2025 Consolidated Assessment and Listing Methodology for Florida

Division of Environmental Assessment and Restoration

Florida Department of Environmental Protection

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Introduction

This report provides an overview of Florida's assessment and listing methodology for surface water. Under the federal Clean Water Act (CWA), the U.S. Environmental Protection Agency (EPA) and its state partners have developed an integrated assessment to address water quality monitoring strategies, data quality assurance needs, and data interpretation methodologies. This document details Florida's assessment objectives and strategy, how Florida determines whether water quality standards are being attained, and how Florida communicates its assessment findings to decision makers, the public, and EPA. This document is submitted to EPA every other year as part of the state's submittal of 303(d) list updates and support documentation.

Florida's Assessment Objectives and Strategy

The Florida Department of Environmental Protection (department) uses the best available information to identify waterbodies and waterbody segments that are not meeting the applicable water quality standards and designated uses based on the Impaired Waters Rule (IWR), Chapter 62-303, and Florida's Surface Water Quality Standards Rule, Chapter 62-302, Florida Administrative Code (F.A.C.). To conform to the expectations of Section 303(d) of the Clean Water Act and title 40, Code of Federal Regulations (C.F.R.), 130.7(b), a 303(d) List of waterbodies and associated parameters that do not meet state water quality standards, which are identified on the Verified or Study List, are submitted to EPA every two years as water quality limited segments.

The department divided Florida's waterbodies into discrete segments for purposes of assessment and restoration under Section 403.067, Florida Statutes. The unique waterbody identification units, referred to as WBIDs (**W**ater**B**ody **ID**entification), are assessed for impairment based on individual parameters. Identifying a waterbody that is not meeting applicable water quality standards allows the department to satisfy the requirement of 303(d) assessment, and to additionally support the development of a Total Maximum Daily Load (TMDL) and Basin Management Action Plan (BMAP) for an impaired water. Once a water quality limited segment is identified a TMDL is determined for the pollutant of concern. A TMDL is the maximum amount of a given pollutant that a surface water can assimilate and still meet the applicable water quality standards that protect human health and aquatic life. Following a TMDL being adopted by rule, depending on the circumstances, a basin working group may be formed to develop a basin management action plan (BMAP) to implement strategies and actions designed to achieve the pollutant reduction established by the TMDL to restore water quality for the applicable waterbody.

Additionally, 303(d) assessment is used to develop a strategic monitoring plan (SMP). The SMP directs water chemistry and biological monitoring to assist in assessing the health of surface waters. The goal of the SMP is to ensure that WBIDs have sufficient data to verify whether potentially impaired waters are in fact impaired and, to the extent possible, determine the causative pollutant for waters impaired for dissolved oxygen (DO) or biological health. The SMP supports the ability to make 303(d) assessments in future cycles, special projects in need of evaluation, and continuous monitoring efforts.

Implementation of the 303(d) Program

DEP's statewide method for water resource management, called the watershed management process, is the framework for developing and implementing the provisions of Section 303(d) of the federal CWA as required by federal and state laws. This process manages water resources based on hydrologic units - natural boundaries such as river basins - rather than political or regulatory boundaries. DEP assesses each basin as an entire functioning system and evaluates aquatic resources from a basin wide perspective that considers the cumulative effects of human activities. From that framework, DEP addresses the causes of pollution.

Rather than relying on single solutions to water resource issues, the watershed management process is intended to improve the health of surface water and groundwater resources by strengthening coordination among activities such as monitoring, stormwater management, wastewater treatment, wetland restoration, BMPs, land acquisition and public involvement. Stakeholder involvement (including federal, state, regional, tribal, and local governments, and individual citizens) is an important feature to cooperatively define, prioritize, and resolve water quality problems. Coordination among the many existing water quality programs helps manage basin resources and reduce duplication of effort.

To implement the watershed management process, Florida’s 52 hydrologic unit code (HUC) basins are divided into 29 drainage basins that are distributed among the department’s 6 regulatory districts. There are five basins in the Northwest, Central, Southwest, South, and Southeast Districts, and four basins in the Northeast District (*Figure 1 and Table 1*).

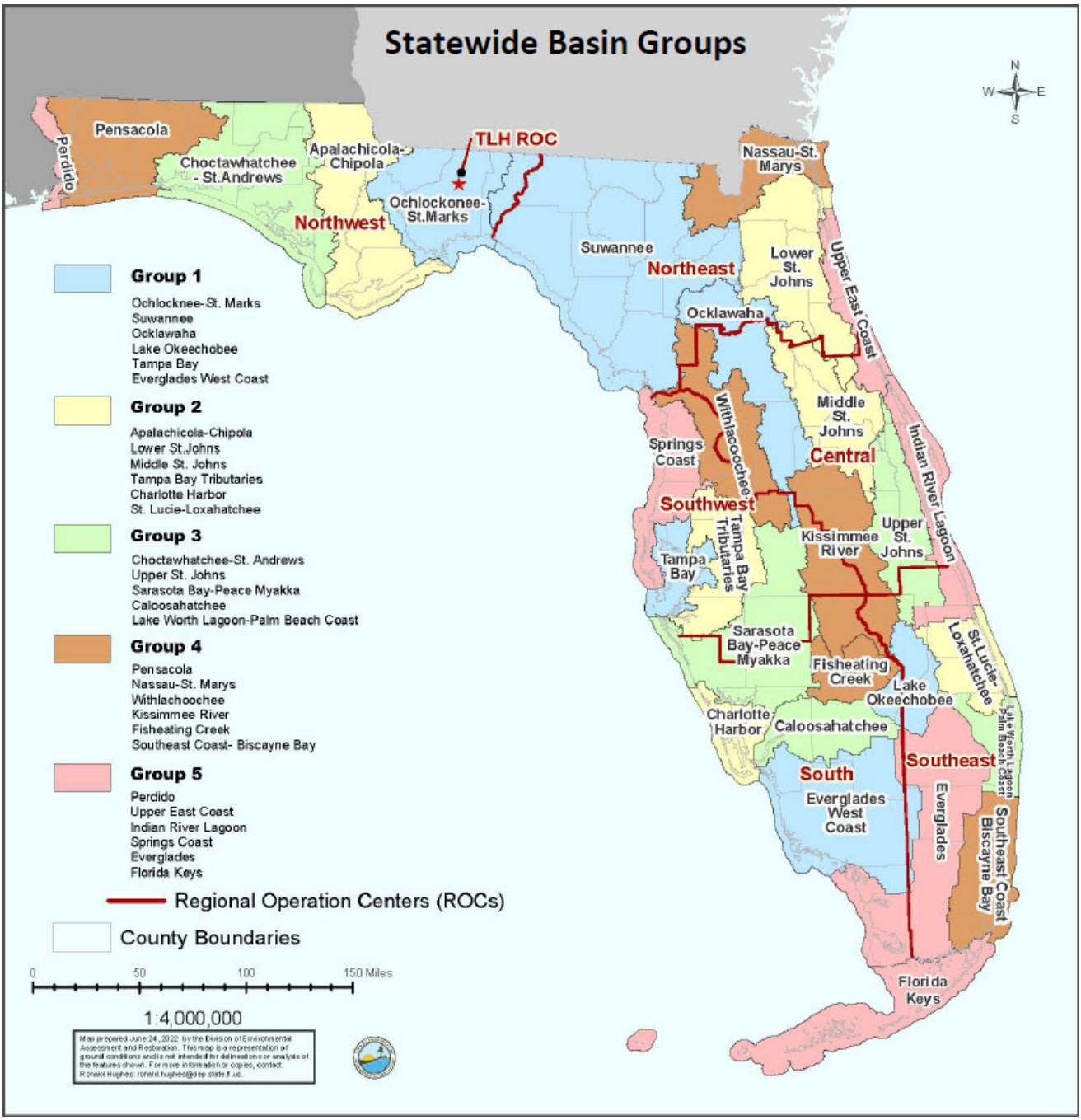

Figure 1. Basin groups for implementing the watershed management process

Table 1. Basin groups for the implementation of the watershed management process by DEP district

DEP District	Group 1 Basins	Group 2 Basins	Group 3 Basins	Group 4 Basins	Group 5 Basins
Northwest	Ochlockonee-St. Marks	Apalachicola-Chipola	Choctawhatchee-St. Andrew	Pensacola	Perdido
Northeast	Suwannee	Lower St. Johns	-	Nassau-St. Marys	Upper East Coast
Central	Ocklawaha	Middle St. Johns	Upper St. Johns	Kissimmee River	Indian River Lagoon
Southwest	Tampa Bay	Tampa Bay Tributaries	Sarasota Bay-Peace-Myakka	Withlacoochee	Springs Coast
South	Everglades West Coast	Charlotte Harbor	Caloosahatchee	Fisheating Creek	Florida Keys
Southeast	Lake Okeechobee	St. Lucie-Loxahatchee	Lake Worth Lagoon-Palm Beach Coast	Southeast Coast-Biscayne Bay	Everglades

The department assesses these waters using a process termed the Biennial Assessment, under which all basins in Florida are assessed every two years. With the Biennial Assessment process, all assessments have the same assessment period and use consistent application of water quality criteria. The impairment analysis is done based on all available data, and an updated impaired waters list for the entire state is published every two years. The department assesses individual basins, identifies impaired waters requiring the development of TMDLs, and works with local stakeholders to develop advanced restoration plans (ARPs) and basin management action plans (BMAPs) to restore water quality.

The watershed management process for basin assessments consists of eight steps as shown in *Table 2*. **Steps 1** and **2** consist of planning using all available data and monitoring; **Steps 3** and **4** consist of compiling and processing data to develop a preliminary evaluation of attainment of water quality standards, and determining waters to retain, add, or remove from assessment lists; **Step 5** consists of holding public meetings to present revisions to the 303(d) List; **Step 6** includes evaluating progress of waters with ARPs, TMDLs, and BMAPs, and finalizing assessment lists; **Step 7** consists of adopting final lists through secretarial order; and **Step 8** consists of submitting revisions to EPA Region 4 as updates to the 303(d) List.

Table 2. Watershed management process for basin assessments

STEP	ACTIVITY
Step 1	Evaluate Previous Assessment's Planning, Study, and Verified Lists
Step 2	Develop and Implement the Annual Strategic Monitoring Plans
Step 3	Conduct Impaired Waters Rule Evaluation
Step 4	Produce Draft Master Lists (Includes Verified, Delist, Study, and Study List Removals Lists)
Step 5	Hold Public Meeting and Request Public Comments

Step 6	Develop Final Master List (Includes Final Verified, Delist, Study, and Study List Removals Lists)
Step 7	Secretarial Adoption of Verified and Delist Lists
Step 8	Submit 303(d) List Updates to EPA Region 4

One of the key components of the watershed management process is that it is iterative. Since the completion of the first assessments, all activities have been concurrent and ongoing. The watershed management process also involves the coordination of multiple programs within the department. First, an SMP is prepared to determine when and where additional monitoring is needed to assess potentially impaired waters. The department executes the monitoring plan primarily using staff in its Regional Operations Centers (ROCs). Data from this effort and other data providers from WIN, Florida STORET, USGS, SBIO, and external biological data sources are used to produce a Verified List of Impaired Waters. Next, the department provides draft lists to stakeholders for comment and finalizes the lists based on those comments and any additional information received throughout the public noticing process. Finally, as required by subsection 403.067(4), Florida Statutes (F.S.), the department adopts the Verified List for each basin by Secretarial Order.

After Secretarial adoption, the department uses the Verified List and additional considerations to set priorities for TMDL development. A TMDL assigns preliminary allocations to point and nonpoint pollution sources. The department adopts all TMDLs by rule. Depending on the circumstances, a basin working group may be formed to develop a BMAP to guide TMDL implementation activities. The department works closely with watershed stakeholders to ensure they understand and support the approaches for developing and implementing the TMDLs.

The basin working group and other stakeholders — especially other state agencies, water management districts (WMDs), and representatives of county and municipal governments — develop the BMAP. The BMAP may include some or all watersheds and basins that flow into the impaired waterbody. The development process culminates in the formal adoption of the BMAP by the department's Secretary.

The most important BMAP component is the list of management strategies to reduce pollutant sources. Local entities (e.g., wastewater facilities, industrial sources, agricultural producers, county and city stormwater systems, military bases, water control districts, and individual property owners) usually implement these efforts. The management strategies may improve the treatment of pollution (e.g., wastewater treatment facility upgrades, or retrofits in an urban area to enhance stormwater treatment, upgrades to OSTDS) or improve source control.

Watershed restoration plans that implement TMDLs can be achieved through the development of a BMAP or other regulatory requirements such as National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) bacteria pollution control plans

(BPCPs) or TMDL implementation plans. In addition, there are opportunities for stakeholders to develop plans that address impairments and improve water quality prior to TMDL development and adoption.

Process of Assessment Determinations

Florida Water Restoration Act (FWRA)

The 1999 Florida Watershed Restoration Act (FWRA) (section 403.067, F.S.) clarified the department's statutory authority to establish TMDLs, required the department to develop a scientifically sound methodology for identifying impaired waters, specified that the department could develop TMDLs only for waters that were verified as impaired using this new methodology, and directed the department to establish an Allocation Technical Advisory Committee (ATAC) to ensure the equitable allocation of load reductions when implementing TMDLs.

The 2005 FWRA amendments included provisions that removed the ATAC requirement and added the development and implementation of BMAPs to guide TMDL activities and reduce urban and agricultural nonpoint sources of pollution. Nevertheless, BMAPs are not mandatory for the implementation of TMDLs. The Legislature established a long-term funding source for urban stormwater retrofitting projects to reduce pollutant loadings to impaired waters.

The FWRA also requires DACS and DEP to adopt rules for BMPs. As Florida already had an urban stormwater regulatory program, this new authority was particularly important in strengthening Florida's agricultural nonpoint source management program. The law requires DEP to verify the effectiveness of BMPs in reducing pollutant loads. The BMP rules and associated BMP manuals are available from the FDACS Office of Agricultural Water Policy (OAWP) web site. DEP can take enforcement action against agricultural landowners who do not enroll and implement BMPs established in the FDACS BMP Program.

IWR

Florida's IWR provides a science-based methodology for evaluating water quality data to identify impaired waters, and establishes specific thresholds for impairment based on chemical parameters, the interpretation of narrative nutrient criteria, biological impairment, shellfish and fish consumption advisories, and primary contact and recreation activities. The IWR also establishes thresholds for data sufficiency and data quality, including the minimum sample size required and the number of exceedances of the applicable water quality standard for a given sample size that identifies a waterbody as impaired. Waters that are identified as impaired through the IWR are prioritized for TMDL development and implementation.

Since the adoption of the IWR in June 2002 there have been several major revisions to the assessment methodology, which are summarized below.

- Amended in 2006 and 2007 to address legal challenges, and the department submitted the revised IWR to the EPA as a change to Florida's water quality standards.

- Amended in 2012 to incorporate the new numeric interpretations of the State of Florida's narrative nutrient criteria (NNC), Rule 62-302.531, F.A.C.

- Also amended in 2012 to include the methodology for placement of waters on the Study List, Rule 62-303.390, F.A.C.

- Al amended in 2013 to incorporate the revised DO percent saturation (DOSAT) criteria rather than concentration, Rule 62-302.533, F.A.C.

- Amended in 2016 to replace the un-ionized ammonia criteria with total ammonia.

- Also amended in 2016 to revise the bacteria criteria to incorporate enterococci and *Escherichia coli* (*E. coli*). The bacteria criteria were revised such that *E. coli* is assessed in Class I and Class III freshwater systems, enterococci in Class III marine systems, and both fecal coliform and enterococci in Class II marine systems.

The department developed the initial IWR database in 2002 to evaluate data for attainment with the applicable water quality criteria in Rules 62-302 and 62-303, F.A.C.; the data for specific time periods are assessed under the IWR methodology for every basin in the state, based on the appropriate data "window". *Table 3* shows the time periods for the Verified and Planning Assessment Periods for the five basin groups for the basin rotation cycles and the 2020 and 2022 Biennial Assessments completed to date. Each IWR Database also incorporates waterbody revisions to class, type, and boundaries from the previous iteration.

Table 3. Time periods for data used in developing the Planning, Study, and Verified List

Note: A 10-year data record is used for the development of the planning period assessment, and a 7.5-year data record is used for the verified period assessment. Study Lists also use the 7.5-year data record.

Cycle Rotation	Basin Group	Planning Period	Verified Period
1	1	1989 – 1998	1/1/1995 – 6/30/2002
1	2	1991 – 2000	1/1/1996 – 6/30/2003
1	3	1992 – 2001	1/1/1997 – 6/30/2004
1	4	1993 – 2002	1/1/1998 – 6/30/2005
1	5	1994 – 2003	1/1/1999 – 6/30/2006
2	1	1995 – 2004	1/1/2000 – 6/30/2007

2	2	1996 – 2005	1/1/2001 – 6/30/2008
2	3	1997 – 2006	1/1/2002 – 6/30/2009
2	4	1998 – 2007	1/1/2003 – 6/30/2010
2	5	1999 – 2008	1/1/2004 – 6/30/2011
3	1	2000 – 2009	1/1/2005 – 6/30/2012
3	2	2002 – 2011	1/1/2007 – 6/30/2014
3	3	2003 – 2012	1/1/2008 – 6/30/2015
3	4	2004 – 2013	1/1/2009 – 6/30/2016
3	5	2005 – 2014	1/1/2010 – 6/30/2017
4	1	2006 – 2015	1/1/2011 – 6/30/2018
4	2	2007 – 2016	1/1/2012 – 6/30/2019
Biennial Assessment 2020 – 2022		2008 – 2017	1/1/2013 – 6/30/2020
Biennial Assessment 2022 – 2024		2010 – 2019	1/1/2015 – 6/30/2022

The designated uses of a given waterbody are established using the surface water quality classification system in Rule 62-302.400, F.A.C. Specific water quality criteria, expressed as numeric or narrative limits for specific parameters, describe the water quality necessary to maintain each of these uses for surface water. The criteria and guidelines for implementation can be found in Chapters 62-302 and 62-303, F.A.C., as well as in the "Implementation of Florida's Numeric Nutrient Standards" (http://www.flRules.org/Gateway/reference.asp?No=Ref-02905).

WBIDs are assessed for impairment based on individual parameters, and then placed into one of the five major assessment categories or their subcategories (*Table 4*). This approach allows the states to document the attainment of applicable water quality standards and develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular waterbody segment is addressed.

Table 4. Assessment categories for waterbodies or waterbody segments

Category	Description	Comments
1	Indicates that all designated uses are attained.	There are no waters in EPA Category 1 because DEP does not sample for all uses.
2	Indicates that sufficient data are available to determine that at least one designated use is attained and insufficient data or no information are available to determine if remaining uses are attained.	If attainment is verified for some designated uses of a waterbody or segment, the department will propose partial delisting for those uses that are attained. Future monitoring will be recommended to acquire sufficient data and/or information to determine if the remaining designated uses are attained.
2b	Attains one or more designated uses and a Reasonable Assurance Plan (RAP) has already been completed.	Used for a waterbody that is not impaired for the parameter being assessed and has a RAP that addresses the parameter. If additional data are needed to confirm attainment, the waterbody should be retained in assessment category 4b.
2e	Attains one or more designated uses and an Alternative Restoration Plan (ARP) has already been completed.	Used for a waterbody that is not impaired for the parameter being assessed and has an ARP that addresses the parameter. If additional data are needed to confirm attainment, the waterbody should be retained in assessment category 4e.
2t	Attains one or more designated uses and a state TMDL has been adopted. The waterbody meets applicable water quality standards for the parameter; however, this assessment category does not imply the attainment of required TMDL load reductions or applicable BMAP restoration goals.	Used for a waterbody that is not impaired for the parameter being assessed and has a TMDL that addresses the parameter. If additional data are needed to confirm attainment, the waterbody should be retained in Assessment Category 4a.

Category	Description	Comments
3a	Indicates that no data and/or information are available to determine if any designated use is attained.	Future monitoring will be recommended to acquire sufficient data and/or information to determine if designated uses are attained
3b	Indicates that although some data and/or information are available, available data are insufficient to determine if the designated use is attained.	Future monitoring will be recommended to acquire sufficient data and/or information to determine if designated uses are attained.
3c	Indicates that sufficient data are available to determine that at least one designated use is not attained using the Planning List methodology in the IWR.	These waters are placed on the Planning List and will be prioritized for future monitoring to acquire sufficient data and/or information to determine if designated uses are attained.
4a	Indicates a segment that has been identified as not attaining one or more designated uses, but TMDL development is not needed because a TMDL has already been completed.	After the EPA approves a TMDL for the impaired waterbody or segment, it will be included in a restoration plan or BMAP to reduce pollutant loading toward the attainment of designated use(s).
4b	Indicates a segment that has been identified as not attaining one or more designated uses, but does not require TMDL development because the water will attain water quality standards because of existing or proposed pollution control measures.	Pollutant control mechanisms designed to attain applicable water quality standards within a reasonable time have either already been proposed or are already in place.
4c	Indicates a segment that has been identified as not attaining one or more designated uses, but the impairment is not caused by a pollutant and therefore TMDL development is not needed.	This category includes segments that do not meet their water quality standards because of naturally occurring conditions or pollution; such circumstances more frequently appear linked to impairments for low DO or elevated iron concentrations. In these cases, the impairment observed is not caused by specific pollutants but is believed to be caused by pollution, or to represent a naturally occurring condition.
4d	Indicates a segment that has been identified as not attaining one or more designated uses, but the department does not have sufficient information to determine a causative pollutant; or current data show a potentially adverse trend in nutrients or nutrient response variables; or there are exceedances of stream nutrient thresholds, but the department does not have enough information to fully assess nonattainment of the stream nutrient standard.	This category includes segments that do not meet their water quality standards, but no causative pollutant has been identified or where there are adverse trends in nutrients, nutrient response variables or DO.

Category	Description	Comments
4e	Indicates a segment that has been identified as not attaining one or more designated uses, and pollution control mechanisms or restoration activities are in progress or planned to address nonattainment of water quality standards, but the department does not have enough information to fully evaluate whether proposed pollution mechanisms will result in attainment of water quality standards.	Restoration activities for waterbodies in this category have been completed, are planned, or are ongoing such that once the activities are completed or the waterbody has had a chance to stabilize, in the opinion of department staff it will meet its designated uses.
5	Indicates a segment that has been identified as not attaining one or more designated uses and a TMDL is required.[1]	Waterbodies or segments in this category have been identified as impaired for one or more designated uses by a pollutant or pollutants. Waters in this category are included on the basin-specific Verified List adopted by Secretarial Order and submitted to the EPA as Florida's 303(d) List of impaired waters at the end of Phase 2.

[1] The TMDLs are established only for impairments caused by pollutants (a TMDL quantifies how much of a given pollutant a waterbody can receive and still meet its designated uses). For purposes of the TMDL Program, pollutants are chemical and biological constituents, introduced by humans into a waterbody that may result in pollution (water quality impairment). Other causes of pollution, such as the physical alteration of a waterbody (e.g., canals, dams, and ditches) are not linked to specific pollutants.

Determination of Use Support

Section 303(c) of the CWA requires that water quality standards established by the states and tribes include appropriate designation uses to be achieved and protected for jurisdictional waters. The CWA also establishes the national goal of "fishable and swimmable" for all waters wherever that goal is attainable. Florida's surface waters are protected for the designated use classifications listed in *Table 5*. The department assesses the health of surface waters through the implementation of the IWR. The rule contains a legislatively authorized methodology for the department to assess water quality and determine whether individual surface waters are impaired (i.e., do not attain water quality standards) under ambient conditions. The IWR is used in conjunction with the state's Surface Water Quality Standards and Quality Assurance Rule (Chapter 62-160, F.A.C.). The latter governs sample collection and analysis procedures.

Table 5. Designated uses for surface waters in Florida

Designated Uses in IWR Evaluation	Applicable Florida Surface Water Classification
Potable Water Supplies	Class I
Treated Potable Water Supplies	Class I-Treated
Shellfish Propagation or Harvesting	Class II
Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife	Class III
Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife	Class III-Limited
Agricultural Water Supplies	Class IV
Navigation, Utility, and Industrial Use	Class V

303(d) Listed Waters

Only those WBID-analyte combinations placed in EPA Category 5 are included on the state's Verified List of Impaired Waters adopted by Secretarial Order. For these listings, water quality standards are not being met, and the development of a TMDL is required. The department subsequently submits the list of these waters to EPA as the biennial update to Florida's 303(d) list.

Although water quality standards are not met for EPA Category 4, these waterbodies are not included on the state's Verified List because a TMDL is not currently required. Nevertheless, for subcategories 4d or 4e, TMDLs may be required later, and therefore these waterbodies are placed on the 303(d) list. These subcategories indicate additional information is needed prior to adding

the analyte to the Verified List. A waterbody can be placed in subcategory 4d (Study List) when the department does not have enough information to determine a causative pollutant; current data show a potentially adverse trend in nutrients or nutrient response variables; or there are exceedances of stream nutrient thresholds, but the department does not have enough information to fully assess non-attainment of the stream nutrient threshold. A waterbody can be placed in subcategory 4e (Ongoing Restoration Activities) if it's impaired but recently completed or ongoing restoration activities are underway to restore the designated uses of the waterbody. For 4e plans, placement on the Verified List is postponed for two biennial assessment cycles (4 years) to allow for implementation of the 4e plan and evaluation of progress toward restoration.

EPA regulations also allow states to place certain impaired water bodies into subcategory 4b (Reasonable Assurance) instead of adding the analyte to the Verified List. The Florida Watershed Restoration Act (Section 403.067(4)), F.S.) explicitly allows the department to not list impaired waters under Category 5 if they already have control programs in place that will ensure water quality standards will be restored, and to instead place these waters in subcategory 4b. When a waterbody is not attaining one or more designated uses due to natural conditions or pollution, a waterbody can be placed in subcategory 4c (Natural Condition). Lastly, subcategory 4a (TMDL Complete) is used when the department has already developed a TMDL that will address the non-attainment.

Data Quality Assurance

While the department is the primary entity responsible for strategic monitoring, many other organizations carry out ambient monitoring. Their data are also used in the 303(d) assessment. The data used in each assessment come from all data providers across the state who conduct ambient monitoring of water chemistry for fresh and estuarine waters and collect biological data in fresh waters. Each data provider (governmental agency, volunteer group, or private organization) has its own monitoring objectives and design, but must adhere to the department's quality assurance (QA) requirements for analytical laboratories and field activities as codified in Chapter 62-160, F.A.C., QA Rule, and the incorporated Standard Operating Procedures (SOPs) for data collection, documentation, and reporting.

In most cases, these data are initially loaded into the department's Watershed Information Network (WIN) database, and then the data are annually uploaded to the Water Quality Exchange (WQX), EPA's national database. The department evaluates, analyzes, and reports on these data to establish their utility in determining the health of the state's surface waters.

The IWR addresses QA and quality control (QC) by requiring all data providers to use established SOPs and National Environmental Laboratory Accreditation Conference-certified laboratories to generate results intended for use in IWR assessments. All data must meet DEP QA rule requirements (Chapter 62-160, F.A.C.). To further ensure that the QA/QC objectives are being met, DEP, on request, audits data providers (or laboratories used by data providers). Data are also reviewed for quality assurance by evaluation of results, data qualifiers, and method detection limits (MDLs). *Table 6* and *Table 7* below show the

chemistry and bioassessment data providers whose data is used in the IWR assessments. Data used in each assessment are extracted from the Florida STOrage and RETrieval (STORET) database (the predecessor to WIN) and WIN, as well as the United States Geological Survey (USGS). The department's statewide biological database (SBIO) and additional biology data submitted to the department from external entities are also used in each assessment. The valid water quality data are assessed against the water quality criteria applicable for the waterbody's classification or designated use.

Table 6. Agencies and organizations providing chemistry data used in the IWR assessments

Agency	Organization ID
Alabama Department of Environmental Management	21AWIC
Alachua County Environmental Protection Department	21FLACEP
AMEC	21FLAMEC
Avon Park Air Force Range	21FLAVON
Biscayne Bay Aquatic Preserve	21FLBBAP
Bream Fisherman Association	21FLBFA
Broward County Environmental Protection Department	21FLBROW
Charlotte County Stormwater Division	21FLCCSW
Charlotte Harbor National Estuaries Program - East Wall	CHNEPCHE
Charlotte Harbor National Estuaries Program - Matlacha Pass	CHNEPMP
Charlotte Harbor National Estuaries Program - Peace River	CHNEPCHP
Charlotte Harbor National Estuaries Program - Tidal Myakka River	CHNEPTMR
Charlotte Harbor National Estuaries Program - Tidal Peace River	CHNEPTPR
Charlotte Harbor National Estuaries Program - West Wall	CHNEPCHW
Choctawhatchee Basin Alliance	21FLCBA
City of Altamonte Springs	21FLALTA
City of Atlantic Beach	21FLCOAB
City of Bonita Springs	21FLCOBS
City of Cape Coral	CAPECRD
City of Casselberry	21FLCASS
City of Deltona	21FLDELT
City of Fort Myers	21FLCOFM
City of Jacksonville	21FLJXWQ
City of Jacksonville Beach	21FLCOJB
City of Kissimmee	21FLKISS
City of Lakeland, Florida	LAKELAND
City of Marco Island	21FLCOMI
City of Naples	21FLNAPL
City of Neptune Beach	21FLCONB
City of Orlando	21FLORL
City of Plant City	21FLCOPC

City of Port St. Lucie	21FLCPSL
City of Saint Petersburg	21FLCOSP
City of Sanibel, Natural Resources Department	21FLSBL
City of Tallahassee Stormwater Management Division	21FLCOT
Collier County Coastal Zone Management Department	21FLCCZM
Collier County Pollution Control	21FLCOLL
Coral Reef Conservation Program	21FLCRCP
Dade County Environmental Resource Management	21FLDADE
Department of Agriculture and Consumer Services	21FLSEAS
Division of Environmental Health, Bureau of Water	21FLDOH
Environmental Services and Permitting, Inc.	21FLESPI
Escambia County	21FLESC
FDEP - Ground Water Monitoring Section	21FLGWMS
FDEP Charlotte Harbor Aquatic/Buffer Preserves	21FLCHAR
FDEP Tallahassee Regional Operation Center	21FLTLHR
FDEP Watershed Assessment	21FLWQA
FDEP, Water Quality Standards and Special Projects	21FLWQSP
FL Dept. of Environmental Protection - WET Sect	21FLWET
Flatwoods Consulting Group	21FLFLAT
Florida Department of Environmental Protection (Central District)	21FLCEN
Florida Department of Environmental Protection (Northeast District)/FDER (L	21FLA
Florida Department of Environmental Protection (Northwest District)	21FLPNS
Florida Department of Environmental Protection (South District)	21FLFTM
Florida Department of Environmental Protection (Southeast District)	21FLWPB
Florida Department of Environmental Protection (Southwest District)	21FLTPA
Florida Dept. Env. Protection - Okaloosa County Environmental Council	21FLCMP
Florida Dept. of Environmental Protection	21FLGW
Florida Fish and Wildlife Conservation Commission	21FLFWC
Florida Keys National Marine Sanctuary	21FLKNMS
Florida Keys NMS - Water Quality Monitoring Program	FWC-WQMP
Florida Lake Watch	21FLKWAT
Frydenborg Ecologic LLC	21FLFRYD
Guana Tolomato Matanzas (GTM) Estuarine	21FLGTM
Hillsborough County Environmental Services Division	21FLHESD
Hillsborough County, Fl Water Quality Data	21FLHILL
Howard T Odum Florida Springs Institute	21FLFSI
Jacksonville Electric Authority	21FLJEA
Lake County Water Resource Management	21FLLCPC
Lee County Environmental Lab	21FLEECO
Lehigh Acres Municipal Services Improvement District	21FLLEHI
Leon County Public Works	21FLLEON

Loxahatchee River Dist	21FLLOX
Manatee County Environmental Management Dept.	21FLMANA
Marine Resources Council of East Florida	21FLMRC
McGlynn Laboratories, Inc.	21FLMCGL
Monroe County Board of County Commissioners	21FLMONR
Mosaic Fertilizer, LLC.	21FLMOSA
Naval Station Mayport	21FLMAYP
Nutter and Associates	21FLNUTT
Orange County Environmental Protection	21FLORAN
Osceola County	21FLOSCE
Palm Beach County Env. Resource Management	21FLPBCH
Pasco County Stormwater Management Division	21FLPASC
Peace River Manasota Regional Water Authority	FLPRMRWS
Pelican Bay Services	21FLPBSD
Pinellas County Dept. of Engineering and Env. Services	21FLPDEM
Polk County Natural Resources Division	21FLPOLK
Reedy Creek Improvement Dist. Environmental Svcs.	21FLRCID
Sanibel Captiva Conservation Foundation	21FLSCCF
Sarasota County Environmental Services	21FLSARA
Seminole County	21FLSEM
SMR Communities, Inc.	21FLSMRC
South Florida Water Management District	21FLSFWM
Southwest Florida Water Management District	21FLSWFD
St. Andrew Bay Resource Management Association, Inc.	21FLSABR
St. John's River Water Management District	21FLSJWM
Suwannee River Water Management District	21FLSUW
Tampa Bay Water	21FLTBW
Turrell, Hall , Inc.	21FLTHAS
University of Florida (Soil and Water Sciences Department)	21FLUFSW
US Geological Survey Data	112WRD
Volusia County Environmental Health Lab	21FLVEMD

Table 7. Agencies and organizations providing bioassessment data used in the IWR assessments

Agency	Organization ID
Florida Department of Environmental Protection (Northeast District)/FDER (L	21FLA
Alachua County Environmental Protection Department	21FLACEP
Biological Research Associates (ENTRIX)	21FLBRA
Florida Department of Environmental Protection (Central District)	21FLCEN
FDEP Charlotte Harbor Aquatic/Buffer Preserves	21FLCHAR
City of Tallahassee Stormwater Management Division	21FLCOT
Division of Environmental Health, Bureau of Water	21FLDOH
Lee County Environmental Lab	21FLEECO
Escambia County	21FLESC
Environmental Services and Permitting, Inc.	21FLESPI
Flatwoods Consulting Group	21FLFLAT
Frydenborg Ecologic LLC	21FLFRYD
Florida Department of Environmental Protection (South District)	21FLFTM
FL Game & Freshwater Fish Commission	21FLGFWF
Florida Dept. of Environmental Protection	21FLGW
Leon County Public Works	21FLLEON
Mosaic Fertilizer, LLC.	21FLMOSA
Northwest Florida Water Management District	21FLNWFD
Orange County Environmental Protection	21FLORAN
Pinellas County Dept. of Engineering and Env. Services	21FLPDEM
Florida Department of Environmental Protection (Northwest District)	21FLPNS
Reedy Creek Improvement Dist. Environmental Svcs.	21FLRCID
Seminole County	21FLSEM
South Florida Water Management District	21FLSFWM
St. John's River Water Management District	21FLSJWM
Southwest Florida Water Management District	21FLSWFD
FDEP Tallahassee Regional Operation Center	21FLTLHR
Florida Department of Environmental Protection (Southwest District)	21FLTPA
FL Dept. of Environmental Protection - WET Sect	21FLWET
Florida Department of Environmental Protection (Southeast District)	21FLWPB
FDEP Watershed Assessment	21FLWQA
FDEP, Water Quality Standards and Special Projects	21FLWQSP
City of Cape Coral	CAPECRD
Highlands County Biology	EXTBIO02
USF Water Institute Biology	EXTBIO03
Jones Edmunds and Associates	EXTBIO04
Sweetgum Environmental	EXTBIO05
Unknown	UNKNOWN

Data Handling and Rationales for Exclusion of Existing Data

In assessing surface water quality under the IWR, DEP attempts to assemble and use all readily available ambient surface water quality data. Measurements or observations that are known not to be representative of ambient waters (e.g., results for samples collected from discharges or in approved mixing zones) are excluded from IWR assessments. In addition, data collected at locations or during periods that are not representative of the general condition of the waterbody (e.g., samples collected during or immediately after a hurricane or samples linked to a short-term event such as a sewage spill) are subject to additional review before inclusion in the IWR assessment process.

If QA/QC audits identify specific data deficiencies, corresponding data subsets may be excluded from the assessment process. ln these situations, DEP will provide recommendations to the appropriate data providers. If a review of water quality assessment data identifies specific discrepancies or anomalies, these data also may be precluded from an assessment. Typically such discrepancies include systematic issues such as errors in the conversion of units, errors caused by using an incorrect fraction to characterize an analyte, or other data-handling errors that may have occurred in conjunction with the data-loading process. In these cases, DEP will work with the data provider to resolve the underlying issues. Upon resolution corrected data are reloaded to WIN and made available for subsequent IWR assessments. *Table 8* shows the data excluded from IWR assessment and the reasoning for the exclusion.

Table 8. Data excluded from IWR assessments

IWR=Impaired Surface Waters Rule; WMD=water management district; USGS=U.S. Geological Survey; MDL=method detection limit; PQL=practical quantitation limit; QC=quality control

Data Excluded	Comment
Results reported in Florida STORET that did not include units or included units that were inappropriate for the particular analyte.	The reported values cannot be quantified accurately or relied on for assessment purposes under the IWR.
Results reported as negative values.	Except in cases where documentation is presented that indicates otherwise, any results reporting a negative value for the substance analyzed represent reporting errors. Credible data cannot have any values less than the detection limit (in all cases a positive value) reported, and therefore results reported as negative values cannot be relied on for assessment purposes under the JWR.
Results reported as "888" "8888" "88888" "888888" "8888888" and "999" "9999" "99999" "999999" "9999999."	Upon investigation, all data reported using these values are provided by a particular WMD. The district intentionally codes the values in this manner to flag the fact that they should not be used, as the values reported from the lab are suspect. The data coded in this manner are generally older.
Extremely old USGS data (from the beginning of the previous century).	These results do not have complete date information available, and accurate date information is required to assess results under the IWR. The USGS data using USGS Parameter Codes 32230 or 32231 also are excluded from assessments performed under the IWR, based on information in a memo sent from USGS.
Results for iron that were confirmed to be entered into Database Hydrologic (dbHydro) (South Florida WMD's environmental database) using an incorrect Legacy STORET parameter code.	These results are limited to a subset of the results reported by a particular WMD.
Results reported associated with **"K"** qualifier code, when the reported value of the MDL was greater than the criterion, or the MDL was not provided.	The results are estimated because of uncertainty in the precision of the data. The actual value is not known but is known to be less than the value shown.
Results reported associated with "**U**" or "**I**" qualifier codes and an MDL is not provided, but the MDL is required based on the applicable method. For example, does not apply to chlorophyll results.	The MDL is required by the applicable method to compare with the numeric value of the criterion.
Results reported using a "U" qualifier code if the MDL is two times or greater above the applicable criterion.	There is uncertainty regarding results with an MDL so much higher than a criterion, and it is not possible to determine whether the results are exceedances.
Results reported for metals using an "**I**" qualifier code if the applicable criterion was expressed as a function of hardness, and the numeric value of the metal criterion corresponding to the reported hardness value was between the MDL and PQL.	Because of the uncertainty regarding results with an MDL above a criterion, it is not possible to determine the precision of the data and the applicable water quality criterion.
Results reported for metals when the applicable criterion was expressed as a function of hardness, the hardness uses an "**I**" qualifier code and the PQL is greater than 25, and the metal result falls between the criterion at a hardness of 25 and the criterion at the PQL of the qualified hardness.	Because of the uncertainty regarding the hardness results, it is not possible to determine whether the applicable criterion is above or below the metal result.
Results reported using an "**L**" qualifier code (meaning that the actual value was known to be greater than the reported value) where the reported value for the upper quantitation limit was less than the criterion.	Data are excluded for similar reasons discussed above for results reported as below the MDL.

Data Excluded	Comment
Results reported with a "**G**" qualifier code {analyte detected in blank).	Data are excluded when the blank value is greater than 10% of the associated sample value.
Results reported with an "**O**" qualifier code {indicating that the sample was collected but that the analysis was lost or not performed).	Data are excluded because no results are reported.
Results reported with an "**N**" qualifier code {indicating a presumption of evidence of the presence of the analyte).	Comparing concentrations of analytes with water quality criteria requires a numeric result value. Presence or absence, for the purposes of assessments performed under the **lWR,** is not sufficient information on which to base an impairment decision.
Results reported with a "**V**" or "**Y**" qualifier code {indicating the presence of an analyte in both the environmental sample and the blank, or a laboratory analysis from an unpreserved or improperly preserved sample).	Such data may not be accurate. The use of these codes indicates that the reported result is not reliable enough to be used in IWR assessments.
Results reported in WIN with a "**?**"qualifier {data are rejected).	These results are excluded because some, or all, of the QC data for the analyte are outside criteria, and the presence or absence of the analyte cannot be determined from the data.
Results reported with a "**Q**" qualifier code {indicating that the holding time was exceeded).	The data are reviewed to validate whether the appropriate holding times were used, and if so, whether they were exceeded. All parameters reported with a "Q" qualifier code are excluded from IWR assessments, except bacteria.
Results reported for mercury not collected and analyzed using clean techniques, as required by the IWR.	The use of clean techniques removes the chance for contamination of samples collected and analyzed for mercury. Mercury concentrations obtained from contaminated samples are not representative of the true mercury concentrations in the target waterbody segments.
Results recommended for exclusion as a result of DEP lab or field audits.	The data excluded based on lab audits are generally analyte specific and refer to a specific period. While the data issues encountered are variable, the lack of acceptable or verifiable records is a common issue.
Certain DO measurements collected using a field kit {as opposed to a sonde).	The results are excluded because of the lack of data quality based on field kits.

Additionally, particular data handling is enacted for metals with hardness-based criteria in order to make sure all exceedances are captured in the assessments. In the rare scenario where hardness is I-qualified and the pql is greater than 25, a maximum criterion is determined by calculating the criteria at the pql and a minimum criterion is the criteria at a hardness of 25 per Rule 62-302.530, F.A.C. If the metal result is lower than the lowest criterion, it is counted as a result and is not an exceedance. If the metal result is higher than the highest possible criterion, it is counted as a result and is an exceedance. If the metal result falls in between the lowest and highest criteria, we cannot make a definitive statement on whether it is an exceedance or not, so the result is not counted.

Use and Interpretation of Biological Results

The biological assessment tools used in conjunction with lWR assessments consist of the SCI, LVI, RPS, LVS, Habitat Assessment (HA), and BioRecon. Because BioRecon is primarily a screening tool, DEP does not use low BioRecon scores alone as the basis for impairment

decisions. Instead, it requires follow-up sampling with the SCI to provide a more comprehensive measure of aquatic life use support. In addition, a single SCI with a score less than the acceptable value is not sufficient to support an impairment or delisting decision. When SCIs are used as the basis for impairment decisions, DEP requires a minimum of at least two temporally independent SCIs.

Impaired Waters Rule Methodology for Evaluating Impairment

The department evaluates the quality of waters of the state by using the science-based assessment methodology described in Chapter 62-303, F.A.C. The methodology provides a detailed process for determining the attainment of applicable water quality standards. Two distinct steps, as follows, are aimed at identifying impaired waters: using a statistical methodology to identify waterbody segments that exceed water quality criteria ("potentially impaired waters"), and subjecting these segments to further review such as confirming anthropogenic sources. The methodology described in the IWR specifies data sufficiency requirements and statistical confidence levels that assessment results must meet to accurately characterize the quality of waters of the state.

In addition to providing assessment and listing thresholds, the IWR also addresses data quality objectives and describes the requirements for delisting segments that were previously included on the Verified List.

The type of data and information required to determine use support varies by designated use and, in addition to physical and chemical analytical results characterizing the water column, includes biological data, fish consumption advisories, and beach advisory information, as well as changes in the classification of shellfish harvesting areas. The department collects biological data, but also uses biological data from other agencies that meet the applicable bioassessment proficiency demonstrations and submit data for use in the Impaired Waters assessment. Fish consumption and beach advisory data is provided to the department by the Florida Department of Health (DOH), and shellfish harvesting area classification data is provided by the Department of Agriculture and Consumer Services (DACS). Besides being used for the assessment of beach advisories, DOH reports the bacteriological results to WIN that are used as the basis for these advisories and DEP combines these data with bacteriological results from other data providers statewide for chemical analysis of the water column.

Table 9 lists the use support categories evaluated under IWR assessments. These categories correspond hierarchically to the surface water classifications provided in *Table 5*.

Table 9. Designated use support categories for surface waters in Florida

Designated Use Category Evaluated by Assessments Performed under the IWR	Applicable Surface Water Classification
Aquatic Life Use	Class I, II, III, III-Limited
Primary Contact and Recreation	Class I, II, III, III-Limited
Fish and Shellfish Consumption	Class I, II, III, III-Limited
Drinking Water	Class I
Protection of Human Health	Class I, II, III, III-Limited

Evaluation of Aquatic Life–Based Use Support

Aquatic life–based use support refers to the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. To determine aquatic life–based use support, the IWR methodology uses three distinct types of data (Rule 62-303.310, F.A.C.):

1. Comparisons of discrete water quality measurements with particular class-specific numeric criteria from Rule 62-303.320, F.A.C.

2. Comparisons of results calculated for multimetric biological indices with waterbody type–specific biological assessment thresholds as described in Rule 62-303.330, F.A.C.

3. Comparisons of annual summary statistics with numeric values based on an interpretation of narrative nutrient criteria from the Florida Standards as described in Rule 62-303.350, F.A.C.

Evaluations performed under the IWR rely primarily on discrete sample data. Subject to data sufficiency and data quality requirements, exceedances of applicable criteria or threshold values indicate that aquatic life–based use support is not achieved. Parameters that meet the listing requirements for the Planning List are further evaluated for impairment using the most recent 7.5 years of data in the Verified Period, applying the data sufficiency requirements in Rule 62-303.420, F.A.C.

Evaluation of Primary Contact and Recreation Use Support

When a Class I, II or III waterbody fails to meet its applicable water quality criteria for bacteriological quality, the waterbody is assessed as impaired under the IWR. Subject to data sufficiency and data quality requirements, exceedances of applicable thresholds indicate that primary contact and recreation use support is not attained. For bacteria assessments evaluated using the binomial distribution of discrete water quality samples, the department applies the assessment guidance shown in *Figure 2*. This evaluation takes into consideration the exceedance ratios and whether land use, chemical tracers or molecular markers indicate potential anthropogenic sources of bacteria.

The IWR methodology determines primary contact and recreation use attainment by evaluating the following:

1. Comparisons of discrete water quality measurements with specific numeric criteria values for bacteria, consisting of comparisons with the relevant class-specific numeric criteria from Rule 62-303.360, F.A.C.

2. Evaluation of beach closures, beach advisories, or warnings. This information must be based on bacteriological data, issued by the appropriate governmental agency, as described in Rule 62-303.360, F.A.C.

3. Comparison of summary measures of bacteriological data with threshold values described in Rule 62-303.360, F.A.C.

Subject to data sufficiency and data quality requirements, exceedances of applicable criteria or threshold values indicate that recreational use support is not achieved. Parameters that meet the listing requirements for the Planning List are further evaluated for impairment using the most recent 7.5 years of data in the Verified Period, applying the data sufficiency requirements in Rule 62-303.460, F.A.C.

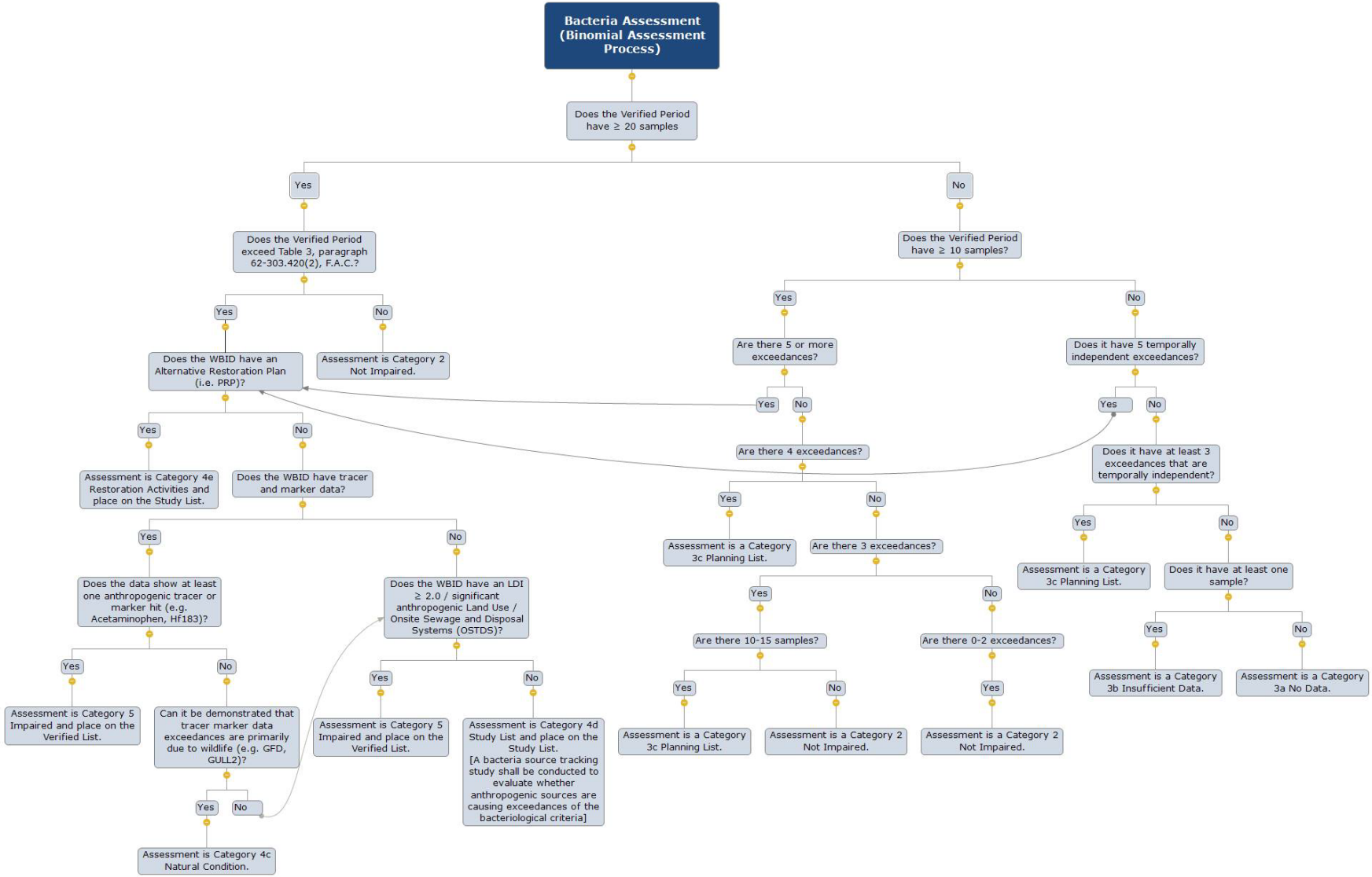

Figure 2. Bacteria assessments applied using the binomial distribution

Evaluation of Fish and Shellfish Consumption Use Support

The evaluation of fish and shellfish consumption use support relies on the evaluation of both quantitative and qualitative information described in Rule 62-303.370, F.A.C.:

1. Comparisons of discrete water quality measurements with specific numeric criteria values for bacteria, consisting of comparisons with the relevant class-specific numeric criteria from the Florida Water Quality Standards (and other similarly worded numeric threshold values, as outlined in Rule 62-303.320, F.A.C.).

2. Evaluation of fish advisories issued by DOH or another authorized governmental entity.

3. Evaluation of shellfish-harvesting actions taken by DACS, provided those actions were based on bacteriological contamination or water quality data.

If DOH has issued a fish consumption advisory to not eat a species, or if DACS has classified a Class II waterbody segment as anything other than approved for shellfish harvesting or propagation, that segment is verified as impaired and determined not to meet its designated use. Parameters that meet the listing requirements for the Planning List are further evaluated for impairment using the most recent 7.5 years of data in the Verified Period, applying the data sufficiency requirements in Rule 62-303.470, F.A.C.

Evaluation of Drinking Water Use Attainment and the Protection of Human Health

The evaluation of drinking water use attainment and the protection of human health is based on the following type of information (Rule 62-303.380, F.A.C.):

1. Comparisons of discrete water quality measurements with class-specific threshold values or numeric criteria from the Florida Water Quality Standards in Rule 62-303.320, F.A.C.

2. Comparisons of summary measures of water quality measurements with human health-based criteria as described in Rule 62-303.380, F.A.C.

Parameters that meet the listing requirements for the Planning List are further evaluated for impairment using the most recent 7.5 years of data in the Verified Period, applying the data sufficiency requirements in Rule 62-303.480, F.A.C.

Evaluation and Determination of Use Attainment

Since the numeric water quality criteria from Chapter 62-302, F.A.C., are class and waterbody-type specific, the department classifies segments first by their appropriate waterbody class and as one of six categories of waterbody types: stream (including rivers, and canals), spring, lake, estuary, beach or coastal. For each analyte with a criterion in the Florida Surface Water Quality Standards Rule, the department calculates four-day station median concentrations (or, in some instances, daily values) and compares these values with the applicable class-specific criterion values in the Florida Standards.

For waters assessed under subsection 62-303.320(1), F.A.C., and for each segment and analyte combination, the department counts the number of samples and exceedances of the applicable criterion and compares the exceedance count with the listing threshold value for the corresponding sample size. The listing thresholds represent the minimum number of samples not meeting the applicable water quality criterion necessary to obtain the required confidence levels. Comparisons performed for acute toxicity–based exceedances, or exceedances of synthetic organic chemicals and pesticides, have a lower listing threshold of more than a single exceedance in any consecutive three-year period.

Subject to data sufficiency requirements, the department places a waterbody segment assessed under subsection 62-303.320(1), F.A.C., on the Planning List if there are sufficient number of samples to attain at least 80% confidence that the actual criterion exceedance rate was greater than or equal to 10%. Waters placed on the Planning List are subject to additional data collection and review.

To place a waterbody segment assessed under subsection 62-303.420(2), F.A.C., on the Verified List, the number of samples must be sufficient to attain at least 90% confidence that the actual criterion exceedance rate was greater than or equal to 10%.

Interpretation of Narrative Nutrient Criterion

The Florida Standards include a narrative nutrient criterion, which states, "In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna." In Rule 62-303.350, F.A.C., the IWR provides a working interpretation of this criterion. Under this interpretation, data for chlorophyll *a*, TN and TP concentrations (for streams, lakes, and estuaries) and nitrate-nitrite (for spring vents) are used to determine whether a waterbody should be further assessed for nutrient impairment.

Exceedances of Biological Thresholds and Metrics Used

Biota inhabiting a waterbody act as continual natural monitors of environmental quality, capable of detecting the effects of both episodic, as well as cumulative, alterations in water quality, hydrology, and habitat. A biological assessment uses the response of resident aquatic biological communities to various stressors as a method of evaluating ecosystem health. Because these

communities can manifest long-term water quality conditions, they can provide a direct measure of whether the designated use of a "well-balanced population of fish and wildlife" is being attained better than characterization by discrete chemical or physical measurements alone. In addition, bioassessment often can provide insights into appropriate restoration strategies.

Bioassessment tools used with the IWR assessments incorporate multimetric methods to quantify biological community structure or function, When multimetric methods are used, the results of individual metrics (e.g., number of long-lived taxa, number of sensitive taxa, percent filter feeders, percent clingers) are combined into a single dimensionless, multimetric index. Such indices offer potential advantages over the use of individual metrics by integrating multiple nonredundant measures into a single score reflecting a wider range of biological information.

The SCI and BioRecon are two examples of multimetric indices used to quantify the health of rivers and streams based on the biological health of macroinvertebrate populations.

Recalibrations of the SCI and the BioRecon methods completed in 2007 involved the use of the Human Disturbance Gradient (HDG), which ranks sites based on independent assessments of habitat quality, degree of hydrologic disturbance, water quality, and human land use intensity. The SCI and BioRecon scores calculated before August 2007 used a smaller, similar set of input metrics.

Since both sets of scores represent valid biological assessments performed during discrete periods, both are used in assessments of biological health performed under the IWR. The BioRecon is used to place waterbodies on the Planning List only, but the SCI is used in conjunction with floral metrics (chlorophyll *a,* RPS and LVS, as described in Rules 62-302.531 and 62-302.532, F.A.C.). This implementation is consistent with the document *Implementation of Florida's Numeric Nutrient Standards* (DEP 2013a).

IWR bioassessments used macroinvertebrate data only from ambient sites located in surface waters of the state. DEP excluded data from effluent outfall sites and monitoring sites not clearly established to collect ambient water quality data.

Site-specific habitat and physicochemical assessment (e.g., percent suitable macroinvertebrate habitat, water velocities, extent of sand or silt smothering and width of riparian buffer zones) provide information important for identifying the stressors responsible for a failed SCI score. This information also can be extremely useful in determining biological impairment because biological communities sometimes respond to factors other than water quality, such as habitat disruption and hydrologic disturbances. Waterbody segments adversely affected only by pollution (e.g., a lack of habitat or hydrologic disruption) but not by a pollutant (a water quality exceedance) are not placed on the Verified List.

DEP's SOPs provide definitions and specific methods for the generation and analysis of bioassessment data. Because these bioassessment procedures require specific training and expertise, the IWR also requires that persons conducting bioassessments must comply with the QA requirements of Chapter 62-160, F.A.C., attend at least eight hours of DEP-sanctioned field training, and pass a DEP-sanctioned field audit. Meeting these requirements helps ensure samplers will follow the applicable SOPs in Chapter 62-160, F.A.C., before collecting bioassessment data used in IWR assessments.

Natural Conditions Assessments

When a waterbody is not attaining one or more designated uses due to natural conditions or pollution (rather than a specific pollutant), a TMDL is not needed and it is assessed in category 4c Natural Condition. Assessment category 4c can be used for multiple parameters when they do not attain standards due to natural conditions.

As an example, the statewide criteria for dissolved oxygen (percent saturation) are set at protective levels based on an extensive statewide study. However, these criteria are still sometimes not attainable due to multiple factors including large areas of flat topography and high-water temperatures which lower the solubility of dissolved oxygen in water, low stream flow and velocities which minimize re-aeration, and the abundance of wetland areas which contribute natural, organic material and water with low dissolved oxygen concentrations.

Additionally, the IWR allows some waterbodies with values not meeting the dissolved oxygen (percent saturation) criterion that have healthy SCI assessments to be omitted from the Verified List because the SCIs are evidence that the aquatic life use is being met on a site-specific basis.

Study List Removal

A waterbody segment on the 303(d) list may be proposed for removal when water quality criteria are currently being met. Procedures for Dissolved Oxygen (Percent Saturation) Study List Removal are based on a sample size of at least 20 results in the verified period, new data collected since the previous Biennial Assessment that confirms attainment, and a less than 10% exceedance ratio in the verified period data.

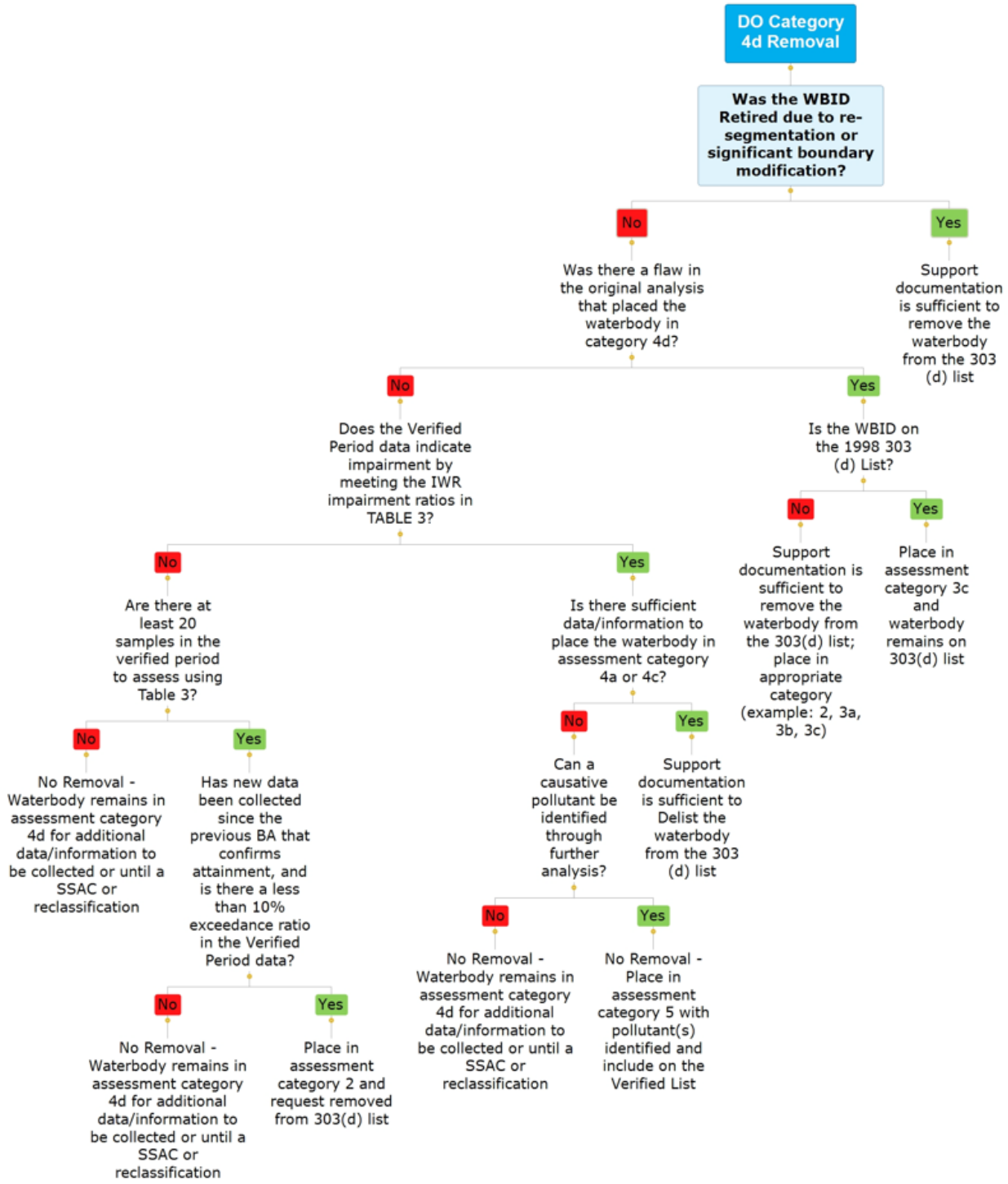

Figure 3. DO category 4d Study List removal

Reasons for Delisting a Waterbody

A waterbody segment on the 303(d) list or the Verified List may be proposed for delisting when it is demonstrated that water quality criteria are currently being met. Delisting assessments are based on provisions of the IWR (Rule 62-303.720, F.A.C.), but there are a variety of reasons why the department might propose that a previously listed water segment be delisted. Below is a list of potential reasons.

- Delist (Analysis Flaw) – if it is determined that the original listing was in error.
- Delist (Natural Condition) – if previously verified impaired waterbodies are due to natural conditions.
- Delist (Not Applicable) – if the parameter is no longer assessed to determine impairment.
- Delist (Not Impaired – TMDL Complete) – once a TMDL has been developed to address the pollutant of concern and the waterbody attains the applicable water quality criteria.
- Delist (Not Impaired) – if it can be demonstrated that water quality criteria are currently being met for a waterbody or segment-analyte combination that was previously included on either the 303(d) list or on the State of Florida's Verified List of Impaired Waters.
- Delist (No Data) – if a waterbody was previously listed as impaired for Fecal Coliform (SEAS Classification) but there is no current shellfish harvesting classification information available from the Shellfish Harvest Area Classification Program of DACS.
- Delist (Ongoing Restoration Activities) – if there are ongoing restoration activities, such as a pollutant reduction plan.
- Delist (Reasonable Assurance) – if there are existing or proposed pollutant control mechanisms that will address the impairment for an adopted RAP.
- Delist (Retired WBID) – if resegmentation is significant enough to split WBIDs due to waterbody classification, type, or sampling station changes, the original WBID is retired and delisted, and the new WBID segments are renumbered.
- Delist (Study List) – if the causative pollutant previously identified was incorrect.
- Delist (TMDL Complete) – once a TMDL has been developed to address the pollutant of concern, and the waterbody is still impaired.

Delisting Procedures for Nutrient Assessments

Delisting waterbodies for nutrients involves evaluating several components because there are multiple types of assessments for nutrients. The three flow charts in *Figure 4* to *Figure 6* illustrate the decision process for delisting waters listed for nutrient-related impairments. For those analytes where the assessment decisions are based on the number of exceedances of numeric water quality criteria, the decision to list or delist is specifically defined in the IWR; however, listing and delisting decisions for nutrients are not defined in the same way as for these other numeric criteria contained in Chapter 62-302, F.A.C., and consequently, the EPA has requested that those decisions include site-specific analyses. The site-specific approach to make delisting decisions for nutrient assessments relies on the use of biological or similar data available for the listed waterbody. The final category for a delisting decision depends on other information that can assist the department in evaluating the waterbody against the narrative nutrient criteria in Chapter 62-302, F.A.C.

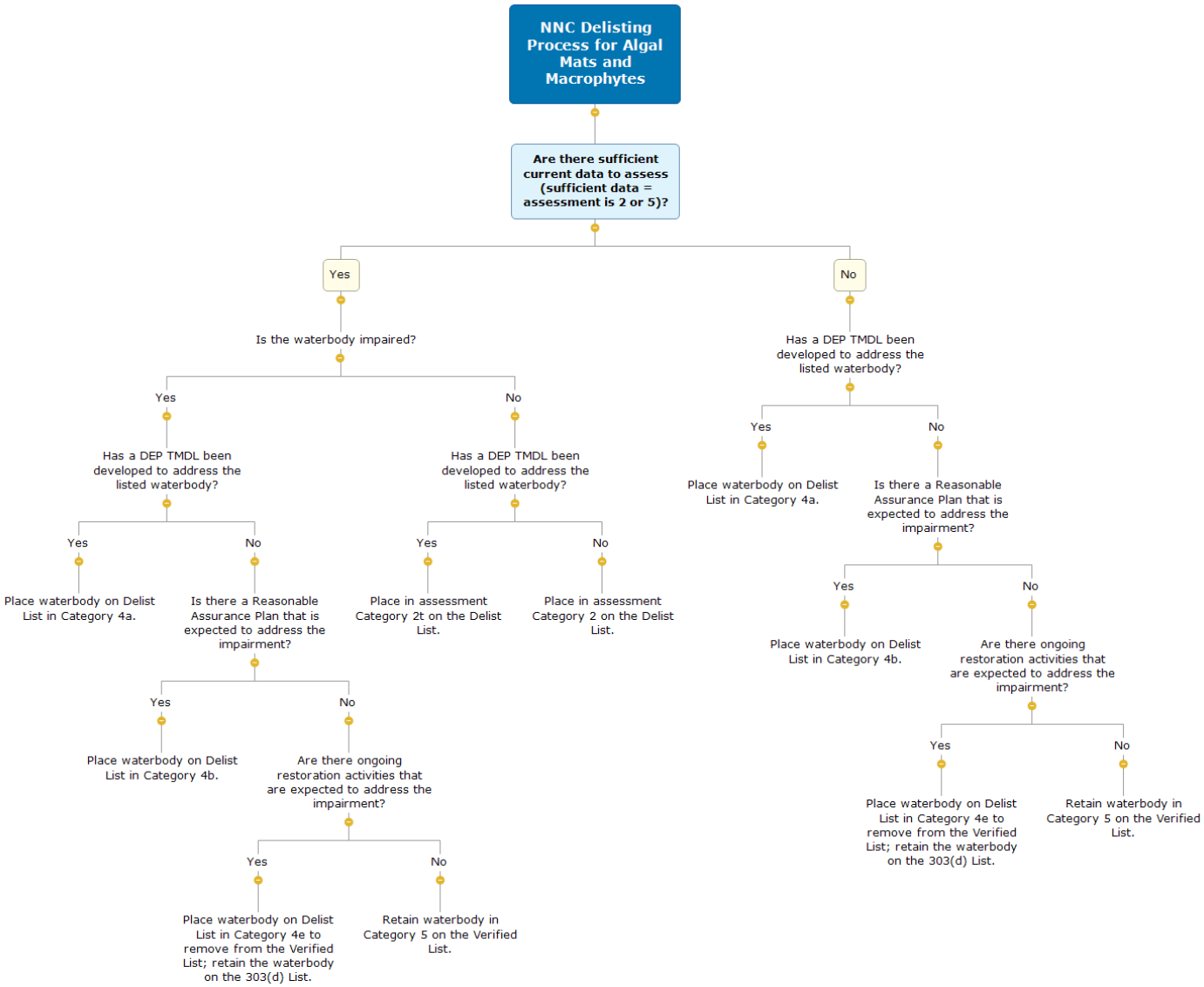

Figure 4. Narrative Nutrient Criterion (NNC) delisting process for Algal Mats and Macrophytes

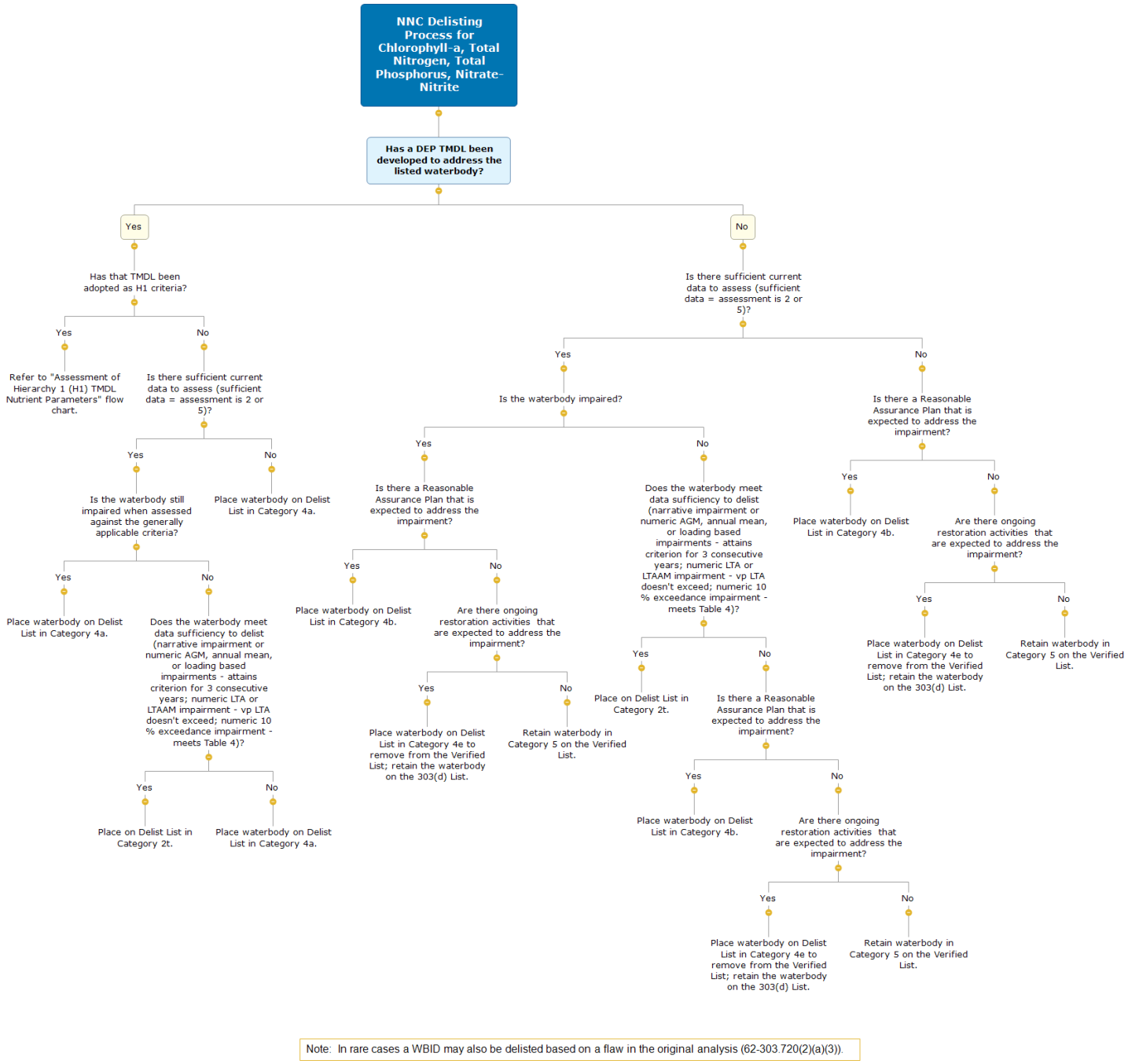

Figure 5. NNC delisting process for Chlorophyll a, TN, TP and Nitrate-Nitrite

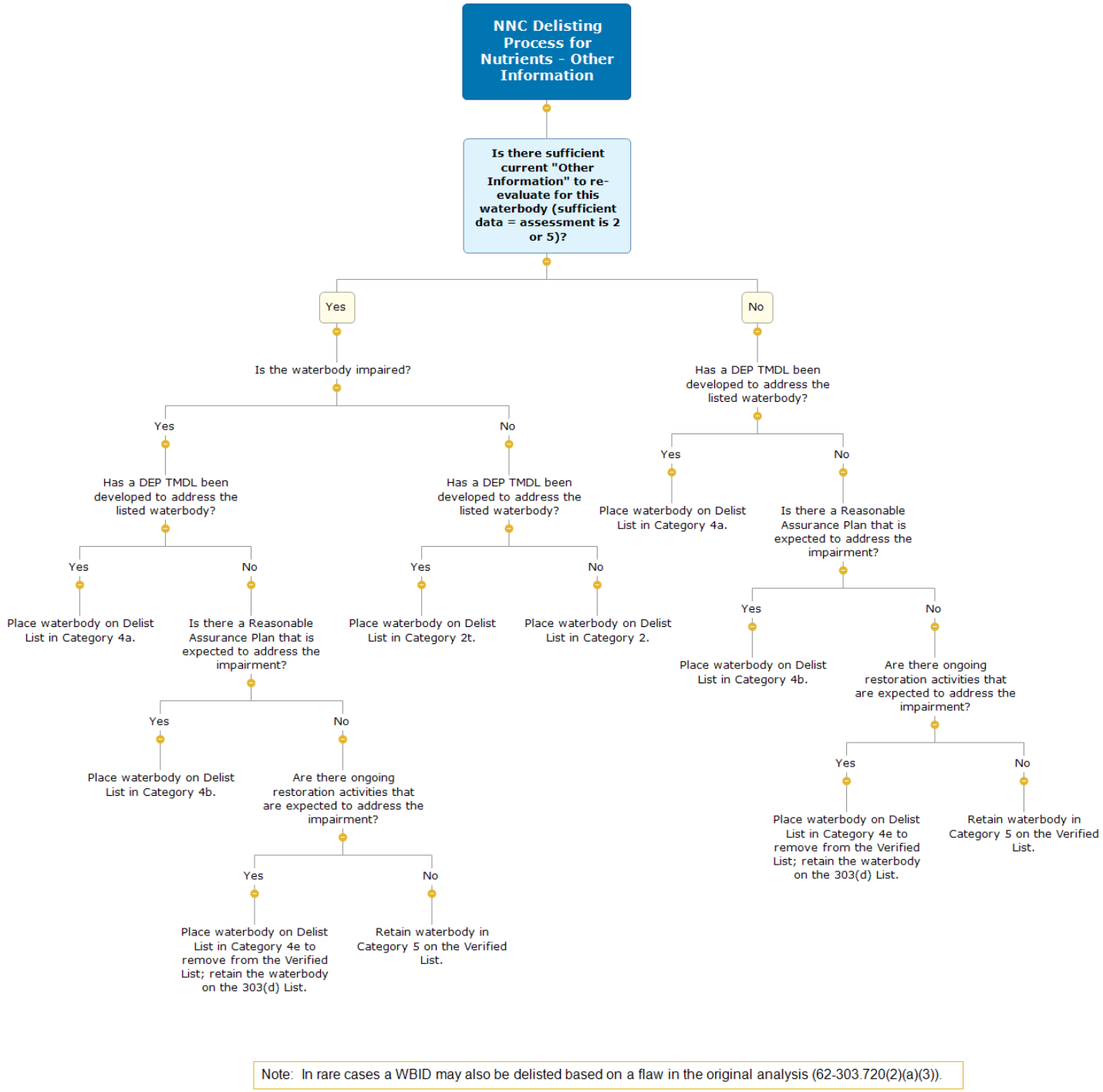

Figure 6. NNC delisting process for Nutrients–Other Information

Communication of Assessment Findings

The success of Florida's watershed restoration program depends heavily on input from local stakeholders. This process is highly collaborative, and department staff closely coordinate and communicate with stakeholders in all phases of the watershed management cycle.

As discussed previously, the department works with a variety of stakeholders and holds public meetings on developing and adopting the Verified and Delist lists. District-specific draft Verified Lists of Impaired Waters and Delist Lists that meet the requirements of the IWR are placed on the department's Watershed Assessment Section website, https://floridadep.gov/dear/watershed-assessment-section, and are also sent upon request to interested parties via mail or email. Stakeholders are given the opportunity to comment on the draft lists in person and in writing. As part of the review process, public workshops are advertised on the above website (as well as on the department calendar, at https://floridadep.gov/events, and through the GovDelivery email service) and held to help explain the process for developing the Verified and Delist Lists, exchange information, and encourage public involvement. The workshops are also noticed in the *Florida Administrative Register*.

The Verified List of Impaired Waters and Delist List are adopted by Secretarial Order. Like all official agency actions, these adoptions are subject to state administrative procedures set forth in Chapter 120, F.S. Once a Verified List or Delist List is adopted, a notice is published in the *Florida Administrative Register* allowing any affected party to request an administrative hearing to challenge the adoption.

The department receives a variety of public input, including email, letters, and verbal comments, and typically responds to commenting parties either by email or mail. All recordings of the public meetings, written comments received, and the department's responses are available on the file transfer protocol site in the associated listing cycle's Administrative Records folder.

Throughout the assessment process, the department also works directly with EPA to discuss any changes to the assessment process or listings that need additional input, which allows for transparency throughout each Biennial Assessment and the opportunity to resolve issues prior to the 303(d) list submittal to EPA. Once the Biennial Assessment is adopted by secretarial order, it is submitted to EPA. The assessments included in each submittal are new updates and have integrated assessments representing the current assessment category for each waterbody-parameter combination based on information from all cycles. It is the department's expectation that EPA will add waters in assessment categories 5 (Impaired), 4d (Study List), and 4e (Ongoing Restoration Activities) to the 303(d) list, while removing those waters where removal from the 303(d) list is requested.