

Shoreline Clean-up Assessment Technique (SCAT)

Rapid survey form – Instructions for completion

1 Purpose

As part of oil spill response, Shoreline Cleanup Assessment Technique (SCAT) teams systematically survey the area affected by the spill to provide geo-referenced documentation of shoreline oiling conditions, information on site features that may affect the logistics of a spill response operation and recommendations on the appropriate response. This information is used to develop real-time decisions and to expedite shoreline treatment planning and response operations. The UK SCAT Manual¹ provides a detailed description of the full methodology and uses of the survey data. The Rapid survey form is designed for use during the Emergency Phase of a response.

2 Instructions for completion of rapid survey form

The form is designed around the assumption that most surveys will be carried out on foot, so that the level of oiling can be described from a close-up view. However, it is still possible to carry out surveys from a distance and provide valuable information about the oiling on the rapid survey form.

Boxes 1 – 3

Complete boxes 1, 2 and 3

Weather & tide: focus on conditions that might have limited your ability to survey

If the coastline has been already been segmented use the Segment ID in Box 3.

Box 4

Tick (✓) boxes for all notable substrata and features present on the whole shore; double tick (✓✓) the primary substrata that characterise the shore (particularly the upper part where oil tends to concentrate). See glossary for definitions of terms.

Write note on the amount of strandline debris and whether it includes much man-made litter.

Box 5

Note if cleanup or treatment is ongoing on the site at the time of the SCAT survey and the type and approximate scale of that activity (e.g. number of workers and vehicles).

Record any useful information on access to the site (e.g. private property, locked gates, ploughed fields etc.); features that may limit movement across the shore (e.g. too soft for wheeled vehicles, rocky ridges etc.); and the amount of back-shore space for laydown of equipment and temporary waste storage.

Note likely issues with communications, particularly mobile phone signal strength (e.g. Vodafone good, Orange okay)

Record whether oiled debris is present on the strandline and the approximate amount (bin bags or dumper trucks).

¹ Maritime and Coastguard Agency. 2007. The UK SCAT manual: a field guide to the documentation of oiled shorelines in the UK. Maritime & Coastguard Agency, Southampton, UK, 47pp+ vi.
www.dft.gov.uk/mca/corp_118.pdf.

Box 6

If surface oil is present you need to mark the oiled areas on a map or sketch of the shore (on back of form) and also describe the oil in a few simple sentences, preferably using the standard SCAT terminology listed (see Section 4.3 below).

Concentrate on any thick oil deposits, say where they are in relation to the most recent strandline (i.e. the strandline that is furthest down the shore), how oil is distributed within each area you have marked on the map and how thick (on average) it is. Describe the area of coverage of the oil by pacing out or roughly estimating the length / width of the oiled band.

Take photographs (or video) and note the photo numbers.

Tick if there is a significant risk that shoreline oil could be remobilised on future high tides. Tick if visible oil (not just sheen) is present on the water close to the shore - indicating that oil is either landing on the shore or already being remobilised from the shore.

Box 7

If you have reason to think that oil could be buried under the beach sediments (e.g. previous observations from this or similar other sites, or indicated by distribution of visible oil and mobile sediments) then circle the appropriate term, briefly explain your reason and mark the location on a map or sketch of the shore (on back of form).

Depending on how much time you have and how serious you think the sub-surface oiling could be, dig a few exploratory pits in the places you think most likely and describe any oil you find in a few simple sentences, preferably using the standard SCAT terminology listed (see Section 4.4 below).

Take photographs (or video) and note the photo numbers.

Box 8A

Add notes on actual or potential resource sensitivities observed or known to be present; including ecological, recreational, cultural, commercial or any other socio-economic issues/constraints that could affect clean-up of the segment.

Include any notable wildlife observations, particularly any casualties.

Box 8B

Add recommendations on cleanup or other treatment. These could include suggested priorities for clean-up of particular oil deposits, optional techniques, the likely scale of operation required (e.g. number of workers) and any practical constraints.

Box 9

Draw a sketch map of the segment to show the location of any observed oil and any other important features (access, areas not surveyed, key photograph points).

If you run out of space you can provide additional notes/sketches on separate pieces of paper; each of which should be labelled with segment code / shore name and date and kept with the main form.

Note photo and/or tape number(s) at the bottom of form page 1.

3 Post-survey processing of survey forms

Before information on the forms can be processed and delivered to the response centre it needs to be checked for legibility, completeness and consistency. Any photographs and video taken during the survey need to be downloaded, labelled and appropriately stored. Any other survey information on separate bits of paper (e.g. annotated maps) also need to be labelled and stapled to the main form. Tick the relevant boxes on the form (bottom of page 2) when those jobs have been completed. It may also be useful if the person who has carried out those jobs adds his/her initials below the tick box.

4 Standard terminology

The terms and definitions in this section provide an explanation for completion of the SCAT forms. Some modification may be appropriate based on local or regional geographic conditions or the specific character of the stranded oil.

4.1 Shore substrata (Box 4)

The following categorisation of commonly occurring substrata is designed for oil spill cleanup purposes, not ecological character.

- **Bedrock** – distinguish between vertical, sloping and near horizontal platforms of bedrock.
- **Stable boulders/cobbles** – characterised by attached seaweed (but not ephemeral species), lichens or animals (e.g. mussels, barnacles, sponges, etc.), on upper or underboulder surfaces, indicating that they are not often turned over by the sea.
- **Mobile boulders/cobbles/pebbles** – characterised by a lack of attached seaweed (although some ephemeral species may be present) or animals (e.g. barnacles, sponges, etc.), on upper or underboulder surfaces, indicating that they are often turned over by the sea. Mobile snails, crabs and sand-hoppers may be present.
- **Solid seawalls**
- **Revetment** – coastal protection structures, particularly riprap and gabion.
- **Coarse sediment** – composed primarily of pebbles and granules; without notable mud content.
- **Mobile sand** – typical of exposed sandy beaches or in tidal channels.
- **Stable sand** – typical of sand flats, without notable mud but characterised by many sediment animals (e.g. worm tubes, lugworm, clams).
- **Clay/Peat** – very firm impermeable layers.
- **Stable mixed substrata** – typical of areas that are sheltered from wave action, particularly marine inlets. Coarse material on surface, often with attached life (e.g. mussels, barnacles, seaweeds), with firm sediments just below.
- **Firm muddy sand** – adult footprint sinks no more than heel depth (<3cm); (can incl. some coarser sediment)
- **Soft mud** – soft muddy sediment; adult footprint sinks more than heel depth (>3cm).
- **Saltmarsh** – only in areas that are very sheltered from wave action. Upper shore areas of mud dominated by rooted saltmarsh vegetation.
- **Reed swamp** – only in areas that are very sheltered from wave action and the water is brackish (very low salinity). Dominated by reeds.

Strandline debris can consist of seaweed, logs, man-made litter and flotsam stranded on the shoreline; dead animals or vegetation; and spill response items such as sorbents, booms, snares, etc.

4.2 Operational features (Box 5)

Laydown areas are relatively flat areas above the high tide mark and with good access to the shore; where response equipment and vehicles, etc. can be parked / organised. **Temporary waste storage areas** are similar, where skips, plastic lined pits and other temporary storage containers (e.g. fastanks) can be placed.

Comms refers to Communication equipment, primarily mobile phones. Most phones will have a signal strength symbol.

4.3 Surface oiling (Box 6)

The definition of Surface Oil is “oil that is visible on the surface and that is up to 5 cm below the surface.” Oil that is not visible on the surface but that is present below the surface or oil that has penetrated more than 5 cm below the surface is considered Subsurface Oil.

Distribution represents the actual percentage of the surface that is covered by oil within a fixed area. A visual aid to surface distribution is provided in Figure 1 below. In the event of grouped multiple bands, distribution refers to the average oil conditions for the zone. While an estimated percentage value is preferred, the oil distribution measurements can also be categorised or grouped according to the following scale:

- **Trace** <1%
- **Sporadic** 1–10%
- **Patchy** 11–50%
- **Broken** 51–90%
- **Continuous** 91–100%

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

- **Thick oil** – accumulations of fresh oil (incl. pools) or mousse >1 cm thick.
- **Cover** – >0.1 cm and <1 cm thick.
- **Coat** – >0.01 cm and <0.1 cm thick. It can be scratched off with fingernail on coarse sediments or bedrock.
- **Stain** – <0.01 cm thick. It cannot be scratched off easily on coarse sediments or bedrock.
- **Film** – transparent or translucent film or sheen.

Surface oil character provides a qualitative description of the form of the oil.

- **Fresh** – unweathered, low viscosity oil.
- **Mousse** – emulsified oil (oil and water mixture) existing as patches or accumulations, or within interstitial spaces.
- **Tar Balls** – discrete balls, lumps, or patches on a beach or adhered to the substrate. Tar ball diameters are generally <10 cm.
- **Tar Patties** – discrete lumps or patches >10 cm diameter that are on a beach or adhered to the substrate.
- **Tar** – weathered coat or cover of tarry, almost solid consistency.
- **Surface Oil Residue** – consists of non-cohesive, oiled, surface sediments, either as continuous patches or in coarse-sediment interstices.
- **Asphalt Pavement** – cohesive mixture of oil and sediments.

4.4 Subsurface oiling (Box 7)

Oil that is not visible on the surface but that is present below the surface or oil that has penetrated more than 5 cm below the surface is considered Subsurface Oil.

Distribution provides your impression of how extensive the sub-surface oil could be.

- **Extensive** – a substantial area of the shore that will require serious consideration of response.
- **Frequent** – a notable area of the shore or many pockets of oil that may require a response.
- **Uncommon** – probably no more than a few small pockets of subsurfaceoil.

Subsurface oil thickness / character provides a qualitative description of the oil.

- **Heavy deposits (Mobile?)** – pore spaces in the sediment matrix are completely or almost completely filled with oil. Described as **Mobile** if it has not been stabilised by the sediment and could potentially remobilise.
- **Residue** as a Cover (> 0.1 – 1 cm) or Coat (0.01 – 0.1 cm) of oil on sediments and/or some pore spaces partially filled with oil. It can be scratched off easily with fingernail on coarse sediments or bedrock.
- **Film or Stain** (< 0.01 cm) of oil residue on the sediment surfaces. Non-cohesive. It cannot be scratched off easily on coarse sediments or bedrock.
- **Subsurface Asphalt Pavement** – cohesive mixture of weathered oil and sediment situated completely below a surface sediment layer (record thickness).

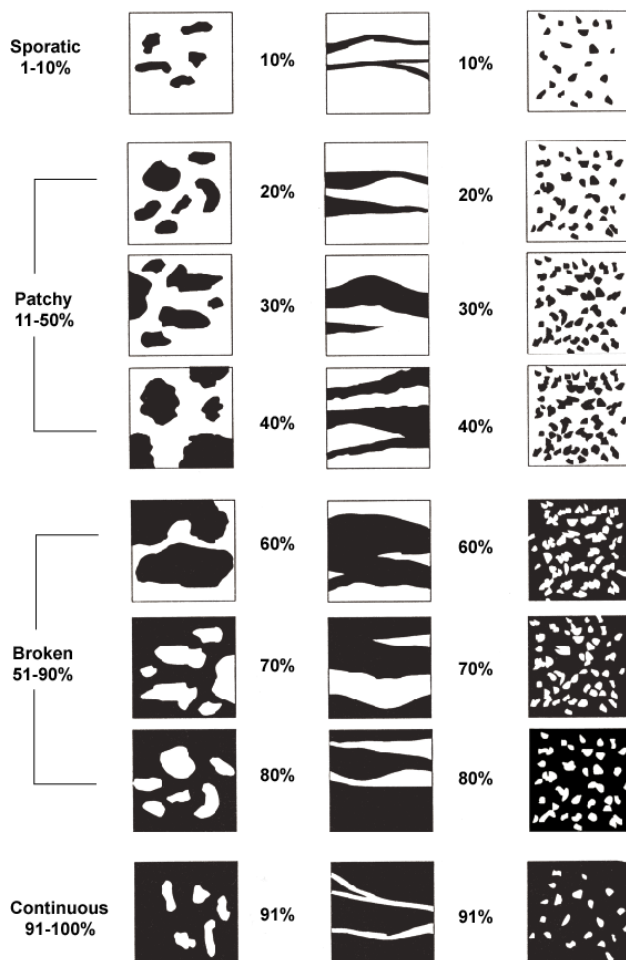


Figure 1 Visual aid for estimating oil distribution.