



## Rodrigo de Freitas Lagoon

- size: 2.4m<sup>2</sup>, average depth 4m

Rodrigo de Freitas Lagoon is located between Ipanema Restinga and Leblon in the south of the city of Rio de Janeiro, Brazil, and possesses a water surface area of 2.2 km<sup>2</sup>, an average depth of 2.8 m, a perimeter of 7.8 km and an approximate water volume of 6,200,000 m<sup>3</sup>.

Water quality and therefore human health, may be significantly affected by the presence of pathogenic microorganisms originating from untreated sewage that are released into surface waters. The microbiological hazards of recreational water include bacteria, protozoa and viruses (Rees et al. 2000), although current waterborne diseases have been increasingly associated with viral contamination (Bosch et al. 2008).

Viruses present in the gastrointestinal tract of both symptomatic and asymptomatic individuals are excreted in the faeces in extremely high concentrations, ranging from 10<sup>5</sup>-10<sup>13</sup> viral particles per gram of stool (Bosch et al. 2008, Espinosa et al. 2008, Hamza et al. 2009). These particles become contaminants of urban surface waters due to the continuous discharge of domestic sewage



The high percentage (50%) of virus that was detected in the Macacos River that flows into the lagoon reveals that this river is a source of contamination that directly influences the quality of the lagoon water and contributes to the degradation of its ecosystem. The microbiological contamination of the river was also demonstrated by the high percentage of samples (83.3%) considered improper when using *E.coli* criterion.

