

Additional information

Ecosystem services

Current land (including water) use:

The pedological characteristics of the soil are propitious to natural vegetation, presenting a high degree of hydromorphism. In this site there is also a leisure zone, with catwalks, birds' observatories, a kid's park, a skate and radical sports park, an area for shows and free space.

Current communications, education and public awareness (CEPA) activities related to or benefiting the site

Presently, the Praia da Vitória Marsh is one of the places in the municipality where more environmental awareness sessions and activities are held, addressing environmental issues related to the various descriptors (water, waste, biodiversity), and arousing awareness of the importance that ecosystem in a regulatory perspective water, and its importance for resident and migratory birds. In the Marsh there is a marked ecological route and two observatories that facilitate bird watching activity. Next to the observatories there is information about the more common species. Visits can be accompanied by a guide whenever requested to the management entity.

The Marsh is located in the urban frame of the city and less than a kilometer away from an elementary, middle and high schools and a vocational school. With its high environmental valued ecosystem, the Marsh has been an excellent site for environmental education. It has held many environmental awareness sessions organized by the Municipality and solicited by schools.

Current scientific research and facilities

Since 1990 there have been many scientific papers published on the Praia da Vitória Marsh, namely inventories of the fauna and flora, ecological and hydrogeological characterization and ecosystem functioning description. Most of the works are from investigators of the University of the Azores, some of them are part of the technical team responsible for the Recovery and Classification Plan of the Praia da Vitória Marsh, dated from 1991.

The uniqueness of the Marsh has aroused the interest of many researchers and served as the basis for many studies embodied in theses to graduate, example is the work done by Miguel (2004) and Goulart (2011), Roach (2002) and Rocha (2002) to obtain a Master's degree and more recently a doctoral thesis that is taking place. Marsh's Management Entity team undergoes regular monitoring work of the environmental quality indicators, namely physical and chemical parameters of water (pH, ORP, Salinity, Conductivity and temperature) and observed and records avifauna, cross-examining the results with other observation fonts.

The recent problem of the excessive proliferation of algae, especially during seasons of higher temperatures, has led to an annual physical removal of algae. These algae have been the target of two identification studies, carried out in 2010 and 2011, concluding that species were *Gayralia oxysperma*, *Cladophora coelothrix*, *Blidingia marginata*, *Cladophora álvida*, *Cladophora hutchinsiae* and *Ulva intestinalis*.

In an attempt to let more sea water directly into the Marsh a connection was built on the other side of the Marsh, which led to better local control of the proliferation of algae. There is the perception that in order to make the ecosystem sustainable in the future a direct connection to the sea is required.

The stabilizing of a large mirror of water has created a considerable ictiofauna community which was also studied by a specialized team of investigators from the University of the Azores.

There have been records of the sightings of avifauna species considered to be very rare in several specialized sites (www.birding.azores.com; www.azores.avesdeportugal.info; www.azoresbs.weebly.com). These species were from European and American origin, which shows us that the Marsh serves not only locals but also a specific niche for tourism: national and international Birdwatching. With this in mind, several

infrastructures were built to support and stimulate this activity, such as observatories and information boards with basic information about the existent flora and avifauna.

Current recreation and tourism

The site is located in the urban centre of the city of Praia da Vitória, the second city of the island, to which is associated a landscape, bathing areas and history of excellence. Besides, the Praia da Vitória Marsh, as with the other marsh in the county, is considered by the international birdwatchers community to be a hotspot for avifauna observation, being especially interesting the junction of American and European species, species whose records of sightings are in the various specialty websites. Is that frequent and numerous record that reinforces the importance of Paul as a hotspot for nationally and internationally. Birdwatching. The record sightings of species of birds can be found at various sites (www.birding.azores.com; www.azores.avesdeportugal.info; www.azoresbs.weebly.com).

Inside of the Praia da Vitória Marsh there is an area for entertainment shows throughout the year, especially during the Municipality's Festivities in the summer.

Current management practices

At the same time that many studies were being developed to the area, several interventions were made in the site. First, the excavation of a contiguous area, although not communicant, with the small glass of water that survived the embankment of the old marsh, in order to study the ecosystem's reaction to the projected intervention.

The new glass of water reacted apparently well and at the end of a week it was perfectly stabilized (which was demonstrated by the chemical analysis of the water that demonstrated similar characteristics to the old glass of water). The Praia da Vitória Municipality ordered the opening of a second area of the old marsh of greater dimensions than the first one and the result was similar in terms of water characteristics. In 2005, the Praia da Vitória Marsh recovery was integrated in the contract for the "renewal and extension of the Praia da Vitória marginal and environmental/touristic park of the Marsh". The project included the recovery of part of the wetland as basis for a site that one expects to respect its natural vocation and at the same time to serve the needs of the human community that is in contact with nature. Therefore, three distinct zones were defined within the Marsh's site. A zone restrict to human presence and that potentiates the existence of the marsh ecosystem in a more complete way; an intermediate zone where human presence is allowed in less disturbing activities for the ecosystem; and a zone where people can walk freely and enjoy the radical sports and skate parks, playground, and a area for the city's festivities with marsh ecosystem surroundings. The amount of water present in the no-human zone is larger than in the playgrounds. Nevertheless, the existence of water helps the existence of a salinity gradient in the body of water (which nourishes biodiversity), frames the different valences and keeps the ecosystem present.

Once the excavation and terrain modeling works were over, in 2009, began the systematic monitoring of the ecosystem.

Since 2009, exists and is put is implemented a plan for monitoring water quality and the presence of birds in Paul da Praia da Vitória, which calls the measurement, three times a week, using a portable meter of the parameters pH, ORP, Temperature, Conductivity and Salinity.

In addition, the regular monitoring is confirmed by laboratory analyzes often biennial. Laboratory analyzes include also the measure of CBO (Biochemical Oxygen Demand), CQO (Chemical Oxygen Demand), Kedjal Nitrogen and Total Phosphorus.

Sightings of birds are compared and supplemented with the entries made in the specialty websites for the same data.

In two years now, has been implemented a plan to physical removal of algae as a way to control the excessive proliferation of those organisms. The operation constitutes in the removal of algae which are pulled out of water. After it dry, are forwarded to the composting of green materials implemented by the Municipality.

On the banks of the lake have been enhanced installation of native vegetation through the seed (the case of reeds) and the minimal intrusion of space just to eliminate weeds. The management of vegetation in the remaining space is made by cutting its regular monthly or bimonthly depending on the growth rate except for the spring time of year that widens the gap between cuts to allow flowering and thus facilitate the identification of flora existing.

The entry of domestic animals (dogs and cats) and this information is conditioned as well as all other aspects of the code of conduct are posted at the main entrances into the park.

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Conventions

- Convenção de Berna - Vida Selvagem e do Ambiente Natural na Europa de 19 de Setembro de 1979.
- Decreto-Lei nº 316/89, de 22 de Setembro – Regulamenta a aplicação da Convenção de Berna.
- Convenção de Bona - Espécies Migradoras Pertencentes à Fauna Selvagem.

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- Decreto-Lei n.º 103/80, de 11 de Outubro - Aprova para ratificação a Convenção de Bonn.
 - Convenção de Washington (CITES) - Comércio Internacional das Espécies de Fauna e Flora Selvagens Ameaçadas de Extinção de 3 de Março de 1973.
 - Decreto-Lei n.º 114/90, de 5 de Abril – Promove a aplicação da Convenção de Washington.

Legislation

- Diretiva 2000/60/CE, do Parlamento Europeu e do Conselho, de 23 de Outubro - estabelece um quadro de ação comunitária no domínio da política da água.
- Diretiva do Conselho n.º 79/409/CEE, de 2 de Abril. Conservação de aves selvagens (Directiva Aves).
- Diretiva do Conselho n.º 92/43/CEE, de 21 de Maio. Preservação dos habitats naturais e da fauna e da flora selvagens (Directiva Habitats).