

## How to complete

# the assessment form

Completion of an Oiled Shoreline Assessment Form for each segment is a fundamental part of recording the information obtained.

The Assessment Form is a double-sided sheet, which may be supported by a sketch, photographs and videos as appropriate.

It is recommended that multiple copies of the form are carried by the assessment team(s) – enough for each segment allocated to the team plus spares.

If necessary, the form can be copied onto waterproof paper and attached to a clipboard.

The Oiled Shoreline Assessment form comprises eight boxes. Below are step-by-step instructions on the completion of each element of the form. Illustrations are included to demonstrate how a form is typically completed. A blank copy of the full form is included in Part 2, datasheet n°1.

Although the Assessment Form has been designed to be relatively simple to complete, there are circumstances when full information may not be available. In these cases, it is acceptable for forms to be only partially completed. This is most likely to occur in the early stages of an incident and may relate to elements such as the unavailability of accurate latitude and longitude readings, or no available information on sub-surface oiling.

It is important that potential users of the Assessment Form are given training on its purpose and how it is most effectively completed. This training may be carried out before an incident occurs, as part of contingency planning, or it may be arranged as an 'induction' during an actual incident, prior to 'live' surveys. The former is preferable, as there is much less time pressure and therefore greater scope for better learning.

## General information

The first three elements of the form are intended to collect basic site information and they are largely self-explanatory. The name of the local territorial administrative division has to be adapted to each country.

The tidal range in the Mediterranean varies from very low to up to 2 m. In those areas where there is little or no tide present, the words 'NO TIDE' should be written if this is the case.

### "Box 1"

box 1	<b>GENERAL INFORMATION</b>	Incident: <i>Nobiga</i>	Date: <i>09/01/12</i>
	Commune/Region	Survey time: <i>10:00</i> to <i>11:15</i>	Tide: <i>no tide</i>

## Survey team

The names of all survey team members should be entered, along with their affiliation and telephone contact number (in case there is a need for any clarifications).

### "Box 2"

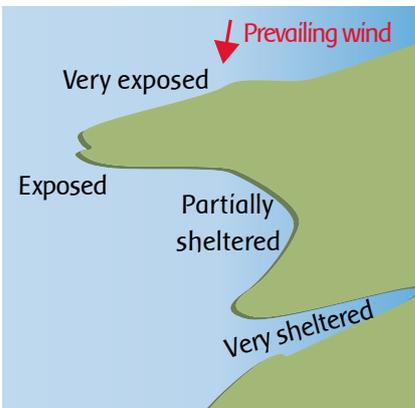
box 2	<b>SURVEY TEAM</b>	Organisation:	Telephone number:
	<i>John Tullow</i>	<i>Environment Ministry</i>	<i>+12 345 6789</i>
	<i>Jose Ballesteros</i>	<i>Municipality</i>	<i>+12 456 7891</i>

## Site and segment details

The 'Segment ID' (identification number) is the unique code which should be issued by the command centre during the survey design. In the early stages of an incident or, in some cases, during the whole spill, the identification number may not be available. That is why the name of the site (if any) or other geographical references are necessary to help to identify the site. Map kilometric coordinates may be used in place of latitude and longitude. In most cases, the total segment length and length surveyed will be the same.

"Box 3"

box 3	<b>SEGMENT</b>	Segment ID: <i>WC 02</i>	Name of site: <i>Ramla bay</i>
	Total Length: <i>600</i> m	Length surveyed: <i>600</i> m	
	Start GPS: Lat: <i>36°03'41.58"N</i>	Long: <i>14°17'03.00"E</i>	Other ref:
	End GPS: Lat: <i>35°46'08.02"N</i>	Long: <i>14°36'09.80"E</i>	Other ref:
	Exposure: high / <u>medium</u> / sheltered / very sheltered / don't know		
	Coastline type description (i.e. estuary, boulder beach, marsh, cliff coastline, port...):	<i>Sandy beach and dunes between rocky headlands</i>	



Coastline type description:  
'Sandy beach and dunes  
between rocky headlands'

### Wave exposure

This refers to the approximate overall exposure rating of the upper shore (or oiled) parts of the segment:

**Very exposed:** Sites which face into prevailing winds and receive oceanic swell without any offshore breaks (islands...) for several hundred kilometers.

**Exposed:** Sites where strong onshore winds are frequent but also have a degree of shelter because of extensive shallow areas or other to seaward obstructions.

**Partially sheltered:** Sites with a restricted sea area over which the wind blows (fetch) generally <10 km. They can face prevailing winds but with extensive shallow areas to seaward or they may face away from prevailing winds.

**Very sheltered:** Sites with a very restricted sea area over which the wind blows (fetch) generally <2 km and which face away from prevailing winds or have obstructions such as reefs to seaward or are fully enclosed.

Sediment grain shape and beach slope are good indicators of beach exposure. For visual aid, see Part 2, datasheet 4.

### Coastline type

The objective is to describe in a few words the main geographical features of the coastline.

## Shoreline substrate type

### "Box 4"

It is important to identify the nature of the substrate in oiled areas.

'Box 4' is a tool box that provides a description of different substrates and common language to help you fill in 'Box 6' on substrate oiling conditions, so you are not expected to fill in 'Box 4'.

#### TOOL BOX: SHORELINE SUBSTRATE TYPE DESCRIPTION (NOT TO BE FILLED IN)

box 4

Man-made structures	solid (quay...)	Sand (60 µm to 2 mm)
	permeable (rip-rap...)	Mud (<60 µm) (grains not visible)
Cliff	rocky	Mixed sediments
	soft	Sand with vegetation (dune)
Bedrock platform		Mud with vegetation (saltmarsh)
Boulder (> 25 cm)		
Cobble (6 cm to 25 cm)		
Pebble (2 cm to 6 cm)		
Granule (2 mm to 2 cm)		

#### Boulder > 25 cm



#### Cobble 6 - 25 cm



#### Pebble 2 - 6 cm



#### Granule 2 mm - 2 cm



#### Sand 60 µm - 2 mm

#### Mud (grains not visible to eye) < 60 µm

There are various scales for classifying sediments based on the grain sizes. For the purposes of shoreline assessment, broad categories have been used. Use the box above as a guide to the size of sediment to determine the nature of the beach substrate. Categories have been chosen based on their implications for shoreline cleanup techniques. Well-known visual references (tennis ball, pencil diameter...) can help to determine the size of sediment grains (see Part 2, datasheet n°4) and see also photographic guide (Part 2, datasheet n°6).

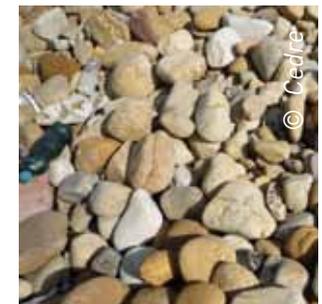
1

2

3

4

1. mud
2. sand (medium)
3. granule
4. cobble



## Operational features

### "Box 5"

Operational features will assist decision makers and logistics or operational personnel in making an initial evaluation of the viable options for cleanup activity.

OPERATIONAL FEATURES	
Direct backshore access? <input checked="" type="checkbox"/> yes / no	Suitable: <input checked="" type="checkbox"/> pedestrian / <input checked="" type="checkbox"/> trucks
Accessible from the neighbouring segment? <input checked="" type="checkbox"/> yes / no	Suitable: pedestrian / trucks
Debris ? <input checked="" type="checkbox"/> yes / no	<input checked="" type="checkbox"/> Not much / a lot / don't know / approx. volume: ..... Oiled? <input checked="" type="checkbox"/> yes / no
Algae/posidonia deposit? yes / <input checked="" type="checkbox"/> no	Not much / a lot / don't know / approx. volume: ..... Oiled? yes / no
Oiled fauna? yes / <input checked="" type="checkbox"/> no	Type Nbr: .....
Uses: <input checked="" type="checkbox"/> tourism / fishing / other:	Conservation: yes / <input checked="" type="checkbox"/> no. If yes, specify: historical / archaeological / nature

box 5

Information on access will be given by circling the relevant options. If you want to record any useful complementary information (private property, locked gates, features that may limit movement across shore...), use Box 8 'General comments'.

Record whether debris is present on the shore and if it is oiled by circling the relevant option. When possible, evaluate the approximate amount (to help you, try to imagine how many bags or trucks you could fill with this amount of debris...), if you cannot, just circle 'don't know'.

1

2

3

4

1. Difficult access
2. Seaweed
3. Posidonia
4. Debris



## Surface and subsurface oiling

Making a detailed record of oiled areas is one of the most important elements of the shoreline assessment. The form requires some quantitative measurement of oiled zones, using widely recognised descriptive terminology. Volume will be estimated by the supervisors on the basis of information below ( $V = L \times W \times \text{Thickness} \times \text{Distribution}$ ).

### "Boxes 6 & 7"

### Surface oiling

boxes 6 & 7	<b>SURFACE OIL</b>		If the segment has relatively uniform oiling conditions along or across shore, complete one section: zone A. If not, subdivide the segment into as many zones as necessary and complete as many sections: B, C, D...										
	<b>SUBSURFACE OIL</b>												
	ZONE A		Level: upper beach / middle beach / lower beach (circle option)						If necessary: Long: .....				Lat: .....
	Substrate		6. Surface oil? yes / no					7. Subsurface oil: yes/no/don't know					
	(choose type from Box 4)		Length (m)	Width (m)	Distr*	Thick**	Charact***	Pit ID	Penetration depth (cm)	Buried			
									depth (cm)	thickness (cm)	water (cm)		

See foot notes of the form for terminology used to estimate oil distribution (\*), thickness (\*\*) and oiling characteristics (\*\*\*)

\* **Distribution:** **Tr**ace < 1%; **SP**oradic (1-10%); **PA**tchy (11- 50%); **BR**oken (51-90%); **CO**ntinuous (91-100%)

\*\* **Thickness:** **TO** = Thick Oil >1 cm; **CV** = CoVer 1 mm to 1 cm; **CT** = CoaT <1 mm; **FL** = FiLm = transparent sheen

\*\*\* **Characteristics:** **FR** = FResh; **MS** = MouSse; **TB** = Tar Balls <10 cm; **PT** = Tar Patties: 10 cm to 1 m; **PA** = PAtches: 1 to 30 m; **SR** = Surface oil Residue: non cohesive oiled sediment; **AP** = Asphalt Pavement: cohesive mixture; **TA** = TArry: almost solid weathered oil.

## For surface oiling

### If no surface oil is present:

circle 'no' and no further information is required in the boxes of this section.

### If surface oil is present:

**STEP 1** - If the segment has relatively uniform oiling conditions along or across the shore, complete one section: zone A. If not, subdivide the segment into as many zones as necessary for an accurate description of oiling conditions, give each zone an ID (A, B, C...) and complete as many boxes: zones A, B, C, D... In the form, space is provided for 4 zones. If you need more, use an additional sheet of paper.

**STEP 2** - Define for each zone:

- level (in relation to tidal height): circle option
- substratum type (choose in box 4)
- oil extent (i.e. length, width of the oiled zone and the percentage distribution of oil within it)
- oil thickness (estimate actual thickness in cm or mm for 'Thick Oil' and 'Cover')
- oiling characteristics.

**STEP 3** - Annotate map and/or draw a sketch map with the location of oiled zone(s).

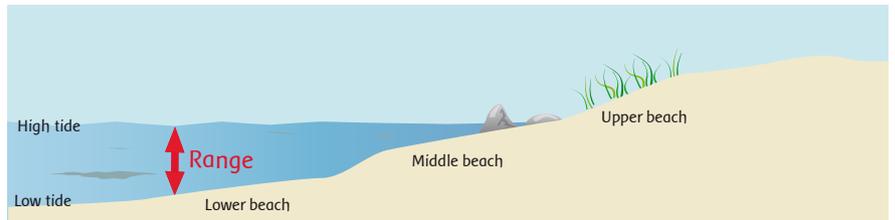
See p. 26 for guidance on drawing sketches.

Ensure photographs or videos of zones are taken and reference the n° of the photo to the segment and oiled zone. See Part 1, p. 30.

## Level (Tidal)

Level refers to the height of oil on the shore in relation to the tide. This information is important to evaluate the risk of oil remobilisation.

Indicate the position of the oiled zone by circling the relevant option. Oil may be thrown into the upper beach (supratidal zone) by large waves during storms.



Cross-section through shoreline showing tidal position

## Length

Length refers to the along-shore distance (parallel to the water's edge) of the oiled lines.

## Width

Width refers to the average across shore distance (perpendicular to the water's edge) of the oil band within a segment or zone.

## Distribution

Distribution represents the actual percentage of the surface that is covered by oil within a given area.

The percentage of coverage is probably the most difficult to estimate: the objective is not to provide an exact measurement of oil distribution, which is generally not homogenous, but to try to reach an average.

TR	Trace < 1%
SP	Sporadic 1 - 10 %
PA	Patchy 11 - 50 %
BR	Broken 51 - 90 %
CO	Continuous > 90 %

See Part 2, datasheet 5, for visual aids and methodology to determine this percentage.

## Thickness

Thickness refers to the average or dominant oil thickness within the segment or zone.

TO	Thick oil (fresh oil or mousse > 1 cm thick)
CV	Cover (oil or mousse from >0.1 cm to <1 cm on any surface)
CT	Coat (visible oil <0.1 cm, which can be scraped off with fingernail)
FL	Film (transparent or iridescent sheen or oily film)

For visual aid, see photographic guide, Part 2, datasheet 7.

## Characteristics

This column provides a qualitative description of the form of oil.

FR	Fresh oil (un-weathered, liquid oil)
MS	Mousse (emulsified oil occurring over broad areas)
TB	Tar balls (discrete accumulations of oil <10 cm in diameter)
TP	Tar patties (discrete lumps or patches >10 cm diameter)
PA	Patches (accumulation of oil > 1 m < 30 m)
SR	Surface oil residue (non-cohesive, oiled surface sediments)
AP	Asphalt pavements (cohesive, heavily oiled surface sediments)
TA	Weathered tarry oil, almost solid consistency

For visual aid, see photographic guide, Part 2, datasheet 7.

Examples of different surface oiling:

1

2

3

4

1. Lines of tarballs (patchy)
2. Mousse tar patties (patchy)
3. Thick mousse (continuous)
4. Weathered tarry coat (continuous)



© Cedre



© Cedre



© Cedre



© Cedre

## Subsurface oiling

boxes 6 & 7

**SURFACE OIL**

**SUBSURFACE OIL**

If segment has relatively uniform oiling conditions along or across shore, complete one section: zone A. If not, subdivide the segment into as many zones as necessary and complete as many boxes: B, C, D....

ZONE A Level: upper beach / middle beach / lower beach (circle option)

Substrate		6. Surface oil? yes / no				7. Subsurface oil : yes / no / don't know				
(choose type in Box 4)	Length (m)	Width (m)	Distr*	Thick**	Charact***	Pit ID	Penetration depth (cm)	Buried		
								depth (cm)	thickness (cm)	water (cm)

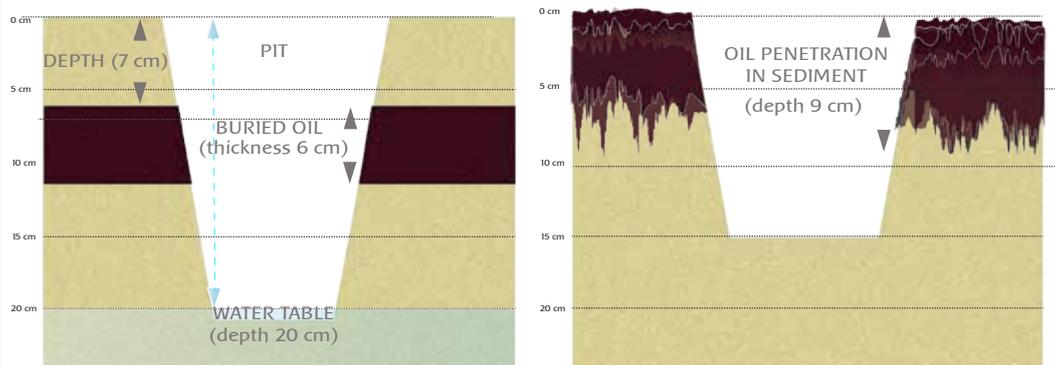
The presence of sub-surface oil can be due to:

- ↳ penetration of oil to a certain depth in the case of coarse sediment (pebbles, gravel) and /or of liquid oil
- ↳ buried oil because of movements of beach materials in rough sea conditions, such as storm events.

This subsurface oil can only be evaluated or revealed by digging trial pits or trenches in the shoreline. Such investigation should only be undertaken if buried oil is expected or suspected. Generally, a first rough evaluation is followed by systematic digging if the first rapid investigation leads to discovery of the presence of subsurface oil.

Depending on how deep the pits are dug, the water table may or may not be reached.

Subsurface film on water table



## For subsurface oiling

If you did not or could not make an investigation

circle 'don't know'

If no subsurface oiling is found

circle 'no'

no further information is required in this section.

If subsurface oil is present

STEP 1 Specify:

**Depth of penetration:** sediment is oiled from surface to a certain depth;  
**Depth of buried oil and oiled layer thickness:** estimate the depth at which the oiled layer appears (under a layer of clean sediment), and the oil layer thickness. Note that sometimes you can find several layers of oiled sediments.

STEP 2 Annotate map and/or sketch map indicating the location of oiled zone(s). See the section on box 8 below for guidance on drawing sketches. Ensure photographs or videos of zones are taken and reference the n° of each photo to the segment and oiled zone.



1

2

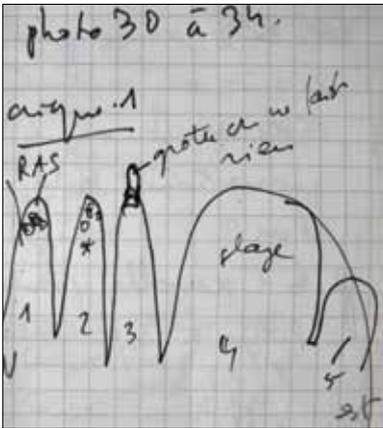
3

1. Buried oil
2. Oil penetration in sediment
3. Buried oil prospection

## "Box 8"

## General comments / sketch Taking photographs

### General comments



The second part of the Assessment Form is for general comments. It is used to highlight particular points of interest or anomalies in the segment. This may include comments relating to:

- actual or potential resource sensitivities observed or known to be present; including ecological, recreational, cultural, commercial or any other socio-economic interests
- any notable wildlife observations to be reported to oiled wildlife response manager, particularly any casualties
- estimates of volumes of oil within the segment, based on dimensions of stranded oil observed and recorded
- storm surges which may have deposited oil above the normal water mark...

### GENERAL COMMENTS / SKETCH

box 8

- ∨ Flock of about twenty seagulls observed on rocks at east end of segment. Two birds appeared to be oiled on their bellies. Report made to Wildlife Branch.
- ∨ Small number of public using the beach, mainly walking dogs. Advised them to avoid use of beach due to risk of oil contamination of footwear and pets.
- ∨ largest patch (Zone A) estimated to contain about 2.5 cubic meters of stranded oil.

### Drawing sketches

The field sketch is an important component of the shoreline assessment process for two principal reasons:

- it provides a focused picture of the oil distribution within the entire segment on a single piece of paper (or image)
- it adds discipline to the field observation process, because it forces the person doing the sketch to make detailed notes of all the relevant features.

It is necessary to mention at least:

- segment identification
- date
- orientation (north arrow)
- segment boundaries
- segment width and length
- shoreline type
- oiled zones id
- pit locations
- photo/video locations.



STEP 1

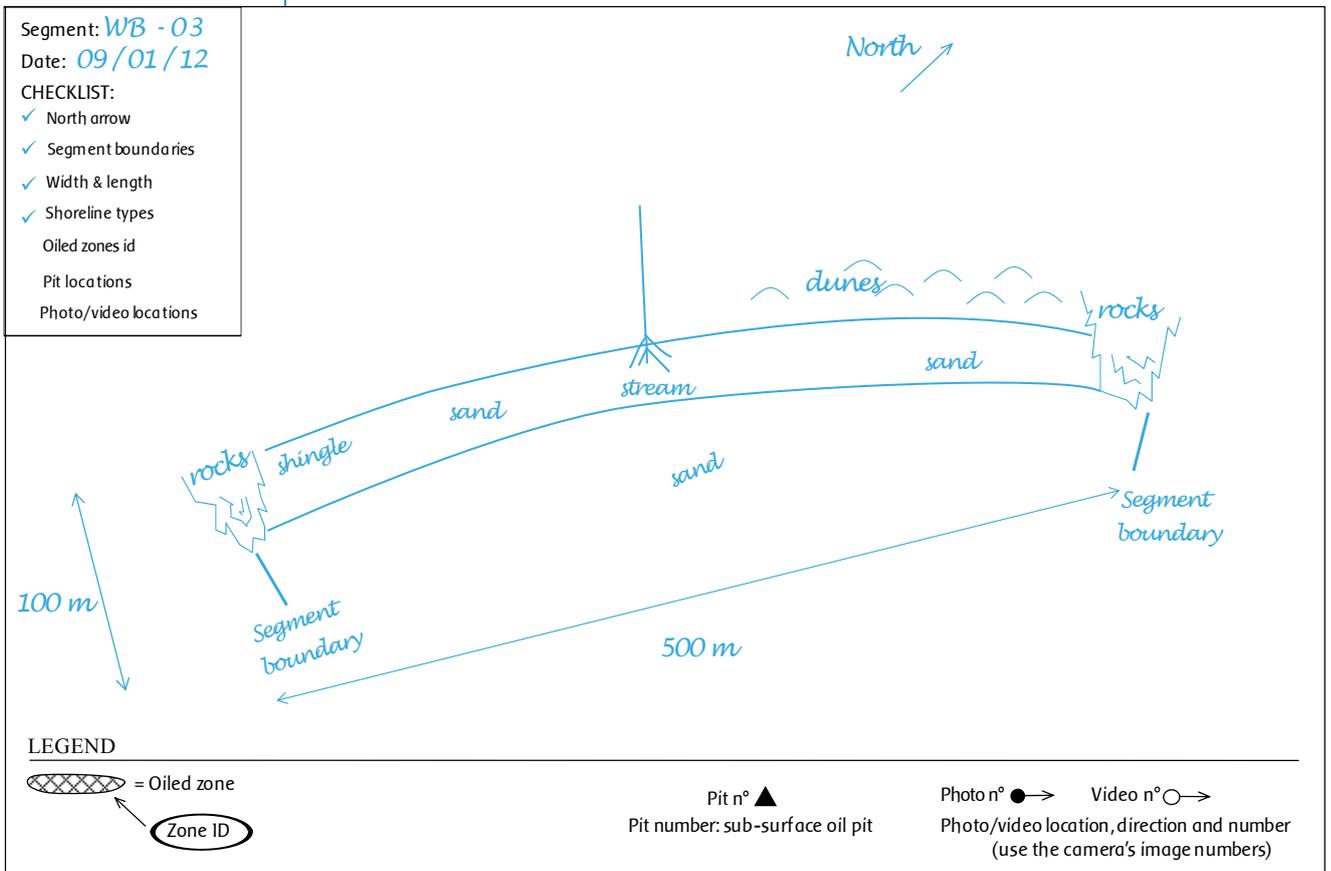


STEP 2

The following provides step-wise guidance to drawing a sketch:

The surveyor should have gained an overview of the segment as their first task. Drawing the sketch may come before or after the completion of the Assessment Form and taking photographs – this is largely a matter of preference and circumstances. However, if it is done early in the survey, care should be taken to ensure key information such as photograph locations and any dug pits are annotated on the sketch before leaving the site. Note that if there are two or more members in the survey team, the various activities can be carried out simultaneously.

Determine the dimensions of the segment. Place the length and width of the intertidal zone as well as some of the more conspicuous features, such as groins or seawall segments. Using a pencil, indicate these measurements on the field sheet. Orient the longest dimension along the longest axis of the paper. Add a scale (use metric units) and a north arrow.



# STEP 3

Lightly sketch in the outline of the intertidal zone or habitat being surveyed. Show in final form (i.e. heavy pencil marks) the oiled zones, using a hatched pattern. These zones should be the most conspicuous feature on the sketch, as shown below. A letter is allocated to each oiled zone on the sketch that corresponds to the 'Zone ID' (Box 6) on the Assessment Form.

Segment: *WB - 03*  
 Date: *09/01/12*

**CHECKLIST:**

- ✓ North arrow
- ✓ Segment boundaries
- ✓ Width & length
- ✓ Shoreline types
- ✓ Oiled zones id
- Pit locations
- Photo/video locations

**LEGEND**

= Oiled zone  
 = Zone ID

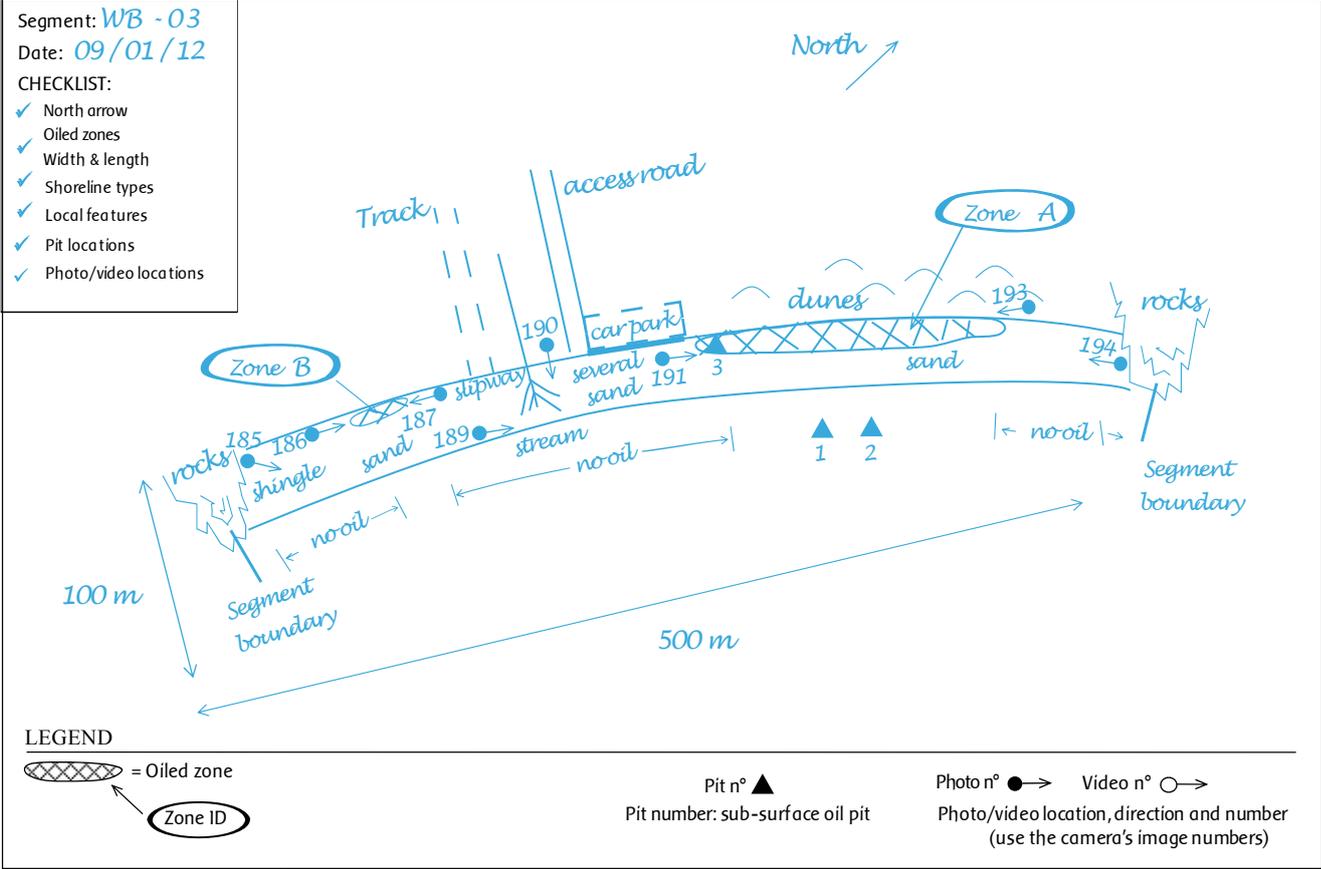
Pit n° ▲  
 Pit number: sub-surface oil pit

Photo n° ● → Video n° ○ →  
 Photo/video location, direction and number  
 (use the camera's image numbers)

# STEP 4

Use the checklist to indicate:

- conspicuous features, such as fences and seawalls that would help identify the site; zones of vegetation and access points, such as roads and parking areas
- pits by a triangle, and give them a reference number that corresponds to the one on the Assessment Form (Box 7). The triangle is filled in to represent oil found in the pit
- photograph locations by a dot with a connecting arrow indicating the direction in which the photo was taken
- location(s) where any video was recorded.



## Taking photographs

Photographs are very useful tools in documenting the shore's appearance. However, some discipline is needed and care should be taken not to take too many photographs, which is very easy to do with digital cameras. Enough photographs should be taken to:

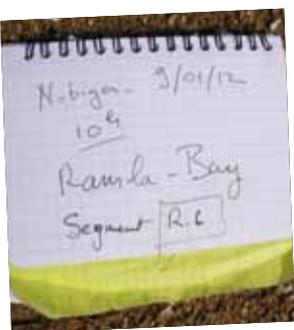
- record general views along and across the shoreline
- capture the appearance and location of oiled areas
- identify key environmental and changes features on the shoreline
- use a suitable scale in any view where the size of the picture is not obvious
- identify access routes or other operational features and on-going activities.

Do not forget to indicate the location of the view point on your sketch.

Most photographic management applications (e.g. Google Picasa, freely available) enable simple tagging of photograph sets and storage by date. If photographs can be uploaded at the end of the survey or at least on the same day, this will aid their cataloguing and secure storage. It also frees memory within a camera for future photographs.

Accurate indication of photograph locations should be made on the segment sketch. As a rule of thumb, if you have taken more than 20-30 photographs at a site, then you have probably taken an excessive number.

It is useful to write basic details about the incident, the date, the segment ID and time on a blank sheet and photograph this sheet prior to taking any pictures at the site. This allows an easy identification of segment pictures when imported into photographic management applications.



*Site identification*



*Global view*



*Close view*



*Close-up with scale*