



جابتن عالم سڤيتر تامن دان ريڤرياسي

DEPARTMENT OF ENVIRONMENT, PARKS AND RECREATION
MINISTRY OF DEVELOPMENT | BRUNEI DARUSSALAM

MARINE DEBRIS CLEAN-UP HANDBOOK



— “ —

The greatest danger to our planet is the
belief that someone else will save it.

- Robert Swan

— ” —



Marine debris is one of the major global environmental concerns contributed by land-based sources into the ocean or waterways where its accumulation would eventually have an impact on the environment, human health and the socio-economic aspect.

As part of the Government's effort to reduce the impact of marine debris, the Department of Environment, Parks and Recreation (JASTRe) has decided to initiate a nationwide clean-up in major beaches in Brunei Darussalam to acquire a baseline data in order to identify the main constituents of the marine debris found in coastal areas. The Department has collected 5608.5 kg of marine debris to date. The general public including agencies and organisations are encouraged to conduct or join in any beach clean-up event, allowing to promote the awareness to a larger audience.

Thus, it is within the Department's best intention to develop a handbook as an effort to provide a guideline for the general public and agencies to conduct proper beach clean-ups systematically as well as to raise the public's awareness on the impacts and how to reduce marine debris.



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INTRODUCTION

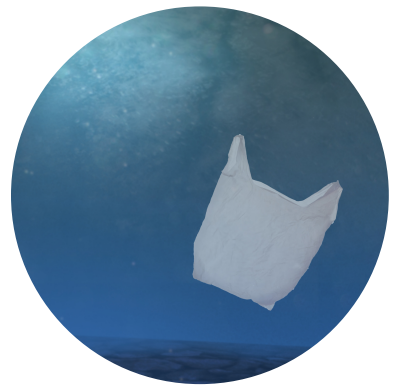
Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment.



Marine debris issues have been recognised as one of the key environmental concerns at the national, regional and global level. The high and rapidly increasing levels of marine debris particularly plastic litter, represents a serious environmental problem that negatively affects marine biodiversity and ecosystem, human health, maritime transport, recreation, tourism and economies.



They originate from land based sources particularly from unmanaged and uncollected waste which account for the majority of marine pollution while the remaining originates from sea-based sources. Plastic litter which is by far the most prevalent debris identified, constitutes the most part of marine debris, contributing to an estimated 60% to 80% of all marine debris. In recognising these issues, it is clear that there is an urgent need to implement



INTRODUCTION

measures and initiate cooperation among relevant stakeholders to prevent and reduce the effects of marine debris.

Coastal areas and beaches represents a hotspot of deposited plastic litter and can prompt people to start understanding the huge pressures we are putting on our marine environment.

Environmental initiatives such as a marine debris clean-up, can assist towards the improvement of the current coastal's condition and instil social responsibility for everyone to work together as a nation to curb marine debris one step at a time.



TYPES OF MARINE DEBRIS

Plastic



Metal



Fishing gear



Others



DECOMPOSITION RATE OF MOST COMMON MARINE DEBRIS

DID YOU KNOW HOW LONG THEY STAY WITH US?



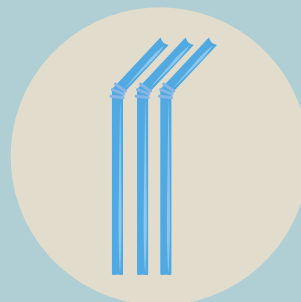
Plastic bottle
450-1000 years



Bottle cap
100-500 years



Plastic bag
10-100 years



Plastic straw
100-500 years



Plastic cup
450-1000 years



Paper cup
> 20 years



Styrofoam cup
50-500 years



Aluminium can
80-200 years



Plastic cutleries
100-1000 years



Snack packaging
80-100 years



Cigarette butt
10-15 years



Fishing line
600 years



**FACT
CHECK!!!**

Plastics do not biodegrade. They break down into tiny pieces called microplastics.

COASTAL MARVEL

NATIONWIDE CLEAN-UP 2021: MARINE DEBRIS




As part of the Government's effort to reduce the impact of marine debris, The Department of Environment, Parks and Recreation (JASTRe) has embarked on a nationwide clean up focusing on major beaches across the country. In commemoration of World Environment Day 2021, the Ministry of Development has launched the Nationwide Clean-Up 2021: Marine Debris also known as the Coastal Marvel.

On Sunday, 13th June 2021 the first Nationwide Clean Up took place at three different beaches simultaneously: Muara Beach Recreational Park (Brunei-Muara District), Lumut Beach Recreational Park (Belait District) and Danau Beach (Tutong District). The second round of clean-up was held at Meragang Beach on Sunday, 18th July 2021. The accumulated weight of marine debris from both clean-ups was 5, 608 kg.



COASTAL MARVEL

OBJECTIVES

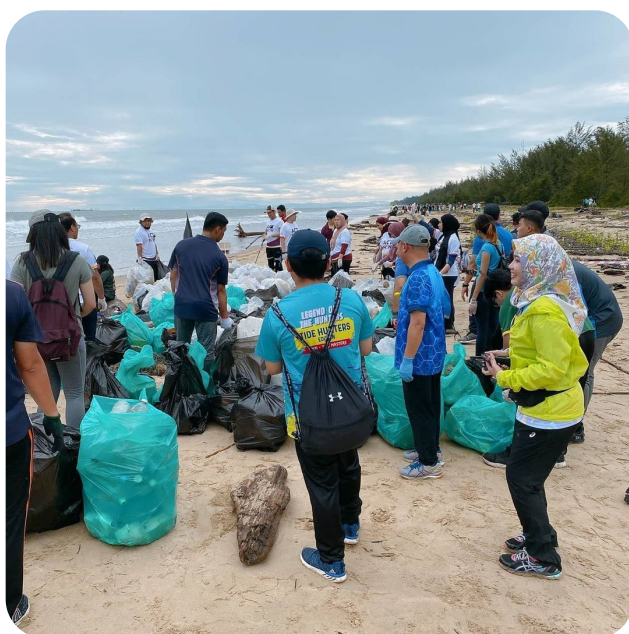
-  To develop a baseline data of marine debris in coastal areas
-  To identify different types of marine debris and reflect these statistics into a milestone dashboard.
-  To empower the society to instil the sense of responsibility towards the protecting and conserving the environment through proper waste disposal methods.



OUR FOCUS

Data collection, Information sharing and Segregation of the most common marine debris:

- ↪ Plastic bottles
- ↪ General plastic (i.e. cups, utensils, straws, etc)
- ↪ Others (i.e. tyres, glass, paper, etc)



SUNDAY, 13.6.2021

Muara Beach Recreational Park,
Lumut Beach Recreational Park
& Danau Beach

Plastic Bottles: 1309.5 kg
General Plastic: 619.5 kg
Others: 853.5 kg
Total Weight: 2782.5 kg



SUNDAY, 18.7.2021

Meragang Beach

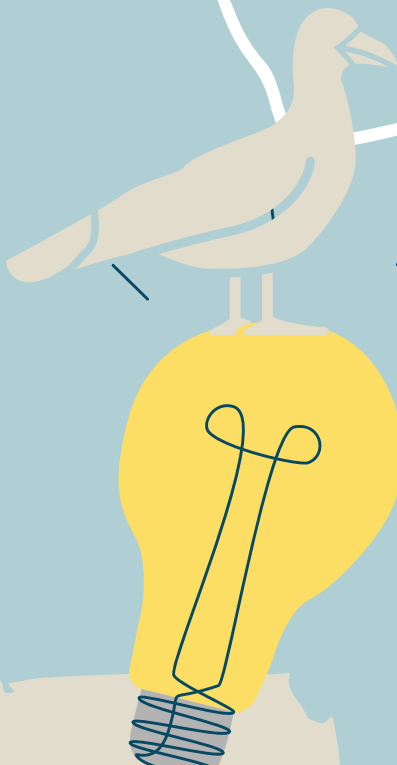

Plastic Bottles: 1957 kg

General Plastic: 659 kg

Others: 210 kg

Total Weight: 2826 kg





**DID YOU
KNOW??**

**100,000 TURTLES AND MARINE
MAMMALS AND ONE MILLION SEABIRDS
ARE KILLED BY PLASTIC MARINE LITTER
EVERY YEAR AROUND THE WORLD.**

Marine debris may be mistaken by some animals for food, for example, turtle often mistake plastic bags as jellyfishes, their main source of food. While some animals may get entangled which leads to injury, illness, suffocation, starvation and even death.



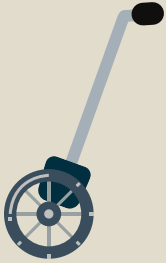
MARINE DEBRIS CLEAN-UP 101!

A GUIDE TO ORGANISING A BEACH CLEAN-UP EVENT

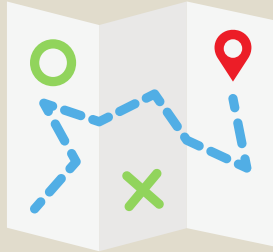


WHAT DO WE NEED?

Site Preparation



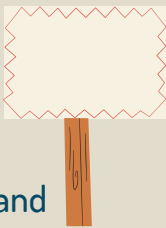
Measuring wheel



Map (divide into zones)



Barrier tape



Label stand



Flags to differentiate zones

Waste Collection



Gloves



Colour-coded trash bags



First-Aid kit



Tongs or rubbish picker



Whistle



Walkie-talkie for zone leaders



Survey data sheet, clipboard and pen

Weighing Station



Tent



Table



Weighing balance with hook



Paper and pen for rough calculation and tally of weights

Volunteers



Water dispenser to refill water bottle



Ribbons according to their zones



Food

Email with itinerary and Info Pack



HOW DO WE DO IT?



BEFORE EVENT



DURING EVENT



AFTER EVENT



DO SITE SURVEY PRIOR TO THE CLEAN-UP

- Measure the distance of the coastal area to be covered.
- Find possible spots to place stations for registration, warm-up session, refreshment, weighing station.
- Inspect the site in advance for risk assessment.
- Complete the site safety questionnaire in the [next page](#).
- Contact JASTRe or other relevant government agency where the beach is under purview of to get permission to conduct the clean up.



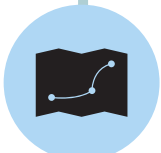
CHOOSE A DATE AND TIME

Weekends are the best time to hold the activity and set a fixed time for the committee and volunteers to come early.



PREPARE EQUIPMENTS AND NECESSITIES FOR THE CLEAN-UP

(refer to previous page)



DIVIDE THE COAST INTO ZONES

Separate the zones using flags of different colours and label with display stand, e.g. Zone A, B and C.



GATHER VOLUNTEERS

Allocate them into zones once registration is closed. Those under 18 are advisable to bring an adult with them.



ASSIGN ZONE LEADERS

They will facilitate and assist the participants throughout the event.



SEND OUT CONFIRMATION EMAIL TO PARTICIPANTS

The email must include the itinerary, Info Pack, map of the clean-up areas and their allocated zones. This should be sent 1-2 days before event.

HOW DO WE DO IT?



BEFORE EVENT



DURING EVENT



AFTER EVENT

Site Safety Inspection

Prior to the event, please ensure to come up with a plan to minimise the risks of danger during the clean up to guarantee the safety of all participants and committees.

| | Yes | No |
|---|-----------------------|-----------------------|
| Will the site be affected by high tides during event? | <input type="radio"/> | <input type="radio"/> |
| Are there holes, fallen branches or other trip hazards? | <input type="radio"/> | <input type="radio"/> |
| Are there any small, deep waterway stream to be crossed safely? | <input type="radio"/> | <input type="radio"/> |
| Are there any areas that are rough, slippery, steep or sloping? | <input type="radio"/> | <input type="radio"/> |
| Are the presence of snakes, spiders, bees, wasps, sandflies, ticks, or crocodiles likely? | <input type="radio"/> | <input type="radio"/> |
| Are there likely to be discarded syringes at the site? | <input type="radio"/> | <input type="radio"/> |
| Is the site isolated or remote from emergency assistance? | <input type="radio"/> | <input type="radio"/> |
| Could asthmatics be exposed to dust or pollen? | <input type="radio"/> | <input type="radio"/> |
| Will volunteers be working in direct sun? | <input type="radio"/> | <input type="radio"/> |
| Will there be a large number of children volunteering? | <input type="radio"/> | <input type="radio"/> |
| How easy is it for logistics movement? | <input type="radio"/> | <input type="radio"/> |



Remember: Safety is always the number one priority
for a successful event

HOW DO WE DO IT?



BEFORE EVENT



DURING EVENT



AFTER EVENT



COME EARLY

Committees are required to come at least 30–45 minutes before participant registration starts for final check of the event set up.



PARTICIPANT REGISTRATION

- Registration and distribution of coloured ribbon for respective zones.
- Any participant with health concerns such as asthma shall be changed to the zone closest to the assembly point.



WARM UP EXERCISE

- Beach clean-up requires participants to bend down and walk long distance.
- Light stretching and warm up help to reduce any muscle injury.



SAFETY BRIEFING

Brief the participants on emergency assembly point, segregation methods, what not to pick up, time limit, photo sessions and refreshment location.



ZONE LEADER INTRODUCTION

- Introduce zone leaders and zone colours.
- Zone leaders lead their members towards respective zones.
- Also responsible in recording the number of trash bags collected in their zone.
- Zone leaders communicate with each other using walkie-talkie for e.g. need more trash bags or assistance.



ON-THE-SPOT SEGREGATION

- Hand out the coloured trash bags to participants.
- On-the-spot segregation must be done during the clean-up according to the colour-coded plastic bags.



WHISTLE!

Once whistle sound can be heard, participants are required to stop and help to transfer the trash bags to the weighing station.

HOW DO WE DO IT?



BEFORE EVENT



DURING EVENT



AFTER EVENT



WEIGHING OF WASTE

Weighing committee will weigh all the marine debris collected according to the categories - plastic bottles, general plastic and others.



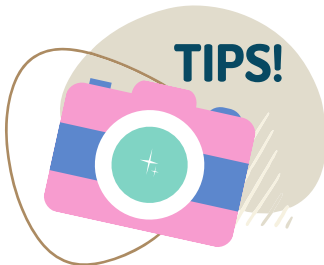
REFRESHMENT

Participants will then collect their refreshments while the weighing of trash are being carried out by the committee.



DATA COMPILATION

Final data of the marine debris are then compiled into the Survey Data Sheet.



TIPS!

Take pictures for memories anytime during the event!

Post it on social media to promote awareness on marine debris

HOW DO WE DO IT?



BEFORE EVENT



DURING EVENT



AFTER EVENT



DO NOT LEAVE ANYTHING BEHIND!

- Do not leave any trash bag behind otherwise it will beat the purpose.
- Ensure the waste collected are disposed of properly from the beach.



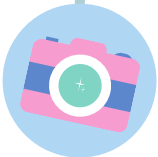
SHARE STATISTICS

Share the total weight collected on social media platforms and with JASTRe.



E-CERTIFICATES

Give out certificate to the volunteers as a token of appreciation and a pledge for committing in marine debris clean-up.



SHARE PHOTOS ON SOCIAL MEDIA

Share the photos taken during the event on social media and with media agencies to acknowledge and recognise the committees and volunteers efforts in tackling marine debris issues.

And you're done!
Congratulations on
hosting your first
marine debris
clean-up!



DO'S

&

DON'TS



Have breakfast beforehand

Attend only if you are healthy and not sick



Wear gloves to avoid any injuries

Bring reusable water bottle for refill at the event



Wear sunscreen

Bring hat/cap & hand towel



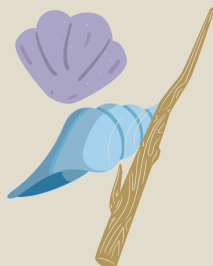
Bring hand sanitiser and bug spray

Bring extra clothes and shoes



Bring personal medication (if any)

Only collect non-organic items. Leave natural occurring items such as wood sticks and shells.



Do not touch anything that you are not sure/know of with bare hands

Do not touch or pick up sharp or suspicious items on the beach such as broken glass and syringes



Do not touch any washed up dead animals on the beach

Do not touch any hazardous chemicals you may encounter during the beach clean-up



Do not attempt to move large items such as lumber, furniture and drums. Inform the organiser about the item's location.



You are not allowed to go into the water during the clean-up. Keep a safe distance back from the tideline as strong waves might be expected.



WHAT CAN WE DO TO REDUCE MARINE DEBRIS?



REDUCE SINGLE-USE PLASTICS

The easiest way to reduce marine debris. This includes plastic bags, water bottles, straws, cups, utensils, takeaway containers and so on.

How?

1. Practice 5Rs - Refuse, Reduce, Reuse, Repurpose & Recycle.
2. Use reusable versions of the disposables (reusable grocery bag, reusable bottles and straws, etc).

PARTICIPATE IN/ORGANISE BEACH CLEAN-UP

Organise a clean-up or join beach clean-up activities organised by any agency or organisation.

Get involved in the physical process of removing marine debris particularly plastics from the coastal areas. This is one of the most direct solutions to fight marine debris.



SUPPORT INITIATIVES

The government has initiated No Plastic Bag Everyday Initiative and No Styrofoam Initiative in an effort to reduce our nation's consumption of these materials in our everyday lives.

Show support towards the adoption of these initiatives in our community and be a hero to our environment.

WHAT CAN WE DO TO REDUCE MARINE DEBRIS?

AVOID PRODUCTS CONTAINING MICROBEADS

Microbeads are tiny plastic particles which have become a rising source of plastic pollution in the ocean. They are able to easily enter the oceans and waterways and affect countless marine animals. They can be found in items we regularly use e.g. toothpaste, face scrubs and liquid body soaps. Avoid products containing microbeads by looking for 'polyethylene' and 'polypropylene' on the ingredients.



SUPPORT NGOS ADDRESSING PLASTIC POLLUTION

There are many NGOs in our country working to reduce and prevent ocean plastic pollution whether through awareness, workshops and clean-up activities. Most of the time, their activities are free. Support these organisations by contributing our manpower and through engaging with them. The most important thing is that we do something for our planet, no matter how small it is.



SPREAD THE WORD!

Educate ourselves with issues related to marine debris. Share these information with your family and friends and show them how they can be a part of the movement.



APPENDICES

APPENDIX I. GENERAL CATEGORIES OF MARINE DEBRIS

| NO. | CATEGORY | TYPE |
|-----|---------------|--|
| 1 | Plastic | Cigarette butts Hard plastic fragments Foamed plastic fragments Filmed plastic fragments Plastic food wrappers Bottles/jugs Bottle caps Bags Cutleries Cups Straws Balloon Toys CDs |
| 2 | Metal | Metal fragments Tin cans Aluminium cans Metal lids Aerosol cans |
| 3 | Fishing gears | Rope and nets Buoy/floats Fishing lines |



| NO. | CATEGORY | TYPE |
|-----|-------------------------|---|
| 4 | Others; not limited to: | |
| | Glass | Glass fragments Bottles Jars Bulbs |
| | Rubber | Shoes Boots Rubber gloves Tyres Balloon |
| | Cardboard | Carton Box |
| | Paper | Food packaging Loose paper Magazine Newspaper Books Bags |
| | Fabric | Fabric pieces Clothings Cap Towels Gloves Shoes |



APPENDIX II. MARINE DEBRIS SURVEY DATA SHEET



Nationwide Clean-Up: Marine Debris

COASTAL MARVEL

Survey Data Sheet

SITE INFORMATION

Site Name: District:

Date: Time: Type of clean up: Coastal / Land

ORGANISATION NAME: NO. OF PARTICIPANTS:

MARINE DEBRIS COLLECTED

| CATEGORY | COLOUR CODED TRASH BAGS | NO. OF BAGS | WEIGHT (KG) |
|--|-------------------------|-------------|-------------|
| Plastic Bottles (e.g. beverage bottle, water bottle) | | | |
| Plastic (General) (e.g. bottle caps, cutleries, detergent, etc) | | | |
| Others (please state): E.g., <ul style="list-style-type: none"> • • Metal • Fishing gear • Paper food packaging • Glass • Rubber • • • • • • • • • | | | |

Go to the link below or scan the QR code:

<http://tiny.cc/MarineDebrisDataSheetDEPR>



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