

NOAA Marine Debris Monitoring and Assessment Project

# Shoreline Survey Guide



*Photo: Pulama Lanai*

**NOAA Marine Debris Program**  
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# Shoreline Survey Guide

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# Shoreline Survey Guide

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# Introduction

Marine debris is a widespread pollution problem in the ocean and waterways. The National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program (MDP) is the United States Government's lead for addressing marine debris and serves as a centralized marine debris resource, coordinating and supporting activities among federal, state, and local agencies, tribes, non-governmental organizations, academia, and industry.

Shoreline monitoring is needed to identify and compare amounts, locations, movement, sources, and impacts of marine debris across the United States and internationally. Monitoring data can be used to inform and assess debris prevention and mitigation measures. The NOAA MDP developed standardized marine debris shoreline survey protocols that were first published in 2012 as the Marine Debris Monitoring and Assessment Project (MDMAP)<sup>1,2</sup>, with datasheets originally adapted from Cheshire et al.<sup>3</sup>. This document presents a revised (2021) version of MDMAP that was informed by field testing, data analyses, advancements in the field of marine debris monitoring, and partner feedback in the years following the initial publication.<sup>4,5</sup>

## MDMAP *at a glance*







-  **Choose a site**  
Select a 100-meter shoreline survey site
-  **Select transects**  
Randomly select four 5 meter transects
-  **Record conditions**  
Record site condition information
-  **Survey for debris**  
Within each transect search for and document items 2.5 centimeters or larger
-  **Enter data**  
Enter data online in the MDMAP database
-  **Repeat!**  
Repeat, aiming for monthly surveys at each site



Photo: NOAA

- 1 Opfer, S., Arthur, C., & Lippiatt S. (2012). *Marine Debris Shoreline Survey Field Guide*. National Oceanic and Atmospheric Administration.
- 2 Lippiatt, S., Opfer S., & Arthur, C. (2013). *Marine Debris Monitoring and Assessment*. National Oceanic and Atmospheric Administration Technical Memorandum NOS-OR&R-46.
- 3 Cheshire, A.C., E. Adler, et al. (2009). *UNEP/IOC Guidelines on Survey and Monitoring of Marine Litter*, UNEP Regional Seas Intergovernmental Oceanographic Commission, page 132.
- 4 Hardesty, B.D., Wilcox, C., Schuyler, Q., Lawson, T.J., & Opie, K. (2017). *Developing a Baseline Estimate of Amounts, Types, Sources and Distribution of Coastal Litter – An Analysis of US Marine Debris Data* (CSIRO: EP167399). Final report to the National Oceanic and Atmospheric Administration Marine Debris Program in fulfillment of Award Number NA15NOS4630201.
- 5 Burgess, H.K., Jones, T. T., Lindsey, J.K., & Parrish, J. K. (2020). *Examining Influences on Observed Counts of Shoreline Surveys of Marine Debris*. Final Report to the National Oceanic and Atmospheric Administration Marine Debris Program under Cooperative Agreement NA15OAR43200063.

## MDMAP GOALS

- ✓ Facilitate a robust and rigorous shoreline marine debris monitoring network that supports research and science-based policies.
- ✓ Guide and evaluate marine debris prevention.
- ✓ Detect spatial and temporal changes in debris loads by material and item type.
- ✓ Provide meaningful opportunities for the public to engage with the issue of marine debris.
- ✓ Provide tools to partners to be able to ask and answer questions of interest locally.

### Project database and website

Data collected using the methods in this guide can be entered into a secure [MDMAP database](#) managed by NOAA where it is viewable and accessible by other researchers and members of the public worldwide. In addition to the survey instructions and datasheets herein, the [Monitoring Toolbox](#) has tools to get started and answers to common questions.

## Survey Supplies

The following supplies are needed to complete MDMAP surveys. Direct questions or comments to MDMAP staff at [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov).

ITEM	USE
<b>Camera</b> <i>Cell phone or other digital</i>	To take photos of debris, the site, survey activities
<b>GPS Unit</b> <i>Handheld or cell phone with GPS app</i>	To record GPS points of the four corners when establishing a survey site
<b>Back-up Power</b> <i>Batteries or battery pack</i>	For cell phone, GPS, and camera – only if applicable, but back-up power can save the day
<b>Measuring Device</b> <i>Surveyor's measuring wheel or measuring tape (measurement phone apps may also be used)</i>	To measure: <ul style="list-style-type: none"><li>• the full 100-meter site length when the site is established</li><li>• the distance to the start of each transect during surveys</li><li>• the width of the beach from the back barrier to the water's edge for each transect</li></ul>
<b>Transect Markers</b> <i>Flags, stakes, or cones (at least 4)</i>	To mark at least the beginning of each transect. Extra flags are helpful to mark the edges of the transect, and to create a line from the back barrier to the water's edge.

ITEM	USE
<b>Rope or Measuring Tape</b> <i>5 meters in length</i>	To measure and maintain the 5 meter transect distance
<b>Sturdy Ruler</b>	To check if items are greater than 2.5 centimeters, and use as a scale for photos
<b>Clipboard</b>	To use as a writing surface. A cover, clips, or large rubber band can be helpful for holding datasheets down on windy days.
<b>Datasheets</b> <i>Waterproof paper if needed</i>	<b>For each survey:</b> one copy of the <i>Survey Coversheet</i> , four copies of the <i>Transect Survey Form</i> . The <i>Shoreline Site Characterization Form</i> is only needed when a survey site is first established.
<b>Pencils</b>	To write on datasheets (pencils tend to work best in variable weather, pens generally do not work if writing on waterproof paper)
<b>Reusable Container(s)</b> <i>Buckets or totes</i>	To collect debris items inside or outside the 100-meter transect. We recommend reusable cleanup supplies, such as 5 gallon buckets.
<b>First Aid Kit</b>	For safety, keep at least the essentials with you at all times. See the <a href="#">Occupational Safety and Health Administration</a> for a list of items.
<b>Field Basics</b>	To ensure your safety and comfort during surveys, bring items such as hand sanitizer, sunscreen, bug spray, drinking water, and snacks
<b>Work Gloves</b>	To keep your hands clean and protected
<b>Weather Appropriate Clothing</b>	For comfort, we recommend layers because the weather can be unpredictable

## A Note About Safety

Be safe. Use common sense and follow general safety guidelines. If you do not know what an item is, do not touch it, even with gloved hands. If it appears to be hazardous, contact the appropriate authorities. Never turn your back to the ocean near the water's edge to avoid being surprised by rogue waves. If you feel unsafe at any time for any reason, discontinue the survey and return at a later date.

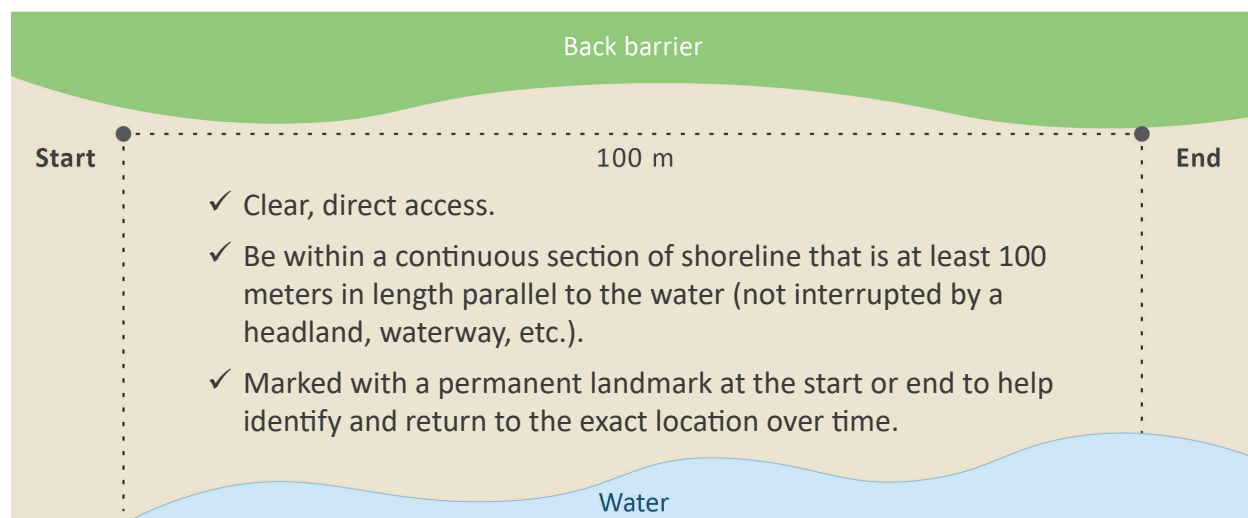
Obey all local laws, including but not limited to, land access, beach closures, sensitive habitat exclusion areas, wildlife avoidance, and waste disposal. Where necessary, be sure to obtain and keep with you any permits or passes for site access.

Create and keep with you a list of local potentially useful phone numbers. Depending on your location, these may include emergency healthcare, law enforcement, and hotlines for oil spills, hazardous waste, large marine debris, stranded animals, and illegal dumping. Consider securing a list on your clipboard for easy reference.

## Before the First Survey

### 📍 Choose a Survey Site

Select the 100-meter shoreline site(s) where you will survey (see **Diagram 1**). Shoreline sites should have the following characteristics where possible:



**Diagram 1.** Example of a 100-meter shoreline site.

These characteristics should be met where possible, but can be modified when required by the goals or circumstances of the monitoring effort.

### 📄 Characterize the Survey Site

Before beginning data collection, complete the *Shoreline Site Characterization Form* for each shoreline site. This form is used to create a record in the MDMAP database, and to describe site characteristics that are typically unchanging. Collecting this information ensures that a site can be mapped and returned to for repeated monitoring, and documents key features that can influence debris loads.

The *Shoreline Site Characterization Form* should only be completed once, when a site is first established, unless the site needs to be redefined due to significant changes (e.g., construction of a jetty, major landslide). In the event of such changes, contact MDMAP staff at [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov) for guidance. The form can be completed right before the first survey is conducted, or during a preliminary site visit.

See **page 14** for detailed field descriptions and guidance on completing the *Shoreline Site Characterization Form*.

# Survey Steps

## 🏠 Prepare Before You Leave Home

### Check tide tables

Check local tide tables (if applicable) and plan to arrive during a low or outgoing tide. This provides a means of standardization and will avoid the tide encroaching on your activities. In some regions, incoming tides are a stranding hazard.

### Pack forms and supplies

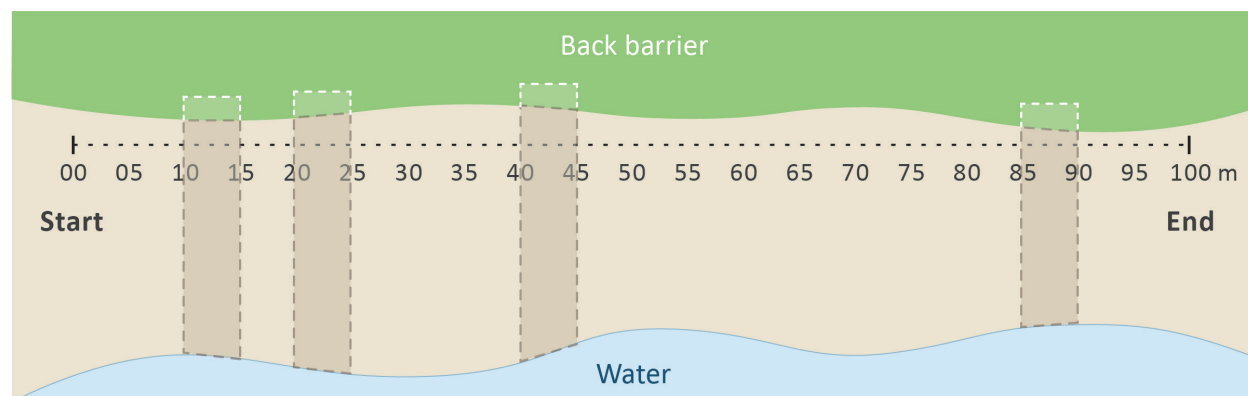
Assemble survey supplies, including one copy of the *Survey Coversheet* and at least four copies of the *Transect Survey Form*. Pre-label each transect sheet with the transect numbers that will be surveyed (see next step). Be sure to dress for the weather, and pack water and snacks.

## ↕ Select Your Transects

Select four random transects to be surveyed. Because each transect is 5 meters long (parallel to the water), there are 20 possible transects within each 100-meter site. Transects are numbered according to which 5 meter increment along the 100-meter site they begin (0, 5, 10, 15, 20, etc., see **Diagram 2**). The survey design requires a truly random set of four transects for each survey. Humans need help to be random, we cannot just pick four transects without underlying bias.

### Here are a couple of ways to select random transects for each survey:

1. Email the NOAA MDMAP team at [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov) to request a lifetime supply of random transect numbers.
2. Use the random number and rounding functions in a spreadsheet program:  
`=MROUND(RANDBETWEEN(0,95),5)`  
Enter this formula into four cells corresponding to four transect start points. If any cells return a duplicate number, try again until there are four unique numbers.



**Diagram 2.** During each survey, four random transects are searched. In this example, transect 10, 20, 40, and 85 are shown.



## Set Up the Survey and Record Site Conditions

Navigate to the survey site using a permanent landmark or the GPS coordinate of the site start. From the site start, use a measuring wheel, meter tape, or measuring phone app to find and mark the beginning of each of the four transects. These can be marked with flags or cones.

### Fill out the *Survey Coversheet*

This datasheet documents the conditions at the site during your survey that could influence debris loads encountered that day. It should be completed once per survey event.

See [page 16](#) for detailed field descriptions and guidance on completing *Survey Coversheets*.

## Survey Four Transects

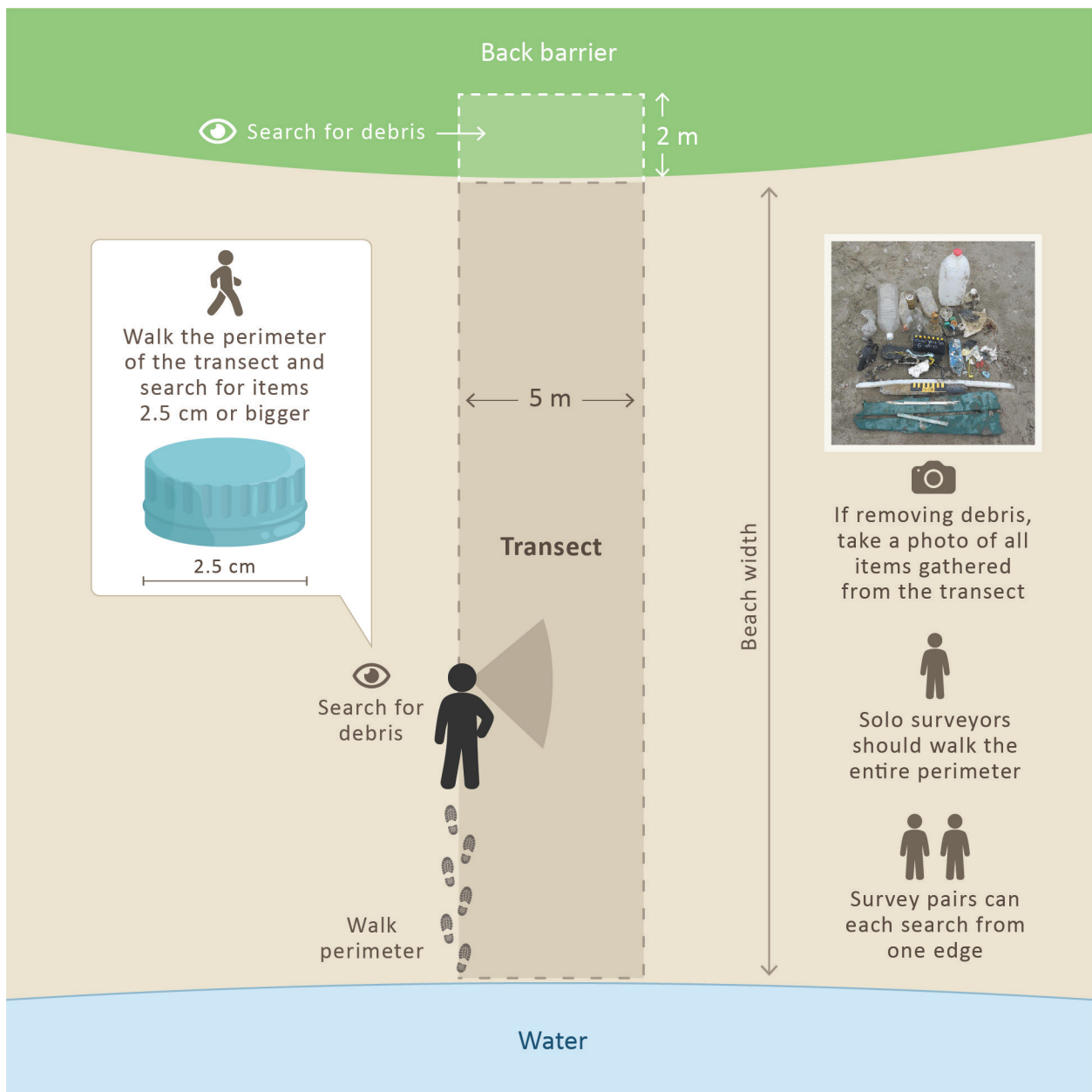
At each transect, search for debris in teams of 1 or 2 people. To ensure that data are comparable between surveys, no more than 2 people can search for debris in a given transect. If the survey team is larger than 2 people, split-up into pairs to survey each transect (see [Diagram 3](#)).

### How to search

- Search from the water's edge to the back barrier on the surface of the site. Do not dig for debris during the search.
- Walk along the edge of the transect and scan for debris within half of the transect (a distance of 2.5 meters to the center of the transect from where you are). Enter the transect only to collect debris for disposal.
- To maintain a transect that is 5 meters across, use a 5 meter rope or measuring tape. Extra flags or cones can also be used to mark the edge of the transect.
- A person searching alone should walk the entire perimeter of the transect, looking in from each edge by going down one side and back up the other.
- Two-person teams can walk in parallel, each walking one edge of the perimeter of the transect. Two people working together can hold the rope/tape between them while they search for debris.
- Record these debris item counts in the main beach section on the back side of the *Transect Survey Form*.

### Survey the back barrier

If the site has a back barrier that can be surveyed (e.g., rip rap, dune, or vegetation), measure and search a distance of two meters into the back barrier. Stand at the edge looking into the back barrier, do not enter sensitive vegetation or unstable surfaces. Record these counts in the back barrier section of the item counts side of the *Transect Survey Form*.



**Diagram 3.** Search for items below the back barrier (main beach) by walking the perimeter of the transect. To search the back barrier, stand at the boundary where it begins and look 2 meters in, if applicable. Record item counts in the main beach and back barrier sections of the *Transect Survey Form*.

## Complete Transect Survey Forms

Complete both sides of the *Transect Survey Form* before proceeding to the next transect. This datasheet documents the conditions of the transect and quantifies debris loads by material and type. Guidance on materials and item types can be found in the [MDMAP Item Categorization Guide](#). A *Transect Survey Form* should be completed once for each transect, yielding **four** forms per survey.

## What to count

Record counts of debris items on the back side of the *Transect Survey Form*. Only record items that measure at least 2.5 centimeters, or 1 inch (roughly the size of a bottle cap), in the longest dimension.

Items smaller than 2.5 centimeters should not be counted, but their abundance can be documented with photos or notes. This is because on average, people can find most items that are 2.5 centimeters or larger within a 5 meter transect, but smaller items are less likely to be detected. At this time MDMAP does not include a method for smaller debris.

Record debris items according to the predominant (majority) material type on the surface of the item.



Rubber fragments measured by longest dimension (Photo: Seba Sheavly).

See [page 18](#) for detailed field descriptions and guidance on completing the *Transect Survey Forms*.

## Take Photographs (optional)

We recommend taking photos of the transect looking towards the back barrier, all debris items found within a transect grouped together, and items that are too large to be included in a grouped photo (**see Photos A, B, and C below**). Each time you complete a *Survey Coversheet*, take site photos while standing at the start and end point of the site (at 0 and 100 meters) looking toward the center of the site (**see Photos D and E below**).



Example photo of the transect looking towards the back barrier (Photo: National Park Service).



Example photos of B) all debris items found within a transect grouped together and C) items that are too large to be moved into a grouped photo (Photos: B) Paul and Sally Parker and C) NOAA).



Photos taken from the start and end points, with both views facing the center of the site (Photos: Hawai'i Wildlife Fund).

## Submitting Your Shoreline Debris Data to NOAA

Data should be entered [online into the MDMAP database](#) after creating an account. This website also contains data visualization and exploration tools! For detailed instructions, visit the [Monitoring Toolbox](#).

After data are entered into the MDMAP database, they are reviewed by a NOAA MDP staff member. During this review, we check to make sure that data were collected following the MDMAP protocol, and look for any issues with debris categorization, feedback provided, etc. During this process, MDP staff may reach out to survey team members for clarification, as needed. Once any issues are resolved, data will be marked as “verified” and published for public access. Unverified data can only be viewed by site participants and administrators.

## Add Custom Items

MDMAP data are counted and categorized according to a standard set of material and item types that are: self-evident, indicative of the use or source, applicable globally, and concise enough to avoid being unwieldy. In some cases, partners and participants may wish to track a specific marine debris item(s) in their area that is not applicable at all MDMAP locations. For example, local activities (e.g., recreation, aquaculture) might be sources of specific marine debris types (e.g., firework debris, green polypropylene netting) that warrant monitoring. MDMAP provides an option to create “custom items” as sub-categories of the standard material/item types. Participants can use custom items that were created by others using a drop-down menu during data entry or, if necessary, request creation of a new one by contacting [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov). To add a custom item to track at your site, list it on the datasheet in the “Custom” section. Once a custom item has been added to a survey transect during data entry, it will appear by default in the database debris list for all future transects at that site.

## Ensure Data Quality

We need to work together to ensure that survey data are collected as consistently as possible across MDMAP. Consistency allows us to discern patterns of debris loads over time and make comparisons between sites and regions. If data collection strays from the instructions, it will become difficult to detect differences due to changing debris loads or types versus a change in the method used, which can negatively impact the usefulness of the data. **There are a few ways to assure data are collected consistently:**

### Review MDMAP resources

When beginning MDMAP surveys, read this survey guide and review the other materials in the [Monitoring Toolbox](#) such as the:

- ✓ Training videos (when available)
- ✓ [MDMAP Item Categorization Guide](#)
- ✓ [Frequently Asked Questions](#)

### Consistency checks

Conduct a consistency check when initiating MDMAP surveys and at least yearly thereafter:

- ✓ Gather all debris found in a transect. Categorize each item independently and compare answers with your partner. This could be done by completing separate copies of the Item Count side of the *Transect Survey Form* or more informally by categorizing item by item and discussing differences as you go. Refer to the [MDMAP Item Categorization Guide](#) as needed to reach consensus.
- ✓ Items that remain in question after this process should be photographed and described in the NOTES section of the *Transect Survey Form* to help us improve our guide.

### Onboarding new participants

Each time a new person joins the survey team, they should “shadow” an experienced surveyor before completing any data collection on their own. Reach out to [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov) with any questions or concerns.

The following sections includes detailed field descriptions to complete each form.



View of an established MDMAP site (Photo: National Park Service).

## Shoreline Site Characterization Form

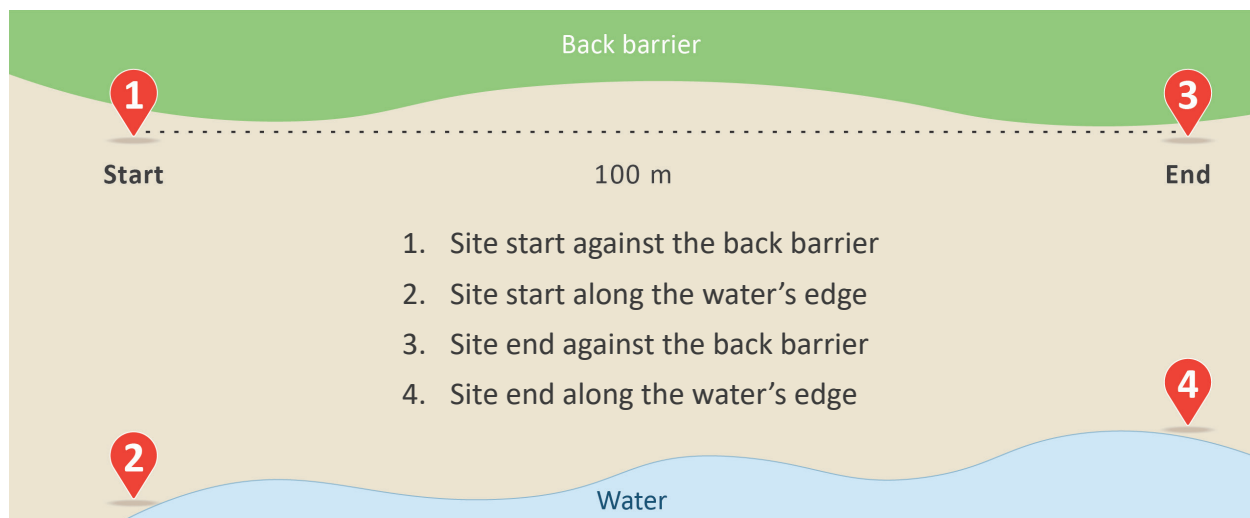
**SITE NAME:** If the site has a locally used name, choose that as the site name. If it is a name that is likely used elsewhere (e.g., “Sunset Beach” or “North Beach”), add a locally unique signifier to make it easy to distinguish in the full dataset, such as “Sunset Beach Miami” or “North Beach Lake Superior”. This will be the “official” name used in the MDMAP database to link all surveys to this site.

**DATE:** Record the date the site was characterized in the MM/DD/YYYY format.

**GROUP/INDIVIDUAL:** If an organization or structured group will survey this site, record that here. Otherwise, list the individual responsible for completing this form.

**SITE LOCATION:** Record the location of the site down to the municipal level according to local conventions (e.g., City, Village, or Borough). Defining sites according to geopolitical location allows for comparison of sites with differing policies and demographics (e.g., population density) that could impact debris loads.

**SITE COORDINATES:** MDMAP sites are defined according to the exact start and end location of the site. It is important to measure a 100-meter length of shoreline and return to the exact location at each survey. Four GPS points are recorded at the four corners of the 100-meter survey site (see [Diagram 4](#) below).



**Diagram 4.** GPS points (numbered red markers) mark the four corners of the 100-meter survey site.

The back barrier is the point, when facing inland, at which an initial barrier is reached. Barriers may include a cliff, consistent vegetation, dense driftwood, rip rap, a parking lot, etc. The 100-meter site is measured parallel to the water's edge, in a straight line along this barrier.

These GPS points are used to map the survey site in geographic information systems, group data by location, and find a survey site in the absence of permanent landmarks. The preferred unit for GPS points are Decimal Degrees (DDD.DDDDDD) out to six decimal places. Most cell phone map and GPS apps will return GPS coordinates in the appropriate units with adequate precision. However, the iPhone compass application does not, so please do not use it! If you need help figuring out how to record GPS points, refer to the guide in the [Monitoring Toolbox](#). Tools and software, especially on smartphones, are constantly evolving. We attempt to keep common options up to date. Feel free to reach out with questions at [md.monitoring@noaa.gov](mailto:md.monitoring@noaa.gov).

**DIRECTION WHEN FACING WATER:** Circle one direction on the compass. When standing at the back barrier of the shoreline, what direction is the water? This information can be obtained using a compass, a compass app on a smart phone, a GPS unit, or by looking on a map. This helps to understand the impact that coastal circulation patterns may have on debris loads.

**SITE PHOTOS:** We recommend taking photos standing at the start and end point of the site (at 0 and 100 meters) looking toward the center of the site. This space is yours to record timestamps, photo number, or other information that will make it easy to associate photos with the site when uploading to the database.

**NEAREST RIVER, STREAM, OR INLET:** Determine the nearest freshwater input and measure the distance from the survey site to the input using a local map, atlas, or mapping software. Measure the straight-line distance from the start point of the survey site to the nearest freshwater inflow in kilometers. Shoreline sites may be bordered by a river or stream, in which case, the distance to the nearest input will be zero. Freshwater inflow can influence debris loads to the nearshore environment and so it is important to document its proximity.

**SITE REMOTENESS:** Check one option. Site remoteness (distance to an access point) will provide some clues as to recreational activity, the likelihood of onsite littering, and the likelihood of

regular cleanups. It can also help identify sites that can be easily accessed versus those that may take more effort to survey.

**SELECTION CRITERIA:** Select all that apply. This information helps the NOAA MDP understand what motivates participants to regularly monitor a site and can inform data analysis and interpretation.

**NOTES:** Describe any additional features about the shoreline site.



An MDMAP participant recording conditions of their survey site (Photo: Pulama Lanai).

## Survey Coversheet

**SITE NAME:** This should be the same as the site name assigned on the *Shoreline Site Characterization Form*.

**DATE:** Record the date the survey was conducted in the MM/DD/YYYY format.

**PARTICIPANT INFORMATION:** This information will only be visible to MDMAP staff. It will be used to communicate about MDMAP and to understand how long and how frequently people participate in MDMAP. If a participant wishes to remain anonymous and/or not to receive communication from MDMAP staff, leave this information blank but include the individual in the total team count (below). Participants only need to provide their email once, or if it changes. After a participant has attended one survey their name and contact information (if provided) will be saved in the database. Please reach out if you have any concerns about how your information is being used.

**TOTAL SURVEY DURATION:** Estimate the total time spent on the beach conducting the survey and traveling to and from the survey site. Total survey duration will help estimate total volunteer hours and provide information on the average time it takes to conduct surveys.



**K-12 GROUP?** We are interested in tracking and facilitating K-12 educator use of MDMAP, but only need the teacher, school, or class name. Student names and emails should not be recorded. However, please include/count each student in the “team count”.

**TEAM COUNT:** This is a count of the total number of participants involved with the survey unless some participants wish to be anonymous, in which case the team count will be larger than the number of participants listed.

**FIRST TIMERS:** Provide a count of how many individuals are completing an MDMAP survey for the first time. Do not count individuals who have completed an MDMAP survey at a different location. This information allows for tracking the rate of recruitment of new participants and the total number of participants over time.

**RECREATORS:** Upon arrival, estimate the number of people within the 100-meter survey site, both on the beach and in the water, that are not part of the survey team. This information can influence the likelihood of litter as well as cleanup activities. Swimmers, surfers, snorkelers, etc. should be counted, but people in vessels (e.g., jet ski, kayak, boat) should not.

**WEATHER NOW:** Check one of the options listed. The current weather conditions might affect the ability to find debris.

**DRAIN INPUT:** Select yes or no as to whether a storm drain or other input, such as a ditch or outfall, is present within the site. Storm drains and channelized inputs are known sources of land-based debris, and recording their presence allows us to track their influence on debris loads.

**TRASH CANS:** Are there accessible receptacles for disposal of trash visible at this location (parking lot, beach access, etc.)? If so, are any overflowing? This gives us the ability to see the relationship between litter on the beach and options for disposal.

**DEBRIS REMOVAL:** Note here whether debris larger than 2.5 centimeters was removed from the 100-meter survey site, following the survey. Debris removal is optional but encouraged. Removal of debris may influence future loads, so it is important to document the extent to which the survey site was cleaned. Survey all four transects BEFORE cleaning-up any other part of the survey site.

**SURVEY PHOTOS:** We recommend taking photos standing at the start and end point of the site (at 0 and 100 meters) looking toward the center of the site, to help document changes in the site over time. This space is yours to record timestamps, photo number, or other information that will make it easy to associate photos with the survey when uploading to the database.

**NOTES:** This is a place to record other potentially relevant or interesting information on the state of your survey site on the date of the survey, including debris items of interest not found within the surveyed transects.



Measuring out a transect during a survey (Photo: Christina Trapani/Eco Maniac).

## Transect Survey Form

**SITE NAME:** This should be the same as the site name assigned when the *Shoreline Site Characterization Form* was completed. We ask for it here in addition to the *Survey Coversheet* so that it is easy to keep track of datasheets over time.

**DATE:** Record the date the survey was conducted in the MM/DD/YYYY format.

**TRANSECT START:** Which one of the 20 random transects was surveyed? Transects are selected prior to arriving at the beach following the instructions provided on [page 8](#).

**BEACH WIDTH:** Measure the beach width for each transect (in meters) from the beginning of the back barrier to the water's edge. This can be done using a measuring wheel, meter tape, or measurement app on your phone that utilizes its internal GPS. This measurement is required to calculate the area of the surveyed transect.

**SLOPE:** Although rigorous approaches exist for measuring beach slope, for the purposes of MDMAP, it can be visually estimated by standing near the water's edge and looking toward the back barrier and estimating the height of the back barrier relative to your body: knees or below (pretty flat), knees to shoulders, shoulders and above (quite steep). We do not recommend turning your back to the ocean and suggest performing this measurement with a spotter. Beach slope is a measure of the angle of the beach, which affects how debris is deposited and persists on the shoreline. It can change within a site, and over time due to erosion.

**PRIMARY SUBSTRATE:** Select the primary substrate. Substrate gives an indication of the likelihood that debris will be deposited and stay on the beach, whether it will be buried, and how easily it can be found. This may change within a site and over time, so we track substrate at the transect level.

**BACK BARRIER:** Select which type of back barrier is present at the site. The type of back barrier will help us interpret debris loads on the main beach compared to the back barrier. The back of the shoreline is the landward limit of the site, where the beach transitions to some other substrate, habitat, or physical barrier.

**SEARCH TEAM SIZE:** While survey/cleanup teams can be quite large, a single transect should be searched by only one or two people. This ensures that data are comparable between surveys. A survey is never “perfect” – not all debris items will be found, but by making effort consistent between transects and surveys, we can make sure that patterns of debris quantity are due to actual debris loads rather than the number of eyes on the transect.

**DEBRIS REMOVAL:** Debris removal is optional but encouraged. Removal of debris may influence future loads, so it is important to document the extent to which the transect was cleaned.

**CONSISTENCY CHECK:** Consistency checks are described in more detail on [page 13](#). They are a procedure that helps teams ensure that items are categorized consistently between surveyors, and to help the MDMAP improve our training resources over time. Note if a consistency check was conducted and describe any questions or confusion that arose in the notes.

**TRANSECT PHOTOS:** We recommend taking photos of a) the transect looking towards the back barrier; b) all debris items found within a transect grouped together (if debris is being picked up during the survey); c) items that are too large to be included in a grouped photo; and d) any unidentifiable or new custom items ([see Photos A, B, and C](#)). Photos should include a ruler for scale. This space is yours to record timestamps, photo number, or other information that will make it easy to associate photos with transects when uploading to the database.

**NOTES:** This is a place to record other potentially relevant or interesting characteristics of the transect or debris items on the date of the survey, including items that could not be categorized and/or the presence of marine debris items smaller than 2.5 centimeters or too large to be removed.



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*Photo: Washington Department of  
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