Observing the Rivers 2023

Water Quality Portrait in Atlantic Forest Watersheds

March 2023

Observing the Rivers 2023

Water Quality Portrait in Atlantic Forest Watersheds

March 2023

Produced by

Sponsored by

---

index

01 Summary

This report provides a comprehensive portrait of water quality in the watersheds of the Brazilian Atlantic Forest, utilizing data collected monthly by a network of volunteers who have been part of the Observing the Rivers Program of the SOS Mata Atlântica Foundation since 2015. The Water Quality Index (WQI) was used to evaluate the water quality in the study area, and the results were measured annually through monthly collections and analyses conducted from January to December 2022.

In this portrait of water quality in the watersheds of the Brazilian Atlantic Forest, a total of 990 analyses were conducted on samples collected from 160 points in 120 rivers and water bodies, located in 74 municipalities across 16 states in the Atlantic Forest. These analyses were carried out by 116 volunteer groups, representing a 62% increase in the total number of collections compared to 2021 (615 analyses). This brings the data closer to the pre-Covid-19 pandemic period.

From this sampling universe, 11 points (6.9%) achieved a good quality score, 120 (75%) showed regular water quality, 26 (16.3%) poor, and three (1.9%) very poor. No point presented excellent water quality. It is safe to say that a little less than 20% of the analyzed river points do not meet conditions for multiple water uses, such as agriculture, industry, human supply, animal watering, leisure, and sports.

The situation of Atlantic Forest rivers remains a cause for much concern. The rivers monitored in the biome revealed fragile environmental conditions, and 75% of the monitored points showed water quality scores that demand special attention from public administrators and society. The results also highlight the fragility of water resources, particularly in the current state of climate emergency.

The precarious state of Brazil's basic sanitation services, which reaches less than half of the population, as well as soil and native forest degradation across its river basins, are important contributors to this situation. It is clear that we are still far from meeting the Sustainable Development Goal 6: Clean Water and Sanitation (SDG 6), which is set for 2030, and the universal access to basic sanitation expected by 2033.

The results obtained from 106 comparative analysis points from 2021 and 2022 pointed to relatively stable water quality, with slight improvements. Eight points had good water quality (compared with seven points in 2021); 80 had regular quality (75 in 2021); 15 poor (21 in the previous year), and three very poor. Unfortunately, the worst score remained unchanged at the same location from the previous year: Pinheiros River in São Paulo.

Observing the Rivers continues to be one of the main initiatives for monitoring the quality of water in rivers in Brazil, through a voluntary survey carried out by society. The 2022 results show that the water quality of rivers in the Atlantic Forest is still far from acceptable: less than 10% of the analyzed points presented good water quality, and none had excellent quality.

These findings highlight the need for urgent actions focused on forest restoration, basic sanitation services, and Brazil's climate and governance commitments. It is crucial to adopt inclusive and participatory approaches.

02 Introduction

This report provides a summary of the 2022 water quality findings for Atlantic Forest watersheds in Brazil, based on the Water Quality Index (WQI) data collected monthly since 2015 by the Observing the Rivers project, a program run by the SOS Mata Atlântica Foundation. Water quality results were measured annually, using samples collected and analyzed from January to December 2022.

During the current monitoring cycle, 990 analyses were conducted, representing a 62% increase from the 615 analyses performed in 2021 and bringing the data closer to the pre-COVID-19 pandemic period. These analyses were performed at 160 collection points in 120 rivers and water bodies across 74 municipalities, involving 116 volunteer groups from 16 states within the Atlantic Forest biome: Alagoas, Bahia, Ceará, Espírito Santo, Mato Grosso do Sul, Minas Gerais, Paraíba, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Santa Catarina, Sergipe, São Paulo, and the Federal District.

The technical team at the SOS Mata Atlântica Foundation supplemented monitoring activities by conducting analyses at strategic points to measure indicators. The Observing the Rivers Program comprises 2,700 volunteers who form its monitoring network and work to produce the data presented in this report.

Regular monitoring of water quality indicators is crucial for creating an accurate understanding of the environment surrounding Atlantic Forest river basins throughout the year, under various weather conditions. The monthly samples collected by the volunteer network allow for a more timely identification of variations and impacts on water bodies compared to data generated by less frequent government agency monitoring during dry and rainy seasons. In addition, the Observing the Rivers Program translates data for society and provides information

for management and governance. The volunteers' dedication and persistence in monthly monitoring reflects the program's commitment to the cause.

In this report, all results are considered, even if only one analysis was performed at a certain collection point during the year, as we appreciate the volunteers' dedication. Volunteers' engagement and dedication are essential for water governance and the quality of life of the population and the environment.

Access to water, both in quality and quantity, is a fundamental human right recognized by the United Nations (UN). However, unequal access to water supply and water quality is a significant issue for the Brazilian population in different regions of the country, indicating the vulnerability of many Brazilians in accessing clean water and basic sanitation services. Approximately 35 million people in Brazil lack access to clean water, highlighting the importance of clean water as the 6th of 17 Sustainable Development Goals (SDGs) proposed by UN-member countries.

Given the significant challenges faced by water management and governance in Brazil, this study from SOS Mata Atlântica serves as a contribution from society for the integrated management of water and ecosystems, striving for clean water for all.

The Water Quality Index (WQI) data and indicators collected from the rivers and springs of eight hydrographic regions in Brazil from January to December 2022 reveal that Brazil still has a long way to go in terms of providing clean water in sufficient quantity for all its citizens. As a result, it is crucial to prioritize water on the country's agenda.

Volunteer groups continued to follow the field safety protocols developed specifically for the Covid-19 pandemic during water collection and water quality analysis in 2022. Nevertheless, many monitoring groups, particularly those comprising junior and high school students, faced some challenges but have gradually resumed field activities.

03 SOS Mata Atlântica and the Clean Water Cause

SOS Mata Atlântica is a Brazilian nonprofit environmental organization with a mission to inspire society to defend the country's most degraded biome. Founded 36 years ago, the organization mobilizes people to engage in the following causes: Clean Water, Forest Restoration, and Biodiversity Protection, as they contribute directly to our quality of life and to the fight against, and adaptation to, climate changes. The Foundation also advocates for public policies that ensure current and future generations have the right to an ecologically balanced environment.

SOS Mata Atlântica has planted more than 23 thousand hectares of native trees through restoration projects, making it one of the organizations that have planted the most native trees in Brazil. The Foundation also operates a plant nursery with an annual production capacity of 750 thousand seedlings per year, consisting of 100 species that are native to the Atlantic Forest. The plant nursery is located in Itu, in the interior of São Paulo, and houses the Center for Forest Experiments, which is currently the institution's headquarters.

The Foundation has around 2,700 volunteers distributed across the 17 states of the Atlantic Forest who monitor the water quality of the biome's rivers through the Observing the Rivers program. Their analyses are compiled in reports that alert society and authorities to the water scenario and act as pressure tools to help improve sanitation services and protect water resources.

The Foundation also maintains updated data on deforestation in the biome, which it has been publishing through the Atlas of the Atlantic Forest Remnants in partnership with the National Institute for Space Research (INPE) since 1989. The Foundation teamed up with MapBiomas and ArcPlan to issue more precise, detailed, and

frequent deforestation alerts in 2022 using satellite and image analysis technology. The system detects deforestation patches greater than 0.3 hectares in any forest fragment, and alerts are validated each month. Both initiatives, combined, provide data of public interest that are used by journalists, researchers, public administrators, and decision-makers.

Recent data shows that only 24% of the biome's original forest cover remains, which is below the safety threshold of 30% that ensures ecosystem sustainability and the survival of its fauna and flora. The Atlantic Forest is a global biodiversity hotspot, a highly threatened place with a wide variety of species, many of them endemic (found only in the biome).

Therefore, it is essential to protect what is left of the Atlantic Forest's biodiversity. That is why SOS Mata Atlântica runs support programs targeting protected areas known as Conservation Units, or CUs, both forest and marine. The organization has partnered with ICMBio (Chico Mendes Institute for Biodiversity Conservation) since 2007 and, through this and other partnerships, has helped create and strengthen about 500 protected areas, with an investment of 15 million reais. The Foundation has supported iconic areas in the Atlantic Forest, such as the Abrolhos Archipelago, on the southern coast of Bahia, the Costa dos Corais Environmental Protection Area (APA), between Pernambuco and Alagoas, and Itatiaia National Park, located in Rio de Janeiro.

SOS Mata Atlântica mobilizes resources and people to protect, restore, and monitor the Atlantic Forest biome, which is home to 70% of the Brazilian population, playing a vital role in the global fight for ecological sustainability.

The alligator “Teimoso”

SOS Mata Atlântica’s Clean Water cause was initiated in the early 1990s when an alligator was discovered in the polluted waters of the Tietê River in São Paulo. The animal, dubbed Teimoso (meaning “stubborn” in Portuguese), earned its name due to the challenging rescue operation that firefighters had to undertake. This event galvanized the community to support the restoration of our rivers, at a time when environmental issues and the importance of clean water were not widespread concerns. Many people mistakenly believed that water was an abundant resource that would never run out, despite the already visible degradation and pollution of the country’s major rivers.

In 1991, SOS Mata Atlântica and Rádio Eldorado formed the Pro-Tietê Union, which spearheaded a campaign that gathered over 1.2 million signatures to demand the cleanup of Tietê River. The petition was presented during the United Nations Conference on Environment and Development, also known as the ‘Earth Summit,’ held in Rio de Janeiro in 1992.

01
02
03
04
05
06
07
08
09
10
11
12

The resulting public pressure compelled the São Paulo State Sanitation Company (SABESP), in partnership with the state government, to initiate the Tietê River Clean-Up Project. This ongoing project has already given millions of people access to sewage collection and treatment.

Despite its success, monitoring a project of such magnitude, which involved installing underground pipes to transport sewage from homes and buildings to large sewage treatment plants, proved to be an enormous challenge.

Adhering to the principle that a river can provide insight into the overall health of its basin, the technical team at SOS Mata Atlântica recognized that the best way to monitor the Tietê River Clean-Up Project, especially in the absence of Access to Information Laws, was to observe the Tietê River and assess whether the project was being effectively implemented.

To achieve this, they created the Observing the Tietê program, which aimed to measure the river's water quality through physical and chemical analyses. Instead of relying solely on technical teams, the program sought to involve society in this task, covering the 1,100-kilometer length of the Tietê River.

To enable community participation, scientists translated the CONAMA Resolution No. 20 (National Environment Council), currently defined by CONAMA Resolution 357/05, which establishes water quality standards for different freshwater and saltwater uses. Volunteers could then analyze water quality and send the data to SOS Mata Atlântica.

Water is closely linked to the conservation of the Atlantic Forest, ecosystem sustainability, and the health of the populations living in the

biome, as well as their economic and cultural activities. Since the year 2000, SOS Mata Atlântica has expanded and improved this participatory methodology for monitoring water quality, using it to assess the environmental condition of other river basins within the Atlantic Forest. Since 2015, Ypê has sponsored Observing the Tietê, enabling the program to expand to cover all 17 Brazilian states within the Atlantic Forest. As a result, SOS Mata Atlântica has incorporated the water cause into its projects, statutes, and mission. All data and information have been systematized, stored, and made available to society through the organization's online portal. The parameters used to establish Water Quality Indexes (WQIs) are now measured in real-time via an application developed specifically for monitoring groups, who receive support from the Observing the Rivers technical team.

The Water Quality Indexes collected by volunteers at georeferenced collection points were integrated into the Atlantic Forest Atlas and Google Maps. Over the years, the implementation and ongoing improvement of this project have enabled the gathering of data and the presentation of a comprehensive picture of water quality in the rivers and river basins of the Atlantic Forest, produced by local communities.

Society's active participation in water management has helped shape public policies and Brazil's Water Law. Access to information and knowledge production regarding river water quality through volunteer monitoring are important tools for engaging society to improve legislation and governance, particularly in the face of unpredictable climate changes.

Brazil's major rivers display alarming figures regarding water quality, which affects water availability, exacerbates water scarcity, and reduces access to water. To reverse this situation, SOS Mata Atlântica is working to depollute and restore these rivers by strengthening and implementing the National Water Resources Policy, as well as water governance and management tools.

04 Political Impact

In 2022, Brazil witnessed significant social mobilization to prevent setbacks in public policies related to the environment, water, climate, the protection of the Atlantic Forest as a national heritage, and the defense of democracy. In this context, the SOS Mata Atlântica Foundation drafted a letter titled “Resuming Development,” which was submitted to presidential candidates, state governments, the National Congress, and Legislative Assemblies, urging them to prioritize these issues.

The letter emphasized the need for a permanent and sustainable development agenda for Brazil that promotes a decarbonized economy through public policies aligned with the climate emergency and socio-environmental equity.

The letter also highlighted that climate change poses a significant threat to us, and society has felt its impact through droughts, floods, and other extreme events that have a direct impact on our lives. However, it also presents Brazil with an opportunity to regain credibility and create new avenues for development. However, it is essential to end deforestation, restore ecosystems, invest in clean and renewable energy sources and sanitation services, and decarbonize the economy to plan a prosperous and equitable future.

The document distributed to candidates during the election stressed the importance of active societal participation and prioritizing environmental concerns, with clear and effective goals, to resume development. It also emphasized the urgency of rebuilding the country's threatened democracy and canceling all decrees and acts that dismantled Brazil's environmental legislation.

We highlighted the need for Brazil to become more ambitious in terms of its Nationally Determined Contributions established by the Paris Agreement. Restoring the Atlantic Forest can be an effective contribution towards Brazil's climate and development agenda, and elected officials and society can play a crucial role in achieving this goal.

The Clean Water cause places the utmost importance on recognizing access to clean water and basic sanitation services as a fundamental right in the Federal Constitution. This priority is currently being considered by the House of Representatives through the Proposed Constitutional Amendment PEC 06/2021. The amendment was unanimously approved by the Federal Senate in 2021 following extensive debate and mobilization by the Working Group Water, Gender, and Climate Security, which is part of the Environmental Parliamentary Front of Brazil's National Congress.

The cause advocates for the full implementation of Brazil's Water Law (Law 9.433/2007), which includes strengthening Watershed Committees and management tools, such as Basin Plans, Water Use Charges, Water Rights, and Water Quality Classification. It also calls for the adoption of progressive goals for water quality, including the termination of Class 4, which currently allows for the existence of rivers without multiple

uses, undermining water security. Terminating Class 4 will promote multiple uses and ensure water security, resulting in direct and effective improvements to the water quality of highly polluted rivers, river sections in metropolitan areas, or areas with intense agricultural activity.

Our systematic monitoring of water quality through a volunteer network has resulted in the progressive classification of key rivers such as the Jundiaí River in the Piracicaba, Capivari, and Jundiaí River Basin in the state of São Paulo. Previously, this river was identified as Class 4, meaning that it was doomed to remain in a degraded state. However, an agreement was signed between civil society, the Public Federal Ministry, the River Basin Consortium and Committee, and São Paulo state agencies, which raised sections of the Jundiaí River to Class 2 and Class 3. This improvement in classification has resulted in an overall improvement in environmental quality throughout the basin.

As members of the Executive Committee of the Water Governance Observatory (OGA Brasil), which integrates 48 organizations and 23 researchers, our focus is on producing technical notes, debates, and position statements in defense of the National Water Resources Policy. As members of the São Paulo State Water Resource Council and the Upper Tietê and Middle Tietê/Sorocaba Basin Committees, we have actively participated in events such as the XXIV National Meeting of River Basin Committees (ENCOB) held in Foz do Iguaçu from August 21 to 26, 2021. During this event, we participated in discussions, plenary sessions, and technical presentations that highlighted the risks and impacts of Federal Government Bill 4.546/2021 on the National Policy on Water Resources and water governance in Brazil.

The Observing the Rivers volunteer network is encouraged to actively engage in the Hydrographic Basin Committees in their respective regions. Additionally, we are actively participating in the process of registering civil organizations for the election and composition of these committees for the 2023-2025 term. As part of our commitment to advancing sustainable water governance practices, we have registered the SOS Mata Atlântica Foundation as an observer organization for the UN Water Conference scheduled for March 2023 in New York.
We aim to present a clear picture of the water quality produced by Brazilian society and contribute to Brazil's recognition of the significance of governance in ensuring the human right of access to water and advancing towards the Sustainable Development Goals.

05 Monitoring Methodology

This report's Water Quality Index (WQI) data was collected according to current legislation and respective collection and measurement protocols. The monitoring methodology for water quality perception was specifically developed for the SOS Mata Atlântica Foundation by Samuel Murgel Branco and Aristides Almeida Rocha, and has been applied and improved since 1993 by the Observing the Rivers program. This methodology aims to provide conditions and instruments for society to understand and identify factors that interfere with water quality, allowing for participatory water and environmental management.

Experts and technicians selected the WQI parameters deemed most relevant for evaluating raw freshwater for public supply and multiple uses. The totalization of the measured indicators results in the classification of water quality on a scale ranging from excellent to very poor.

The WQI, adapted from the index developed by the National Sanitation Foundation in the United States, is obtained by adding physical, chemical, and biological parameters found in water samples.

EXCELLENT
above 40

GOOD
between 35 and 40

REGULAR
between 26 and 35

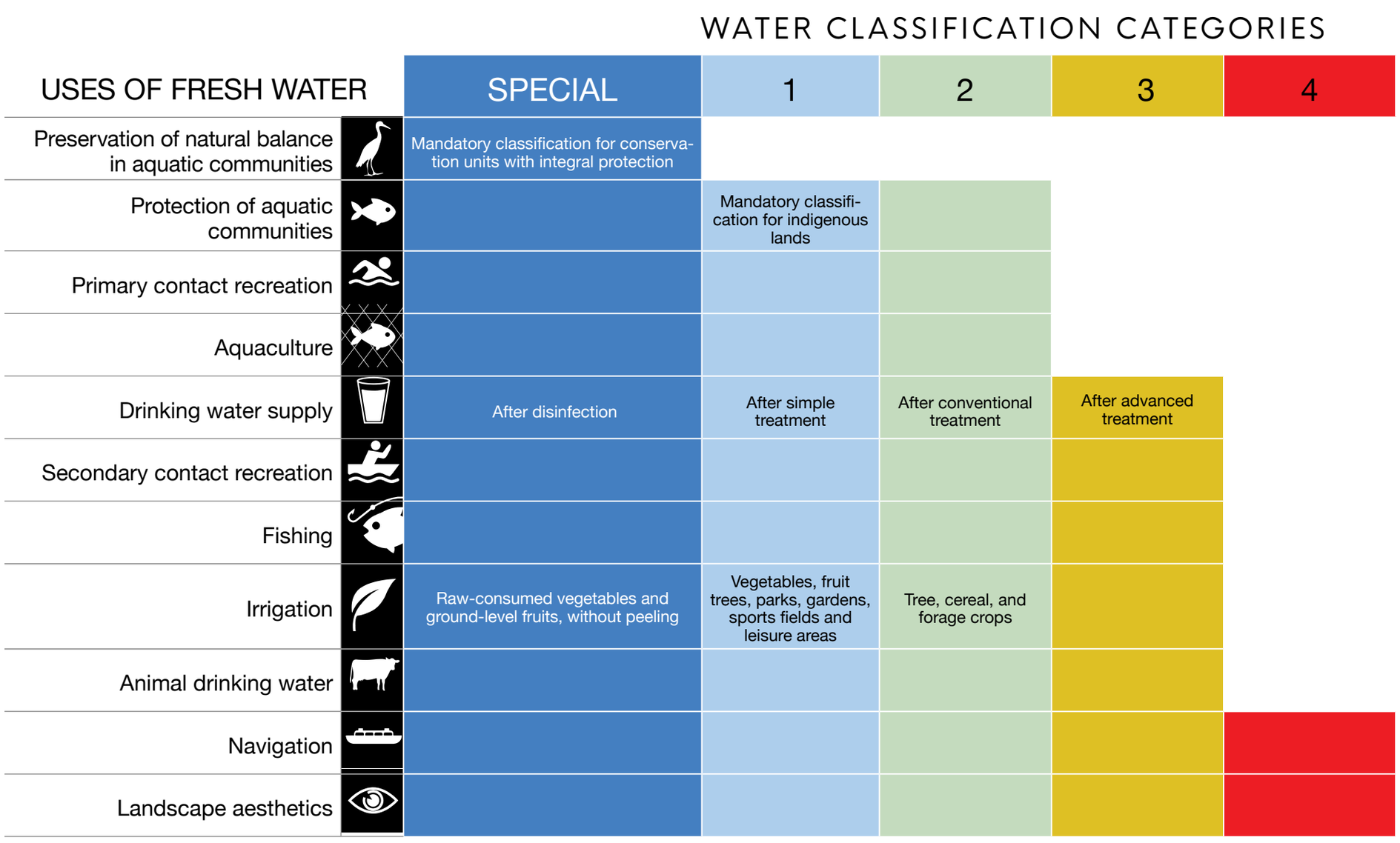
POOR
between 20 and 26

VERY POOR
less than 20

In Brazil, the Environmental Company of the State of São Paulo (Cetesb) began using the WQI in 1974 to evaluate the environmental condition of surface freshwater in the state. In subsequent decades, other Brazilian states adopted the WQI, which remains the primary methodology for water quality analysis used in the country.

The Observing the Rivers methodology includes perception parameters along with physical, chemical, and biological indicators that allow society to survey 16 WQI parameters according to current legislation. These parameters include water temperature, ambient temperature, turbidity, foam, floating debris, odor, sedimentable material, fish, red larvae and worms, dark and transparent larvae and worms, total coliforms, dissolved oxygen (DO), biochemical oxygen demand (BOD), hydrogen potential (pH), phosphate (PO4), and nitrate (NO3).

The limits defined in current legislation for the parameters that make up the WQI vary based on the class of water body. The classification of inland waters in Brazil is established in CONAMA Resolution 357/2005, and the standards vary depending on the predominant use of water and the degree of restriction or permission for discharge and concentration of substances present in water. See the water classification table below for more information.

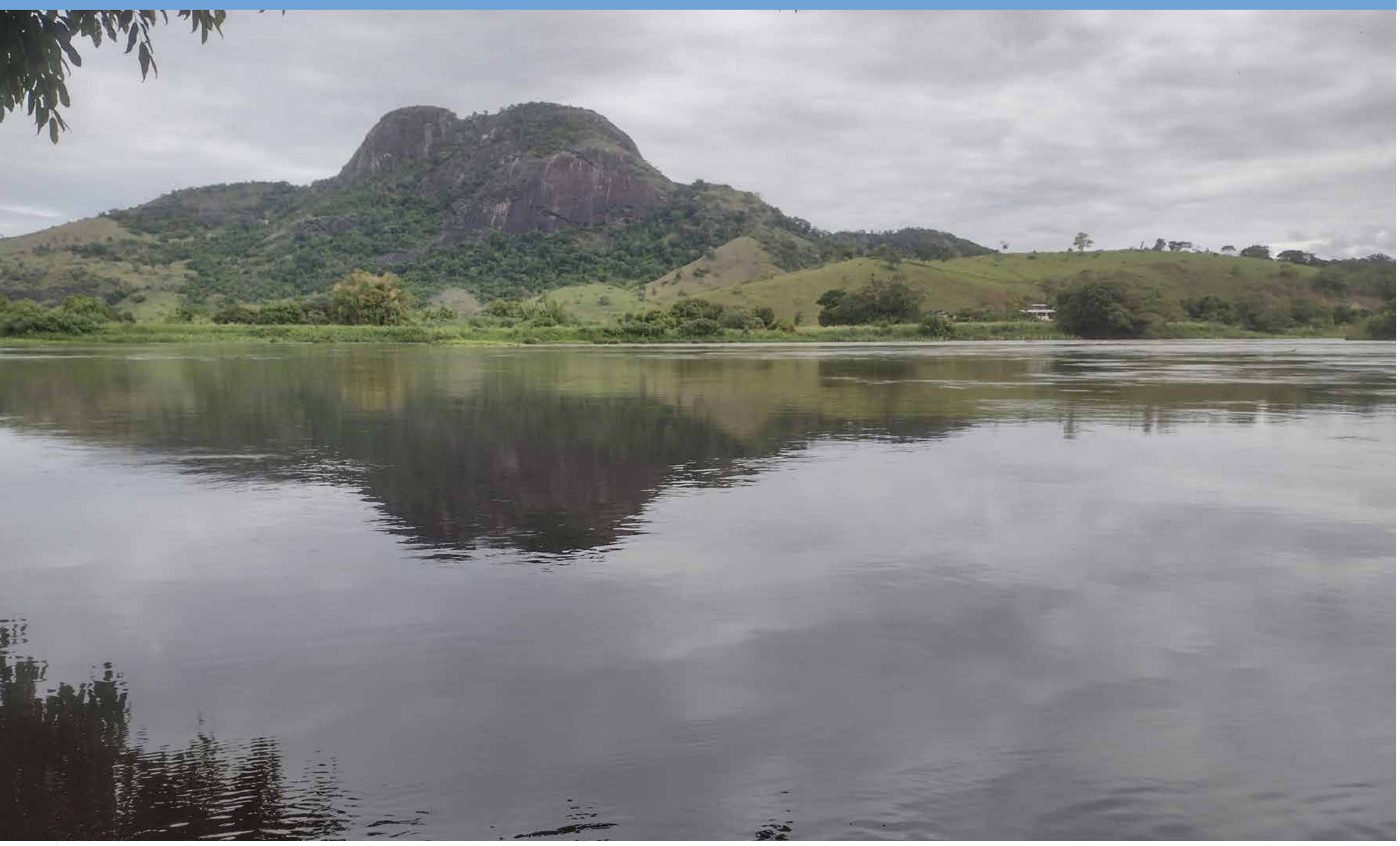


Parameters	Classes				
	Special	1	2	3	4
OD mg/l	7 a 10	6	5	4	2
DBO mg/l	-	3	5	10	-
Nitrate Nitrogen	-	10	10	10	-
Phosphorus*	-	0.025	0.025	0.025	-
Turbidity (NTU)	-	40	100	100	-
Fecal Coliforms	Absent	200	1,000	4,000	-

* The limits for phosphorus vary in Classes 2 and 3 for slow, intermediate, and fast-flowing water environments. Additionally, the maximum concentrations of thermotolerant coliforms vary in Class 3 according to use. For secondary contact recreation, the limit should not exceed 2,500; for confined animal drinking, the limit should not exceed 1,000, and for other uses, the limit should not exceed 4,000 thermotolerant coliforms.

Source: http://www.sigrh.sp.gov.br/enquadramentodoscorposdagua - adaptado da Resolução CONAMA 357/2005

06 Atlantic Forest River Basins



The Atlantic Forest biome, which spans an area equivalent to 1,315,460 km² across 17 states in Brazil, is one of the top biodiversity hotspots on the planet, known for its biological richness and deep threats due to centuries of intensive use and severe land use changes. This forest and its associated ecosystems are made up of a vegetation mosaic that includes dense, open, and mixed ombrophilous forests, deciduous and semi-deciduous seasonal forests, high-altitude fields, mangroves, and restingas.

The Atlantic Forest has been declared a Biosphere Reserve by UNESCO and a National Heritage in the Federal Constitution of 1988 due to its vital importance in maintaining the hydrologic cycle, the climate, and a highly diverse variety of species. It provides essential ecosystem services and resources that are necessary for the well-being of over 70% of the Brazilian population that resides within this biome.

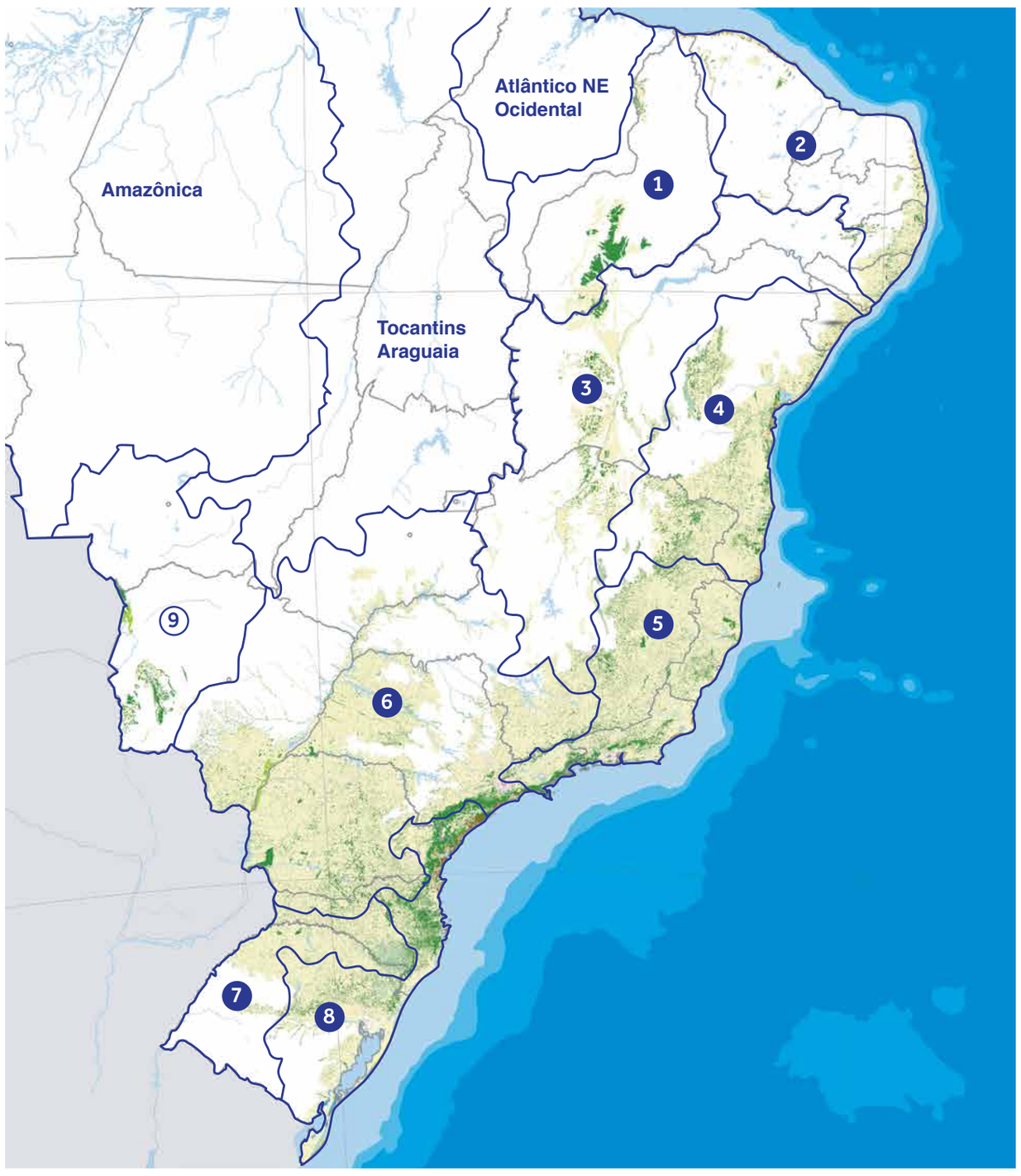
Despite its critical role, deforestation and land use changes have caused the Atlantic Forest to shrink drastically, leaving only 8.5% of its original forest remnants above 100 hectares intact. If we include all mature native forest fragments above three hectares, only 12.4% of the Atlantic Forest remains intact in Brazil. According to data provided by MapBiomas in 2022, if we consider all regenerating and young forests, as well as degraded forests, we find a remaining forest cover of 24%. This data highlights the fragility of the biome in maintaining its ecosystem services, and the need for conservation and restoration actions to manage this resource effectively.

Brazil has a vast network of rivers, springs, and surface freshwater that comprises a true blue treasure. It is intimately linked to Brazil's biomes, ecosystems, geography, land use, and the diverse characteristics of the national territory. The rivers and springs directly reflect the impacts of climate and all public policies that directly or indirectly affect the quality and availability of water in all its dimensions.

Water disregards political-administrative borders and instead follows the hydrologic cycle. Therefore, managing water resources in a megadiverse country like Brazil requires adopting hydrographic regions as the planning unit for the National Water Resources Policy.

The National Water Resources Council (CNRH) established the National Hydrographic Division, which created 12 Brazilian hydrographic regions that account for the country's socio-environmental, cultural, and economic characteristics. These regions are defined as river basins, a group of basins, or a group of sub-basins with similar natural, social, and economic features. This division aims to guide planning and management activities for water resources across the country.

The Atlantic Forest biome covers nine of these hydrographic regions, and the Observing the Rivers methodology is active in eight of them.



Hydrographic Regions of the Atlantic Forest

1. Parnaíba
2. Northeastern Oriental Atlantic
3. São Francisco
4. Eastern Atlantic
5. Southeast Atlantic
6. Paraná
7. Uruguay
8. Southern Atlantic
9. Paraguay (small fragments)

● Project action
○ No project action

07 2022 WQI Results

In 2022, the monitoring groups of the Observing the Rivers project gradually resumed their activities, as they started feeling safe to go out into the field for monthly analyses.

The number of volunteers in 2022 was encouraging compared to the two previous years that were directly affected by the Covid-19 pandemic.

In 2020, due to the pandemic, the analyses for the Observing the Rivers project were conducted only from January to March, with 609 analyses recorded on the SOS Mata Atlântica webpage. In 2021, as official agencies relaxed restriction protocols, volunteer groups were able to resume field work and 615 analyses were recorded. They used a series of protocols jointly developed by SOS Mata Atlântica's technical staff

and project volunteers. In 2022, the year of this report, the number of analyses conducted was about 50% higher than the previous year, with 990 analyses performed.

The analyses were performed at nearly 160 sampling points in 120 rivers and water bodies, 74 municipalities, and 16 states within the Atlantic Forest. The work was carried out by 116 volunteer groups participating in the Observing the Rivers project.

In our sample universe, 11 rivers (6.9%) presented good water quality, while 120 (75%) presented regular water quality, 26 (16.3%) poor, and three (1.9%) very poor. Thus, a little under 20% of the analyzed river points do not meet the criteria for multiple water uses, such as agriculture, industry, human supply, animal watering, leisure, and sports. In the previous survey, this number was higher than 20%. It is important to note that some volunteer groups did not return when monitoring activities resumed, giving way to others who began monitoring other rivers, which explains slight differences in results. The survey did not find any water bodies with excellent water quality.

The situation of Atlantic Forest rivers remains alarming, with the monitored rivers revealing fragile environmental conditions. Seventy-five percent of the monitored points showed water quality scores that demand special attention from public administrators and society. The results also point out the fragility of water resources, especially in our current state of climate emergency.

The precarious condition of the country's basic sanitation services, with less than half of the population having access to these services, in addition to soil and forest degradation in river basins, also inform the numbers presented here.

The report highlights that achieving Sustainable Development Goal 6 - Clean Water and Sanitation (SDG 6) by 2030, and universal access to basic sanitation services by 2033, still remains a distant goal. The lack of access to Clean Water negatively impacts people's lives, particularly in terms of public health services, and contributes to water scarcity and water insecurity, disproportionately affecting the poor in Brazil due to deficiencies in basic infrastructure such as water, sewage, waste management, and rainwater management.

Polluting a body of water is easy, but recovery takes time. In order to prevent degradation, constant attention and improvements in sanitation and education infrastructures are needed. Surface freshwater quality is highly responsive to environmental conditions in its river basins, climate variations and impacts, land use, and economic activities. Therefore, the Water Quality Indexes presented in this monitoring cycle are based on average indicators obtained at each collection point during the continuous monthly analyses carried out over 12 months.

The precarious Water Quality Indexes directly impact the population's health, the environment, and the region's sustainability.

Average WQI per analysis point

STATE	MUNICIPALITIES	GROUP	MONITORING POINTS	WQI AVERAGE
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Poxim	Regular
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Coruripe	Regular
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Adriana	Regular
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Piauí	Regular
Alagoas	Japaratinga	Instituto Federal de Alagoas - IFAL	Salgado	Regular
Alagoas	Jequiá da Praia	Jequiá da Praia	Jequiá	Regular
Alagoas	Maceió	Instituto Biota de Conservação	Doce	Regular
Alagoas	Maceió	Secretaria do Meio Ambiente e Recursos Hídricos - SEMARH	Pratagy	Regular
Alagoas	Maragogi	Instituto Federal de Alagoas - IFAL	Maragogi	Regular
Alagoas	Maragogi	Instituto Federal de Alagoas - IFAL	Persinunga	Regular
Alagoas	Penedo	Universidade Federal de Alagoas - UFAL - PENEDO	São Francisco	Regular
Bahia	Alagoinhas	Universidade do Estado da Bahia - UNEB	Catu	Regular
Bahia	Alagoinhas	Universidade do Estado da Bahia - UNEB - Montante	Catu - Montante	Poor
Bahia	Mata de São João	Colégio Alaor Coutinho	Lagoa do Aruá	Regular
Ceará	Fortaleza	Ambienteia Consultoria Ambiental	Maceió	Regular
Ceará	Fortaleza	Grupo Rio Ceará	Ceará	Regular
Ceará	Fortaleza	Lagoa Parangaba Novo Ensino Médio Integrado	Lagoa Parangaba	Poor
Distrito Federal	Brasília	Salve o Urubu	Urubu	Regular
Distrito Federal	Brasília	Salve o Urubu	Urubu	Regular
Espírito Santo	Domingos Martins	Coletivo Formate - 02	Biriricas	Regular
Espírito Santo	Linhares	EEEFM José de Caldas Brito	Lagoa do Aviso	Poor
Espírito Santo	Vila Velha	Prysmian	Aribiri	Poor
Espírito Santo	Vila Velha	Prysmian	Aribiri	Regular
Espírito Santo	Vila Velha	Prysmian	Aribiri	Poor
Minas Gerais	Belo Horizonte	Grupo Bonsucesso	Bonsucesso (afluente do Arrudas)	Regular
Mato Grosso do Sul	Bodoquena	Departamento Municipal de Meio Ambiente_01	Campina	Regular
Mato Grosso do Sul	Bodoquena	Departamento Municipal de Meio Ambiente_02	João Augusto	Regular
Paraíba	Cabedelo	Águas do Paraíba	Paraíba	Regular
Paraíba	João Pessoa	Congregação Holística da Paraíba - Escola Viva Olho do Tempo	Gramame	Regular
Paraíba	João Pessoa	Sanhauá em Águas Limpas	Sanhauá	Regular
Paraíba	Rio Tinto	Fundação Mamíferos Aquáticos 2	Mamanguape	Regular
Pernambuco	Limoeiro	Amatur	Capibaribe	Regular
Pernambuco	Olinda	Espaço Ciência Chico Science	Beberibe	Regular
Pernambuco	Paudalho	EREM HB Observando o Capibaribe - Paudalho	Capibaribe	Poor
Pernambuco	Recife	Fundação Mamíferos Aquáticos	Capibaribe	Regular
Pernambuco	Recife	Instituto Bioma Brasil	Capibaribe	Regular
Piauí	Demerval Lobão	Canoas	Poti	Regular
Piauí	Pedro II	SOS Rio Correntes	Correntes	Regular
Piauí	Teresina	Bio Universitário	Poti	Regular
Piauí	Teresina	Dois Rios	Poti	Regular

STATE	MUNICIPALITIES	GROUP	MONITORING POINTS	WQI AVERAGE
Piauí	Teresina	Olhos do Poti	Poti	Regular
Piauí	Teresina	SANEAR	Parnaíba	Regular
Paraná	Campo Largo	Cuidadores do Rio Cambuí	Cambuí	Poor
Paraná	Curitiba	O Bacacheri	Bacacheri	Regular
Rio de Janeiro	Itaocara	Projeto Piabanha 1	Paraíba do Sul	Regular
Rio de Janeiro	Itaocara	Projeto Piabanha 2	Paraíba do Sul	Poor
Rio de Janeiro	Itaocara	Projeto Piabanha 3	Paraíba do Sul	Regular
Rio de Janeiro	Rio de Janeiro	Águas do Quitite	Quitite	Regular
Rio de Janeiro	Rio de Janeiro	IFRJ - MAMigos	Joana (Remanescente)	Regular
Rio de Janeiro	Rio de Janeiro	Jardim Botânico do Rio de Janeiro	Macacos	Regular
Rio de Janeiro	Rio de Janeiro	Parque Estadual do Grajaú	Perdido	Regular
Rio de Janeiro	Rio de Janeiro	Rio da Barra	Barra	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio	Carioca	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio 2	Carioca	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio 3	Carioca	Regular
Rio de Janeiro	Rio de Janeiro	Trilha Transcarioca	Piraquara	Regular
Rio de Janeiro	Rio de Janeiro	Voluntários PNT Rio Tijuca	Tijuca	Regular
Rio Grande do Norte	Arês	Grupo Guarairas	Limoal	Regular
Rio Grande do Norte	Maxaranguape	Associação de Proteção Ambiental e Conservação Ambiental	Maxaranguape	Regular
Rio Grande do Norte	Natal	Gamboa do Jaguaribe	Jaguaribe	Regular
Rio Grande do Norte	Nísia Floresta	Amigos da Lagoa	Lagoa do Bonfim	Good
Rio Grande do Norte	Vera Cruz	Vera Cruz Sustentável	Vera Cruz	Regular
Rio Grande do Sul	Canoas	Grupo SOS Bacia do Gravataí	Garças	Regular
Rio Grande do Sul	Canoas	SOS Bacia Rio Gravataí	Gravataí	Regular
Rio Grande do Sul	Dois Irmãos	EETQAW & DMAPM	Feitoria	Poor
Rio Grande do Sul	Dois Irmãos	Sinos Portão & Caí - Dois Irmãos_02	Feitoria	Poor
Rio Grande do Sul	Lindolfo Collor	Arroio Serraria	Serraria	Good
Rio Grande do Sul	Portão	EMEF Visconde de Mauá	Noque	Poor
Rio Grande do Sul	Portão	Sinos Portão & Caí 01	Portão	Poor
Rio Grande do Sul	São Leopoldo	Grupo Escoteiro João de Barro 172/RS	Sinos	Regular
Rio Grande do Sul	São Leopoldo	Grupo Sinos São Leo_02	Sinos	Regular
Santa Catarina	Bombinhas	Bombinhas	Bombinhas	Regular
Santa Catarina	Florianópolis	Capivari	Capivari	Regular
Santa Catarina	Florianópolis	EE Virgilio Várzea	Papaquara	Regular
Santa Catarina	Florianópolis	EE Virgilio Várzea 2	Brás	Poor
Santa Catarina	Florianópolis	Escola do Futuro - EBM Mâncio Costa	Ratones	Regular

STATE	MUNICIPALITIES	GROUP	MONITORING POINTS	WQI AVERAGE
Santa Catarina	Florianópolis	Sangradouro	Sangradouro	Regular
Santa Catarina	Florianópolis	Tavares 1	Tavares	Good
Santa Catarina	Florianópolis	Tavares 2	Tavares	Regular
Santa Catarina	São José	Escola de Meio Ambiente de São José 2	Afluente do Forquilhas	Regular
Santa Catarina	São José	Escola de Meio Ambiente de São José 3	Três Henriques	Regular
Santa Catarina	São José	Escola do Meio Ambiente de São José 1	Forquilhas	Regular
Sergipe	Aracaju	Cajueiro	Poxim	Regular
Sergipe	Aracaju	Capitania dos Portos de Sergipe	Sergipe	Regular
Sergipe	Aracaju	Fundação Mamíferos Aquáticos	Vaza Barris	Regular
Sergipe	Nossa Senhora do Socorro	Orlinha do São Brás	Sal	Regular
Sergipe	Pacatuba	Colégio Estadual Nossa Senhora Santana	Betume	Regular
Sergipe	São Cristóvão	UFS São Cristovão	Poxim	Regular
São Paulo	Amparo	Voluntários Ypê 1	Camanducaia	Regular
São Paulo	Aparecida	Paraíba do Sul - Beira Rio - Aparecida	Paraíba do Sul	Regular
São Paulo	Aparecida	Paraíba do Sul - Porto Itaguaçu - Aparecida	Paraíba do Sul	Regular
São Paulo	Barra Bonita	SESI Barra Bonita	Tietê	Regular
São Paulo	Cabreúva	Projeto Observando o Ribeirão Cabreúva	Cabreúva	Regular
São Paulo	Campinas	Voluntários Ypê - Campinas 1	Anhumas	Regular
São Paulo	Campinas	Voluntários Ypê - Campinas 2	Anhumas	Poor
São Paulo	Cotia	Colégio Rio Branco - Cotia	Maicurê	Poor
São Paulo	Embu	Sociedade Ecológica Amigos de Embu - SEAE	Ressaca	Regular
São Paulo	Embu Guaçu	Associação Aramitan	Santa Rita (Congonhal)	Regular
São Paulo	Guaratinguetá	Paraíba do Sul - Guaratinguetá	Paraíba do Sul	Regular
São Paulo	Guarulhos	Observando O Tietê - Guarulhos	Tietê	Poor
São Paulo	Ilhabela	IIS / AMAB Sul	Feiticeira	Good
São Paulo	Ilhabela	IIS / AMAB Sul	Curral	Regular
São Paulo	Ilhabela	IIS / AMAB Sul	Meio (Curral)	Regular
São Paulo	Ilhabela	IIS / Associação Barreiros	Cachoeira (Vila)	Regular
São Paulo	Ilhabela	IIS / Associação Barreiros	Armação	Regular
São Paulo	Ilhabela	IIS / EE Dr. Gabriel Ribeiro dos Santos	Itaguaçu / Itaquanduba	Regular
São Paulo	Ilhabela	IIS / EE Dr. Gabriel Ribeiro dos Santos	Cocaia	Regular
São Paulo	Ilhabela	IIS / EM Paulo Renato Costa Souza	Camarão	Ruim
São Paulo	Ilhabela	IIS / Instituto Tiê	Paquera (Fórum)	Regular
São Paulo	Ilhabela	IIS / Instituto Tiê	Água Branca	Regular
São Paulo	Itapecerica da Serra	Biblioteca Popular de Itaquaciara Dona Nélida - BIPI	Itaquaciara	Regular
São Paulo	Itaquaquecetuba	Equipe Observando os Rios - Itaquaquecetuba	Tietê	Ruim
São Paulo	Itu	Equipe Água 4	Caiacatinga	Good
São Paulo	Mauá	Gruta Santa Luzia	Nascente do Tamanduateí	Regular
São Paulo	Mogi das Cruzes	Equipe Observando os Rios - Mogi das Cruzes 2	Tietê	Regular
São Paulo	Pirapora do Bom Jesus	PBJ	Tietê	Regular
São Paulo	Porto Feliz	Equipe Água 3	São Luiz	Regular

STATE	MUNICIPALITIES	GROUP	MONITORING POINTS	WQI AVERAGE
São Paulo	Ribeirão Pires	Ação Ecológica - I	Taiaçupeba Mirim	Regular
São Paulo	Ribeirão Pires	Ação Ecológica - II	Pires	Regular
São Paulo	Rio Grande da Serra	EE Poetisa Cora Coralina	Afluente do Pequeno	Poor
São Paulo	Salto	GE Tapera 215º	Piray	Good
São Paulo	Salto	GE Tapera 2	Tietê	Regular
São Paulo	Salto	Voluntários Ypê	Jundiaí	Regular
São Paulo	Salto	Voluntários Ypê	Jundiaí	Regular
São Paulo	São Lourenço da Serra	Escola Estadual Governador André Franco Montoro	São Lourenço	Regular
São Paulo	São Paulo	A Voz dos Rios	Pinheiros	Very Poor
São Paulo	São Paulo	A Voz dos Rios 2	Pinheiros	Very Poor
São Paulo	São Paulo	A Voz dos Rios 3	Pinheiros	Very Poor
São Paulo	São Paulo	CADES Jaçanã Tremembé	IPESP	Regular
São Paulo	São Paulo	Colégio Magno	Congonhas	Regular
São Paulo	São Paulo	Colégio Mater Dei	Sapateiro (Lago do Parque Ibirapuera)	Regular
São Paulo	São Paulo	Colégio Objetivo - Luis Góis	Sapateiro	Regular
São Paulo	São Paulo	DJEKUPÉ	Lavras	Regular
São Paulo	São Paulo	Ecobairros Vila Beatriz , Vila Ida e Vila Jataí	Corujas	Regular
São Paulo	São Paulo	ETEC Getúlio Vargas	Ipiranga	Poor
São Paulo	São Paulo	Insper 1	Sapateiro	Good
São Paulo	São Paulo	Insper 2	Sapateiro	Regular
São Paulo	São Paulo	Instituto Reciclando Vidas	José Gladiador	Poor
São Paulo	São Paulo	Moradores do Riacho Água Podre	Água Podre	Poor
São Paulo	São Paulo	Ocupe e Abrace (Praça da Nascente)	Água Preta	Regular
São Paulo	São Paulo	Ocupe e Abrace 2	Água Preta	Regular
São Paulo	São Paulo	Travessia Tiburtino	Tiburtino	Regular
São Paulo	São Paulo	UniSant'Anna	Tietê	Poor
São Paulo	São Sebastião	Ascam	Cambury	Regular
São Paulo	São Sebastião	Desengarrafando Mentes	Maresias	Poor
São Paulo	São Sebastião	Sociedade Educacional Raízes	Boiçucanga	Poor
São Paulo	São Sebastião da Grama	Fazenda Cachoeira da Grama	Água Limpa	Regular
São Paulo	São Sebastião da Grama	Fazenda Cachoeira da Grama	Recreio	Regular
São Paulo	São Sebastião da Grama	Fazenda Irarema	Grande	Good
São Paulo	São Sebastião da Grama	Fazenda Recreio	Recreio	Regular
São Paulo	São Sebastião da Grama	Fazenda Recreio	Recreio	Regular
São Paulo	São Sebastião da Grama	Fazenda Santa Alina	Grande	Regular
São Paulo	São Sebastião da Grama	Fazenda Santa Alina	Onça	Regular
São Paulo	São Sebastião da Grama	São Domingos	São Domingos	Regular
São Paulo	São Sebastião da Grama	Vale San Juan	São Domingos	Regular
São Paulo	Sorocaba	REA Unesp Sorocaba	Sorocaba	Regular
São Paulo	Suzano	Equipe Obervando os Rios - Suzano	Tietê	Poor
São Paulo	Suzano	Rotary Suzano e Amigos 1	Balainho	Good
São Paulo	Suzano	Rotary Suzano e Amigos 2	Balainho	Good
São Paulo	Tietê	CIREPEM	Tietê	Regular

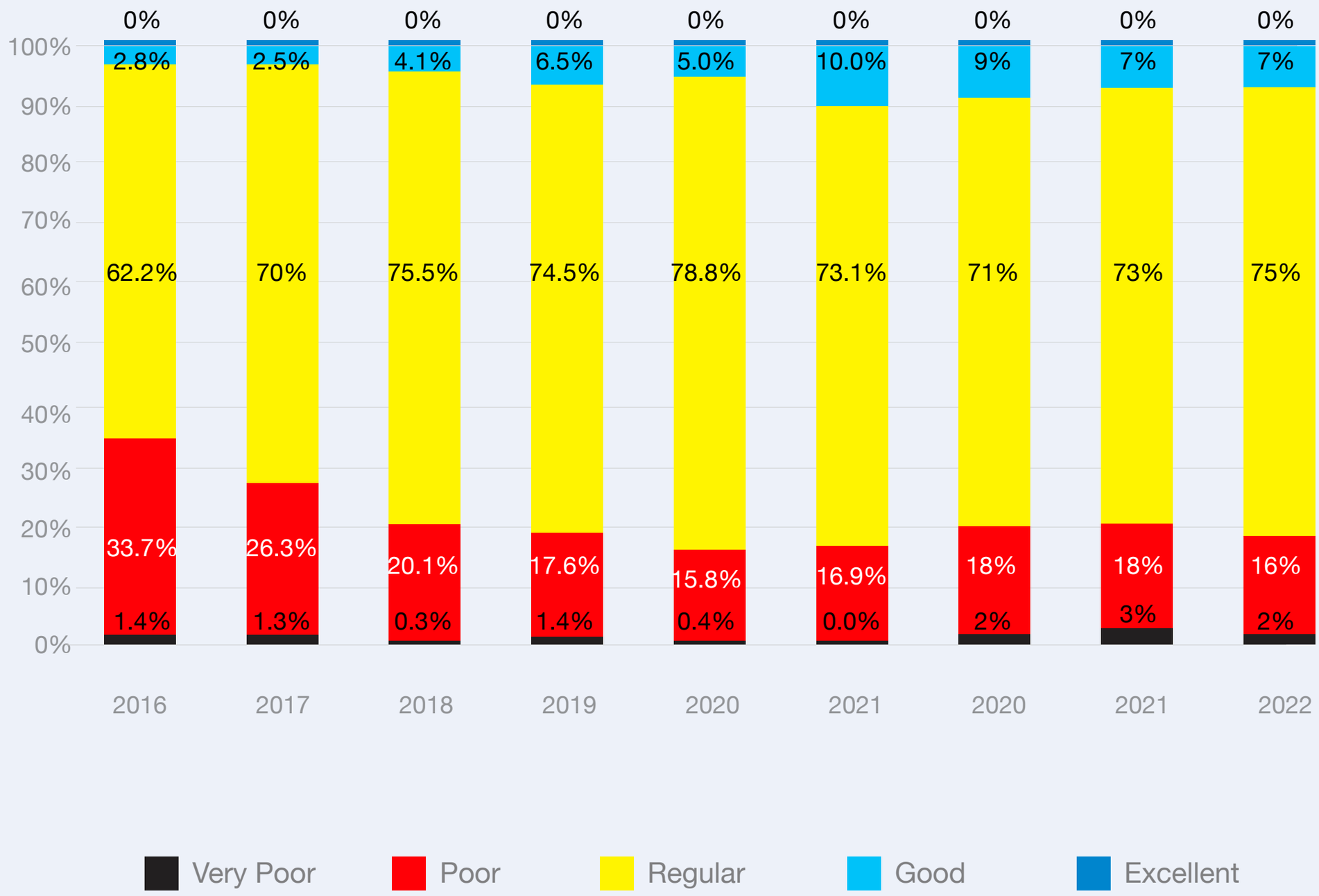
Total and Percentage Numbers according to the Measured Average Water Quality

DE	WQI	TOTAL	%
40.1	Excellent	0	0.0%
35.1	Good	11	6.9%
26.1	Regular	120	75.0%
20.1	Poor	26	16.2%
14 0	Verry Poor	3	1 9%
	TOTAL	**160**	**100.0%**

Number of Municipalities, Rivers, Collection Points, and Monitoring Groups participating in the 'Observing the Rivers' project, by Brazilian State

STATE	MUNICIPALITIES	RIVERS	COLLECTION POINTS	MONITORING GROUPS	TOTAL ANALYSES
Alagoas	6	11	11	6	117
Bahia	2	2	3	2	24
Ceará	1	3	3	3	21
Distrito Federal	1	1	2	1	13
Espírito Santo	3	3	5	3	30
Goiás	0	0	0	0	0
Mato Grosso do Sul	1	2	2	1	2
Minas Gerais	1	1	1	1	5
Paraíba	3	4	4	4	17
Paraná	2	2	2	2	8
Pernambuco	4	2	5	5	23
Piauí	3	3	6	6	18
Rio de Janeiro	2	9	13	9	97
Rio Grande do Norte	5	5	5	5	16
Rio Grande do Sul	5	7	9	7	70
Santa Catarina	3	10	11	7	71
São Paulo	28	50	72	48	431
Sergipe	4	5	6	6	27
17+DF	**74**	**120**	**160**	**116**	**990**

Water Quality Index History - 2016 to 2022



08 2021/22 Comparative data - general and by state

Through comparative analysis of data, we are able to observe the evolution of Water Quality Indexes and identify trends that demonstrate environmental improvements or deterioration in rivers. This allows us to recognize natural and anthropogenic impacts that affect water quality, river basins, and their ecosystems. These indicators encourage society to participate in public policies that address water management, enabling us to plan, propose, and implement action plans that progressively achieve water quality goals.

In 2021 and 2022, the WQI figures included 106 fixed monitoring points. There were some changes in volunteer groups, with some points no longer being monitored and the analysis kits being sent to new groups formed in 2022. As a result, the number of comparison points reduced to 116 in the previous report. The results obtained showed that water quality was somewhat stable, with small improvements overall. Eight points showed good water quality (compared to seven in 2021), 80 had regular quality (75 in 2021), 15 poor (21 in the previous year), and three very poor, with the same volume and locations as the previous year, Pinheiros River in São Paulo.

When analyzing each data point individually, we found that water quality improved in 12 points and worsened in five. In the remaining points, the average quality remained the same. Notably, there were improvements in water quality at three points in the Capibaribe River in Pernambuco, specifically in the municipalities of Limoeiro (one point) and Recife (two points). However, the overall water quality remained poor in Paudalho, a municipality located between the two others that showed improvements.

Notable improvements in water quality were observed in Sapateiro stream, where the quality of water at its spring improved due to the work of São Paulo's city government and civil society organizations and movements. However, there was a slight deterioration in water quality at the Ibirapuera Lake point, which had been improving since 2021 but saw increased foot traffic after pandemic restrictions were lifted. Sapateiro's mouth maintained its regular water quality.

Structural changes made to sewage collection and treatment plants at Balainho River in Suzano (SP) resulted in significant improvements in environmental quality. Other locations that showed improvements include Paraíba do Sul in Aparecida (SP), Irarema Farm in São Sebastião da Grama, Piray in Salto (SP), Bonsucesso stream in Belo Horizonte (MG), and Gramame in João Pessoa (PB).

Despite the overall good results at Paraíba do Sul, a negative result was recorded at a collection point in Itaocara (RJ) due to reduced river flow for most of the year and a lack of sewage water treatment. Similarly, the Paquera stream in Ilhabela (SP) and the Maresias stream in São

Sebastião (SP), two popular tourist destinations on the north coast of São Paulo, also showed deteriorating water quality. The Biricas stream in Domingos Martins (ES) exhibited worsening scores as well.

Although interventions in sewage water treatment have led to improved water quality in some locations, the overall picture remains worrisome because more than half of the population still lacks access to this service

Comparison of results at monitoring points with analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Coruripe	Regular	Regular
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Adriana	Regular	Regular
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Piauí	Regular	Regular
Alagoas	Maceió	Instituto Biota de Conservação	Doce	Regular	Regular
Alagoas	Maceió	Secretaria do Meio Ambiente e Recursos Hídricos - SEMARH	Pratagy	Regular	Regular
Alagoas	Penedo	Universidade Federal de Alagoas - UFAL - PENEDO	São Francisco	Regular	Regular
Ceará	Fortaleza	Ambienteia Consultoria Ambiental	Maceió	Regular	Regular
Ceará	Fortaleza	Grupo Rio Ceará	Ceará	Regular	Regular
Espírito Santo	Domingos Martins	Coletivo Formate - 02	Biriricas	Good	Regular
Minas Gerais	Belo Horizonte	Grupo Bonsucesso	Bonsucesso (afluente do Arrudas)	Poor	Regular
Mato Grosso do Sul	Bodoquena	Departamento Municipal de Meio Ambiente _ 01	Campina	Regular	Regular
Mato Grosso do Sul	Bodoquena	Departamento Municipal de Meio Ambiente _ 02	João Augusto	Regular	Regular
Paraíba	João Pessoa	Congregação Holística da Paraíba - Escola Viva Olho do Tempo	Gramame	Poor	Regular
Paraíba	João Pessoa	Sanhauá em Águas Limpas	Sanhauá	Regular	Regular
Paraíba	Rio Tinto	Fundação Mamíferos Aquáticos 2	Mamanguape	Regular	Regular
Pernam-buco	Limoeiro	Amatur	Capibaribe	Poor	Regular
Paraíba	Olinda	Espaço Ciência Chico Science	Beberibe	Regular	Regular
Paraíba	Paudalho	EREM HB Observando o Capibaribe - Paudalho	Capibaribe	Poor	Poor

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Paraíba	Recife	Fundação Mamíferos Aquáticos	Capibaribe	Poor	Regular
Paraíba	Recife	Instituto Bioma Brasil	Capibaribe	Poor	Regular
Piauí	Teresina	Dois Rios	Poti	Regular	Regular
Piauí	Teresina	Olhos do Poti	Poti	Regular	Regular
Piauí	Teresina	SANEAR	Parnaíba	Regular	Regular
Paraná	Curitiba	O Bacacheri	Bacacheri	Regular	Regular
Rio de Janeiro	Itaocara	Projeto Piabanha 1	Paraíba do Sul	Good	Regular
Rio de Janeiro	Itaocara	Projeto Piabanha 2	Paraíba do Sul	Poor	Poor
Rio de Janeiro	Itaocara	Projeto Piabanha 3	Paraíba do Sul	Regular	Regular
Rio de Janeiro	Rio de Janeiro	IFRJ - MAMigos	Joana (Remanescente)	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Parque Estadual do Grajaú	Perdido	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Rio da Barra	Barra	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio	Carioca	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio 2	Carioca	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Rio do Rio 3	Carioca	Regular	Regular
Rio de Janeiro	Rio de Janeiro	Voluntários PNT Rio Tijuca	Tijuca	Regular	Regular
Rio Grande do Norte	Natal	Gamboa do Jaguaribe	Jaguaribe	Regular	Regular
Rio Grande do Sul	Canoas	Grupo SOS Bacia do Gravataí	Garças	Regular	Regular
Rio Grande do Sul	Canoas	SOS Bacia Rio Gravataí	Gravataí	Regular	Regular
Rio Grande do Sul	Dois Irmãos	EETQAW & DMAPM	Feitoria	Poor	Poor
Rio Grande do Sul	Dois Irmãos	Sinos Portão & Caí - Dois Irmãos_02	Feitoria	Poor	Poor
	Lindolfo Collor	Arroio Serraria	Serraria	Good	Good
Rio Grande do Sul	Portão	EMEF Visconde de Mauá	Noque	Poor	Poor
Rio Grande do Sul	Portão	Sinos Portão & Caí 01	Portão	Poor	Poor
Rio Grande do Sul	São Leopoldo	Grupo Escoteiro João de Barro 172/RS	Sinos	Regular	Regular
Rio Grande do Sul	São Leopoldo	Grupo Sinos São Leo _ 02	Sinos	Regular	Regular
Santa Catarina	Florianópolis	Capivari	Capivari	Regular	Regular
Santa Catarina	Florianópolis	Tavares 1	Tavares	Good	Good
Santa Catarina	Florianópolis	Tavares 2	Tavares	Regular	Regular

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Sergipe	Aracaju	Cajueiro	Poxim	Regular	Regular
Sergipe	Aracaju	Capitania dos Portos de Sergipe	Sergipe	Regular	Regular
Sergipe	Aracaju	Fundação Mamíferos Aquáticos	Vaza Barris	Regular	Regular
Sergipe	Nossa Senhora do Socorro	Orlinha do São Brás	Sal	Regular	Regular
Sergipe	São Cristóvão	UFS São Cristovão	Poxim	Regular	Regular
São Paulo	Amparo	Voluntários Ypê 1	Camanducaia	Regular	Regular
São Paulo	Aparecida	Paraíba do Sul - Beira Rio - Aparecida	Paraíba do Sul	Poor	Regular
São Paulo	Aparecida	Paraíba do Sul - Porto Itaguaçu - Aparecida	Paraíba do Sul	Regular	Regular
São Paulo	Barra Bonita	SESI Barra Bonita	Tietê	Regular	Regular
São Paulo	Cabreúva	Projeto Observando o Ribeirão Cabreúva	Cabreúva	Regular	Regular
São Paulo	Campinas	Voluntários Ypê - Campinas 1	Anhumas	Regular	Regular
São Paulo	Campinas	Voluntários Ypê - Campinas 2	Anhumas	Poor	Poor
São Paulo	Embu	Sociedade Ecológica Amigos de Embu - SEAE	Ressaca	Regular	Regular
São Paulo	Embu Guaçu	Associação Aramitan	Santa Rita (Congonhal)	Regular	Regular
São Paulo	Guaratinguetá	Paraíba do Sul - Guaratinguetá	Paraíba do Sul	Regular	Regular
São Paulo	Guarulhos	Observando O Tietê - Guarulhos	Tietê	Poor	Poor
São Paulo	Ilhabela	IIS / AMAB Sul	Meio (Curral)	Regular	Regular
São Paulo	Ilhabela	IIS / EE Dr Gabriel Ribeiro dos Santos	Itaguaçu / Itaquanduba	Regular	Regular
São Paulo	Ilhabela	IIS / Instituto Tiê	Paquera (Fórum)	Good	Regular
São Paulo	Itapecerica da Serra	Biblioteca Popular de Itaquaciara Dona Nélida - BIPI	Itaquaciara	Regular	Regular
São Paulo	Itaquaquecetuba	Equipe Observando os Rios - Itaquaquecetuba	Tietê	Poor	Poor
São Paulo	Itu	Equipe Água 4	Caiacatinga	Good	Good
São Paulo	Mogi das Cruzes	Equipe Observando os Rios - Mogi das Cruzes 2	Tietê	Regular	Regular
São Paulo	Pirapora do Bom Jesus	PBJ	Tietê	Regular	Regular
São Paulo	Porto Feliz	Equipe Água 3	São Luiz	Regular	Regular
São Paulo	Salto	GE Tapera 215º	Piray	Regular	Good
São Paulo	Salto	GE Tapera 2	Tietê	Regular	Regular
São Paulo	Salto	Voluntários Ypê	Jundiaí	Regular	Regular
São Paulo	São Paulo	A Voz dos Rios	Pinheiros	Very Poor	Very Poor
São Paulo	São Paulo	A Voz dos Rios 2	Pinheiros	Very Poor	Very Poor
São Paulo	São Paulo	A Voz dos Rios 3	Pinheiros	Very Poor	Very Poor
São Paulo	São Paulo	Colégio Magno	Congonhas	Regular	Regular
São Paulo	São Paulo	Colégio Mater Dei	Sapateiro (Lago do Parque Ibirapuera)	Good	Regular
São Paulo	São Paulo	Ecobairros Vila Beatriz, Vila Ida e Vila Jataí	Corujas	Regular	Regular
São Paulo	São Paulo	Insper 1	Sapateiro	Regular	Good
São Paulo	São Paulo	Insper2	Sapateiro	Regular	Regular
São Paulo	São Paulo	Instituto Reciclando Vidas	José Gladiador	Poor	Poor
São Paulo	São Paulo	Moradores do Riacho Água Podre	Água Podre	Poor	Poor
São Paulo	São Paulo	Ocupe e Abrace (Praça da Nascente)	Água Preta	Regular	Regular

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI 2021	WQI 2022
São Paulo	São Paulo	Ocupe e Abrace 2	Água Preta	Regular	Regular
São Paulo	São Paulo	UniSant'Anna	Tietê	Poor	Poor
São Paulo	São Sebastião	Ascam	Cambury	Regular	Regular
São Paulo	São Sebastião	Desengarrafando Mentes	Maresias	Regular	Poor
São Paulo	São Sebastião	Sociedade Educacional Raízes	Boiçucanga	Poor	Poor
São Paulo	São Sebastião da Grama	Fazenda Cachoeira da Grama	Água Limpa	Poor	Regular
São Paulo	São Sebastião da Grama	Fazenda Cachoeira da Grama	Recreio	Regular	Regular
São Paulo	São Sebastião da Grama	Fazenda Irarema	Grande	Regular	Good
São Paulo	São Sebastião da Grama	Fazenda Recreio	Recreio	Regular	Regular
São Paulo	São Sebastião da Grama	Fazenda Recreio	Recreio	Regular	Regular
São Paulo	São Sebastião da Grama	Fazenda Santa Alina	Grande	Regular	Regular
São Paulo	São Sebastião da Grama	Fazenda Santa Alina	Onça	Regular	Regular
São Paulo	São Sebastião da Grama	São Domingos	São Domingos	Regular	Regular
São Paulo	São Sebastião da Grama	Vale San Juan	São Domingos	Regular	Regular
São Paulo	Sorocaba	REA Unesp Sorocaba	Sorocaba	Regular	Regular
São Paulo	Suzano	Equipe Obervando os Rios - Suzano	Tietê	Poor	Poor
São Paulo	Suzano	Rotary Suzano e Amigos 1	Balainho	Regular	Good
São Paulo	Suzano	Rotary Suzano e Amigos 2	Balainho	Regular	Good
São Paulo	Tietê	CIREPEM	Tietê	Regular	Regular

Comparison of results, with total and percentage numbers, according to the average water quality measured in 2021 and 2022

Results	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	7	6.6%	8	7.5%
REGULAR	75	70.8%	80	75.5%
POOR	21	19.8%	15	14.2%
VERY POOR	3	2.8%	3	2.8%
TOTAL	106	100.0%	106	100.0%

Alagoas

Comparison of results, with total and percentage numbers, according to the average water quality measured in 2021 and 2022 in the state of Alagoas

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	6	100.0%	6	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	6	100.0%	6	100.0%

Comparison of results in monitoring points in the state of Alagoas based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Alagoas	Coruripe	Instituto Amigos da Natureza - INAN	Coruripe	Regular	Regular
	Coruripe	Instituto Amigos da Natureza - INAN	Adriana	Regular	Regular
	Coruripe	Instituto Amigos da Natureza - INAN	Piauí	Regular	Regular
	Maceió	Instituto Biota de Conservação	Doce	Regular	Regular
	Maceió	Secretaria do Meio Ambiente e Recursos Hídricos -SEMARH	Pratagy	Regular	Regular
	Penedo	Universidade Federal de Alagoas - UFAL - PENEDO	São Francisco	Regular	Regular

Ceará

Comparison of results, with total and percentage numbers, according to the average water quality measured in 2021 and 2022 in the state of Ceará

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	2	100.0%	2	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	2	100.0%	2	100.0%

Comparison of results in monitoring points in the state of Ceará based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Ceará	Fortaleza	Ambienteia Consultoria Ambiental	Maceió	Regular	Regular
	Fortaleza	Grupo Rio Ceará	Ceará	Regular	Regular

Espírito Santo

Comparison of results, with total and percentage numbers, according to the average water quality measured in 2021 and 2022 in the state of Espírito Santo

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	1	100.0%	0	0.0%
REGULAR	0	0.0%	1	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	1	100.0%	1	100.0%

Comparison of results in monitoring points in the state of Espírito Santo based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Espírito Santo	Domingos Martins	Coletivo Formate - 02	Biriricas	Good	Regular

Mato Grosso do Sul

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Mato Grosso do Sul

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	2	100.0%	2	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	2	100.0%	2	100.0%

Comparison of results in monitoring points in the state of Mato Grosso do Sul based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Mato Grosso do Sul	Bodoquena	Departamento Municipal de Meio Ambiente _ 01	Campina	Regular	Regular
	Bodoquena	Departamento Municipal de Meio Ambiente _ 02	João Augusto	Regular	Regular

Minas Gerais

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Minas Gerais

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	0	0.0%	1	100.0%
POOR	1	100.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	1	100.0%	1	100.0%

Comparison of results in monitoring points in the state of Minas Gerais based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Minas Gerais	Belo Horizonte	Grupo Bonsucesso	Bonsucesso (afluente do Arrudas)	Poor	Regular

Paraíba

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Paraíba

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	2	66.7%	3	100.0%
POOR	1	33.3%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	3	100.0%	3	100.0%

Comparison of results in monitoring points in the state of Paraíba based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Paraíba	João Pessoa	Congregação Holística da Paraíba - Escola Viva Olho do Tempo	Gramame	Poor	Regular
	João Pessoa	Sanhauá em Águas Limpas	Sanhauá	Regular	Regular
	Rio Tinto	Fundação Mamíferos Aquáticos 2	Mamanguape	Regular	Regular

Paraná

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Paraná

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	1	100.0%	1	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	1	100.0%	1	100.0%

Comparison of results in monitoring points in the state of Paraná based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Paraná	Curitiba	O Bacacheri	Bacacheri	Regular	Regular

Pernambuco

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Pernambuco

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	1	20.0%	4	80.0%
POOR	4	80.0%	1	20.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	5	100.0%	5	100.0%

Comparison of results in monitoring points in the state of Pernabmbuco based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Pernam-buco	Limoeiro	Amatur	Capibaribe	Poor	Regular
	Olinda	Espaço Ciência Chico Science	Beberibe	Regular	Regular
	Paudalho	EREM HB Observando o Capiba-ribe - Paudalho	Capibaribe	Poor	Poor
	Recife	Fundação Mamíferos Aquáticos	Capibaribe	Poor	Regular
	Recife	Instituto Bioma Brasil	Capibaribe	Poor	Regular

Piauí

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Piauí

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	3	100.0%	3	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	3	100.0%	3	100.0%

Comparison of results in monitoring points in the state of Piauí based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Piauí	Teresina	Dois Rios	Poti	Regular	Regular
	Teresina	Olhos do Poti	Poti	Regular	Regular
	Teresina	SANEAR	Parnaíba	Regular	Regular

Rio de Janeiro

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Rio de Janeiro

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	1	10.0%	0	0.0%
REGULAR	8	80.0%	9	90.0%
POOR	1	10.0%	1	10.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	10	100.0%	10	100.0%

Comparison of results in monitoring points in the state of Rio de Janeiro based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Rio de Janeiro	Itaocara	Projeto Piabanha 1	Paraíba do Sul	Good	Regular
	Itaocara	Projeto Piabanha 2	Paraíba do Sul	Poor	Poor
	Itaocara	Projeto Piabanha 3	Paraíba do Sul	Regular	Regular
	Rio de Janeiro	IFRJ - MAMigos	Joana (Remanescente)	Regular	Regular
	Rio de Janeiro	Parque Estadual do Grajaú	Perdido	Regular	Regular
	Rio de Janeiro	Rio da Barra	Barra	Regular	Regular
	Rio de Janeiro	Rio do Rio	Carioca	Regular	Regular
	Rio de Janeiro	Rio do Rio 2	Carioca	Regular	Regular
	Rio de Janeiro	Rio do Rio 3	Carioca	Regular	Regular
	Rio de Janeiro	Voluntários PNT Rio Tijuca	Tijuca	Regular	Regular

Rio Grande do Norte

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Rio Grande do Norte

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	1	100.0%	1	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	1	100.0%	1	100.0%

Comparison of results in monitoring points in the state of Rio Grande do Norte based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Rio Grande do Norte	Natal	Gamboa do Jaguaribe	Jaguaribe	Regular	Regular

Rio Grande do Sul

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Rio Grande do Sul

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	1	11.1%	1	11.1%
REGULAR	4	44.4%	4	44.4%
POOR	4	44.4%	4	44.4%
VERY POOR	0	0.0%	0	0.0%
TOTAL	9	100.0%	9	100.0%

Comparison of results in monitoring points in the state of Rio Grande do Sul based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Rio Grande do Sul	Canoas	Grupo SOS Bacia do Gravataí	Garças	Regular	Regular
	Canoas	SOS Bacia Rio Gravataí	Gravataí	Regular	Regular
	Dois Irmãos	EETQAW & DMAPM	Feitoria	Poor	Poor
	Dois Irmãos	Sinos Portão & Caí - Dois Irmãos_02	Feitoria	Poor	Poor
	Lindolfo Collor	Arroio Serraria	Serraria	Good	Good
	Portão	EMEF Visconde de Mauá	Noque	Poor	Poor
	Portão	Sinos Portão & Caí 01	Portão	Poor	Poor
	São Leopoldo	Grupo Escoteiro João de Barro 172/RS	Sinos	Regular	Regular
	São Leopoldo	Grupo Sinos São Leo _ 02	Sinos	Regular	Regular

Santa Catarina

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Santa Catarina

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	1	33.3%	1	33.3%
REGULAR	2	66.7%	2	66.7%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	3	100.0%	3	100.0%

Comparison of results in monitoring points in the state of Santa Catarina based on analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Santa Catarina	Florianópolis	Capivari	Capivari	Regular	Regular
	Florianópolis	Tavares 1	Tavares	Good	Good
	Florianópolis	Tavares 2	Tavares	Regular	Regular

São Paulo

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of São Paulo

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	3	5.6%	6	11.1%
REGULAR	38	70.4%	36	66.7%
POOR	10	18.5%	9	16.7%
VERY POOR	3	5.6%	3	5.6%
TOTAL	54	100.0%	54	100.0%

Comparison of results at monitoring points in the state of Sao Paulo with analyses conducted in 2021 and 2022

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
São Paulo	Amparo	Voluntários Ypê 1	Camanducaia	Regular	Regular
	Aparecida	Paraíba do Sul - Beira Rio - Aparecida	Paraíba do Sul	Poor	Regular
	Aparecida	Paraíba do Sul - Porto Itaguaçu - Aparecida	Paraíba do Sul	Regular	Regular
	Barra Bonita	SESI Barra Bonita	Tietê	Regular	Regular
	Cabreúva	Projeto Observando o Ribeirão Cabreúva	Cabreúva	Regular	Regular
	Campinas	Voluntários Ypê - Campinas 1	Anhumas	Regular	Regular
	Campinas	Voluntários Ypê - Campinas 2	Anhumas	Poor	Poor
	Embu	Sociedade Ecológica Amigos de Embu -SEAE	Ressaca	Regular	Regular
	Embu Guaçu	Associação Aramitan	Santa Rita (Congonhal)	Regular	Regular
	Guaratinguetá	Paraíba do Sul - Guaratinguetá	Paraíba do Sul	Regular	Regular
	Guarulhos	Observando O Tietê - Guarulhos	Tietê	Poor	Poor
	Ilhabela	IIS / AMAB Sul	Meio (Curral)	Regular	Regular
	Ilhabela	IIS / EE Dr. Gabriel Ribeiro dos Santos	Itaguaçu / Itaquanduba	Regular	Regular
	Ilhabela	IIS / Instituto Tiê	Paquera (Fórum)	Good	Regular

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
São Paulo	Itapecerica da Serra	Biblioteca Popular de Itaquaciara Dona Nélida - BIPI	Itaquaciara	Regular	Regular
	Itaquaquecetuba	Equipe Observando os Rios - Itaquaquecetuba	Tietê	Poor	Poor
	Itu	Equipe Água 4	Caiacatinga	Good	Good
	Mogi das Cruzes	Equipe Observando os Rios - Mogi das Cruzes 2	Tietê	Regular	Regular
	Pirapora do Bom Jesus	PBJ	Tietê	Regular	Regular
	Porto Feliz	Equipe Água 3	São Luiz	Regular	Regular
	Salto	GE Tapera 215º	Piray	Regular	Good
	Salto	GE Tapera 2	Tietê	Regular	Regular
	Salto	Voluntários Ypê	Jundiaí	Regular	Regular
	Salto	Voluntários Ypê	Jundiaí	Regular	Regular
	São Paulo	A Voz dos Rios	Pinheiros	Very Poor	Very Poor
	São Paulo	A Voz dos Rios 2	Pinheiros	Very Poor	Very Poor
	São Paulo	A Voz dos Rios 3	Pinheiros	Very Poor	Very Poor
	São Paulo	Colégio Magno	Congonhas	Regular	Regular
	São Paulo	Colégio Mater Dei	Sapateiro (Lago do Parque Ibirapuera)	Good	Regular
	São Paulo	Ecobairros Vila Beatriz, Vila Ida e Vila Jataí	Corujas	Regular	Regular
	São Paulo	Insper 1	Sapateiro	Regular	Good
	São Paulo	Insper 2	Sapateiro	Regular	Regular
	São Paulo	Instituto Reciclando Vidas	José Gladiador	Poor	Poor
	São Paulo	Moradores do Riacho Água Podre	Água Podre	Poor	Poor
	São Paulo	Ocupe e Abrace (Praça da Nascente)	Água Preta	Regular	Regular
	São Paulo	Ocupe e Abrace 2	Água Preta	Regular	Regular
	São Paulo	UniSant'Anna	Tietê	Poor	Poor
	São Sebastião	Ascam	Cambury	Regular	Regular
	São Sebastião	Desengarrafando Mentes	Maresias	Regular	Poor
	São Sebastião	Sociedade Educacional Raízes	Boiçucanga	Poor	Poor

STATE	MUNICIPALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
São Paulo	São Sebastião da Grama	Fazenda Cachoeira da Grama	Água Limpa	Poor	Regular
	São Sebastião da Grama	Fazenda Cachoeira da Grama	Recreio	Regular	Regular
	São Sebastião da Grama	Fazenda Irarema	Grande	Regular	Good
	São Sebastião da Grama	Fazenda Recreio	Recreio	Regular	Regular
	São Sebastião da Grama	Fazenda Santa Alina	Grande	Regular	Regular
	São Sebastião da Grama	Fazenda Santa Alina	Onça	Regular	Regular
	São Sebastião da Grama	São Domingos	São Domingos	Regular	Regular
	São Sebastião da Grama	Vale San Juan	São Domingos	Regular	Regular
	Sorocaba	REA Unesp Sorocaba	Sorocaba	Regular	Regular
	Suzano	Equipe Obervando os Rios - Suzano	Tietê	Poor	Poor
	Suzano	Rotary Suzano e Amigos 1	Balainho	Regular	Good
	Suzano	Rotary Suzano e Amigos 2	Balainho	Regular	Good
	Tietê	CIREPEM	Tietê	Regular	Regular

Sergipe

Comparison of results, with total and percentage numbers, according to the average of water quality measured in 2021 and 2022 in the state of Sergipe

RESULTS	2021		2022	
EXCELLENT	0	0.0%	0	0.0%
GOOD	0	0.0%	0	0.0%
REGULAR	5	100.0%	5	100.0%
POOR	0	0.0%	0	0.0%
VERY POOR	0	0.0%	0	0.0%
TOTAL	5	100.0%	5	100.0%

Comparison of results at monitoring points in the state of Sergipe with analyses conducted in 2021 and 2022

STATE	MUNICI-PALITY	GROUP	MONITORING POINT	WQI	
				2021	2022
Sergipe	Aracaju	Cajueiro	Poxim	Regular	Regular
	Aracaju	Capitania dos Portos de Sergipe	Sergipe	Regular	Regular
	Aracaju	Fundação Mamíferos Aquáticos	Vaza Barris	Regular	Regular
	Nossa Senhora do Socorro	Orlinha do São Brás	Sal	Regular	Regular
	São Cristóvão	UFS São Cristovão	Poxim	Regular	Regular

09 Data dissemination – using the press and social media

The data collected by volunteer groups participating in the Observing the Rivers project is critical to our work. The media's support in disseminating this information is crucial to ensuring that a broader section of society can access and understand the results.

Water is a crucial issue in our daily lives, and it is imperative to understand not only how to use this resource efficiently, but its relationship to healthy ecosystems. The work of journalists in helping SOS Mata Atlântica communicate environmental issues and provide information about water is essential.

SOS Mata Atlântica has a dedicated communications team and press office to engage with various media outlets. This ensures a relationship

between the foundation's technical staff and information disseminators, allowing technical data to be properly understood by journalists and passed on to the community as clearly as possible.

According to a survey conducted in 2022, there were over 420 reports and media insertions across various outlets about the Clean Water Cause and the Observing the Rivers project.

In addition to working with the media, SOS Mata Atlântica also uses social media platforms to disseminate information about its water-related projects. As of the latest count, posts related to the Observing the Rivers project and the Clean Water Cause on SOS Mata Atlântica's profiles on Instagram, Facebook, Twitter, LinkedIn, and TikTok reached over 530,000 people. Significant posts include a new series called "River Correspondents," which began in late 2022 and reached over 43,000 people on Instagram on November 24, 2022 – https://www.instagram.com/p/ClWOIhYMPaR/, and a post in partnership with "Periferia em Movimento," which reached over 21,000 people on Instagram alone - https://www.instagram.com/p/ClhVSnsJWqT/.

10 Engagement and Mobilization to Foster Political Participation

Volunteer group participation in environmental and water management policies

The engagement and constant presence of our volunteer groups who monitor rivers is what sets them apart. Their involvement demonstrates a strong sense of citizenship and allows us, as agents of social change, to critically examine the condition of the waters that flow through our territory.

The monthly water quality results obtained by the volunteer groups participating in the Observing the Rivers project provide a snapshot of the water quality on the day of their visit. We analyze the technical data, confirm our perceptions, verify physicochemical analyses, and assess whether they reflect the state of sanitation services, the preservation of riparian forests, the level of education of the society, and the effectiveness of public policies, among other factors.

When we share this experience with more people, such as students, neighbors, and local leaders, it amplifies the awareness that there are many issues that can be improved in a specific location. This creates a trend in which local actions and engagement are strengthened by participation, holding public administrators accountable through councils, river basin committees, forums, social movements, and complaints to environmental and water resource control agencies.

Promoting active citizenship is crucial in encouraging more people to participate in our monitoring activities, ensuring its monthly continuity. When we bring along students, neighbors, and local leaders on our routine visits to monitor rivers, we gain different perspectives and align them collectively. We stop criminalizing water bodies and understand that they are just thermometers that measure the region's general

situation. By gradually returning to a river culture, even in urban areas, we reconnect with our roots, history, and biological connection. In the end, there is only one water - our water, and we are water.

Through this report, we have the opportunity to share the stories of numerous rivers and volunteers. It conveys what thousands of individuals are experiencing, observing, aspiring for, and working towards.

To accurately tell the story of a river through its water quality, it is essential to accumulate monthly results throughout an annual cycle. This is because quality indicators can naturally vary due to seasonal changes such as winter, summer, rain, drought, cold, and heat. Additionally, human actions such as maintenance activities, ongoing works, and plantations can also impact water quality. The river is a "living organism," and what it tells us can significantly vary every month. By witnessing these seasonal variations, we gain credibility in the methodology and experience of each water quality monitoring group

We acknowledge the challenges associated with maintaining long-term volunteer initiatives with active engagement. Nevertheless, we appreciate and commend the dedication of all volunteer groups for their contributions towards gathering data to develop a comprehensive understanding of the rivers in the Atlantic Forest region. We value every piece of information and encourage each group to increase the frequency of their analyses. This will enhance the local actions and network of each group, providing more insights and interaction with the prevailing situation in each area. Consequently, we will have a more robust supply of seasonal data, helping us to promote better river basin projects and generate reports with more accurate data for each river. Such efforts strengthen the Clean Water movement and promote environmental health.

Given the importance of producing monthly data, we would like to highlight some volunteer groups who were able to complete a large volume of analyses in this 2022 cycle, and were able to record results for 9 to 11 months. The following groups are acknowledged for their efforts:

- Instituto Federal de Alagoas (IFAL) - AL
- Instituto Biota de Conservação - AL
- Universidade do Estado da Bahia (UNEB) - BA
- Amatur - PE
- Projeto Piabanha - RJ
- Rio da Barra - RJ
- Voluntários PNT Rio Tijuca - RJ
- Gamboa do Jaguaribe - RN
- Grupo SOS Bacia do Gravataí - RS
- Arroio Serraria - RS
- EMEF Visconde de Mauá - RS
- Sinos Portão & Caí 01 - RS

- EE Virgilio Várzea - SC
- Escola de Meio Ambiente de São José - SC
- Capitania dos Portos de Sergipe - SE
- Voluntários Ypê 1 - SP
- Paraíba do Sul - Beira Rio – Aparecida - SP
- Paraíba do Sul - Porto Itaguaçu – Aparecida - SP
- SESI Barra Bonita - SP
- Observando O Tietê – Guarulhos - SP
- IIS/AMAB Sul - SP
- IIS/Instituto Tiê - SP
- Biblioteca Popular de Itaquaciara Dona Nélida(BIPI) - SP
- Voluntários Ypê - SP
- Insper 1 - SP
- Fazenda Cachoeira da Grama - SP
- Fazenda Recreio - SP
- São Domingos - SP
- Vale San Juan – SP

There were also groups that were able to complete the entire cycle, that is, they carried out 12 months of socio-environmental analyses, helping to foster deep conversations and greater understanding of the river and its messages. Below is a list of the groups that completed the full 12-month cycle:

- Instituto Amigos da Natureza (INAN) - AL
- Secretaria do Meio Ambiente e Recursos Hídricos (SEMARH) - AL
- Parque Estadual do Grajaú - RJ
- Tavares - SC
- Projeto Observando o Ribeirão Cabreúva - SP
- Paraíba do Sul – Guaratinguetá - SP
- REA Unesp Sorocaba – SP

We would like to extend our deepest gratitude to all the volunteers who participate in our monitoring groups. We especially thank those who have dedicated their time and effort in trusting our methodology, forming partnerships, and working consistently to achieve collective engagement and structural changes that improve social and environmental conditions. If we continue to improve our practices and educate our communities, our rivers will reflect our progress. Let us continue to move forward, as there is still much work to be done in building a healthier relationship with our rivers.

11 Conclusion

Observing the Rivers continues to be a leading initiative for monitoring the water quality of Brazilian rivers through voluntary surveys carried out by society. The 2022 results indicate that the water quality of Atlantic Forest rivers still falls far below acceptable levels, with less than 10% of analyzed points presenting good water quality and none achieving excellent quality.

Roughly 20% of points had poor or very poor water quality, while 75% fell into the regular quality range. While there were some localized improvements and deterioration in water quality, little changed compared to the previous monitoring period.

Amid the constraints brought about by the Covid-19 pandemic, our volunteer monitoring groups resumed their involvement with the Clean Water movement. Despite the challenges posed by restrictions, they managed to collect and analyze water samples gradually while adhering to safety protocols.

Our ultimate goal is to establish access to Clean Water as a fundamental human right for all Brazilians. To achieve this, we have worked with our volunteer network for Observing the Rivers and other partners to support the Constitutional Amendment Proposal (PEC nº 06/2021) currently under consideration in the House of Representatives. The success of this proposal and the realization of Clean Water as a fundamental right for all will require the implementation of consistent and long-term public policies, environmental sanitation projects, and watershed conservation projects across Brazil.

Climate change is causing water crises in different regions of Brazil, increasing pressure on water availability, but the country has experienced the dismantling of its environmental policies in the last four years, with serious consequences. However, there is hope that this trend will be reversed in the coming years.

As we continue our efforts to strengthen the National Water Resources System and increase society's participation in Watershed Committees to eliminate Class 4 rivers from the country's water quality standards, it is also crucial to prevent any further damage to Brazil's environmental laws. This can be achieved by opposing Bills in the National Congress and actions taken by state governments that may further endanger natural resources in Brazil.

We are confident that this decade of restoration will provide us with a sense of connection and renewed energy to prevent further setbacks in 2023 and work towards rebuilding Brazil's environmental policy.

Now more than ever, it is essential to prioritize Clean Water, the climate, and the environment in Brazil's strategic agenda.

The Water Quality Indexes obtained from the river stretches of Atlantic Forest watersheds demonstrate that we have yet to meet society's true needs and achieve a development model that prioritizes both the present and the future.

In light of the climate emergency and the pressing need for water security, it is imperative that we move beyond regressive agendas and science denial that undermine both the environment and society's involvement in public policies.

The rivers we monitor reflect the urgent need for actions focused on forest restoration, the provision of basic sanitation services, and fulfilling Brazil's climate and governance commitments in an inclusive and participatory manner.

12 References

STANDARD methods for the examination of water and wastewater. 23rd. Washington, American Public Health Association, 2017.

BRASIL. Ministério do Meio Ambiente. CONAMA. Resolução nº 357, de 17 de março de 2005. Dispõe sobre a classificação dos corpos de água e diretrizes ambientais para o seu enquadramento, bem como estabelece as condições e padrões de lançamento de efluentes, e dá outras providências. **Diário Oficial da União:** seção 1, Brasília, DF, ano 142, n. 53, p. 58-63, 18 mar. 2005. Disponível em: http://conama.mma.gov.br/atos-normativos-sistema. Acesso em: 06 mar. 2023.

BRANCO, Samuel Murgel. **Água:** origem, uso e preservação. São Paulo: Moderna, 1993. (Coleção Polêmica, 47).

BRANDÃO, C. J.; BOTELHO, M. J. C; SATO, M. I. Z.; LAMPARELLI, M. C. (org.). **Guia nacional de coleta e preservação de amostras:** água, sedimento, comunidades aquáticas e efluentes líquidos. São Paulo: CETESB; Brasília: ANA, 2011. Disponível em: http://www.clean.com.br/downloads/Guia_Nacional_de_Coleta_e_Preservacao_de_Amostras_.pdf. Acesso em: 06 mar. 2023.

OTSUKA, A. A.; ATTILI-ANGELIS, D.; MORALES, M. A. M.; ANGELIS, D. F. Microrganismos também existem nas águas: por que precisamos conhece-los? **Boletim das Águas**, Edição 2015. Disponível em https://conexaoagua.mpf.mp.br/arquivos/artigos-cientificos/2016/11-microrganismos-tambem-existem-nas-aguas-por-que-precisamos-conhece-los.pdf. Acesso em: 07 mar. 2023.

ROCHA, A. A.; VIOLINI, F. G.; MANTOVANI, M.; RIBEIRO, M. L.; BRANCO, S. M. **Observando o Tietê**. São Paulo: Fundação SOS Mata Atlântica, 2004.

SMITH, D. Culture collections. **Advances in Applied Microbiology.** Academic Press, v. 79, p. 73-118. 2012. DOI: https://doi.org/10.1016/B978-0-12-394318-7.00004-8. Disponível em: https://www.sciencedirect.com/science/article/abs/pii/B9780123943187000048?via%3Dihub. Acesso em 07 mar. 2023.

The SOS Mata Atlântica Foundation is a Brazilian non-profit environmental organization with no political or religious affiliations. It works to promote public policies and protect the Altantic Forest through biome monitoring, research studies, pilot projects, and dialogue with both public and private sectors. It is committed to improving environmental legislation and engaging society in public outreach to protect the Atlantic Forest and climate, restore the forest, safeguard protected areas and ensure clean water for all.

MASTHEAD

Observing the Rivers 2023
Water Quality Portrait in Atlantic Forest Watersheds

Clean Water Cause Coordinator
Gustavo Veronesi

Writers
Gustavo Veronesi, Luís Fernando Guedes Pinto e Maria Luísa Ribeiro

Collaborators
Afra Balazina, Cesar Pegoraro, Aline Cruz e Marcelo Naufal

Image Search
Andrea Herrera

Editor
Ana Cíntia Guazzelli

Graphic Design and Layout
Rodrigo Masuda / Multitude

Translation
Janaina Ribeiro

Editorial Production
Marcelo Bolzan / Estúdio Verbo

Image Credits
Cover, p. 3, 12, 18 - Grupo IFAL/AL; p. 6, 35 - Grupo PE Grajaú/RJ; p. 8 - Grupo PNT/RJ; p. 9, 25, 57 - Grupo Insper/SP; p. 13 - esq. SOSMA, dir. Ana Almeida/SOSMA; p. 15 - Grupo EE Virgílio Várzea/SC; p. 22 - Grupo Piabinha/RJ; p. 23 - Grupo Capitania dos Portos de Sergipe/SE; p. 61, 63 - Grupo Rio da Barra/RJ

SOS MATA ATLÂNTICA
Rodovia Marechal Rondon, km 118
13300-970, Porunduva – Itu, SP

www.sosma.org.br

Produced by

Sponsored by

ONLINE

@SOSMataAtlantica

@sosma

@sosmata

@sosmataatlantica

@fundação-sos-mata-atlantica