Marine litter monitoring
Priorities and challenges

International High-level Conference Inter-basin Cooperation on Marine Litter:
a focus on the Danube River and the Black Sea
4 April 2019

Black Sea Basin Directorate

- Black Sea Basin Directorate to the Ministry of Environment and Waters was established in 2002, in accordance with Water Framework Directive 2000/60/EC and national legislation.
- Regional division of the Ministry of Environment and Waters for the Black Sea Region, based in Varna.
- Legal authority responsible for implementation of integrated water management of the Black sea river basin district including Bulgarian part of the Black sea according to Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and Floods Directive.

Marine Strategy Framework Directive 2008/56/EC

MSFD requires Member States to take the necessary measures to achieve or maintain good environmental status (GES) in the marine environment. GES must be achieved for each of these 11 ecosystem aspects - qualitative descriptors:

Figure from OSPAR

D10 - Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

Priorities

- The biggest problem with marine litter is the lack of information on determination of the sources, its movement in the basin depending on dynamics of the sea and trends regarding the status of marine litter.
- Information D10 is important because of the need to evaluate the effect of marine litter at a local and national level also at regional level.
- BSBD priority - to fill that gap of information implementing monitoring programme on D10 – Marine litter under MSFD.

Priorities

- BSBD has as a priority to fill that gap of information implementing monitoring programme on D10 and provide harmonized and comparable data for Black sea region.
- In order to that BSBD conducts monitoring on beach litter (macrolitter) on the North and South Black sea coast/beaches.
- Institute of Oceanology provides data on floating and seafloor litter in Bulgarian sector of Black sea.
- MARLEN project – Marine Litter Eutrophication and Noise assessment tools, several monitoring campaigns were conducted, new technology and best practices implemented.

Methodology

Marine litter
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- BSBD conducts monitoring programme on D10 criteria D10C1, indicator 1: beach litter > 2,5 cm (macrolitter) in 2017 and 2018.
- The measurement period - 4 seasonal campaigns in 2018, 3 in 2017.
- Target - Survey of 10 beaches for the registration and classification of the number and weight of the macrolitter, register in standardized form (protocols) in accordance to the 8 categories and their respective subcategories from *Guidance on Monitoring of Marine litter in European Seas, 2013 ,* which is a guidance document in the Common Implementation Strategy for MSFD.
- Main categories: Plastic, Rubber, Metals, Glass/ Ceramics, Textiles, Wood (processed), Paper /cardboard, Unspecified




Methodology

Marine litter
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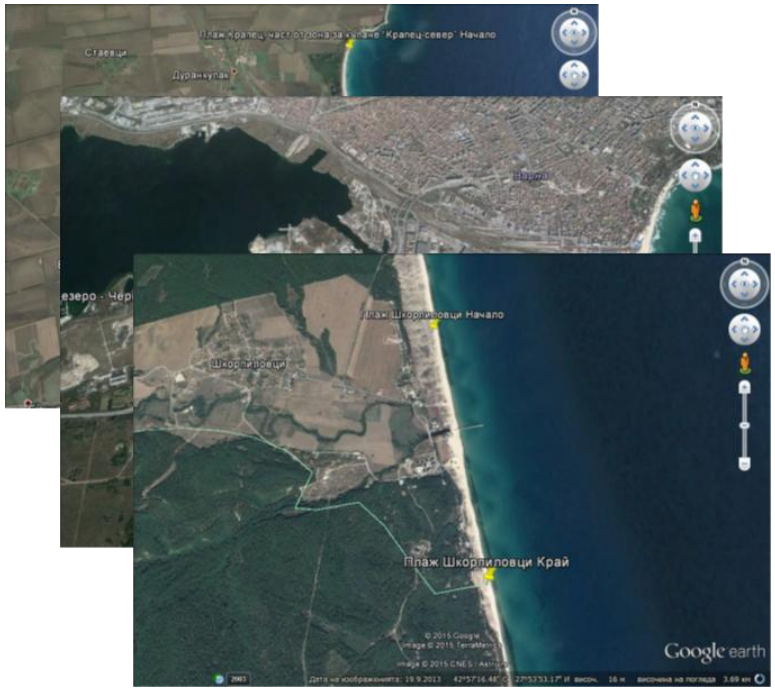
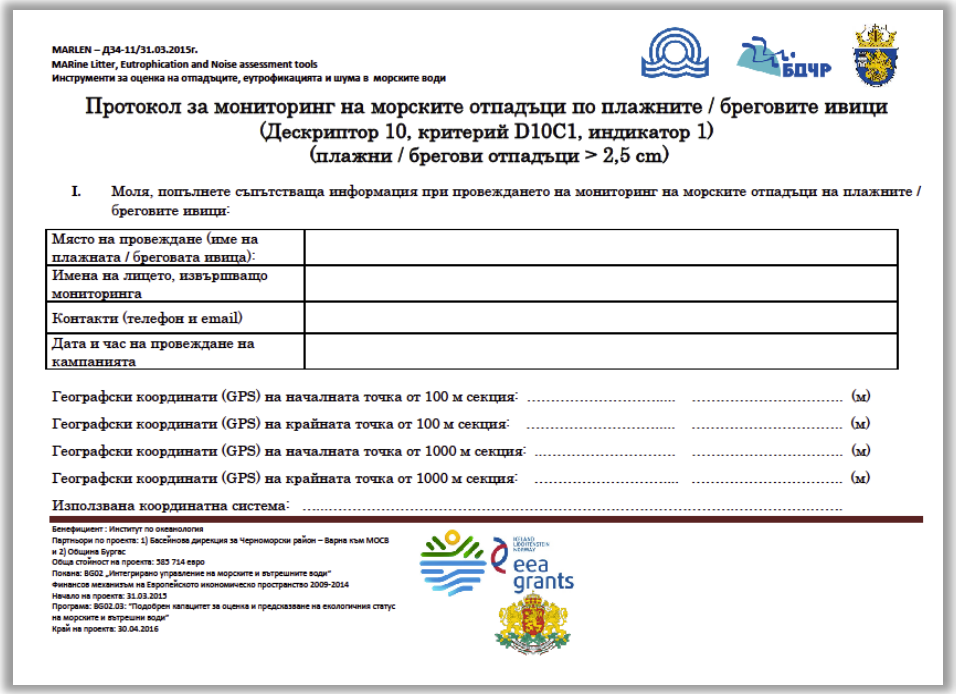
- Chosen section of 1000 m of each beach. From that section are chosen 2 sections - 100 m long.
- Register the number of all objects found (categories and subcategories) with their unique code and accompanying information in standardized monitoring protocols for each section for each of the 4 seasonal campaigns;



Methodology

Marine litter 10.

- Measure weight of individual categories (plastics, paper, textiles, etc.) and their total weight, if possible weight measurement and sub-categories;
- Importing data into a database and evolving trends in the quantity and quality of beach litter relative to the location of beaches, seasonal variation and identification of pressure sources.



MARLEN – Д34-11/31.03.2015г.
MARine Litter, Eutrophication and Noise assessment tools
Инструменти за оценка на отпадъците, еутрофикацията и шума в морските води

Протокол за мониторинг на морските отпадъци по плажните / бреговите ивици
(Дескриптор 10, критерий D10C1, индикатор 1)
(плажни / брегови отпадъци > 2,5 cm)

I. Моля, попълнете съпътстваща информация при провеждането на мониторинг на морските отпадъци на плажните / бреговите ивици:

Място на провеждане (име на плажната / бреговата ивица):	
Имена на лицето, извършващо мониторинга	
Контакти (телефон и email)	
Дата и час на провеждане на кампанията	

Географски координати (GPS) на началната точка от 100 м секция: .... (м)
Географски координати (GPS) на крайната точка от 100 м секция: .... (м)
Географски координати (GPS) на началната точка от 1000 м секция: .... (м)
Географски координати (GPS) на крайната точка от 1000 м секция: .... (м)
Използвана координатна система: .....

Бенефициент: Институт по океанология
Партньори по проекта: 1) Басейнова дирекция за Черноморски район – Варна към МОСВ и 2) Община Бургас
Обща стойност на проекта: 383 714 евро
Покана: BG02 „Интегрирано управление на морските и вътрешните води"
Финансов механизъм на Европейското икономическо пространство 2009-2014
Начало на проекта: 31.03.2015
Програма: BG02.03: "Подобрен капацитет за оценка и предсказване на екологичния статус на морските и вътрешни води"
Край на проекта: 30.04.2016

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II. Списък с основните категории и подкатегории отпадъци, срещащи се при мониторинга на плажните / бреговите ивици

Моля, попълнете следния списък, съдържащ подробно описание на основните категории и подкатегории отпадъци, които се срещнат при провеждането на мониторинг на морските отпадъци на плажните / бреговите ивици съгласно изискванията на Рамкова директива за морска стратегия и Дескриптор 10 – Морски отпадъци.
Отбележете със знак „X", подкатегориите отпадъци, които намирате, като обръщате специално внимание на различните размери на отпадъците или на частите от тях. Също така, приложете снимков материал:

TSG_ML General1- Code	OSPAR- Code	UNEP- Code	General Name	Основно име	Core/ индикаторни подкатегории	Матрица: плажна/ бregова ивица	Забележка (брой на откритите предмети)	Общ брой на предметите
Level 1 – Materials: Artificial polymer materials Ниво 1-Материали (основна категория отпадък): Изкуствени полимерни материали								
G1	1	PL05	4/6-pack yokes, six-pack rings	4/6 еднокомпонентни скоби, шест пръстена (държачи за напитки)	x			
G3	2	PL07	Shopping Bags incl. pieces					

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Results

Marine litter

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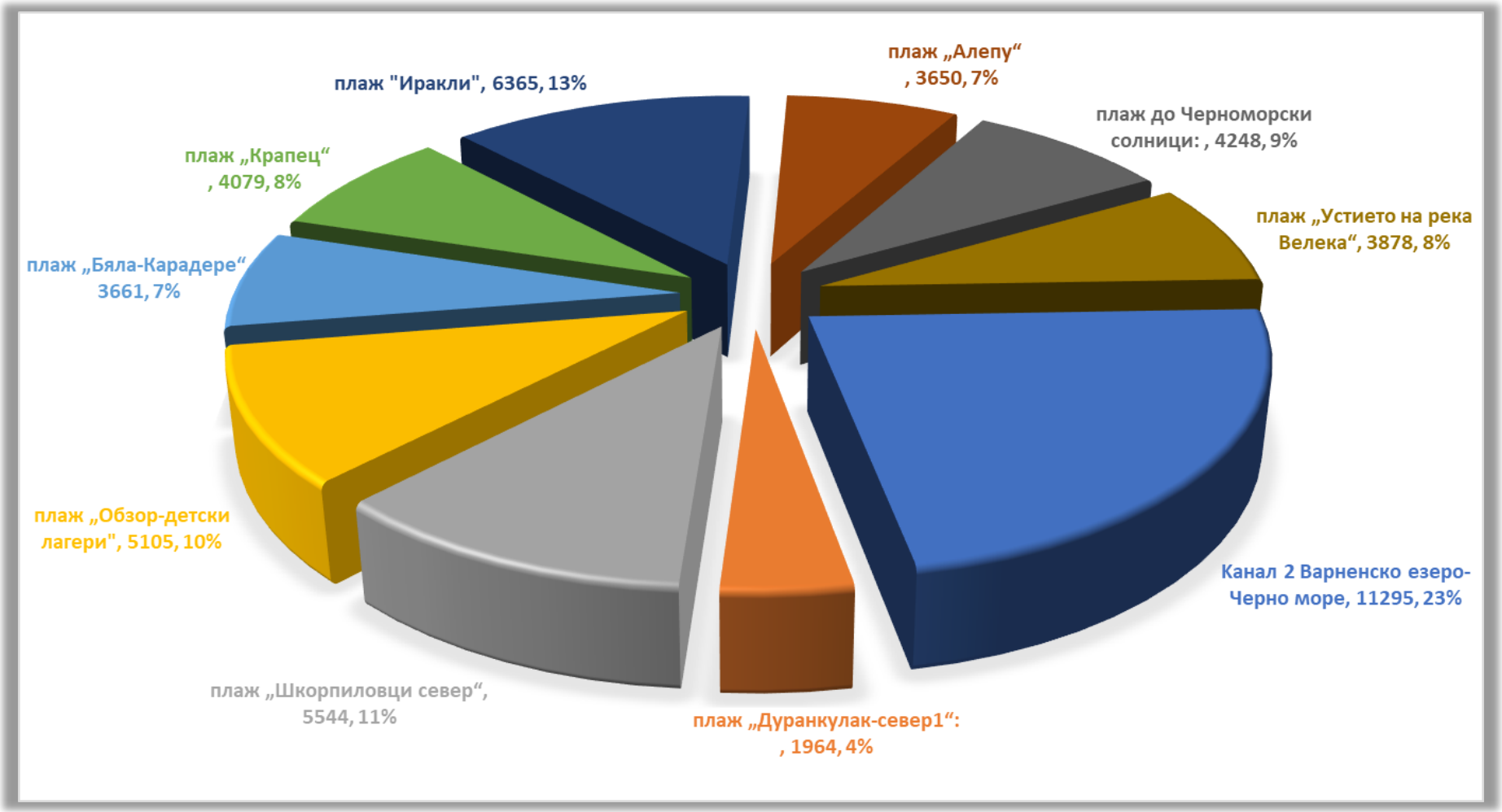
Total number for 10 beaches, 4 monitoring campaigns in 2018: **49 789 units**
Total weight: **2 987,644 kg**



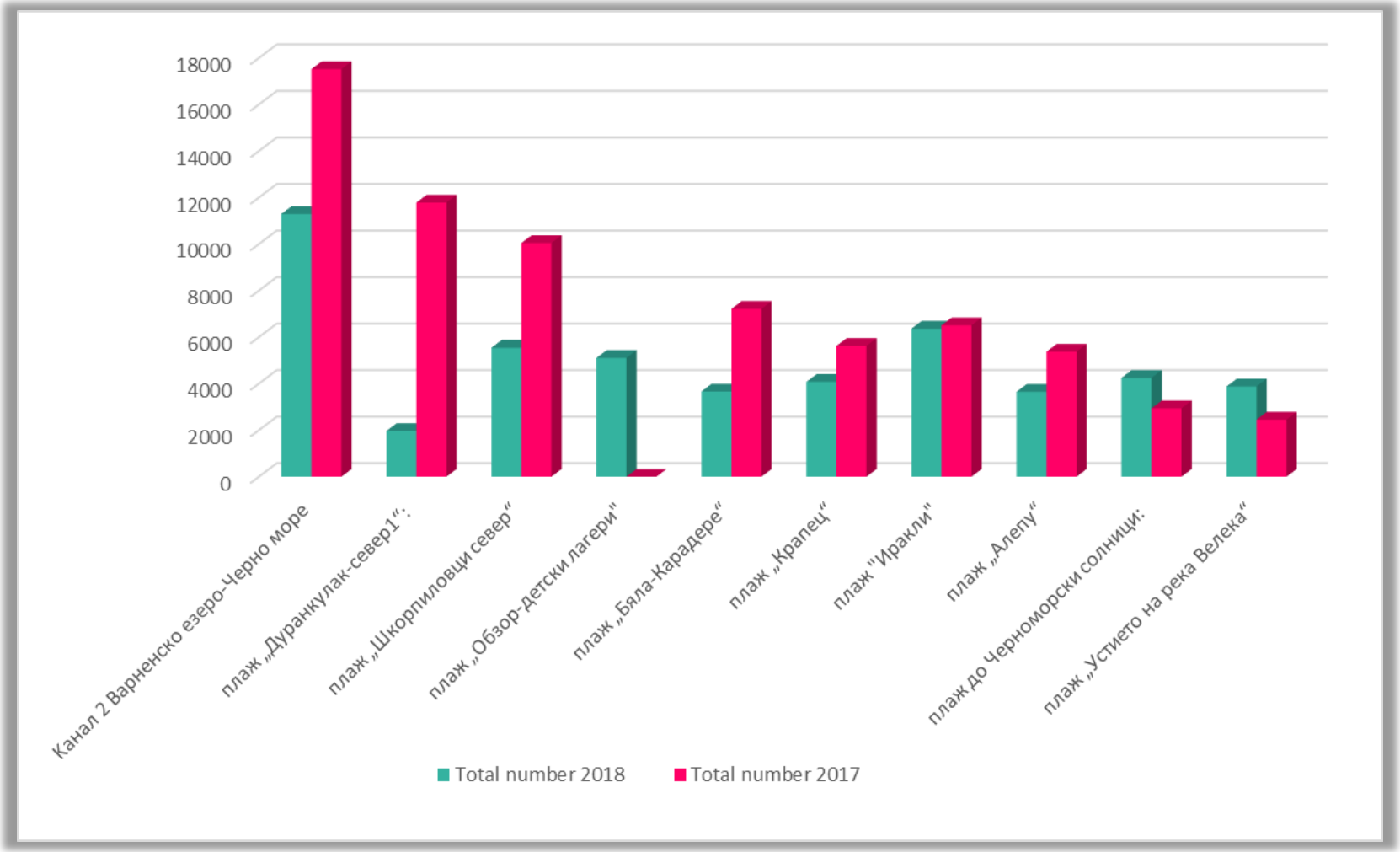
Comparison of the amount of beach litter (numbers found) by location

Results

Comparison Total number units 2017 – 2018 by location

Marine litter

10.



Source: European Commission

An EU proposal would ban or limit single-use plastics in a bid to reduce pollution. The idea behind the proposal is to target products that are among the so-called "10 most found items of litter on EU beaches" including fishing gear containing plastics.

Primarily found during the beach litter monitoring campaigns 2017-2018:

Plastic (bottle caps and rings, bottles of 0,5 and 1 L, tubes and parts of, cigarette buds, ropes, fishing nets);
Paper: pieces of paper and cardboard, cardboard boxes;
Textiles: clothes and parts of, pieces of ropes;
Glass: glass bottles and pieces;
Metal: Cans, other metallic packages (sprays, pharmaceutical)

Conclusions

Marine litter
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The main sources of accumulation of marine litter on the Bulgarian Black Sea coast and their entry into the marine environment:

- Unregulated landfills, sewer networks from coastal and urbanized areas;
- Tourism and recreational activities in the coastal zone;
- Construction activities (from resorts, residential and seasonal construction);
- River runoff, open channels and drainages;
- Commercial and recreational fishing (fishing gears);
- Transborder transport.

The total number and weight of beach litter in 2018 is less than in 2017. This is the result of a number of public awareness activities on negative environmental and human health impacts, coordinated beach cleaning campaigns and enhanced society culture.

Challenges:

How to manage human activities generating marine litter ?

- Improved monitoring and coordinated actions, synchronised or joint monitoring campaigns will result in comparable data sets. That will provide information on the sources, but will not effects on the human activities and the quantity of marine litter.
- One of the challenges is the lack of provision of waste collecting facilities and disposal points on the beach and public spaces
- The biggest challenges are **mitigation and prevention** – to do not create marine litter, do not use single plastics and increase public awareness. This is the way to cope with human activities generating marine litter.

An example of good practice, dissemination of information and increase public awareness - a video made as an implementation of *Measure 5* of PoM, MSFD:

Coordinated organization / support of annual campaigns to raise awareness of the business sector (traders, beach concessionaires, beach service users, fishermen, etc.) and the public (tourists, students, children, etc.) regarding the consequences for the marine environment caused by marine litter and the need for their recycling

Thank you for attention!

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Black Sea Basin Directorate
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