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This job aid was produced and published by NOAA's Emergency Response Division (ERD). All photographs, with exception of the one on the cover, were contributed by Miles O. Hayes and Jacqueline Michel of Research Planning, Inc.

ERD draws on three decades of experience in responding with the U.S. Coast Guard to spill emergencies and resolving the often longer-term problems presented by hazardous waste sites, garnering a reputation for rapid, yet carefully considered and cost-effective environmental protection decisions.

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Introduction 1

Beach Profiles 2

Photographs 4

Surface Oil Distribution – Percent Cover

C Continuous 4

B Broken 4

P Patchy 5

S Sporadic 5

Surface Oiling Descriptors – Thickness

PO Pooled oil 6

CV Cover 6

CT Coat 7

ST Stain 7

FL Film 8

Surface Oiling Descriptors – Type

FR Fresh oil 9

MS Mousse 9

TB Tarballs 10

PT Patties 10

TC Tar 11

SR Surface oil residue 11

AP Asphalt pavements 12

Subsurface Oiling Descriptors – Type

SAP Subsurface asphalt pavement 13

OP Oil-filled pores 13

PP Partially filled pores 14

OR Oil residue 14

OF Oil film 15

CONTENTS

CONTENTS

Sediment Types

R Bedrock outcrop 16
B Boulder 16
C Cobble 17
P Pebble 17
G Granule 18
S Sand 18
M Mud 19

Shoreline Types by ESI rank

1 Exposed rocky shores 20
2 Exposed rocky platforms 20
3 Fine-grained sand beaches 21
4 Coarse-grained sand beaches 21
5 Mixed sand and gravel beaches 21
6a Gravel beaches 22

Shoreline Types continued

6b Riprap structures 22
7 Exposed tidal flats 22
8a Sheltered rocky shores 23
8b Sheltered man-made structures 23
9 Sheltered tidal flats 23
10a Salt to brackish marshes 24
10b Freshwater marshes 24
10c Swamp 25
10d Mangroves 25

Cleanup Methods

Barriers/berms 26
Physical herding 26
Manual oil removal/cleaning 27
Mechanical oil removal 27

Cleanup Methods continued

Sorbents 28

Vacuum 28

Debris removal 29

Sediment reworking/tilling 29

Vegetation cutting/removal 30

Flooding (deluge) 30

Low-pressure flushing 31

High-pressure flushing 31

High-pressure, hot-water flushing 32

Percent Cover Estimation Charts 33

Shoreline Assessment Job Aid

When oil contaminates shoreline habitats, responders must survey the affected areas to determine the appropriate response. Though general approvals or decision tools for use of shoreline cleanup methods may be developed during planning stages, responders must base specific cleanup recommendations on field data on the shoreline habitats, type and degree of shoreline contamination, and spill-specific physical processes.

A shoreline assessment program is:

- a SYSTEMATIC approach that uses STANDARD terminology to collect data on shoreline oiling conditions and support decision making for shoreline cleanup.
- FLEXIBLE in terms of scale of the survey and detail of the data sets collected.
- MULTI-AGENCY, with TRAINED representatives from all interested parties who have authority to make decisions.

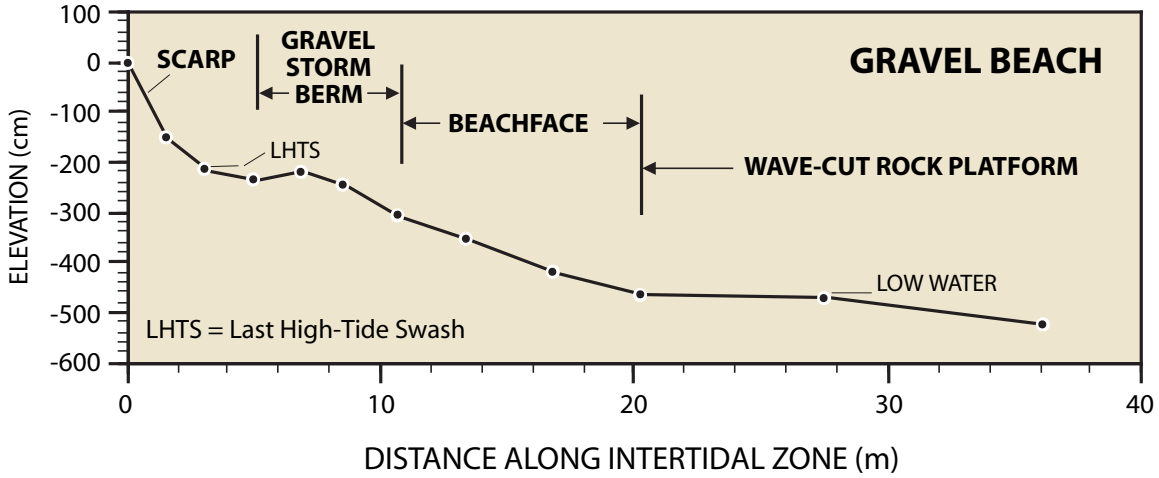
NOAA published the Shoreline Assessment Manual (Report No. HAZMAT 97-4) which outlines methods for planning and conducting shoreline assessment and incorporating the results into the decision-making process for shoreline cleanup at oil spills. This job aid was developed to supplement the manual, providing a visual guide to many of the terms used during shoreline assessments.

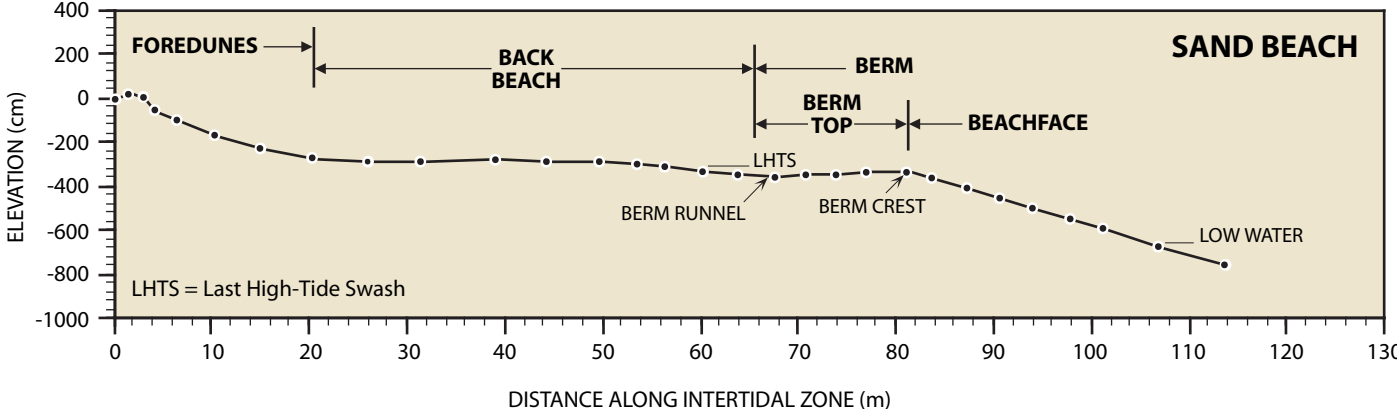
Photographs are included for the following terminology:

- Oil distribution (as ranges in percent oil cover)
- Surface oiling thickness descriptors
- Surface oiling type descriptors
- Subsurface oiling type descriptors
- Sediment types
- Shoreline types
- Cleanup methods

Beach terminology is defined on typical cross-sections of sand and gravel beaches. Percent cover estimation charts are also provided.

At a spill, it is important to "calibrate" by having all team members visit a segment together and agree on how the oiling descriptors will be applied for the specific spill when used with the *Shoreline Assessment Manual*. This job aid is helpful for calibrating and promoting consistency among terms.


GRAVEL BEACH
SCARP
GRAVEL
STORM
BERM
BEACHFACE
WAVE-CUT ROCK PLATFORM
LHTS
LOW WATER
LHTS = Last High-Tide Swash
ELEVATION (cm)
100
0
-100
-200
-300
-400
-500
-600
0
10
20
30
40
DISTANCE ALONG INTERTIDAL ZONE (m)


SAND BEACH
FOREDUNES
BACK BEACH
BERM
BERM TOP
BEACHFACE
LHTS
BERM RUNNEL
BERM CREST
LOW WATER
LHTS = Last High-Tide Swash
ELEVATION (cm)
400
200
0
-200
-400
-600
-800
-1000
0
10
20
30
40
50
60
70
80
90
100
110
120
DISTANCE ALONG INTERTIDAL ZONE (m)

C

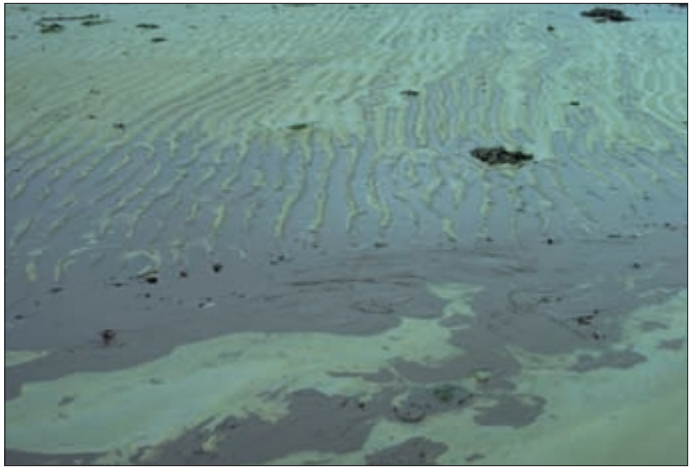
Continuous
91-100% cover

(seen here as black oil on light sand beach)

Broken
51-90% cover

(seen here as brown oil on tan sand beach)

B



P

Patchy
11-50% cover

(seen here as black oil bands on a white sand beachface)

Sporadic
1-10% cover

(seen here as brown oil bands on a white sand beachface)

S

PO

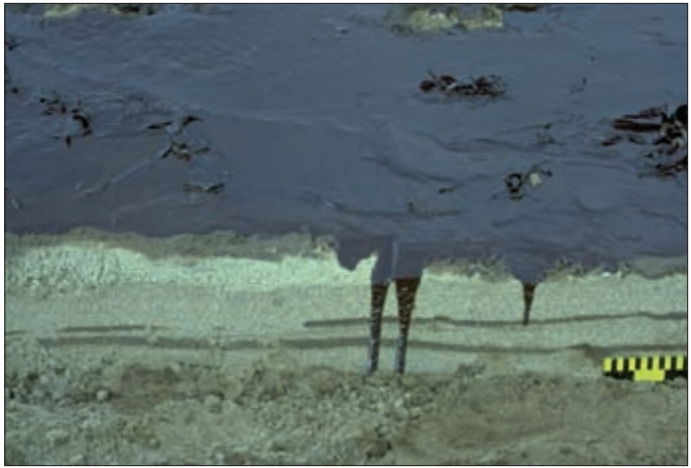
Pooled Oil
fresh oil or mousse > 1 cm thick

(seen here as accumulation around a large boulder)

Cover
oil or mousse > 0.1 cm to < 1 cm thick

(seen here as oil covering sand beach surface and running into a small trench)

CV



CT

Coat
visible coating of oil < 0.1 cm – can be scraped off with fingernail

(seen here as a thin layer of oil on riprap)

Stain
visible oil which cannot be scraped off with fingernail

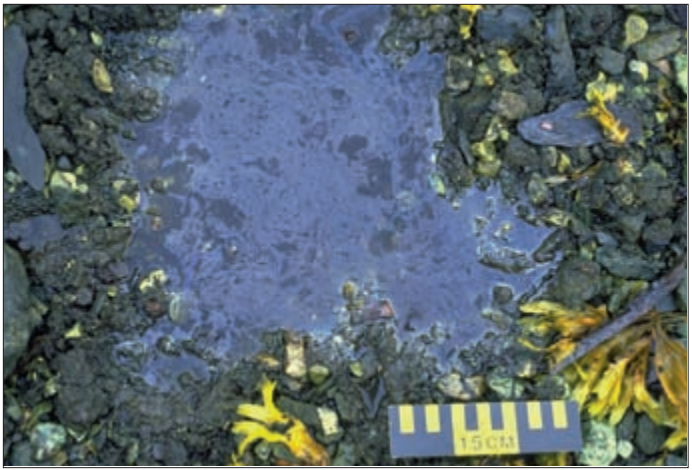
(seen here as splotches on cobbles)

ST

FL

Film
transparent or iridescent sheen, or oily film

(seen here as oil sheen floating on water)



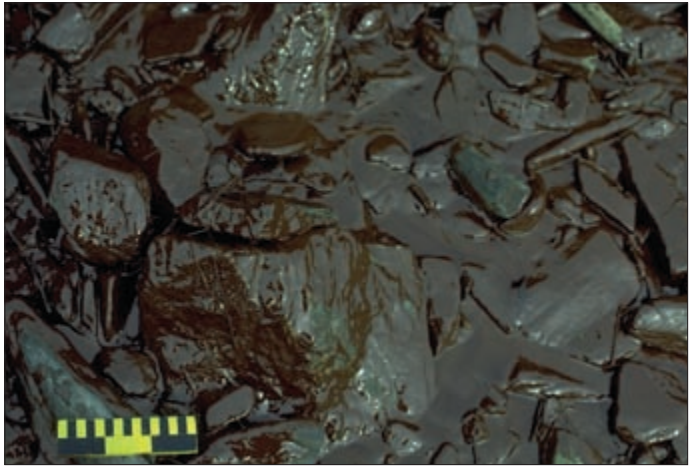
FR

Fresh Oil
unweathered, liquid oil

Mousse
emulsified oil

(seen here as brown oil coating cobbles)

MS



TB

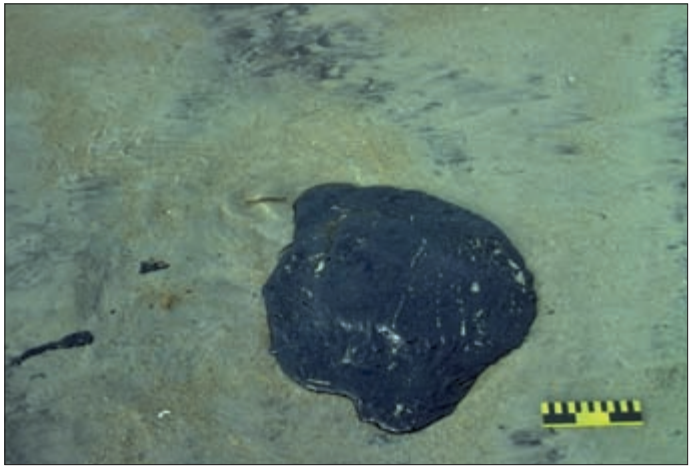
Tarballs
discrete accumulations of oil < 10 cm in diameter

(seen here scattered on sand beach)

Patties
discrete accumulations of oil > 10 cm in diameter

(seen here as single black patty on sand beach)

PT

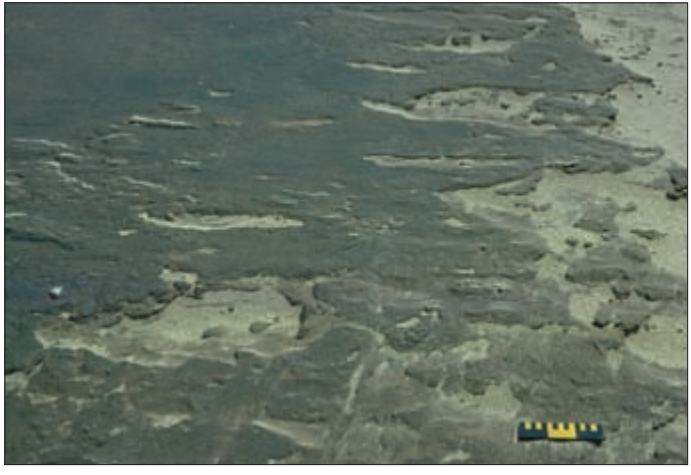


TC

Tar
highly weathered oil of nearly solid consistency

Surface Oil Residue
non-cohesive, heavily oiled surface sediments characterized as soft, incipient asphalt pavements

SR



AP

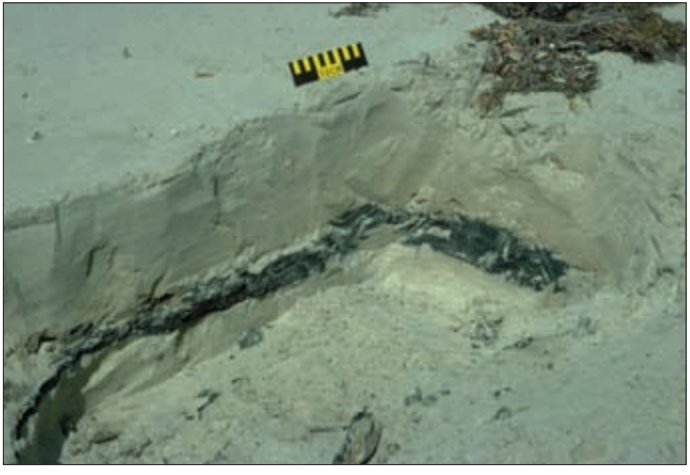
Asphalt Pavements
cohesive, heavily oiled surface sediments

(seen here as thick black deposit on a beachface)

SAP

Subsurface Asphalt Pavement
a buried layer of hardened oil

(seen here as black layer buried in a white sand beach)



Oil-filled Pores
pore spaces are completely filled with oil to the extent that oil flows out of sediments when disturbed

(seen here as brown oil pebbles)

OP

PP

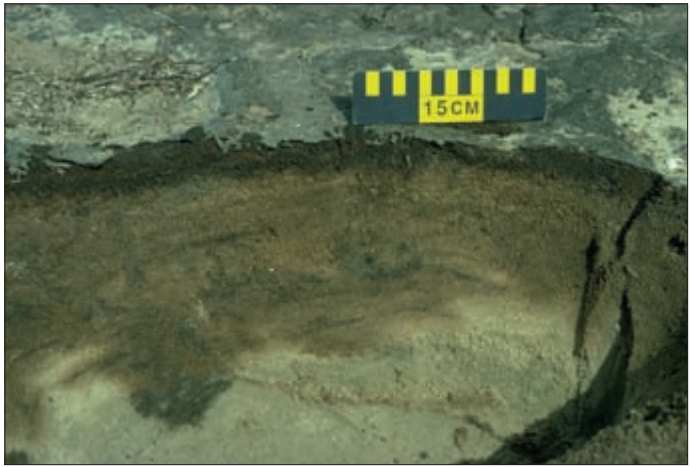
Partially Filled Pores

pore spaces filled with oil, but generally does not flow out when disturbed

Oil Residue

sediments visibly oiled with black/brown coat or cover on clasts, but little or no accumulation of oil within pore spaces

OR



OF

Oil Film
sediments are lightly oiled with an oil sheen or stain on the clasts.

R

Bedrock Outcrop

Boulder
>256 mm in diameter

B

C

Cobble
64 – 256 mm in diameter

Pebble
4 – 64 in diameter

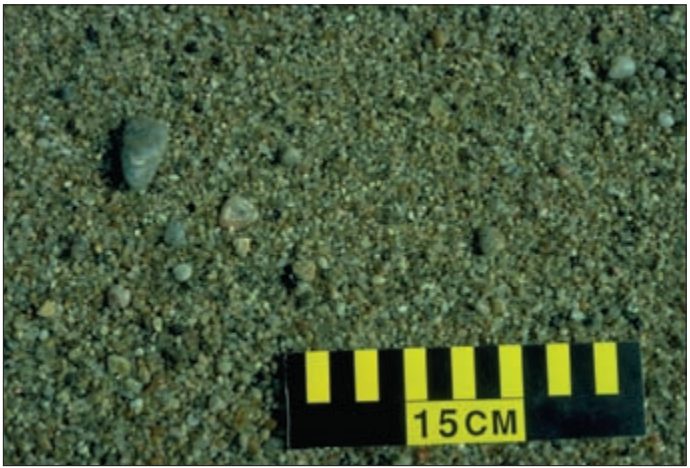
P

G

Granule
2 – 4 mm

Sand
0.06 – 4 mm

S



M

Mud
silt and clay

1

Exposed Rocky Shores

(also includes exposed seawalls)

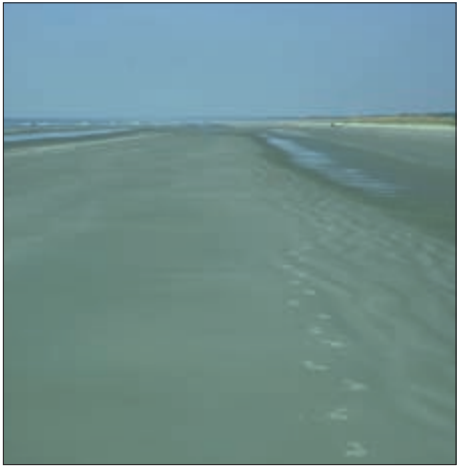
Exposed Rocky Platforms

(also includes clay scarps)

2

3

Fine-grained Sand Beaches
(also includes scarps in sand)



4

Course-grained Sand Beaches

Mixed Sand and Gravel Beaches
(also includes mixed sand and shell beaches)

5

A

'RAVEL "EACH
ALSO INCLUDES

B

2IPRAP
BEACHES
STRUCTURES

%XPOSED 4IDAL &LATS