

# Guidelines for Monitoring Marine Litter on the Beaches and Shorelines of the Northwest Pacific Region



**NOWPAP**  
Northwest Pacific Action Plan



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## 1. Introduction

These guidelines were developed as a part of the NOWPAP Marine Litter Activity (MALITA), which has been implemented since its approval by the Tenth NOWPAP Intergovernmental Meeting (Toyama, Japan, November 2005).

These guidelines are designed as a tool for the NOWPAP member states, including local governments, volunteers and NGOs, to monitor marine litter on their beaches and shorelines. The guidelines will help to identify the types, amounts and sources of marine litter, and ultimately to protect human and animal health and safety, as well as to preserve the marine and coastal environment. These guidelines will also help member states to share the results of their monitoring surveys with the wider international community.

Each NOWPAP member state is encouraged to implement its monitoring programmes in order to obtain long-term quantitative data (e.g., the number of marine litter items and the weight of litter per square meter), based on their own needs and decisions, while taking these guidelines into account.

## 2. Objectives of the monitoring surveys

The guidelines below are for conducting NOWPAP monitoring surveys, which involve collecting and categorizing marine litter, to identify the types, amounts and sources. Such surveys are a vital step towards reducing the volume of marine litter entering the marine and coastal environment.

It is recommended that NOWPAP monitoring surveys be organized annually, in conjunction with the existing monitoring surveys and cleanup events, involving the general public (local volunteers, school children, NGOs, the media, etc.). They should aim to achieve the following objectives:

- Estimate the amounts, types and possible sources of marine litter found on beaches and shorelines.
- Estimate trends in the amounts and types of marine litter found on beaches and shorelines.
- Remove marine litter along the coasts of the NOWPAP region.
- Educate people and increase public awareness regarding the severity of the marine litter problem.
- Maintain an effective communication network among the people of the NOWPAP member states to coordinate activities related to marine litter in the Northwest Pacific region.
- Use the information collected from the surveys to foster positive attitudes – from the individual to the national and regional level – aimed at reducing marine litter inputs to the marine and coastal environment and enhancing the preservation of the marine environment.

## 3. Monitoring Methodology

### 3.1. Timing and Frequency

The NOWPAP monitoring surveys are organized once a year, preferably in September or October, in combination with existing monitoring surveys and cleanup events. The timing and frequency of the surveys should be determined by the national/local organizer, taking into account other important variables, such as weather conditions.

### 3.2. Site Selection

The member states that have already implemented their national monitoring programmes should ensure that the previous survey sites are included in the regular NOWPAP monitoring surveys, in order to estimate trends in the distribution and prevalence of marine litter. Member states that have not yet had their national monitoring programmes should select several survey sites in their countries within the Northwest Pacific region.

In general, the following areas are considered less suitable for the surveys:

- Areas within 1 km of river mouths, harbors, ports and swimming beaches (as they are known as areas of garbage accumulation).
- Rocky beaches and breakwaters (as they are dangerous to work on, and litter often becomes lodged between rocks and is hard to remove and collect).

### 3.3. Collection and Identification of Marine Litter

The following information should be obtained and recorded for each site during the NOWPAP monitoring survey:

- Determine the approximate area (i.e. length and width, e.g. 10 x 10 m or 4 x 100 m) of the survey site. The number and size of the survey sites should be ideally kept the same for future surveys.
- Record the site (beach) name, the area of the survey site (in square meters) and the positions of the site (latitude and longitude).
- Collect all marine litter within the survey site and record it onto the appropriate form (some examples are shown in the Annex).
- Put collected marine litter into litter bags, stockpile it if it is too bulky, or place it into suitable containers. Special care should be taken when dealing with potentially dangerous garbage (e.g. syringes, broken bottles).

When the litter collection is completed, participants should bring all litter bags to a designated location that has enough space to sort, weigh and record collected marine litter. Participants are required to identify marine litter items according to the categories listed on the data sheet.

At the central location, participants sort, count, and weigh marine litter according to the categories listed on the data sheet as follows:

- Label empty litter bags with each of the litter category names listed on the data sheet.
- Sort marine litter into the categories. As litter is placed in the appropriate bag, it should be counted and recorded on the data sheet (excess sand and water should be removed).
- Weigh each bag (litter category) using scales. Record the total weight of each litter category on the data sheet.
- If possible, also weigh fishing nets, lines and ropes.

Additional Notes:

- The local organizer should arrange the proper disposal of sorted, counted and weighed marine litter (remember that some items can be recycled).
- When working at the beach, participants should be aware of their surroundings all the time and watch for waves and sharp objects. Never work alone.
- Participants should recognize beaches are a sensitive environment, susceptible to erosion caused by human activities.
- From the point of view of quantitative analysis, it is preferable to divide each site into several parts according to the distance from the high tide mark and to collect data from each part.

### 3.4. Supplies for Participants

When the NOWPAP monitoring survey is planned, the following supplies should be prepared for participants with proper safety instructions attached:

- Data sheet (national monitoring format or ICC data card)
- Strong litter bags (recyclable)
- Scales for weighing marine litter collected (e.g. bathroom/kitchen scales)
- Measuring tape (50 m)
- Gloves for each participant.
- Tongs
- Containers for dangerous items (e.g. syringes)
- Other supplies the local organizers deem necessary.

### 3.5. Data Collection and Management

The data collected should be entered onto the data sheet. The NOWPAP member states should designate a national coordinator or focal point to collect the data generated by all participants during the NOWPAP monitoring surveys. The national coordinator (or focal point) should submit the collected data to CEARAC with the site map, other relevant information available, and photographs taken during the survey (in electronic form, if appropriate). These data will be eventually entered in the NOWPAP Monitoring Database (led by DINRAC). The data will be regularly updated and will be made available on the DINRAC website for the general public.

#### 4. Data Sharing

The Ocean Conservancy, formerly known as the Centre for Marine Conservation, has established and currently maintains the annual International Coastal Cleanup (ICC) campaign. The campaign currently involves more than 100 countries around the world, including NOWPAP member states, Japan and the Republic of Korea. The ICC campaign provides inspiration to hundreds of thousands of people who participate in annual cleanups along beaches and waterways worldwide.

In order to share the results of NOWPAP monitoring surveys with the wider international community, it is recommended to use the ICC Data Card, which will help to highlight NOWPAP monitoring results and allow easy comparison of the data collected with those from different countries. Survey organizers using their own monitoring data sheet in the NOWPAP monitoring surveys would convert such national data into the ICC data format, and submit the collected data to the Ocean Conservancy (the NGO responsible for the overall ICC coordination), either directly or through the ICC National Coordinator.

# Annex: Examples of Data Collection Forms

## a) International Coastal Cleanup Data Card, The Ocean Conservancy INTERNATIONAL COASTAL CLEANUP™ DATA CARD

Data collected during The Ocean Conservancy's International Coastal Cleanup™ is used to educate people and create solutions to the problems of solid waste and litter. Through partnerships with business, government, environmental groups, and citizens, we are helping to change the behaviors and practices that create debris. Thank you for being part of this very important process.



### CLEANUP LOCATION

Type of Cleanup:  Shoreline/Beach  Underwater Location of Cleanup: State \_\_\_\_\_ Country \_\_\_\_\_  
 Zone or County Cleaned: \_\_\_\_\_ Beach Site Name: \_\_\_\_\_  
 Today's Date: Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_ Name of Coordinator: \_\_\_\_\_  
 Number of People Working on This Card: \_\_\_\_\_ Distance Cleaned: \_\_\_\_\_ miles or \_\_\_\_\_ km  
 Number of Trash Bags Filled: \_\_\_\_\_ Total Estimated Weight Collected: \_\_\_\_\_ lbs. or \_\_\_\_\_ kgs.

### NAMES OF PARTICIPANTS IN YOUR GROUP

If you are interested in becoming a member of The Ocean Conservancy and/or joining our Ocean Action Network (OAN) to make your voice heard on important ocean conservation issues, please check the box(es) below your name and address. **Thank you for helping to protect our oceans!**

1. Name: \_\_\_\_\_ Age: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_ Country: \_\_\_\_\_  
 Phone: (\_\_\_\_) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 I would like information on:  The Ocean Conservancy  The OAN

2. Name: \_\_\_\_\_ Age: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_ Country: \_\_\_\_\_  
 Phone: (\_\_\_\_) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 I would like information on:  The Ocean Conservancy  The OAN

3. Name: \_\_\_\_\_ Age: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_ Country: \_\_\_\_\_  
 Phone: (\_\_\_\_) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 I would like information on:  The Ocean Conservancy  The OAN

4. Name: \_\_\_\_\_ Age: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_ Country: \_\_\_\_\_  
 Phone: (\_\_\_\_) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 I would like information on:  The Ocean Conservancy  The OAN

**ENTANGLED ANIMALS:** (  Dead or  Alive). List all entangled animals found during the Cleanup. Tell us what they were entangled in (fishing line, rope, net, etc.) \_\_\_\_\_

### WHAT WAS THE MOST PECULIAR ITEM YOU COLLECTED?

The following national and international organizations endorse and/or support the International Coastal Cleanup:  
 ♦ U.S. Environmental Protection Agency  
 ♦ IUCN – The World Conservation Union  
 ♦ Intergovernmental Oceanographic Commission (IOC) of the United Nations' Educational, Scientific, and Cultural Organization (UNESCO)

Please return this card to your area coordinator or mail it to:  
**The Ocean Conservancy** Office of Pollution Prevention and Monitoring  
 1432 N. Great Neck Road, Suite 103  
 Virginia Beach, VA 23464 USA  
 Phone (757) 496-0920 Fax (757) 496-3207  
 www.oceanconservancy.org  
 100% post-consumer recycled paper, chlorine free.

## ITEMS COLLECTED

### Human-made debris, trash and litter...

- ♦ Harms the environment & wildlife
  - ♦ Threatens human health & safety
  - ♦ Causes communities to lose money
  - ♦ Looks bad
- Think about where all this debris comes from and how **we** can prevent it!

Please pick up all debris found on the beach. Record information on only the items listed below. Keep a count of your items using tick marks and enter the item total in the box. **Example:**  Beverage Cans **111**  III

### SHORELINE AND RECREATIONAL ACTIVITIES

(Debris from beach-goers, sports/games, festivals, litter from streets/storm drains, etc.)

Bags	<input type="checkbox"/>	Cups, Plates, Forks, Knives, Spoons	<input type="checkbox"/>
Balloons	<input type="checkbox"/>	Food Wrappers/Containers	<input type="checkbox"/>
Beverage Bottles (plastic) 2 liters or less	<input type="checkbox"/>		<input type="checkbox"/>
Beverage Bottles (glass)	<input type="checkbox"/>	Pull Tabs	<input type="checkbox"/>
Beverage Cans	<input type="checkbox"/>	6-Pack Holders	<input type="checkbox"/>
Caps, Lids	<input type="checkbox"/>	Shotgun Shells/Wadding	<input type="checkbox"/>
Clothing, Shoes	<input type="checkbox"/>	Straws, Stirrers	<input type="checkbox"/>
	<input type="checkbox"/>	Toys	<input type="checkbox"/>

### OCEAN/WATERWAY ACTIVITIES

(Debris from recreational/commercial fishing and boat/vessel operations)

Bait Containers/Packaging	<input type="checkbox"/>	Fishing Nets	<input type="checkbox"/>
Bleach/Cleaner Bottles	<input type="checkbox"/>	Light Bulbs/Tubes	<input type="checkbox"/>
Buoys/Floats	<input type="checkbox"/>	Oil/Lube Bottles	<input type="checkbox"/>
Crab/Lobster/Fish Traps	<input type="checkbox"/>	Pallets	<input type="checkbox"/>
Crates	<input type="checkbox"/>	Plastic Sheeting/Tarps	<input type="checkbox"/>
Fishing Line	<input type="checkbox"/>	Rope	<input type="checkbox"/>
Fishing Lures/Light Sticks	<input type="checkbox"/>	Strapping Bands	<input type="checkbox"/>

### SMOKING-RELATED ACTIVITIES

Cigarettes/Cigarette Filters

<input type="checkbox"/>	Appliances (refrigerators, washers, etc.)	<input type="checkbox"/>
<input type="checkbox"/>	Batteries	<input type="checkbox"/>
<input type="checkbox"/>	Building Materials	<input type="checkbox"/>
<input type="checkbox"/>	Cars/Car Parts	<input type="checkbox"/>
<input type="checkbox"/>	55-Gal Drums	<input type="checkbox"/>
<input type="checkbox"/>	Tires	<input type="checkbox"/>

### MEDICAL/PERSONAL HYGIENE

Condoms

<input type="checkbox"/>	Diapers	<input type="checkbox"/>
<input type="checkbox"/>	Syringes	<input type="checkbox"/>
<input type="checkbox"/>	Tampons/Tampon Applicators	<input type="checkbox"/>

### DEBRIS ITEMS OF LOCAL CONCERN

(Identify and count 3 other items found that concern you)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) Marine Debris Data Card, Ministry of Maritime Affairs & Fisheries (MOMAF), Republic of Korea

# MARINE DEBRIS DATA CARD

(Applied since April 2002)

## Ministry of Maritime Affairs and Fisheries (MOMAF)

1. Rubber Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-origin	Ocean-based	Land/Ocean origin	Sub-total(ea)		
rubber glove, rubber band, balloon, rubber belt						
lire, rubber boot						
others						
Sub-total(ea)						

2. Metal Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-origin	Ocean-based	Land/Ocean origin	Sub-total(ea)		
wire, nail, tool, steel plate, aluminum plate (re-used item)						
can, aluminum foil (re-used item)						
fishhook, sinker made of lead and copper, lead for fishing net						
paint barrel and others (non-re-used items)						
Sub-total(ea)						

1) can: beverage can, gas can, spray can, good can, bottle-cap, can ring, etc.

3. Wood Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based	Subtotal(ea)		
Wooden box, Wooden chopstick, Basket, Bamboo mat						
Wooden material, Palette (Wooden carrier)						
Wood for fishery use						
Others						
Subtotal(ea)						

1) Unprocessed wood, leaves and stems are excluded.

4. Glass Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based	Subtotal(ea)		
Light bulb						
Glass bottle						
Ceramic ware (Porcelain), Mirror, Heat-resistant glass tableware						
Others						
Subtotal(ea)						

1) Light bulbs: incandescent bulbs, fluorescent tubes, small sized light bulbs, etc. (Metal parts attached to light bulbs should be counted as light bulbs. Note that they should be handled carefully not to be broken.)  
2) Glass bottles: bottle-caps should be counted separately.

5. Styrofoam Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based	Subtotal(ea)		
Styrofoam container						
Styrofoam for fishery use						
Others						
Subtotal(ea)						

1) Styrofoam containers (Record only those items with a length of 5cm or more): Rameon containers, food wrappers, agricultural and fishery product wrappers, styrofoam boxes  
2) Styrofoam for fishery use (Record only those items with a length of 5cm or more): buoys (if buoys contain foreign substances or wastes inside, please record only after buoys are separated from those substances.)  
3) Items smaller than 5cm in length should be classified as "others" and aggregated to the grand total.

6. Paper Items	Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based	Subtotal(ea)		
Paper cup, Paper pack, Milk pack						
Book, Newspaper, Notebook, Photocopying paper, Paper box						
Advertisement leaflet, Wrapping paper, Disposable (Coated items)						
Others						
Subtotal(ea)						

1) Books, newspapers, notebooks, photocopying paper: recyclable items because they are not coated, e.g. paper shopping bags and paper envelopes  
2) Paper boxes: uncoated corrugated cardboard, cookie boxes and tissue paper container, etc.  
3) Items smaller than 5cm in length should be classified as "others" and aggregated to the grand total.



7. Plastic Items		Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based				Subtotal(ea)
Plastic item (Recyclable item)							
Plastic item for fishery use							
Plastic string/rope							
Fishing net, Rope for buoy, Fish trap, Fishing line,							
Plastic bags, Rameon/cookie packaging							
Piece of plastic bag, Vinyl tent,							
Disposable glove, Plastic tube							
Others							
Subtotal(ea)							
1) Recyclable items: beverage bottles, cooking oil bottles, yogurt drink bottles, detergent containers, water bottles, rice wine bottles, milk bottles, combs, trash boxes, gourds, rice bags etc. 2) Non-recyclable items: telephones, buttons, cosmetics containers, tableware, PVC construction materials, writing tools 3) Plastic strings: nylon strings, ropes, electric strings, wrapping strings, etc. 4) Items with a length of below 5cm such as plastic pieces, cigarette butts and straws should be classified as "others." Their weight should be aggregated to the grand total.							

8. Clothes and Fabrics		Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based				Subtotal(ea)
Cotton glove, Cotton sock,							
Wool suit, Underwear (Recyclable item)							
Mixed yarn suit, Leather jackets, Hat, Scarf							
Waterproof fabrics, Carpet, Blanket, Cotton, Pillow							
Subtotal(ea)							
1) Recyclable items: cotton items 2) Non-recyclable items: synthetic fiber items							

9. Large Items		Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based				Subtotal(ea)
Furniture							
Electronic home appliance							
Automobile, Bicycle							
Machinery, Facilities, Drum							
Others							
Subtotal(ea)							

10. Other Items		Weight (kg) :		Number (ea) :		Volume (l) :	
	Land-based	Ocean-based	Land/Ocean-based				Subtotal(ea)
Food waste							
Debris of non-domestic origin							
[ Remarks ]							
[ ]							
Subtotal(ea)							
1) Debris of non-domestic origin: nation of origin can be identified through reading letters or barcodes printed on the debris.							

•Origin of marine debris (Unit: Weight, %)			
Classification	Total [Significant items]	[Significant items]	[Significant items]
Land-based			
Ocean-based			
Land/Ocean-based			

•Cleanup activities by other organizations		•Damage case caused from marine debris	







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