



What is Clean Coast Bonaire?

Clean Coast Bonaire has been initiated to implement a Marine Litter Monitoring Program at designated beaches on Bonaire. The project is funded by The World Wide Fund for Nature in the Netherlands and supported by a local organization on Bonaire called, Boneiru Duradero (Sustainable Bonaire). Seven Seas Care is in charge of project implementation.

Although various organizations and individuals are conducting beach clean ups, there is no unified data collection protocol in place. Clean Coast Bonaire will recruit and train volunteers to complete monthly surveys in accordance with OSPAR methodology. Volunteer citizen science recruitment will target both local residents as well as visiting eco-tourists.

The goals are to:

- Remove litter from coastline
- Identify litter sources
- Evaluate the amount and type present in our seas
- Provide systematically collected and consistent evidence to decision makers to take action

What is OSPAR?

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention” – from the former Oslo and Paris commissions) was entered into force in 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

The goals of the Convention are:

- **Prevention and elimination** of pollution (from land-based sources, by dumping or incineration and from offshore sources)
- **Assessment** of the quality of the marine environment
- **Protection and conservation** of the ecosystems and biological diversity of the maritime area

In June 2017, the United Nations Conference to Support the Implementation of Sustainable Development Goal 14, OSPAR Commission (OSPAR) and the Cartagena Convention (CEP) registered a voluntary commitment to collaborate across the Atlantic. Several initial areas for cooperation among the Wider Caribbean Region and the North-East Atlantic have been identified where OSPAR and CEP can partner to provide technical and programmatic support to member states.

What is the OSPAR marine Litter Monitoring Program?

The Marine Litter Monitoring Program was developed by OSPAR in 2000 to provide a system to scientifically collect information regarding marine litter. It is used to monitor and identify trends in the occurrence of marine litter on beaches and provides a basis for marine management decisions and policy development. It has proven to be an effective tool in accomplishing the following goals:

- Provide a **standardized** methodology to collect data on marine litter on beaches
- Provide a basis for assessing trends in the **quantities** and **significance** of litter
- Provide a **feasible** approach and a **cost-effective** means to monitor marine litter on beaches – quantities, composition and trends

For years, there have been many beach litter programs used successfully worldwide. However, the problem has been the lack of standardisation and compatibility between methods used and results obtained in these projects. That has made it difficult to compare data from different regions and to make an overall assessment of the marine litter pollution situation.

The OSPAR Project on Monitoring Marine Beach Litter was the first, effective, long-term and region-wide attempt in Europe to develop a method for monitoring marine litter on beaches and to assess presence of marine litter on the beaches in the OSPAR region.

The program is recognized by global policy makers and survey data provided by OSPAR was influential in recent marine litter reduction policies enacted in the EU. These new regulations include bans of several single-use plastic items as well as requiring industry producers to help cover the costs of waste management and clean-up.

What is Marine Litter?

An internationally agreed definition of the concept of marine litter (marine debris) has recently been established by the United Nations. According to this definition, marine litter (marine debris) "is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment". The OSPAR Marine Litter Monitoring survey protocol includes 107 different marine litter items of all sizes, divided into in 11 major groups of materials, or specific uses, or other characteristics:

- Plastic/polystyrene
- Metal
- Paper and cardboard
- Wood
- Sanitary waste
- Cloth
- Rubber
- Glass
- Pottery/ceramics
- Medical waste
- Faeces

What is the impact of marine litter?

Global studies have shown that marine litter harms the economy, society and environment of coastal areas in different ways.



Environment: Marine litter creates a range of growing pressures on marine ecosystems and biodiversity – e.g. plastic bags and abandoned nets pose risks to turtles, dolphins and seals.

Public finances: Marine litter creates an economic burden on local authorities through clean-up costs, and potential loss of income from tourism and recreation activities.

Economic: Plastic waste represents a loss of material value to the economy. Marine litter can also create economic pressures on the shipping sector (fouled motors, lost output and repair costs), fishing ('ghost fishing' by lost and discarded nets), and tourism (loss of revenues).

Social: Marine litter creates risks to human health, via injuries and accidents, through the release of chemical substances (some potentially endocrine disrupting substances and carcinogens) and also through ingestion of micro plastics. An average European shellfish consumer could ingest up to 11,000 pieces of microplastic per year by eating mussels and oysters. As filter feeds which feed on the algae present in seawater, mussels and oysters are exposed to pollutants such as microplastics in the water. We do not yet know what effect this has on our health.

UN Environment Assembly estimated the total natural capital cost to marine ecosystems of plastic littering damage at USD 13 billion per year. Across the world, plastics make up 85% of marine litter. Known hazards of marine plastic are:

- Entanglement of marine life
- Ingestion (whole & micro-plastics)
- Transportation of toxic chemicals into food chain
- Spread of invasive species

Impact on Tourism: When marine debris washes ashore, it causes serious economic effects and diminishes enjoyment of beaches. For example:

- A study in 1988 estimated that "New Jersey lost between \$379 million and \$3.6 billion in tourism and other revenue as a result of marine debris washing ashore."
- A similar study demonstrated that New York forfeited anywhere from \$950 million to \$2 billion in revenue as a result of marine debris washing ashore. This decline in economic revenue stems from tourists foregoing ventures to the beach because of its distasteful appearance.
- A South African study concluded that 10 pieces of marine debris "per meter of beach would deter 40 percent of foreign tourists."

Impact on Fishing Industry: Marine litter can lead to a reduction in catch due to entanglement (i.e. 'ghost fishing', ingestion and exposure to toxic materials.) There are risks that consumer demand will decline and prices will drop due to concern about fish quality and/or health impacts of eating seafood contaminated by microplastics. It can also lead to costs related to damage to vessels.

For example:



- The annual costs to the UK fishing sector of marine litter have been estimated at EUR 36.1 million, with annual costs to the aquaculture sector EUR 489,050 for cage clearance and EUR 916,970 for fouled propellers and intakes.
- The total cost of marine litter for the EU fishing fleet at EUR 61.7 million per year.

What is the impact of Marine Litter on Bonaire?

Visual inspection and approximate amounts from previous beach clean-ups indicate that we have a large quantity of marine litter washing ashore and being left behind by beach visitors. However, we have **no** systematically collected, consistent data available currently. As an island economy whose revenue depends upon our marine environment tourism and fishing, if the conclusions of the global studies detailed above are applied to Bonaire, the evidence suggests that we have a lot to lose if the problem of marine litter is not addressed.

Fisheries: The economic value of fisheries on Bonaire is valued at approximately \$1 million per annum.

- The reef-related total commercial fisheries are valued at almost \$400,000 annually.
- The recreational fishery value is estimated at a market value of almost \$700,000 per annum.

Tourism: In 2017, the tourism industry contributed in direct economic spending nearly US\$229 million to the local economy while the value added was approximately 20% of the economy.

- 136,000 tourists visited Bonaire by air
- 217,000 tourists visited Bonaire by cruise ship

Tourism operators on Bonaire like to promote the island as a sustainable vacation destination. Litter covered beaches do not support this image. However, when Clean Coast Bonaire implements a transparent, effective, practical and efficient beach litter removal and assessment method it will be apparent to visitors that Bonaire is working on a solution.

Sources:

Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area

OSPAR Commission, 2007: Monitoring of marine litter on beaches in the OSPAR region

OSPAR Beach Litter Monitoring in the Netherlands 2010-2015 Annual Report

TEEB Fishery Value of Coral Reefs in Bonaire



UNEP (2014) Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry

Institute for European Environmental Policy: Plastics Marine Litter and the Circular Economy - October 2016

CBS Tourism in the Caribbean Netherlands in 2016

Bonaire Strategic Tourism Plan 2017