Methodology for conducting a survey ensures that any well-trained volunteer will conduct observations and gather data in the same manner. Existing MPA Watch programs have agreed upon standardized protocols that promote consistency across the state.

MPA Watch Survey Protocol (Land-Based)

The following protocol is designed for MPA Watch community science volunteers as the audience. It details the steps required to complete a land-based survey including preparation and materials required, alignment on the coast, how to count activities and when, ending a survey route, and entering data into the online database.

How to Conduct a Survey

1 Have all required materials are on hand before conducting a survey. This includes:

- MPA Watch field guide/maps (survey protocol and directions for conducting the survey)
- Data Sheets (one for each survey)
- Clipboard

- Writing Utensil
- Watch
- Compass (can use on smart phone) or GPS
- Digital camera (encouraged but optional)
- Binoculars (encouraged but optional)

2 Fill out the top portion of the data sheet, writing in some of the metadata (Name, Date, Transect ID/Site).

3 Walk to the designated start point.

4 Write in the existing metadata (Start Time, Weather, Tide, etc.)

5 To begin the survey accurately, use a compass or GPS unit to orient yourself in the correct direction of the MPA boundary or transect boundary (see program field guide for site specific orientation directions).

6 Start walking the specified route your survey protocol describes, usually along the mean high tide line, observing and recording all people and boats on the beach or in the water. Do not count people on bluffs, trails, roads, or parking lots. The first occurrence of infrastructure or bluff onshore constitutes the shoreward boundary. The only activities you can count on trails or bluffs are active shore-based hook and line fishing, where the fishing line is touching the waters of the MPA or control site. In some cases limited access prevents volunteers from moving steadily along a transect route. Instead, they must visit predefined vista points and scan the coast to document activities occurring across a wide area. For all vista points, the time spent observing at each vista point should be the smallest amount of time needed to count all activities across the defined transect.

7 As you walk, record any activity in the appropriate categories when you pass the people doing that activity. For example, if you see someone surfing 50 feet ahead of you, do not count that activity until you pass the person who is surfing. People's activities may change from the time you first see them until the time you pass them, so to maintain scientific consistency, you should only record the activity you see them doing when you pass them. Count every single person you see, except in the case of boats (a boat gets one tally regardless of the number of people aboard). Each person or boat counted gets a tally in only one category. Also, domestic animals are tallied separately from their owner. For example, if a man is walking his leashed dog down the beach, this counts as one "Beach Recreation" and one "Domestic Animal".

8 Do not count any activity that is happening behind you. Only count activity that is happening between you and the stop point as you pass them. However, for example, if a person is running along the beach in the same direction you are walking and he passes you from behind, you should count that activity as running when he passes you (as long as you have not counted him earlier in the survey). Try not to double-count people if their activity changes.

9 All activities should be counted as you pass them and as they are happening. The only activities you can count if the person is not actively doing those activities in the water are surfing and SCUBA diving. If a person is in a wetsuit and is walking with his surfboard along the beach (and he has no other beach recreational items with him), it can be assumed that his only activity is or was surfing. The same can be assumed for a person walking along the beach in a wetsuit and SCUBA gear. However, if a person is next to a surfboard lying on the sand and he or she is in clothes or a bathing suit (NOT a wetsuit), you should count that activity as "beach recreation" because we cannot assume that his/her only activity is or was surfing.

10 Wildlife watching should only be counted if the activity is taking place on the beach or in the water- not on bluffs or trails. Wildlife watching is indicated by the use of binoculars or overt pointing and gesturing towards wildlife (such as whales, sea lions, etc.).

11 When recording consumptive boat fishing activities, make sure to properly mark if a person is inactive or active in the appropriate section of the data sheet. Active fishing is indicated by lines in the water, traps or nets set or pulled up from the water, and divers with fishing gear entering or exiting the water. Inactive fishing is when fishing gear is visible or present on board, but not baited, in the water, or being used. It is allowed for a person to transit through an MPA with fishing gear to areas where fishing is permitted as long as the gear is not baited or ready to be used to fish. Therefore, for example, we need to differentiate between a kayaker with a rod/reel on board who is legally transiting through an MPA, and a kayaker with a rod/reel that is actively fishing inside the MPA.

12 When you arrive at the end point, stand facing the ocean and use your compass or GPS to orient yourself in the accurate direction for the end of the survey. Imagine a line that extends out to the ocean as the border of the survey segment, and use this to accurately record only the activities within the survey area on your data sheet.

13 Write the end time at the top of the data sheet.

14 Total the tally marks in each individual box and circle the numbers when you finish your survey.

15 Begin your next survey on the next data sheet. Please only survey any one transect once per day. If you would like to conduct more than one survey in the same day, you may survey a different transect.

16 If you have been trained and approved for data entry, please log in to www.mpawatch.org to enter your data, and attach a photo or PDF of your data sheet to the survey online.

17 If you have not been trained and approved for online data entry, send your data sheet to the local MPA Watch program administrator via an email attachment, fax, mail, or in person.

Reminders:

1. Each survey should take no longer than one hour (one direction).
2. Only mark the activity the person is actively engaging in.
3. Some surveys may have no activity – fill out data sheet with zeros and write "no activity". These surveys are equally as important as ones that have plenty of activities recorded.
4. Fill out a separate data sheet for EACH transect surveyed.
5. **SAFETY FIRST!**
   a. Do not compromise your safety to collect the data!
   b. Be aware of people approaching you- be friendly, provide them with a general overview of what you are doing.
   c. Do not approach people engaged in an activity -especially fishing- as you are taking observational surveys and do not want to influence behavior while conducting a survey, or put yourself in a controversial or dangerous situation.

MPA WATCH LAND-BASED DATASHEET

Name(s):		Date: ___/___/_____	Transect ID:
Start Time:	End Time:	Clouds: clear (0%)/ partly cloudy (1-50%)/ cloudy (>50%cover)	Precipitation: yes / no
Air Temperature: cold / cool / mild / warm / hot		Wind: calm / breezy / windy	Tide Level: low / med / high
Visibility: perfect / limited / shore only		Beach Status: open / posted / closed / unknown	

On-Shore Activities	Rocky	Sandy
Recreation (walking, resting, playing, etc. NOT tidepooling)		
Wildlife Watching		
Domestic animals on-leash		
Domestic animals off-leash		
Driving on the Beach		
Tidepooling (not collecting)		
Hand collection of biota		
Shore-based hook and line fishing		
Shore-based trap fishing		
Shore-based net fishing		
Shore-based spear fishing		

Off-Shore Activities (Non-Boating)	
Offshore Recreation (e.g., swimming, bodysurfing)	
Board Sports (e.g., boogie boarding, surfing)	
Stand-Up Paddle Boarding (alternatively can tally in paddle operated boat below)	
Non-Consumptive SCUBA and snorkeling	
Spear Fishing (free diving or SCUBA)	
Other Consumptive Diving (e.g., nets, poles, traps)	

Boating	Recreational		Commercial		Unknown	
	Inactive	Active	Inactive	Active	Inactive	Active
Boat Fishing - Traps						
Boat Fishing - Line						
Boat Fishing - nets						
Boat Fishing - Dive						
Boat Fishing - Spear						
Boat Kelp Harvesting						
Unknown Fishing Boat						
Paddle Operated Boat (can separately tally stand-up paddle boarding above under board sports)						
Dive Boat (stationary – flag up)						
Whale Watching Boat						
Work Boat (e.g., life-guard, DFW, research, coast guard)						
Commercial Passenger Fishing Vessel (5+ people)						
Other Boating (e.g., powerboat, sail boat, jet ski)						

Comments

Did you observe: ☐ scientific research; ☐ education; ☐ beach closure; ☐ large gatherings (e.g., beach cleanup); ☐ enforcement activity

Describe below and provide counts of individuals involved where possible, and whether it took place on rocky or sandy or sandy substrate.

Did you report a violation: ☐ yes ☐ no   If yes, how many violations did you report _____

Who did you report the violation to (mark all that apply): ☐ DFW   ☐ State Parks   ☐ other entity (e.g., lifeguard, harbor patrol)

Which method did you use to report your violation (mark all that apply): ☐ phone call ☐ text ☐ mobile app ☐ website ☐ email ☐ in person

Statewide MPA Watch
Land-Based Data Sheet

Statewide MPA Watch Data Definitions

MPA Watch program management takes place at the local level, administered by the local MPA Watch program. The considerations below offer guidance to programs in selection of transect routes, volunteer training, and program management. One of the first things a program should do is define their total coverage of the coast, understand where MPAs are, and make sure coordination is not overlapping with other MPA Watch programs. Defining sites, and transects within those sites, is a careful balance between practical and scientific considerations. In addition, when scouting survey routes, program managers will need to map and define methods of conducting surveys- such as from a bluff, or walking along the beach. Program managers will also need to define transects with a specific start point and end point, and map them clearly in the local program's volunteer field guide so transect routes are easily findable, surveys can be completed accurately, and safety considerations such as tides are identified.

Table 2. Metadata definitions on datasheet

Metadata	Definition	Note
Name(s)	First and Last Name	
Date	Month / Day / Year	
Transect ID	Name of transect	
Start Time	Time data collection begins	This could be different from the time you make your first observation.
End Time	Time data collection ends	This could be different from the time you make your last observation.
Clouds	Clear (0%)/ partly cloudy (1-50%)/ cloudy (>50%cover)	
Precipitation	Yes/No	If there is the presence of precipitation anytime during the survey indicate "yes."
Air Temperature	Cold / cool / mild /warm / hot	Automated temperature data from Weather Underground are linked to surveys submitted in the data portal.
Wind	Calm / breezy / windy	Automated wind data from Weather Underground are linked to surveys submitted in the data portal.
Tide Level	Low/ Medium / High	Automated temperature data from Weather Underground are linked to surveys submitted in the data portal.
Visibility	Perfect / limited / shore only	
Beach Status	Open / posted / closed / unknown	

On-Shore Activities

Recreation
Walking, hiking, running, resting, playing, sitting, camping, art (NOT TIDEPOOLING).

Wildlife Watching
Use of binoculars or a spotting scope OR visible interaction with wildlife (e.g. pointing at).

Domestic Animal On-Leash
(also count the human as recreation)
Mostly dogs, but could apply to other domestic animals. Note non-dogs in the comments section.

Domestic Animal Off-Leash
(also count the human as recreation)
Mostly dogs, but could apply to other domestic animals. Note non-dogs in the comments section.

Driving on the Beach
(count vehicle, not people)
Motorized vehicles, actively driving, or parked on the sand. E.g. Lifeguards, Humane Society, CA State Parks vehicles.

Tidepooling
Actively observing tidepools without physical contact to the wildlife/tidepool itself.

Collecting
(things that are alive or were alive, e.g. shells)
Collecting marine life into a bucket or net and taking it away. Common examples include clams and shells.

Shore-Based Fishing
(describe gear in comments)
Fishing line in the water, casting a line, use of a net or hoop net, spear fishing.

Sandy- If an activity occurs on a sandy shoreline. Apply, where applicable, to ALL onshore activities.

Rocky - If an activity occurs on a rocky shoreline. Apply, where applicable, to ALL onshore activities.

Off-Shore Activities

Surfing/Boogie Boarding
aka "Board Sports"
Surfing, boogie boarding, kite surfing, wind surfing.

Offshore Recreation
Swimming, wading (knees or deeper), bodysurfing, etc.

Stand-Up Paddle Boarding
Stand-up paddle boarding.

Non-Consumptive SCUBA and Snorkeling
In water, gearing up, entering or exiting the water - no collection or fishing gear.

Spear Fishing
(Free Diving or SCUBA)
In water, or gearing up, entering or exiting the water with observed spear gun.

Other Consumptive Diving
Possession of marine life (lobster, scallops, etc.) and/or presence of nets and/or bags.

Consumptive - An activity in which a natural resource (e.g. animal, plant, rock, sand) is removed from the environment.

Non-Consumptive - An activity in which natural resources are not removed.

Boating

Boat Fishing
(describe gear in comments)
Poles, nets, traps, tow lines, purse seines, spear guns, etc.

Kayak/Canoe/Dinghy
Each counts as 1 regardless of number of people on board.
On water, launching, or hauling out.

Dive Boat
(stationary - flag up)
Look for divers or dive gear.
No presence of fishing gear.

Whale Watching Boat
Passengers observing marine life (dolphins, whales) - can be two levels or one on boat, binos, cameras.

Work Boat
Including lifeguard boats, enforcement, research, military, coast guard, etc.

Commercial Passenger Fishing Vessel (CPFV)
aka "Party Boats"
5+ anglers visible on board.
Record name of boat if possible.

Other Boating
Any powerboat, jet ski, or sailboat, which is not obviously a work-boat.