The criteria for turbidity stated in 785:45-5-12(f)(7) shall constitute the screening levels for turbidity. The tests for use support shall follow the default protocol in 785:46-15-4(b).

(f) **Oil and grease.**

(1) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall
be deemed to be fully supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in 10% or less of the observations.

(2) The Fish and Wildlife Propagation beneficial use designated for a waterbody shall be deemed to be not supported with respect to oil and grease if a visible sheen or bottom deposits of oil or grease are observed on that waterbody in more than 10% of the observations.

(g) Suspended and bedded sediments.

(1) If a stream is supporting the biological criteria assigned to that stream as provided in (e) and (i) through (n) of this section, then that stream will be deemed to be supporting its assigned Fish and Wildlife Propagation beneficial use with respect to suspended and bedded sediments.

(2) If a stream is not supporting the biological criteria assigned to that stream as provided in (e) and (i) through (n) of this section, then a habitat assessment must be conducted using the habitat assessment protocols found in OWRB Technical Report TRWQ2001-1, "Unified Protocols for Beneficial Use Assignment for Oklahoma Wadable Streams." The results of the habitat assessment shall then be compared to either historical conditions or regional reference conditions in order to determine attainment with respect to suspended and bedded sediments in that stream.

(3) The method for establishing reference conditions shall meet the following requirements:

(A) a minimum of five (5) reference streams or reaches shall be assessed;
(B) all of the reference streams or reaches must be within the same ecoregion as the test stream;
(C) all of the reference streams or reaches must be streams with similar flow regimes no more than two (2) stream orders removed from the test stream; and
(D) the reference streams shall be selected from the least impacted streams in the ecoregion whose watersheds contain soils, vegetation, land uses, and topography typical of the watershed of the test stream(s).

(4) The Fish and Wildlife Propagation beneficial use will be considered to be not supported with respect to suspended and bedded sediments if any of the following habitat parameters deviate from the reference conditions by the specified amount:

(A) The total percent of clay, silt, and loose sand in the pool bottom substrate of the test stream is increased by more than 30% over the reference condition;
(B) Cobble embeddedness in the test stream is increased by 15% or more over the reference condition;
(C) The percentage of the length of the reach containing fresh (non-vegetated) point bars and/or islands in the test stream is 20 or more percentage points above that of the reference condition; or
(D) The percentage of the length of the reach dominated by pools of a depth of 0.5 meters or more in the test stream is less than 70% of that of the reference condition.

(5) If all of the habitat parameters identified in (h)(4) of this section deviate from the reference conditions by less than the amounts specified in (h)(4) of this section, then the Fish and Wildlife Propagation beneficial use is not impaired due to suspended and bedded sediments.
(h) **Metals.** The Fish and Wildlife Propagation beneficial use designated for a waterbody may be assessed using either total recoverable or dissolved metals. When available, the concentrations of dissolved metals shall be compared following the provisions of (c) of this subsection to the criteria in OAC 785:45 Appendix G converted to dissolved criteria by multiplying the total metal criterion listed in table 2 by the appropriate conversion factor listed in Table 3. Preference shall be given to the beneficial use determinations based upon dissolved metals. For those metals criteria requiring a hardness component, individual assessment results may be calculated using the average of all hardness data meeting the requirements of OAC 785:46-15-3. The segment-averaged hardness in Appendix B of this Chapter shall be used in the determination of the criterion if there is insufficient site-specific data to determine stream hardness.

(i) **Biological criteria.**

1. If data demonstrate that an assemblage of fish or macro invertebrates from a waterbody is significantly degraded, according to 785:45-5-12(f)(5), from that expected for the subcategory of Fish and Wildlife Propagation designated in OAC 785:45 for that waterbody, then that subcategory may be deemed by the appropriate state environmental agency to be not supported.

2. All physical assessments and biological collections shall be performed in accordance with the requirements set forth in OWRB Technical Report No. 99-3 entitled "Standard Operating Procedures for Stream Assessments and Biological Collections Related to Biological Criteria in Oklahoma".


4. The determination of whether the use of Fish and Wildlife Propagation is supported in wadable streams in Oklahoma ecoregions shall be made according to all of the requirements of this subsection (e), the application of Appendix C of this Chapter, and the special provisions in subsections (i) through (o), where applicable, of this Section. Streams with undetermined use support status shall be subject to additional investigation that considers stream order, habitat factors and local reference streams before the use support determination is made. A finding of impairment for biocriteria due to any one of the parameters listed in this section shall trigger an evaluation of all likely causes, not precluding monitoring, assessment, and subsequent support determination of the Fish and Wildlife beneficial use for any of the other parameters in this section.

(j) **Special provisions for Ouachita Mountains wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Ouachita Mountains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

1. Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 35 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 24 or less. If a score is 25 to 34 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

2. Where designated, the subcategory of Habitat Limited Aquatic Community shall
be deemed fully supported if the application of Appendix C produces a score of 27 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 18 or less. If a score is 19 to 26 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(k) **Special provisions for Arkansas Valley wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Arkansas Valley ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 24 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 18 or less. If a score is 19 to 26 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Habitat Limited Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 24 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 18 or less. If a score is 19 to 26 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(l) **Special provisions for Boston Mountains and Ozark Highlands wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Boston Mountains and Ozark Highlands ecoregions shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Cool Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 37 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 29 or less. If a score is 30 to 36 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 31 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 22 or less. If a score is 23 to 29 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(m) **Special provisions for Central Irregular Plains wadable streams.** The determination of whether the use of Fish and Wildlife Propagation is supported for wadable streams located in the Central Irregular Plains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Where designated, the subcategory of Cool Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 35 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 28 or less. If a score is 29 to 34 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(2) Where designated, the subcategory of Warm Water Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 30 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 22 or less. If a score is 23 to 29 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.
subcategory is supported shall be deemed undetermined.

(3) Where designated, the subcategory of Habitat Limited Aquatic Community shall be deemed fully supported if the application of Appendix C produces a score of 25 or more. Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 16 or less. If a score is 17 to 24 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(n) **Special provisions for Central Oklahoma - Texas Plains wadable streams.** The determination of whether the Warm Water Aquatic Community subcategory of the Fish and Wildlife Propagation beneficial use is supported for wadable streams located in the Central Oklahoma - Texas Plains ecoregion shall be made according to the application of Appendix C of this Chapter, together with this subsection, as follows:

(1) Such subcategory shall be deemed fully supported if the application of Appendix C produces a score of 26 or more.

(2) Such subcategory shall be deemed not supported if the application of Appendix C produces a score of 19 or less.

(3) If the application of Appendix C produces a score of 20 to 25 inclusive, the issue of whether this subcategory is supported shall be deemed undetermined.

(o) **Special provisions for Central Great Plains wadable streams.** The subcategory of Warm Water Aquatic Community of the beneficial use of Fish and Wildlife Propagation in the wadable streams located in the Central Great Plains ecoregion shall be deemed fully supported if the application of Appendix C of this Chapter produces a score of 22 or more. Such subcategory shall be deemed not supported for the streams in the ecoregion of the application of Appendix C produces a score of 18 or less. If the application of Appendix C produces a score of 19 to 21 inclusive, the issue of whether this subcategory is supported for the streams in this ecoregion shall be deemed undermined. Provided, however, this subsection does not apply to the area bounded by State Highway 54 on the west, U.S. Highway 62 on the south, U.S. Highway 281 on the east and State Highway 19 on the north.


(a) **General.** OAC 785:45-3-2(c) prohibits water quality degradation by nutrients which will interfere with the attainment or maintenance of any existing or designated beneficial use. OAC 785:46-13-3(a)(1) requires maintenance of any existing or designated beneficial use. This Section provides a framework which shall be used in assessing threats or impairments to beneficial uses and waterbodies and watersheds caused by nutrients, and the consequences of such assessments.

(b) **Determining whether a stream is nutrient-threatened.** The dichotomous process stated in this subsection shall be used in the determination of whether a stream is nutrient-threatened.

(1) The stream order shall be identified. If the stream order is 1, 2 or 3, then proceed to paragraph (2). If the stream order is not 1, 2 or 3, then proceed to paragraph (9).

(2) The stream slope shall be identified. If the stream slope is greater than or equal to 17 feet per mile, then proceed to paragraph (3). If the stream slope is less than 17 feet per mile, then proceed to paragraph (4).

(3) Subject to the application of the foregoing paragraphs of this subsection, if the mean phosphorus concentration in the stream is greater than 0.24 mg/L or if the mean nitrite plus nitrate concentration in the stream is greater
than 4.95 mg/L, then proceed to paragraph (5). If such mean nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(4) Subject to the application of the foregoing paragraphs of this subsection, if the mean phosphorus concentration in the stream is greater than 0.15 mg/L or if the mean nitrite plus nitrate concentration in the stream is greater than 2.4 mg/L, then proceed to paragraph (5). If such mean nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(5) Subject to the application of the foregoing paragraphs of this subsection, if the percentage of canopy shading is greater than or equal to 80%, then the stream is not threatened by nutrients. If the percentage of canopy shading is less than 80%, then proceed to paragraph (6).

(6) Subject to the application of the foregoing paragraphs of this subsection, if the stream's turbidity is organic, then proceed to paragraph (7). If the stream's turbidity is inorganic, then proceed to paragraph (8).

(7) Subject to the application of the foregoing paragraphs of this subsection, if the mean turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is not threatened by nutrients. If the mean turbidity measured at seasonal base flow conditions is 20 or more NTU, then the stream is threatened by nutrients.

(8) Subject to the application of the foregoing paragraphs of this subsection, if the mean turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is threatened by nutrients. If the mean turbidity measured at seasonal base flow conditions is 20 or more NTU, then the stream is not threatened by nutrients.

(9) Subject to the application of the foregoing paragraphs of this subsection, if the stream slope is greater than or equal to 17 feet per mile, then proceed to paragraph (10). If the stream slope is less than 17 feet per mile, then proceed to paragraph (11).

(10) Subject to the application of the foregoing paragraphs of this subsection, if the mean phosphorus concentration in the stream is greater than 1.00 mg/L, or if the mean nitrite plus nitrate concentration in the stream is greater than 4.65 mg/L, then proceed to paragraph (12). If such mean nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(11) Subject to the application of the foregoing paragraphs of this subsection, if the mean phosphorus concentration in the stream is greater than 0.36 mg/L, or if the mean nitrite plus nitrate concentration in the stream is greater than 5.0 mg/L, then proceed to paragraph (12). If such mean nutrient concentrations are less than the levels specified in this paragraph, then the stream is not threatened by nutrients.

(12) Subject to the application of the foregoing paragraphs of this subsection, if the stream's mean inorganic turbidity measured at seasonal base flow conditions is greater than or equal to 20 NTU, then the stream is not threatened by nutrients. If the stream's mean inorganic turbidity measured at seasonal base flow conditions is less than 20 NTU, then the stream is threatened.

(c) **Alternative to dichotomous process for streams.**

(1) A wadable stream shall be deemed threatened by nutrients if the arithmetic mean
of benthic chlorophyll-a data exceeds 100 mg per square meter under seasonal base flow conditions, or if two or more benthic chlorophyll-a measurements exceed 200 mg per square meter under seasonal base flow conditions. A non-wadable stream shall be deemed threatened by nutrients if planktonic chlorophyll-a values in the water column indicate it has a Trophic State Index (TSI) of 62 or greater.

(2) If clear and convincing evidence indicates a result for a stream different from that obtained from application of the dichotomous process in (b) of this Section, then the appropriate state environmental agency may, after completing the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101, accordingly identify the stream as threatened or not threatened by nutrients.

(d) **Demonstration that nutrients may be adversely impacting a beneficial use.** If it is demonstrated by the Trophic State Index or by other relevant data as provided in 785:46-15-1(c) that nutrient loading in a waterbody may be adversely impacting a beneficial use designated for that waterbody, then the Board may determine that the waterbody and its watershed is an NLW, and shall identify the waterbody and watershed as NLW in Appendix A of OAC 785:45.

(e) **Consequence of identification as NLW.** If a waterbody or its watershed is identified as NLW in Appendix A of OAC 785:45, then the Board or other appropriate state environmental agency may cause an impairment study to be performed. Provided, if an impairment study demonstrates that the uses are not threatened, then the Board shall consider deleting the NLW identification.

(f) **Consequence of assessment that use is threatened by nutrients.** If it is determined that one or more beneficial uses designated for a waterbody are threatened by nutrients, then that waterbody shall be presumed to be nutrient-threatened. If it is determined or presumed, in accordance with this Section, that a waterbody is nutrient-threatened, then before the waterbody is determined to be nutrient-impaired, an impairment study must be completed by the appropriate state environmental agency.

(g) **Result of impairment study.**

(1) **Impaired.** If, independent of or in addition to the process set forth in this Section, an impairment study of a waterbody demonstrates that any beneficial use designated for a waterbody is impaired by nutrients, then the appropriate state environmental agency shall initiate the appropriate listing procedure in accordance with the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101 for each such beneficial use.

(2) **Not impaired.** If, independent of or in addition to the process set forth in this Section, an impairment study of a waterbody demonstrates that all beneficial uses designated for that waterbody are not impaired by nutrients, then the appropriate state environmental agency shall initiate the appropriate de-listing procedure in accordance with the public participation process developed by the Secretary of Environment pursuant to 27A O.S. 1-2-101.