

Fact Sheet on Puerto Rico's 2016 Impaired Waters List January 2017

EPA has approved Puerto Rico's 2016 List of Impaired Waters Requiring a Total Maximum Daily Load (TMDL). Puerto Rico's 2016 list presents information on impaired waters, pollutants causing impairment and pollutant sources. The list is important because it focuses management attention on impaired waters. EPA will continue to build partnerships throughout Puerto Rico to ensure that impaired waters receive proper attention.

How States Report on the Quality of their Waters

The Clean Water Act requires states (Section 502 of the Act defines "state" to include the Commonwealth of Puerto Rico) to assess the quality of their water bodies and to report their findings every two years to EPA. States adopt specific water quality standards which serve as the foundation for water quality management. Water quality standards identify the designated uses for each body of water (such as swimming, drinking, shellfish harvesting, etc.) and set scientific criteria to protect those uses. During the assessment process, states compare the collected data to the established water quality standards.

In addition to reporting on the overall quality of all waters, the Clean Water Act directs states to identify and list specific water bodies where water quality is impaired or threatened by pollutants. This requirement is found under section 303(d) of the Clean Water Act and the list of impaired waters is often referred to as the "303(d) list."

- Impaired—A body of water that does not meet water quality standards even after pollution controls have been put in place.
- Threatened—A body of water that is expected to be impaired within two years.

Each impairment reflected on the 303(d) list requires a calculation of the maximum amount of the impairing pollutant that a water body can receive and still meet water quality standards. This calculation is called the total maximum daily load (TMDL). TMDL's include reductions for pollution sources impacting the water body which, when achieved, will result in the attainment of water quality standards in the water body.

In certain cases, impaired or threatened waters may not appear on a state's 303(d) list. If a TMDL has already been developed for the water, another required control measure is expected to result in the attainment of water quality standards within a reasonable amount of time, or the impairment or threat is the result of *pollution not caused by a pollutant*¹, then the water may not be included.

Water quality monitoring data and other information must be considered by states in assessment and reporting efforts. Monitoring is carried out by national, state, local and tribal authorities,

¹ Examples of pollution not caused by a pollutant include segments impaired solely due to lack of adequate flow or stream channelization.

universities, dischargers, volunteers and others. It can include measurements of physical and chemical parameters (temperature, dissolved oxygen, suspended sediment, nutrients, metals, oils, and/or pesticides, for example), examinations of stream flow, water color, condition of stream banks and lake shores, observations of communities of aquatic wildlife, and sampling of fish tissue or sediment. Land use data, predictive models and land surveys may also be used.

Summary of 2016 Findings

Puerto Rico's 303(d) list contains 534 instances where a pollutant is causing a designated use impairment.

- The most common indicators/causes of impairments include:
 - low dissolved oxygen (137)
 - turbidity (108)
 - cyanide (13)
 - pathogens (enterococcus, total coliforms, and fecal coliform) (64)
 - copper (33)
 - nutrients (total nitrogen and total phosphorus) (35)
 - pH (73)

- Pollutant sources include:
 - onsite wastewater systems (173)
 - urban/stormwater runoff (106)
 - confined animal feeding operations (77)
 - collection system failure (70)
 - agriculture (51)

(Note: a pollutant may come from more than one source.)

- One hundred thirty-five (135) new water body/pollutant combinations were added to the 2016 303(d) list. The new combinations are summarized below:
 - 30 assessment units impaired for turbidity;
 - 29 assessment units impaired for low dissolved oxygen;
 - 26 assessment units impaired for total phosphorus;
 - 17 assessment units impaired for total nitrogen;
 - 12 assessment units impaired for pH;
 - 7 assessment units impaired for free cyanide;
 - 4 assessment units impaired for enterococci bacteria;
 - 2 assessment units impaired for lead;
 - 2 assessment units impaired for copper;
 - 2 assessment units impaired for surfactants;
 - 2 assessment units impaired for thermal modifications;
 - 1 assessment unit impaired for total coliform bacteria;
 - 1 assessment unit impaired for ammonia

The 303(d) list also reflects water body/pollutant combinations that no longer require listing. Removal of a water body/pollutant combination from the 303(d) list, called delisting, may indicate that the water is restored, a TMDL has been developed, the water is receiving management attention that is expected to result in the attainment of water quality standards, or other factors (including errors). One hundred eighty-one (181) water body/pollutant combinations were delisted in the 2016 cycle, including:

- 174 waterbody/pollutant combinations where water quality standards are now met, based on new water quality data, including:
 - 61 assessment units previously impaired for cyanide;
 - 25 assessment units previously impaired for arsenic;
 - 22 assessment units previously impaired for surfactants;
 - 15 assessment units previously impaired for turbidity;
 - 12 assessment units previously impaired for low dissolved oxygen;
 - 11 assessment units previously impaired for copper;
 - 10 assessment units previously impaired for lead;
 - 5 assessment units previously impaired for pH;
 - 3 assessment units previously impaired for cadmium;
 - 3 assessment units previously impaired for thermal modifications;
 - 3 assessment units previously impaired for total coliform;
 - 2 assessment units previously impaired for mercury;
 - 1 assessment unit previously impaired for phosphorus;
 - 1 assessment unit previously impaired for selenium;
- 5 waterbody/pollutant combinations because of the development of fecal coliform TMDLs
- 2 waterbody/pollutant combinations because of a change in the nitrate/nitrite water quality standard

Evaluation of Management Efforts

EPA's National Water Program has prioritized protecting and restoring America's watersheds, and the 303(d) list is a useful tool for measuring progress in this effort. By comparing recent 303(d) lists to those developed in past years, managers can gain a sense of whether – and how quickly – impaired waters are being restored. EPA uses states' 2002 303(d) lists as a baseline against which managers track impairment removal and water quality improvement. Examination of Puerto Rico's recent 303(d) lists reveals that, over the last 12 years, 3 formerly impaired waters now meet applicable water quality standards. In addition, many other waters, while not fully restored, are improving in quality. Water quality improvement in restored waters can often be traced to watershed management efforts undertaken by EPA, states and local stakeholders.

How the Water Quality Sampling and Reporting Process Works

Puerto Rico has divided the island into 96 hydrologically defined basins, including the San Juan Bay Estuary System. Puerto Rico monitors 23 of the 96 basins routinely. These 23 basins form part of the permanent stream water quality network.

The Puerto Rico Environmental Quality Board (PREQB) monitoring activities for this reporting cycle included routine ambient water quality sampling at the various networks and special water quality studies performed in the water bodies of concern. Where available, effluent quality data from the discharge monitoring reports submitted by National Pollutant Discharge Elimination System (NPDES) permitted point sources were used as contributing sources that may impact the potential designated use support of the water bodies.

The PREQB generates data from five routine monitoring networks that provide physical, chemical and biological water quality data from the different water bodies:

Surface Water Monitoring Network: Operated by the U.S. Geological Survey under a cooperative agreement with Puerto Rico, this network includes water quality sampling stations in the 23 major river basins in the north, south, east and west hydrographic regions of Puerto Rico.

Clean Lakes Monitoring Network: Operated by PREQB, this network monitors water quality in the 19 major lakes (reservoirs) that are mostly used as raw sources of drinking water and for recreation activities, including fishing.

Groundwater Monitoring Network: This network is limited to 53 drinking water wells operated by the Puerto Rico Aqueduct and Sewer Authority. The wells are sampled at least one time per year.

Coastal Monitoring Network: Operated by PREQB, this network includes 104 monitoring stations around the coastal perimeter of Puerto Rico. The network covers a total of 419.01 coastal miles of Puerto Rico's main island, out of a total 546.63 shore miles from the archipelago.

Beach Monitoring and Notification Program Network: Operated by PREQB, this network includes 36 stations distributed over 36 beaches in Puerto Rico. The Beach Monitoring and Notification Program network stations are sampled biweekly for bacteria (fecal coliform and enterococcus) and temperature. Beginning in April 2015, PREQB expanded the parameters measured at each site to include pH.

PREQB may perform special sampling activities whenever necessary to investigate fish kills, hydrocarbon leaks and spills, and illegal discharges to storm sewers and water bodies to obtain water quality data to assess the impact and attempt to identify responsible parties.

In addition, for the 2016 303(d) listing cycle, PREQB sent letters soliciting chemical and biological data on water bodies, along with information pertaining to the quality control procedures that were used to generate the data, from a wide variety of organizations, including academic institutions, government agencies and nongovernmental organizations. Once received, PREQB assembled all existing and readily available data and evaluated this data in accordance with Puerto Rico's water quality standards, using methods described in Puerto Rico's

Consolidated Assessment and Listing Methodology, available at <http://www.jca.pr.gov>. These assessments inform Puerto Rico's 303(d)/305(b) Integrated Report.

How to Get Involved

Recognizing that stakeholders throughout Puerto Rico collect valuable water quality data, the PREQB has established a process that allows groups and individuals to submit information for the Commonwealth to use in its assessment. Submissions (data, photographs, etc.) must be sent to the PREQB by September 30 of odd-numbered years. In May of 2016, EPA approved a Quality Assurance Project Plan (QAPP) for the use of external data for the development future Integrated Reports for Puerto Rico. This QAPP will be included in future external data solicitation requests, and will help to increase the quality and quantity of external data used for monitoring and evaluation of the waters of Puerto Rico. When it is submitted as part of the 303(d) or 305(b) process, stakeholder information is considered as soon as it is received. Parties submitting information should send materials to:

PREQB – Evaluation and Strategic Planning Area
Cruz A. Matos Environmental Agencies Building
1375 Ponce de León Avenue, San Juan, PR 00926-2604
P.O. Box 11488, Santurce, PR 00910
Fax 787-767-4861

Alternatively, information can be sent via email to waterquality@jca.gobierno.pr. If you have questions or would like to speak directly with a PREQB representative, call 787-767-8181.

The PREQB provides the opportunity for formal public comment on draft 303(d) lists. This is typically announced in early January of even-numbered years via an announcement on PREQB's website. Comments are accepted for a 30-day period.

EPA Contacts for Puerto Rico's 303(d) List

If you have questions or concerns, contact EPA's Puerto Rico water quality assessment and 303(d) list expert, Nathaniel Delano (212-637-3884) or email Delano.Nathaniel@epa.gov.