Implementation of Florida's Numeric Nutrient Standard for Streams

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Florida Department of Environmental Protection
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1.0 FLORAL EVALUATION FOR DETERMINING ACHIEVEMENT OF NUMERIC NUTRIENT CRITERIA

Assessment of the numeric nutrient standard for streams pursuant to paragraph 62-302.531(2)(c), Florida Administrative Code (F.A.C.), involves the determination of whether chlorophyll *a* levels, algal mats or blooms, nuisance macrophyte growth, or changes in algal species composition indicate an imbalance in flora. During numeric nutrient criteria (NNC) development, the Department, in coordination with EPA, conducted a series of comprehensive statistical analyses to identify relationships between human disturbance (such as nutrient enrichment) and floral responses (such as adverse changes to algal taxonomic composition, algal and vascular plant abundance, and chlorophyll *a*) using an extensive data set collected in Florida streams. The relationships were statistically weak, and neither the Department nor EPA could identify floral health/impairment thresholds for streams associated with human disturbance or nutrient concentrations or loads.

To establish floral health metrics and impairment thresholds, the Department decided to determine whether measures of the algal and plant communities at a given stream were consistent with the measures found within the population of minimally disturbed sites as approved by EPA (nutrient benchmark sites), with supporting information from healthy sites, defined as those sites with passing Stream Condition Index (SCI) scores. If all floral measures were within the benchmark site distribution, (generally the 90^{th} percentile, as was used to develop the nutrient thresholds), it was reasonable to conclude the presence of a balanced floral community.

Based on all potential floral outcomes associated with the conceptual nutrient enrichment model, the Department evaluates the Rapid Periphyton Survey (RPS), Linear Vegetation Survey (LVS), and chlorophyll *a* data collected at stream sites using Standard Operating Procedures (SOP) FS 7230, FS 7320, and FS 2100, respectively, as set forth in Rule 62-160.210, F.A.C., as described below.

If any one of these floral measures indicates an imbalance, then the Department would conclude that the stream site does not attain the numeric nutrient standard for streams. Floral measures alone can provide evidence that the nutrient standard in paragraph 62-302.531(2)(c), F.A.C., is not achieved, potentially leading to the waterbody being placed on the Florida Verified List of impaired waters and Clean Water Act Section 303(d) list if the Department identifies the causative pollutant(s) and the concentration of the pollutant(s) causing the impairment, pursuant to subsection 62-303.710(1), F.A.C. However, because invasive exotic or tolerant species can occur even in the absence of anthropogenic nutrient enrichment, streams that fail the LVS will be placed on the Study List of potentially impaired waters to evaluate whether nutrients contribute to the LVS failure.

If floral data (RPS, LVS, and chlorophyll a) are unavailable for a stream that exceeds the nutrient thresholds for TN or TP, the waterbody is placed on the Study List, indicating additional information needs to be collected. It is the Department's intent to collect the additional information before the next assessment of the waterbody.

For the RPS and LVS, one survey is insufficient to document a stream's long term floral health because natural climate-related circumstances during any given period can cause shifts in the vascular plant and algal communities. Therefore, at least two temporally independent (collected ≥ 90 days apart) bioassessment evaluations, are required to make a decision about floral health for a site.

For the RPS and LVS, greater weight will be given to the most recent samples because changes can occur rapidly in the primary producer communities in response to changes in nutrients or a mitigating factor (*e.g.,* loss of canopy cover). If the two most recent samples (temporally independent) pass the RPS or LVS evidentiary thresholds described in the following sections, then there is no indication of floral imbalance at the site. If the two most recent samples fail the RPS or LVS evidentiary thresholds, there is evidence of floral imbalance at the site. If one "pass" and one "fail" comprise the two most recent samples, then the next most recent assessment should be considered, and the assessment determination will be based on the results of this third assessment.

1.1 Evaluating Algal Mats

The RPS is a rapid assessment tool for evaluating streams' ecological condition based on the attached algae (periphyton). The RPS quantifies periphyton length and extent in a 100-meter stretch of a stream by assigning a rank category to the length of periphyton filaments. Ranks 4, 5 and 6 represent filament lengths of > 6 mm. If observations made during the physical/chemical characterization portion of the Habitat Assessment (HA) conducted per DEP SOP FT 3000 as set forth in Rule 62-160.210, F.A.C., indicate that algae smothering is "none" or "slight" and periphyton abundance is "not observed" or "rare," the RPS need not be conducted and the Department would conclude that there are no floral imbalances attributable to periphyton. Otherwise, the RPS shall be conducted and interpreted as described in this section.

In deriving the RPS threshold, the Department compiled RPS results from the population of nutrient benchmark and healthy sites sampled by the Department as part of NNC development. RPS rank 4-6 coverage at nutrient benchmark streams ranged from 0% to 66%, with a mean value of 6% and a 90th percentile value of 25%. RPS rank 4-6 coverage at all biologically healthy sites (as indicated by SCI scores > 40), ranged from 0% to 91%, with a mean value of 8% and a 90th percentile value of 32%. Although these RPS distributions are similar, the Department concluded that use of an RPS evidentiary threshold based on the 90th percentile of

the nutrient benchmark sites would be consistent with how the nutrient thresholds were derived. Therefore, the RPS evidentiary threshold was set at 25%.

When the RPS rank 4-6 coverage is ≥ 20% but ≤ 25%, an evaluation of the algal species composition (qualitative identification of dominant or co-dominant taxa) must also be conducted to provide additional information for determining if there is an imbalance of flora (see 1.2). Where RPS 4-6 coverage is < 20%, there is no need to collect samples for algal species composition because the stream is clearly within the reference site distribution. Therefore, the algal species composition is presumed to be acceptable.

If a stream site exhibits a percent coverage of periphyton ranks 4-6 of 25% or less for two consecutive, temporally independent samples collected ≥ 90 days apart, the RPS results indicate evidence of a balanced periphyton community. If a stream site exceeds an RPS 4-6 coverage of 25%, OR the site exhibits a percent coverage of periphyton ranks 4-6 of 25% or less but ≥ 20%, AND an evaluation of the algal species composition indicates the dominance of one or more algal species that produce toxins or are associated with nutrient enrichment (see 1.2), for two consecutive, temporally independent samples (≥ 90 days apart), the Department considers this as evidence that the numeric nutrient standard for streams is not achieved.

If the two most recent surveys have differing results in relation to the evidentiary threshold, the third most recent survey will be used to make the assessment determination. If there are no additional survey results available, an additional, temporally independent RPS shall be conducted, and the results of the additional RPS will determine the assessment status of the site.

A complete RPS sample includes 99 observations, but sometimes site conditions prevent access to all 99 points. Samples with ≤ 90 valid observations are inconclusive unless the sampled points are sufficient to evaluate the evidentiary threshold (e.g., ≥ 25 points with rank 4-6 coverage among the ≤ 90 observations would indicate a floral imbalance). Valid observations include “N” or ranks 3-6 as specified in SOP FS 7230, as set forth in Rule 62-160.210, F.A.C. An “X” indicates that the point could not be assessed and is not a valid observation.

1.2 Evaluating Dominant Algal Species Composition

Although the Department conducted a comprehensive study of stream periphyton in Florida in an attempt to formulate a multi-metric index for assessing human disturbance (including nutrient effects), the statewide data indicated that the periphyton community composition was more highly correlated with pH and conductivity than with nutrients or measures of human disturbance. Additionally, common metrics that typically decrease in response to human disturbance in invertebrate communities, such as taxa richness and diversity, often increase in algal communities when comparing oligotrophic to eutrophic streams, meaning such metrics are not useful for assessing anthropogenic nutrient inputs. Given these constraints, the Department

assesses the environmental information associated with dominant algal taxa qualitatively using the scientific literature and Florida occurrence data to determine if they indicate nutrient enriched/imbalanced conditions.

Nutrient enriched Florida springs are typically characterized by an abundance of one or more of the following taxa: *Plectonema wollei* (formerly *Lyngbya wollei), Vaucheria spp., Dichotomosiphon spp, Aphanothece spp., Caloglossa spp., Chaetomorpha spp., Cladophora spp., Compsopogon spp., Enteromorpha spp., Hydrodictyon spp., Lyngbya spp., Oscillatoria spp., Rhizoclonium hieroglyphicum, Spirogyra spp.* Information on potential toxin-producing taxa is located in the Department's Statewide Biological Database (SBIO) Florida Taxonomic Lists. Please contact the Florida DEP Laboratory for more information about specific taxa. The dominance of such taxa as described above at a stream site where the RPS rank 4-6 ≥ 20% but ≤ 25% would be evidence that the numeric nutrient standard is not achieved.

A stream is considered to have a balanced periphyton community if two consecutive temporally independent samples either do not have RPS rank 4-6 at > 20% of points or do have RPS rank 4-6 at ≥ 20% but ≤ 25%, but do not include dominance or co-dominance by taxa known to be nutrient enrichment indicators or to produce toxins. Streams are considered to have an imbalanced periphyton community if both assessments indicate dominance by taxa known to be nutrient enrichment indicators or to produce toxins. As was the case for the RPS ranks, a third bioassessment result, either from a previously conducted survey or a subsequent survey, will be used to make the assessment call if the results of the two most recent surveys are contradictory.

1.2.1 RPS AND ALGAL SPECIES COMPOSITION DECISION KEY

1) Were the two most recent RPS assessments collected at least 90 days apart (temporally independent), and under representative conditions (*e.g.*, flow between 10th and 90th percentile of long-term discharge, light penetration/canopy cover characteristic of the system, sampling location representative of waterbody segment) for the system?

1a. Yes. Proceed to step 2.

1b. No. Evaluate previous RPS assessments, and either use previous RPS or conduct an additional RPS and collect algal taxonomic composition samples (if needed) at representative locations and during representative conditions and return to step 1.

2) Do both RPS assessments evaluated in step 1 attain the expectations for algal mat occurrence and taxonomic composition when applicable? To attain the expectations, conditions A **or** B must be met: A) RPS Rank 4-6 are < 20% **or** B) RPS Ranks 4-6 are ≥ 20 but ≤ 25%, and the dominant algal taxa are not nutrient enrichment indicators or potential toxin producers.

2a. Yes. The site attains the expectations for algal mat occurrence and taxonomic composition.

2b. No. Proceed to step 3.

3) Do both RPS assessments evaluated in step 1 fail the expectations for algal mat occurrence and taxonomic composition? To fail the expectations, conditions C **or** D must be met: C) RPS ranks 4-6 > 25%, **or** D) RPS ranks 4-6 are ≥ 20 but ≤ 25%, and the dominant algal taxa are nutrient enrichment indicators or potential toxin producers.

3a. Yes. The site does not meet expectations for algal mat occurrence and taxonomic composition.

3b. No. The two RPS assessments evaluated in steps 2 and 3 have differing results (i.e., one "pass" and one "fail"). Either review results of the next most recent temporally independent RPS assessment or collect an additional temporally independent RPS assessment. Proceed to step 4.

4) Does the result of the next most recent temporally independent RPS assessment or the result of an additional temporally independent RPS assessment achieve the expectations for algal mat occurrence and taxonomic composition?

4a. Yes. The site attains the expectations for algal mat occurrence and taxonomic composition.

4b. No. The site does not attain expectations for algal mat occurrence and taxonomic composition.

1.3 Evaluating the Presence or Absence of Nuisance Macrophyte Growth

The Linear Vegetation Survey (LVS) is a rapid assessment tool for evaluating the ecological condition of streams based on vascular plants. Because many streams naturally have very little or no aquatic vegetation, LVS data interpretation requires a minimum of two square meters (2 m^2) of macrophyte coverage be present within a 100-meter stream reach. If there is < 2 m^2 of vascular plant coverage present in a 100-m stream reach, there are no floral imbalances attributable to aquatic macrophytes. To determine an LVS threshold for streams that would support aquatic life, the Department evaluated LVS data from the nutrient benchmark streams. The Department concluded that if a site's average Coefficient of Conservatism (C of C) score is greater than or equal to 2.5 (the 10th percentile of the distribution), the plant community composition is part of the reference site distribution. Based on the Department's experience in minimally disturbed streams and the types of plants associated with C of C scores greater than or equal to 2.5, this threshold was determined to be reasonable and protective.

The Department also analyzed the frequency of occurrence of Florida Invasive Species Council (FISC) exotics in the nutrient benchmark streams, and found that FISC exotics made up approximately 40% of the total plant occurrences at the 90th percentile. Considering the somewhat limited number of reference streams with > 2 m^2 of vascular plants (nineteen) and the variability in the data, the Department decided to set the FISC threshold at the 80th percentile of the distribution (25%) to be more protective of aquatic life. Therefore, if the frequency of

occurrence of FISC exotics at a site is less than or equal to 25% of the total plant occurrences, the site may be considered part of the reference site distribution.

Based on the analysis of the nutrient benchmark streams described above, if a site's average C of C score is ≥ 2.5 and the frequency of occurrence of FISC exotic taxa is ≤ 25% of the total plant occurrences in the two most recent temporally independent samples, there is no imbalance of flora in the vascular plant community. If a site's C of C score is < 2.5 and the frequency of occurrence of FISC exotic taxa is > 25% of the total plant occurrence in the two most recent temporally independent samples, there is evidence of floral imbalance. If the two metrics have differing results (one passes, and one fails) in an individual sample, that sample is inconclusive. If there are additional LVS results available, the third most recent sample with conclusive results can be used to make the assessment determination. If there are no other LVS assessment results available, an additional, temporally independent sampling should be conducted. The results of the additional bioassessment, if conclusive, will determine the assessment status of the site.

Because invasive exotic or tolerant species can occur even in the absence of anthropogenic nutrient enrichment, streams with failing LVS scores shall be placed on the Study List for further evaluation to determine if LVS results can be linked to anthropogenic nutrient enrichment. If a stressor identification study is conducted and it is determined that nutrients are not the causative factor contributing to the LVS failure, the waterbody will be removed from the Study List.

1.3.1 LVS DECISION KEY

1) Were the two most recent LVS assessments collected at least 90 days apart (temporally independent) and under representative conditions (*e.g.*, flow between 10th and 90th percentile of long-term discharge, light penetration/canopy cover characteristic of the system, sampling location representative of waterbody segment) for the system?

1a. Yes. Proceed to step 2.
1b. No. Evaluate LVS assessments previous to the two most recent, and either use previous LVS or conduct an additional LVS at representative locations during representative conditions and return to step 1.

2) Do the two LVS assessments evaluated above in step 1 attain the expectations for stream macrophyte communities, with a mean C of C score ≥ 2.5 AND a frequency of occurrence of FISC exotic taxa ≤ 25%?
2a. Yes. The site attains the expectations for stream macrophyte communities.
2b. No. Proceed to step 3.

3) Do both LVS assessments evaluated in step 1 fail to meet the expectations for stream macrophyte communities, with a mean C of C score < 2.5 AND a frequency of occurrence of FISC exotic taxa > 25%?

3a. Yes. Proceed to step 5.

3b. No. The two LVS assessments evaluated in steps 2 and 3 have differing results (i.e., one "pass" and one "fail"). Either review results of the next most recent temporally independent LVS assessment or collect an additional temporally independent LVS assessment. Proceed to step 4.

3c. No. One or both of the LVS assessments attains the expectation for one metric (i.e., mean C of C or occurrence of FISC taxa) but not the other. Either review results of the next most recent temporally independent LVS assessments or collect additional temporally independent LVS assessments until you find two samples for which the metrics either both attain or do not attain expectations for stream macrophyte communities. Return to step 1.

4) Do the results of the next most recent temporally independent LVS assessment or the results of an additional temporally independent LVS assessment attain the expectations for stream macrophyte communities?

4a. Yes. The site attains the expectations for stream macrophyte communities.

4b. No. Place the waterbody on the Study List for IWR assessment purposes, and proceed to step 5.

5) Based on a stressor ID study, is there evidence the LVS results can be linked to anthropogenic nutrient inputs?

5a. Yes. The waterbody does not meet the nuisance macrophyte growth component of floral measures.

5b. No. The LVS results are inconclusive, and the water should stay on the Study List for IWR assessment purposes.

5c. No. Stressor ID indicates the impairment is due to something other than nutrients. The waterbody should be removed from the Study List for the LVS for IWR assessment purposes.

1.4 Evaluating Algal Blooms, Chlorophyll a, and Phytoplankton Taxonomic Data

A chlorophyll *a* annual geometric mean (AGM) value of > 20 µg/L is used as an impairment threshold for both lakes and streams in Chapter 62-303, F.A.C. However, it is commonly understood that healthy lakes in Florida may be characterized by chlorophyll *a* AGMs up to 20 µg/L, while most healthy streams would be expected to have significantly lower chlorophyll *a* levels. While this impairment threshold for streams was supported by an expert panel of Florida scientists that helped the Department develop the Impaired Waters Rule (IWR), neither the

expert panel nor a review of stream chlorophyll *a* literature was able to identify a stream chlorophyll *a* value below 20 µg/L that definitively did, or did not, support aquatic life uses.

To develop a chlorophyll *a* threshold for streams, the Department evaluated the chlorophyll *a* results compiled from the population of nutrient benchmark and healthy sites the Department sampled as part of NNC development. If a stream exhibits chlorophyll *a* AGMs below the 90th percentile of values (3.2 µg/L), this is a clear indication of no imbalance of flora. However, some nutrient benchmark streams and biologically healthy streams also exhibited chlorophyll *a* AGM values up to 17 µg/L and 19 µg/L, respectively. Because the remaining distribution of observed chlorophyll *a* AGMs included values approaching the IWR impairment threshold (and higher percentiles of the distribution exceeded it), the Department chose to continue to utilize 20 µg/L as a chlorophyll *a* impairment threshold.

Streams with chlorophyll *a* AGMs that are greater than 3.2 µg/L and less than or equal to 20 µg/L are evaluated on a site specific basis by comparing the values to chlorophyll *a* values for similar reference streams in the region. Factors such as upstream sources of chlorophyll *a*, water residence time, flow, color, climatological conditions, and size of the stream/river (i.e., stream order) are considered when comparing the chlorophyll *a* values to values for reference streams in the region. If a site has chlorophyll a AGMs that are greater than 3.2 µg/L and less than or equal to 20 µg/L, the assessment is inconclusive until the Department documents a decision regarding whether chlorophyll *a* conditions reflect an imbalance in flora or not. When the Department determines that the values indicate enrichment (e.g., are higher than functionally similar reference streams in the region), the Department considers this evidence of imbalances in flora, and vice versa.

The Department also uses the presence of phytoplankton blooms as an indicator of floral imbalances. An unacceptable phytoplankton bloom would consist of a situation where an algal species, whose noxious characteristics or presence, biomass, or areal extent, may reasonably be expected to prevent, or unreasonably interfere with, the designated use of a waterbody. The Department evaluates the autecological information for the dominant bloom species, in conjunction with the associated chlorophyll *a* when assessing imbalances of flora.

1.4.1 Chlorophyll a/Algal Bloom Decision Key

1. Were there sufficient chlorophyll *a* data to calculate an AGM? Chlorophyll *a* AGMs require at least 4 samples with at least one sample collected between May 1 and September 30 and at least one sample collected during the other months of the calendar year. Were samples collected when environmental conditions were representative of typical conditions for the system (e.g., flow between 10th and 90th percentile of long-term discharge, light penetration/canopy cover characteristic of the system, and use of sampling locations representative of the waterbody segment).

1a. No. Collect additional chlorophyll *a* samples at representative locations and during representative conditions, and return to step 1.
1b. Yes. Proceed to step 2.

2. Is the chlorophyll *a* AGM > 3.2 µg/L more than once in a three-year period?
   2a. No. The waterbody attains the chlorophyll *a*/algal bloom component of floral measures.
   2b. Yes. Proceed to step 3.

3. Is the chlorophyll *a* AGM > 20 µg/L more than once in a three-year period?
   3a. Yes. The waterbody does not attain the chlorophyll *a*/algal bloom component of floral measures.
   3b. No, the chlorophyll *a* AGMs are > 3.2 and ≤ 20 µg/L, proceed to step 4.

4. After considering site specific factors that affect chlorophyll *a* concentrations, such as system morphology, water residence time, whether the chlorophyll *a* levels are due to primary productivity in the stream or due to upstream sources, or consistency with other functionally similar reference sites, can it be documented that the chlorophyll *a* values represent a healthy well balanced phytoplankton community?
   4a. Yes. The waterbody attains the chlorophyll *a*/algal bloom component of floral measures.
   4b. No. The waterbody does not meet the chlorophyll *a*/algal bloom component of floral measures.
   4c. Inconclusive because of insufficient contemporaneous data from other functionally similar reference sites. Waterbody will be placed on the Study List.

1.5 Floral Measures Summary

As described previously, the Department derived the floral thresholds that are used to interpret the numeric nutrient standard for streams using a distribution of a population of nutrient benchmark streams. The thresholds summarized in **Table 1** are used when developing evidence to support a Department conclusion regarding the balance of the floral community. If all floral measures are achieved, a stream site attains the floral component of a healthy, well-balanced aquatic system, because it is within the minimally disturbed nutrient benchmark stream condition. However, if any one of these floral measures indicates an imbalance, then the stream site does not attain the Numeric Nutrient Standard.

Table 1. Floral community metric summary. These values were based on the distribution of a population of minimally disturbed nutrient benchmark sites sampled by the Department as part of NNC development.

Floral Measure	Floral Metric	Evidentiary Threshold of No Imbalance
Macrophytes	LVS C of C	Site average $\geq$ 2.5
Macrophytes	LVS FISC	Site average $\leq$ 25%
Periphyton	RPS Rank	$\leq$ 25% rank 4-6 coverage
Periphyton	RPS Algal Community Composition (Autecology)	If $\geq$ 20 but $\leq$ 25 % rank 4-6 coverage, no dominant nuisance taxa
Phytoplankton	Chlorophyll *a*	> 3.2 to 20 µg/L = site specific; $\leq$ 3.2 µg/L

2.0 BASIC INFORMATION NEEDS FOR DISTINGUISHING FLOWING WATERS UNDER RULE 62-302.200, F.A.C.

The numeric nutrient standard for streams only applies to "flowing waters" meeting the stream definition in subsection 62-302.200(36), F.A.C. The Department will apply the standard to any flowing waterbody or segment of flowing waterbody unless information necessary to demonstrate that a waterbody meets one of the exclusions in the definition for streams is provided to or identified by the Department. Information can be submitted to the Department prior to or during the Watershed Assessment Cycle, or as a component of a permit application. The Department will review the submitted information, and all approved exclusions will be tracked by the Water Quality Standards Program including a Geographic Information System (GIS) record of all stream exclusions.

The definition of stream in subsection 62-302.200(36), F.A.C., states:

> (36) "Stream" shall mean, for purposes of interpreting the narrative nutrient criterion in paragraph 62-302.530(48)(b), F.A.C., under paragraph 62-302.531(2)(c), F.A.C., a predominantly fresh surface waterbody with perennial flow in a defined channel with banks during typical climatic and hydrologic conditions for its region within the state. During periods of drought, portions of a stream channel may exhibit a dry bed, but wetted pools are typically still present during these conditions. For a flowing waterbody or waterbody segment to be considered perennial it must exhibit measurable flow for at least 180 consecutive days in greater than 50% of years. Flowing waterbodies or segments of flowing waterbodies that exhibit lesser flow duration shall be considered non-perennial unless there is site-specific bioassessment information based on the resident flora or fauna that an aquatic community is present that would require perennial flow. Streams do not include:

(a) Non-perennial waterbody segments where site specific bioassessment information or flow data indicate periods of desiccation; typically result in the dominance of wetland and/or terrestrial taxa (and corresponding reduction in obligate fluvial or lotic taxa); wetlands; portions of streams that exhibit lake characteristics (*e.g*., long water residence time, increased width, or predominance of biological taxa typically found in non-flowing conditions); or tidally influenced segments that routinely reverse the direction of flows or fluctuate between predominantly marine and predominantly fresh waters during typical climatic and hydrologic conditions; or

(b) Ditches, canals and other conveyances, or segments of conveyances, that are man-made, or predominantly channelized or predominantly physically altered; and

1. Are primarily used for water management purposes, such as flood protection, stormwater management, irrigation, or water supply; and

2. Have marginal or poor stream habitat or habitat components, such as a lack of habitat or substrate that is biologically limited, because the conveyance has cross sections that are predominantly trapezoidal, has armored banks, or is maintained primarily for water conveyance.

The Department applies relevant water quality standards when assessing waterbodies for attainment of water quality standards under section 403.067, F.S., or implementing the NPDES permitting programs. When applying the nutrient standards adopted in subsection 62-302.531(2), F.A.C., the Department makes clear whether the numeric nutrient standards for streams adopted in paragraph 62-302.531(2)(c), F.A.C., apply. When preparing draft lists of impaired waters under the IWR, the Department provides public notice of the draft lists and requests information relevant to determining whether a flowing waterbody or waterbody segment meets one of the exclusions in the streams definition, including the purpose of the waterbody, such as flood protection, stormwater management, irrigation, water supply, navigation, boat access to an adjacent waterbody, or frequent recreational use. The Department considers all relevant information in implementing water quality standards and maintains the administrative records of such decisions, which will be available to the public.

Until a Class I, I-Treated or III stream segment is identified as meeting one of the exclusions in paragraph 62-302.200(36)(a) or (b), F.A.C., the criteria in paragraph 62-302.531(2)(c), F.A.C., apply. Interested parties wishing to demonstrate that a stream segment qualifies for one of the exclusions in subsection 62-302.200(36), F.A.C., may provide the Department with the information needed.

A clear delineation of the segment's geographic boundaries is necessary so that the Department knows exactly where the numeric nutrient standard for streams does not apply. Delineation of segment boundaries can include physical, biological, and chemical information, such as intersections of tributaries into a segment, control structures, the interface of wetlands, or other factors that indicate that the homogeneous physical, biological, or chemical condition of the segment would change at the boundary.

For waterbodies or waterbody segments that meet one of the exclusions of paragraph 62-302.200(36)(a) or (b), F.A.C., the narrative nutrient criteria will apply, including applicable subsections of Rule 62-303.350, F.A.C. For freshwater systems, the Department shall assess the waterbody or waterbody segment using the nutrient impairment thresholds in subsection 62-303.351(3), F.A.C. (other information indicating an imbalance), subsection 62-303.351(4), F.A.C. (AGM chlorophyll *a* greater than 20 µg/L), and subsection 62-303.351(5), F.A.C. (increasing trends in nutrients or chlorophyll *a*). For tidal systems, the Department shall assess the waterbody using the nutrient impairment thresholds in subsection 62-303.353(2), F.A.C. (AGM chlorophyll *a* greater than 11 µg/L), subsection 62-303.353(3), F.A.C. (other information indicating an imbalance), and subsection 62-303.353(4), F.A.C. (increasing trends in nutrients or chlorophyll *a*).

2.1 Non-Perennial Water Segments

The numeric nutrient standard for streams was not designed to apply to wetlands, uplands, or non-perennial waterbodies or waterbody segments. The duration and frequency of surface flow in a flowing waterbody must be understood to avoid confounding effects of natural drying events when assessing the ecological integrity of aquatic resources present. Some knowledge of flow permanence is critical and may be the key variable influencing the communities in many small flowing waterbodies in Florida and in determining the applicability of the stream definition in subsection 62-302.200(36), F.A.C. Different ecological expectations and sampling procedures are needed when assessing the condition of perennial versus non-perennial flowing waterbodies or waterbody segments. The drying process causes changes in the physical and chemical conditions (e.g., loss of wetted habitat, reduced dissolved oxygen), which can exclude some species while allowing others to thrive. These effects are not related to nutrients and therefore need to be controlled for in nutrient evaluations. Geophysical, hydrological, and biological information may be used individually or in combination to make a demonstration whether a flowing waterbody segment is non-perennial. Specific information to be included in a demonstration is discussed below.

There are two methods for demonstrating that a segment is non-perennial: 1) site specific gage and discharge data, 2) biological demonstration based on the resident flora or fauna. Either method can be used to independently establish whether a flowing waterbody or waterbody segment is non-perennial. If both lines of evidence are available and the results conflict, the

biological demonstration will take precedence. Demonstrations may be strengthened by employing multiple methods. Each method is described below.

Other methods that provide this demonstration with similar accuracy will be considered by the Department if they are a means to predicting the resulting biological conditions discussed below.

2.1.1 Stream Flow Characteristics as an Indicator

AMEC (2013, reference provided for informational purposes only) defined perennial streams as those that have non-zero flow for at least 180 consecutive days (i.e., 6 months) in at least 90% of years in the available period of record, and likely perennial steams as those that have measurable flow for at least 180 consecutive days in greater than 50% of years. Both perennial and likely perennial streams are included in the definition of streams for NNC purposes. A demonstration that a stream is non-perennial can be made using pre-existing gage data or by deploying gages specifically for determining flow duration in the waterbodies of interest. Monitoring must be representative of a consecutive 12-month period to capture seasonal variability. The demonstration shall include the mean annual flow, mean monthly flows, and 30-day low-flow frequencies. Longer periods of record will provide greater confidence that the mean, high, and low flow conditions have been adequately characterized. Flow statistics can be estimated using accepted regression equations for the region and site of interest and will be evaluated on a case-by-case basis for data sufficiency and accuracy.

2.1.2 Biological Information as Indicators

Vascular plants

The Department has long relied on lists of vascular plants including obligate wetland indicators, facultative wetland indicators, and facultative neutral indicators, as one component of the method used to identify and delineate wetland boundaries, as defined in Chapter 62-340, F.A.C. If available, vascular plant community composition will help distinguish streams from non-perennial water segments. Often, both types of systems contain few or no rooted herbaceous plants in the stream channel, because natural turbidity, canopy cover, and color reduce the light available for photosynthesis. If herbaceous plants are present, perennial and non-perennial systems often share many taxa, particularly in areas where they transition to adjacent floodplains. However, the presence of certain facultative or facultative-wetland herbaceous species within the stream bed can be a valid indication that the stream is non-perennial. These taxa may require moist or saturated conditions to germinate and grow, but would **not tolerate** the inundation of a perennially flowing stream. Examples of these taxa include: grasses such as *Chasmanthium latifolium* and *Tripsacum dactyloides*, sedges such as *Cyperus esculentus* and *Cyperus retrorsus*, forbs such as *Cuphea carthagenesis*, *Bidens pilosa*, and *Sphagneticola trilobata*, and ferns such as *Woodwardia virginica* and *Thelypteris* spp. (see complete lists of obligate wetland, facultative wetland and facultative taxa in Chapter 62-340, F.A.C.). During a HA or LVS conducted during a site visit, the presence of facultative and facultative-wetland herbaceous vascular plant taxa in

the channel bed would be an indicator that the system is non-perennial. Many plants within a permanently wetted channel are aquatic plants, which are defined but not listed in Chapter 62-340, F.A.C. Under extremely dry conditions, terrestrial taxa could also invade the channel bed of a non-perennial system.

Macroinvertebrates

If available, macroinvertebrates will also be used to distinguish perennial from non-perennial segments. Most rheophilic invertebrates require relatively consistent inundation and water velocity to complete their life cycle, although many have mechanisms to survive extreme drought conditions if perennial streams reduce to a series of pools. These pools typically exhibit slow flowing water with connecting flows between the pools existing in the sediments below the temporarily non-inundated sections of the stream bed. Other mostly wetland taxa are adapted to survive the frequent (generally annual) periods of desiccation associated with non-perennial streams or wetlands. Some invertebrate species classified as facultative (semi-aquatic) are able to occupy both perennial streams and non-perennial flowing waterbodies. This is due in part to the colonization of non-perennial flowing waterbodies by movement of invertebrates from nearby perennial waters, especially those with adaptations that allow them to survive in short hydroperiod environments, such as a multivoltine life cycle, highly mobile adults, and rapid growth during the wet season. Some rarely inundated non-perennial flowing waterbodies that have only a short hydroperiod may be completely lacking in aquatic invertebrates (terrestrial animals may be present) or have a limited number of species that can complete their life cycles rapidly before the stream dries.

The Department has compiled taxa lists to distinguish perennial from non-perennial waterbodies or non-flowing systems (**Tables 2 and 3**). Paragraph 62-302.531(2)(c), F.A.C., **does not** apply to non-perennial waterbody segments where there is a dominance of wetland, semi-aquatic and/or terrestrial taxa (with a corresponding reduction in obligate fluvial or lotic taxa) or to wetlands. Paragraph 62-302.531(2)(c), F.A.C., **does apply** to perennial streams where drought conditions may result in portions of a stream channel temporarily exhibiting a partially dry bed, but where wetted pools are typically still present.

SCI sampling requires certain hydrologic conditions to distinguish the effects of natural drought from water quality issues. SCI sampling (following DEP Standard Operating Procedure SCI 1000 as set forth in Rule 62-160.210, F.A.C.) is conducted during periods when water velocity has been 0.05 m/sec or greater for at least 28 days or after a 6-month period if the site has gone completely dry or 3 months (90 days) if a site has been reduced to a series of disconnected pools. Following these SOPs ensures that perennial streams are typically dominated by taxa from **Table 2**, while non-perennial systems (which tend to transition into linear wetland strands) either would usually not be sampled for SCI or would typically be dominated by taxa in **Table 3**. The presence of long-lived aquatic species (benthic macroinvertebrates that require water for their

entire life cycle) is another reliable method to determine if a stream is more characterized by perennial flow or wetland/terrestrial conditions. A list of long-lived taxa is included in DEP SOP SCI 2100 as set forth in Rule 62-160.210, F.A.C.

For purposes of establishing segments that are excluded from the stream definition, the Department will evaluate the taxa that occur in the segment, as well as the vascular plant information described above.

Table 2. The most commonly encountered invertebrate taxa in flowing streams in Florida. Taxa information was retrieved from the Florida Statewide Biological DataBase ("SBIO") and represents 6,695 stream samples collected over the entire state (2004-2024). Some of the organisms are ubiquitous (*e.g., Chironomidae*) and are found in several system types; however, in flowing systems there are a large number of rheophilic and long-lived taxa that are not commonly encountered in wetlands or non-perennial waterbodies.

Taxa	**Number of Occurrences (n = 6,695)**
Chironomidae	5750
Hyalella azteca	4196
Polypedilum illinoense grp.	3640
Caenis	3556
Stenelmis	3400
Cheumatopsyche	3294
Ancylidae	3238
Polypedilum flavum	3071
Rheotanytarsus exiguus grp.	3063
Microcylloepus pusillus	2897
Tubificidae	2869
Coenagrionidae	2826
Stenochironomus	2802
Dubiraphia vittata	2612
Simulium	2320
Ceratopogonidae	2293
Polypedilum scalaenum grp.	2264
Ablabesmyia mallochi	2238
Sphaeriidae(mollusca)	2210
Argia	2138
Oecetis	2122
Corbicula fluminea	1983
Enallagma	1930
Heptageniidae	1914
Physa	1879
Palpomyia/bezzia grp.	1866
Pentaneura inconspicua	1866
Palaemonetes	1853
Hemerodromia	1812

Taxa	**Number of Occurrences (n = 6,695)**
Hydroptila	1803
Rheotanytarsus pellucidus	1775
Hydrobiidae	1768
Baetidae	1670
Triaenodes	1626
Ablabesmyia rhamphe grp.	1626
Thienemannimyia grp.	1618
Cambaridae	1616
Pseudochironomus	1594
Micromenetus	1558
Oxyethira	1552

Table 3. The most abundant invertebrate taxa found in wetland systems in Florida from 221 samples retrieved from SBIO (2004-2024). The organisms are dominated by oligochaetes (*e.g.*, represented by the genera *Dero*, *Bratislavia,* and others), midges (*e.g., Polypedilum* and *Goeldichironomus*), and damselflies and dragonflies (*e.g., Coenagrionidae* and *Libellulidae*).

Taxa	**Number of Occurrences (n=221)**
Hyalella azteca	173
Chironomidae	140
Dasyhelea	139
Larsia decolorata	115
Palpomyia/bezzia grp.	114
Polypedilum trigonus	104
Palaemonetes	97
Ceratopogonidae	95
Caenis	93
Larsia	92
Parakiefferiella sp. f epler	92
Coenagrionidae	85
Polypedilum sp. a epler	83
Arrenurus	82
Bratislavia unidentata	81
Chironomus	81
Tanytarsus sp. g epler	81
Polypedilum illinoense grp.	75
Parachironomus alatus	73
Libellulidae	72

Taxa	Number of Occurrences (n=221)
Tanytarsus	71
Ancylidae	67
Planorbella	67
Cladotanytarsus sp. a epler	64
Paratanytarsus	63
Tanytarsus sp. r epler	63
Hydrobiidae	61
Berosus	53
Dero digitata complex	52
Pelocoris	49
Desmopachria	48
Corixidae	46
Tanytarsus limneticus	45
Derallus	42
Naididae	42
Hydrocanthus	40
Polypedilum halterale grp.	40
Gastropoda	39
Odontomyia	39
Dero pectinata	37

2.1.3 Geomorphology as an Indicator of Flow Permanence

Given the large number of potentially non-perennial flowing waterbodies or segments, the Department plans to use GIS resources to help identify candidates for the collection of biological data or flow monitoring. Drainage area and dominant water source (surface versus groundwater), which rely on readily available GIS layers, provide insight into the typical flow regime and degree of flow permanence in a stream. Drainage area in this context refers only to the contributing area upstream of a sampling location. As drainage area increases, groundwater storage increases and approaches the streambed level, ensuring a more continuous flow (exceptions to this include springs and seepage streams where even the upper reaches sustain year-round surface flow). Similarly, as groundwater's relative contribution versus surface water increases, so does the permanence of flow in a system.

Elements of the HydroBioGeomorphic (HBG) Classification System developed by John Kiefer (2010; reference provided for informational purposes only) and subsequently refined under DEP contract (AMEC, 2013; reference provided for informational purposes only) provides critical information that can be used to estimate whether a stream is perennial at a given location. The

HBG system is a hierarchical, four-step process. The first step involves segregating streams based on broad differences in regional climate and geology (**Figure 1**). The second step divides streams into classes (karst, highlands, and flatwoods) based on the soils and dominant mode of water delivery in a watershed and is described in greater detail in a later paragraph (**Table 4**). The third step incorporates slope and valley configuration, and the fourth and final step, considers the dimensions and habitats of the channel and floodplain corridor (AMEC, 2013; reference provided for informational purposes only). For purposes of determining the likelihood of perenniality of a given system, the first two steps in the HBG classification process, identifying the hydrophysiographic region and mode of water delivery, are critical.

There are three regions for stream classification purposes: Northwest Florida Coastal Plain (NWFCP), Northeast Florida Coastal Plain (NEFCP), and Peninsula Florida Coastal Plain (PFCP). A fourth region, the South Florida Coastal Plain (SFCP) has been fundamentally hydrologically altered and thus is not included in this discussion. The hydrophysiographic regions are illustrated in **Figure 1**. The NWFCP generally comprises the Florida panhandle west of and including the Ochlockonee River basin. The NEFCP lies to the east of the Ochlockonee River and north of an imaginary diagonal line running from the mouth of the Waccasassa River on the west (Gulf) coast to the mouth of the St Johns River on the east (Atlantic) coast. The PFCP region lies to the south of the same line as shown in **Figure 1**. It is important to note that sites near regional boundaries require more careful consideration and may exhibit characteristics that are intermediate between the bordering regions. If the system under evaluation crosses multiple regions, then each region should be evaluated. Department staff should be contacted if there is any uncertainty when conducting these determinations.

Florida's geology results in three distinctly different water delivery systems for Florida streams (karst, highlands, and flatwoods). Karst systems are those with abundant and steady groundwater discharged through limestone springs under pressure. The steady groundwater flow typical of karst systems exempts them from further non-perennial discussion. Highlands systems have unconfined lateral groundwater seepage through thick columns of sand through relict dunes, and flatwoods streams are dominated by surface water runoff seasonally coursing through and over combinations of flat, shallow, organic, and sandy soils. Accurately determining the dominant water source for highlands and flatwoods systems requires evaluating the soil drainage potential in the watershed of a given site. Surrogates for this information, such as the presence or absence of tannins in the water, i.e., color, is highly variable and not a reliable long-term indicator.

There are clear differences between the soil composition of the flashy, surface water dominated flatwoods systems and the steady, groundwater-dominated highlands systems among the three regions. Highlands generally have well-drained soils, low water tables, and rolling topography. Flatwoods generally have an abundance of poorly-drained soils, high water tables, and flat topography.

Soils are classified by the Natural Resource Conservation Service (NRCS) into four hydrologic soil groups based on the soil's runoff potential. The four hydrologic soil groups are A, B, C and D. A type soils are the most well-drained and generally have the smallest runoff potential, B soils are moderately well-drained, C soils are not well-drained, and D soils are the most poorly drained and have the greatest runoff potential. If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the second letter, which is the natural or unaltered soil group, should be used in the calculation (AMEC 2013, reference provided for informational purposes only). It is standard NRCS convention to have the first letter express the "potential" for a soil to be well-drained if it were drained or otherwise altered and the second letter to be the" unaltered" or "natural" group.

To determine the hydrologic soil groups in the drainage area of a given site, a GIS layer (*e.g.* NRCS, SSURGO) with hydrologic soil content is required. The percent of better drained soils in the drainage area of interest should be calculated by adding up the soil types A and C in the PFCP region (C soils were included rather than B soils in the PFCP region calculations because B soils were not common in this region.) and the soil types A and B in the NEFCP and NWFCP regions. In GIS, this feature is typically designated as "HYDRGRP" or something similar in the attribute table of the soil layer. The percent thresholds in **Table 4** should be used to determine whether the site is highlands or flatwoods.

Table 4. Hydrologic soil thresholds for Flatwoods and Highlands stream by Hydrophysiographic Region.

Region	Flatwoods	Highlands
Peninsula (PFCP)	<40% A+C Soils	≥40% A+C Soils
Northeast (NEFCP)	<40% A+B Soils	≥40% A+B Soils
Northwest (NWFCP)	<40% A+B Soils	≥40% A+B Soils

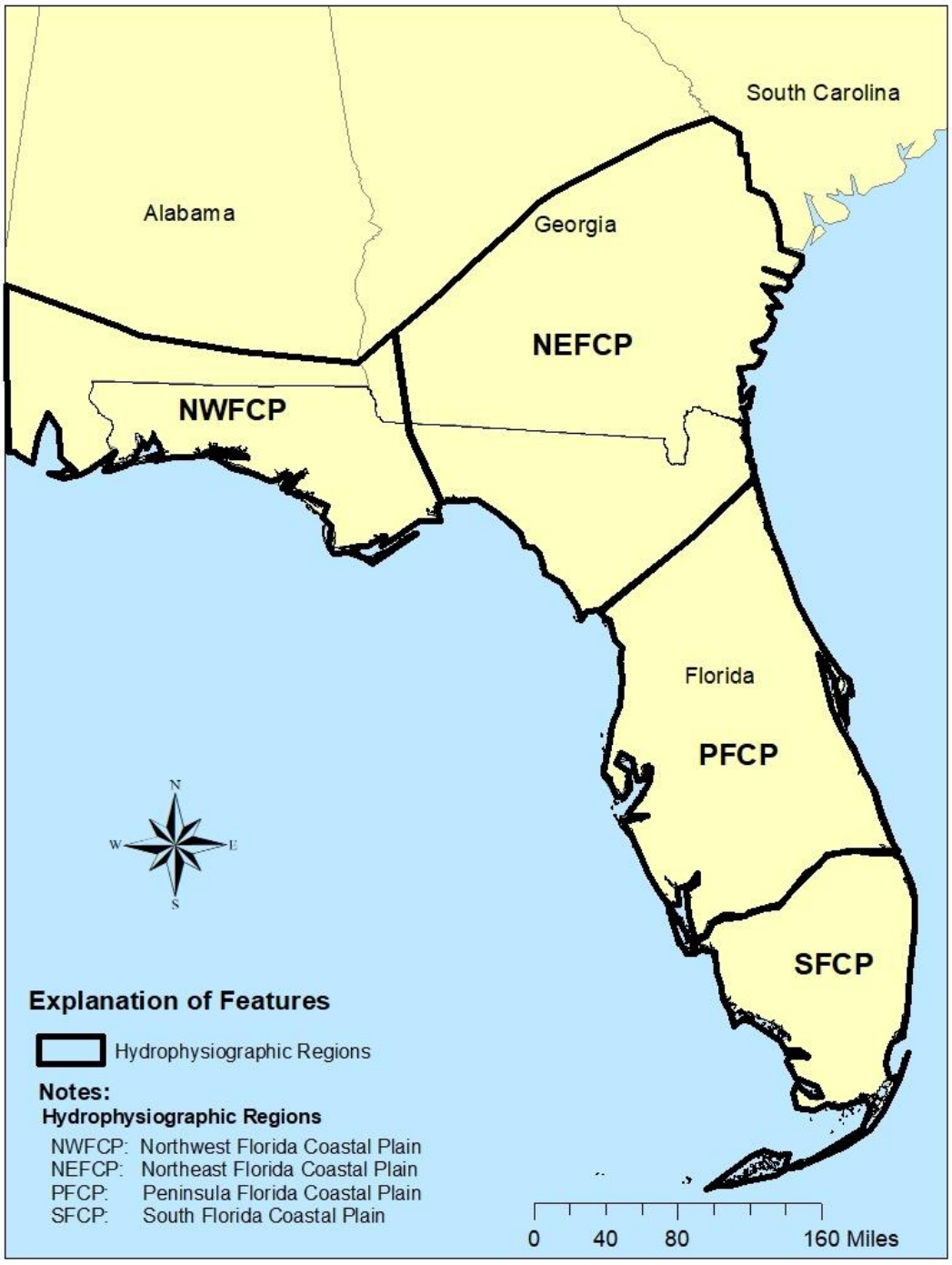

Figure 1. Hydro-physiographic regions versus FDEP Bioregions. This figure was adapted from AMEC (2013). For informational purposes only.

2.1.3.1 Peninsula

The peninsula's distinct wet and dry seasons lead to the state's largest seasonal water deficits, which are most severe in April and May. The wet season typically starts in June and usually ends in November. The seasonal water stress creates the potential for a highly variable flow regime that is ameliorated in areas where the watershed's dominant soil characteristics consist of thick columns of unsaturated sands that allow for substantial infiltration consistent with the highland's physiography.

- Flatwoods Streams - Streams in the peninsular region with watersheds smaller than 5 sq. miles have highly variable hydroperiods and are inherently non-perennial. Streams with drainage areas above 5 square miles but less than 20 sq. miles are seasonally flowing. Peninsula flatwoods streams are likely perennial with drainage areas of at least 20 sq. miles and perennial above 50 square miles. Adequate flow volumes should not be an issue in these systems.

- Highlands Streams - In contrast to the flatwoods systems, highlands streams have a more consistent base flow and become perennial with much smaller drainage areas. Streams smaller than 1 sq. mile are typically non-perennial, but those above this size are likely perennial.

Northeast

Streams in the northeast achieve perenniality in smaller basins than in the peninsula due to a more equitable distribution of rainfall throughout the year and lower evaporation potential.

- Flatwoods Streams - Northeast flatwoods streams with drainage areas less than 1 sq. mile are non-perennial. Systems between 1 and 5 sq. miles are seasonally flowing. Streams with drainage areas greater than 5 sq. miles are either seasonally flowing or perennial.

- Highlands Streams - There are very few highlands sites in the northeast region. Stream with drainage areas less than 3 sq. miles are likely to be non-perennial.

Northwest

Streams in the northwest region receive more rain than the peninsula or northeast regions, primarily in the winter and spring. With evapotranspiration potential the lowest and rainfall the highest, streams achieve perenniality in smaller basins when compared to the other regions.

- Flatwoods Streams – There are a limited number of these systems in the northwest region; most in this region tend to occur in or near the Apalachicola River basin. Given the climatic regime, it is likely that flatwoods sites become perennial when the drainage area exceeds 5 sq. miles.
- Highlands Streams – All sizes of highlands streams in northwest Florida are likely to be perennial.

A summary of the perenniality and associated NNC applicability based on region, water source, and drainage area is provided in **Table 5**. As noted in **Table 5**, peninsula flatwoods with a DA less than 5 square miles and peninsula highlands with a DA less than 1 square mile are expected to be nonperennial and therefore are candidates for further study. The nonperennial DA threshold for candidates in both Northeast and Northwest flatwoods is 1 square mile, while there is no DA threshold below which non-perenniality can be concluded for Northeast and Northwest highlands.

Table 5. Summary of HBG factors and stream flow characteristics.

Region	Water Source	Drainage Area (DA) sq. miles	Perenniality
Peninsula	**Flatwoods**	DA <5	Non-perennial
Peninsula	**Flatwoods**	≥5 DA <20	Seasonally Flowing
Peninsula	**Flatwoods**	≥20 DA <50	Likely Perennial
Peninsula	**Flatwoods**	DA ≥50	Perennial
Peninsula	**Highlands**	DA <1	Non-perennial
Peninsula	**Highlands**	≥1 DA ≤5	Likely Perennial
Peninsula	**Highlands**	DA ≥ 5	Perennial
Northeast	**Flatwoods**	DA <1	Non-perennial
Northeast	**Flatwoods**	≥1 DA <5	Seasonally Flowing
Northeast	**Flatwoods**	≥5 DA <20	Likely Perennial
Northeast	**Flatwoods**	DA ≥20	Perennial
Northeast	**Highlands**	DA <3	Seasonally Flowing
Northeast	**Highlands**	3 ≥DA ≥5	Likely Perennial
Northeast	**Highlands**	DA ≥5	Perennial
Northwest	**Flatwoods**	DA <1	Non-perennial
Northwest	**Flatwoods**	≥1 DA <5	Seasonally Flowing
Northwest	**Flatwoods**	≥5 DA <10	Likely Perennial
Northwest	**Flatwoods**	DA ≥10	Perennial

Region	Water Source	Drainage Area (DA) sq. miles	Perenniality
Northwest	**Highlands**	DA <1	Seasonally Flowing
Northwest	**Highlands**	≥1 DA <5	Likely Perennial
Northwest	**Highlands**	DA ≥5	Perennial

2.2 Tidally Influenced Segments

Tidally influenced segments are those that fluctuate (daily, weekly, or seasonally) between predominantly marine and predominantly fresh waters during typical climactic and hydrologic conditions (e.g., flow between 10th and 90th percentile of long-term discharge). The delineation of the segment is important as only portions of segments that are demonstrated to fluctuate between marine and fresh conditions qualify for the exclusion under paragraph 62-302.200(36)(a), F.A.C. The definitions of predominantly fresh and predominantly marine waters in Rule 62-302.200, F.A.C., are as follows:

> (29) "Predominantly fresh waters" shall mean surface waters in which the chloride concentration is less than 1,500 milligrams per liter or specific conductance is less than 4,580 µmhos/cm. Measurements for making this determination shall be taken within the bottom half of the water column.
>
> (30) "Predominantly marine waters" shall mean surface waters in which the chloride concentration is greater than or equal to 1,500 milligrams per liter or specific conductance is greater than or equal to 4,580 µmhos/cm. Measurements for making this determination shall be taken within the bottom half of the water column.

This demonstration can be made with chloride or specific conductance data collected during typical hydrologic conditions, taking into account tidal cycles and seasonal and climatic variability. The presence of typical hydrologic conditions may be shown by tide and flow data temporally coupled with the water quality sampling events. Typical hydrologic conditions exclude periods of high rainfall or drought that would create flow conditions well outside of average annual flow conditions.

Tidally influenced segments also include those for which the direction of flow changes during the typical tidal cycle, such that the flow reverses during flood tide and resumes toward the coast during ebb tide or the water level increases during flood tide. Routine changes in the direction of flow or water level prevent consistent conditions required for the biological assessment tools included in the numeric nutrient standard.

As part of the NPDES permitting process for domestic and industrial discharges, existing Florida law requires that dischargers need to provide reasonable assurance that water quality standards will not be violated as a result of their discharge. For those waters that qualify as tidally influenced segments under paragraph 62-302.200(36)(a), F.A.C., the numeric nutrient standard for streams in paragraph 62-302.531(2)(c), F.A.C., does not apply. Nutrient water quality based effluent limits (WQBELs) for NPDES permitted domestic and industrial wastewater discharges into such tidal segments will be based on the applicable numeric nutrient standards in waters both downstream (estuaries) and upstream (if tidally influenced), as well as the narrative nutrient water quality standard at the point of discharge.

2.3 Water Management Conveyances

The stream definition in paragraph 62-302.200(36), F.A.C., excludes the following: Ditches, canals and other conveyances, or segments of conveyances, (hereafter referred to collectively as "conveyances"), that are man-made, or predominantly channelized or predominantly physically altered; and

1. Are primarily used for water management purposes, such as flood protection, stormwater management, irrigation, or water supply; and

2. Have marginal or poor stream habitat or habitat components, such as a lack of habitat or substrate that is biologically limited, because the conveyance has cross sections that are predominantly trapezoidal, has armored banks, or is maintained primarily for water conveyance.

The following information will be used in identifying segments that qualify for the exclusion for conveyances in paragraph 62-302.200(36)(b), F.A.C.

2.3.1 Delineation

Only those sections of the stream that meet the requirements in paragraph 62-302.200(36)(b), F.A.C., are eligible for the exclusion. A map of the applicable areas for review must clearly delineate the upstream and downstream extent of the artificial conveyance.

2.3.2 Primary Water Management Purpose

Information must show that the current purpose of the man-made or physically altered conveyance is primarily water management such as flood protection, stormwater management, irrigation, or water supply. Relevant documentation can include photographic evidence, funding authorizations, operational protocols, local agreements, permits, memoranda of understanding, contracts, or other records that indicate how the conveyance is operated and maintained, and must verify that the conveyance's design or maintenance allows the conveyance to currently function in a manner consistent with the primary water management purpose.

The phrase "primarily used for water management purposes" in subparagraph 62-302.200(36)(b)1., F.A.C., does not include use for navigation or boat access to an adjacent waterbody, or frequent recreational activities. The purpose of the conveyance design in conjunction with the purpose of any subsequent alterations or maintenance is evaluated to help differentiate whether its primary function is navigation, boat access, or frequent recreational activities, versus flood protection, stormwater management, irrigation, or water supply. If available information provided by the public, in response to public notice and request for information, or otherwise known by the Department, demonstrates that the segment is commonly used for navigation, boat access, or other frequent recreational activities such as swimming or boating, then the primary purpose is not water management and the Department will apply the nutrient standards in paragraph 62-302.531(2)(c), F.A.C. Freshwater finger canals dug during the construction of neighborhoods designed to create homes with boat access to waterbodies are an example of navigation or access as a primary purpose.

2.3.3 Physical Alteration that Limits Habitat

The exclusion at subparagraph 62-302.200(36)(b)2., F.A.C., outlines that the conveyance must have marginal or poor stream habitat or habitat components that limit biological function because the conveyance has cross sections that are predominantly trapezoidal, has armored banks, or is maintained primarily for water conveyance. Photographic evidence of these limitations can demonstrate the habitat condition of the conveyance. Also, SOPs for conducting stream HAs have been adopted by the Department in DEP SOP FT 3000 as set forth in Rule 62-160.210, F.A.C. To qualify under subparagraph 62-302.200(36)(b)2., F.A.C., the overall HA score must be either poor (0-40 points) or marginal (41-80 points), and the Substrate Diversity and Artificial Channelization metrics must score in the poor category (≤ 5 points). However, the exclusion may still apply when Substrate Diversity or Artificial Channelization scores are in the marginal range if it can be demonstrated that the higher scores are due to a lack of maintenance of the conveyance when the HA was completed. The Department will evaluate information related to ongoing maintenance programs and schedules to determine whether a lack of recent maintenance likely caused the scores to be within the marginal category, and to demonstrate that the conveyance is still being maintained primarily for water management purposes. If the overall HA score is other than poor or marginal, the conveyances do not meet the exclusion.

The HA procedures include long-established criteria that can be used to demonstrate physical alterations in a system, and can provide information verifying that ongoing maintenance activities are associated with perpetuating those physical alterations. The lack of substrate and degree of artificial channelization are part of the HA scoring system's definition and components. An HA score must be completed by an individual with demonstrated proficiency (as per DEP SOP FT 3000 as set forth in Rule 62-160.210, F.A.C.,) to indicate that the definition related to the segment's modification is met. If there are different segments within the conveyance that exhibit different features, a HA is needed for each segment.

REFERENCES

[AMEC] Amec Environment and Infrastructure, Inc. 2013. Technical Support for Nutrient Concentration Sensitivities Associated with Different Types of Florida Freshwater Streams. Amec No. 14251.5. Prepared for Florida Department of Environmental Protection. February 2013. 191 pp. **For informational purposes only**.

Kiefer, John. H. (2010). Hydrobiogeomorpholgy of Fluvial Systems in Peninsular Florida: Implications to Classification, Conservation, and Restoration. [Unpublished doctoral dissertation, University of Florida]. UF Digital Collections. **For informational purposes only.**