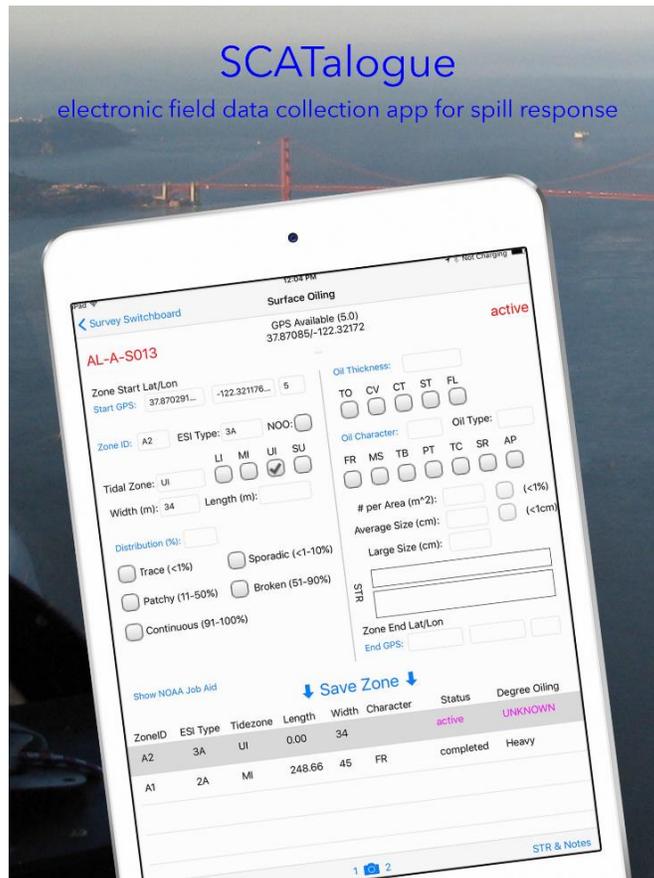


SCATalogue – User’s Guide



SCATalogue, version 1.51

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Introduction

The SCATalogue app is a creation of the California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW, OSPR).

SCATalogue simplifies the collection of shoreline cleanup assessment technique (SCAT) data during a spill response. Survey data attributes are based upon the National Oceanic and Atmospheric Administration (NOAA) standard SCAT shoreline oiling summary (SOS) paper form. A SCAT survey is a collection of SCAT data for a length of shoreline called a shoreline segment. SCATalogue is designed to support spill response SCAT data collection in the marine environment.

The survey data can be transferred via email, via iTunes or other methods if available. These other methods are dependent on the user and/or user's organizational iPad setup and/or information technology (IT) protocols.

SCATalogue is designed for use on an iPad, specifically the iPad mini that is used by the California Department of Fish and Wildlife, Office of Spill Prevention and Response's field response staff.

CDFW OSPR's geographic information systems (GIS) unit utilizes ESRI® GIS software almost exclusively.

Data output is in JSON format. Data containing geographic/spatial data is formatted in Environmental Systems Research Institute (ESRI®) geoJSON format. This output can be converted into feature classes using ArcGIS Desktop's® ArcToolbox's "JSON To Feature" tool. CDFW OSPR GIS processes the JSON/geoJSON output from SCATalogue using this tool and other custom scripts/tools in ArcGIS Desktop® software.

What is SCATalogue?

SCATalogue is an iOS app. It was built using Apple's Xcode® integrated development environment (IDE). The software language of development is Swift 3.

It is an electronic field data collection app designed to collect shoreline cleanup assessment technique (SCAT) data.

The SCAT method originated during the response to the 1989 Exxon Valdez oil spill. Less than a year later on February 7, 1990, the American Trader spilled approximately 416,598 gallons of crude oil off Huntington Beach, California in Southern California.

These events inspired the California Legislature to enact legislation in 1990 called the [☐ Lempert-Keene-Seastrand Oil Spill Prevention and Response Act.](#)

The Act covered all aspects of marine oil spill prevention and response in California. It established an Administrator who is given very broad powers to implement the provisions of the Act. The Act also gave the State Lands Commission certain authority over marine terminals. In 1991, the Office of Spill Prevention and Response (OSPR) opened, headed by the Administrator. SCATalogue's interface is form driven. Data is entered on a series of related forms. Entry via forms were chosen versus a mapping interface because the basis for all SCAT collection has been and continues to be the National Oceanic and Atmospheric Administration (NOAA) SCAT paper form. Therefore, it more closely reflects what teams are used to seeing and using.

SCATalogue was created by The California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW, OSPR). Because of its origins at CDFW OSPR, some features of SCATalogue are more specific to a spill response in California.

For example, as you might expect, the app contains picklists to simplify, reduce data entry error and speed data entry. Some of the picklists default items contains list items applicable to California. There are also some elements specific to CDFW OSPR, for example, SCATalogue is an iOS app. CDFW OSPR did not create an Android version due to the hardware platform limitations imposed by our organization. Further, it was optimized for the iPad Mini, although it will run on other iPads.

SCATalogue, form flow

SCATalogue has ten main forms and a number of subforms. The main forms roughly correspond to the eight sections on the NOAA SOS form.

The form flow generally follows the SOS paper form from top to bottom going from section one to section five. Once these data have been recorded, sections six (surface oiling) and seven (subsurface oiling) can be accessed.

Many of the main forms have buttons to access subforms. These subforms allow the user to add secondary data. For example, for each surface oiling zone, a user can associate shoreline treatment recommendations (STR) via the STR subform.

The user can also associate up to two photos for each surface oiling zone. This is done via the Photo subform. Note, the Photo subform can also be accessed from the Subsurface Oiling form, the Segment form, and the Survey Switchboard form.

If a form has a navigation button on the top left, this goes back to previous form. Repeated back navigation will take the user to the Survey Switchboard, then to the Survey List form.

Items/words in blue, are buttons. If the button is greyed out then it has been disabled.

Initial Data Entry

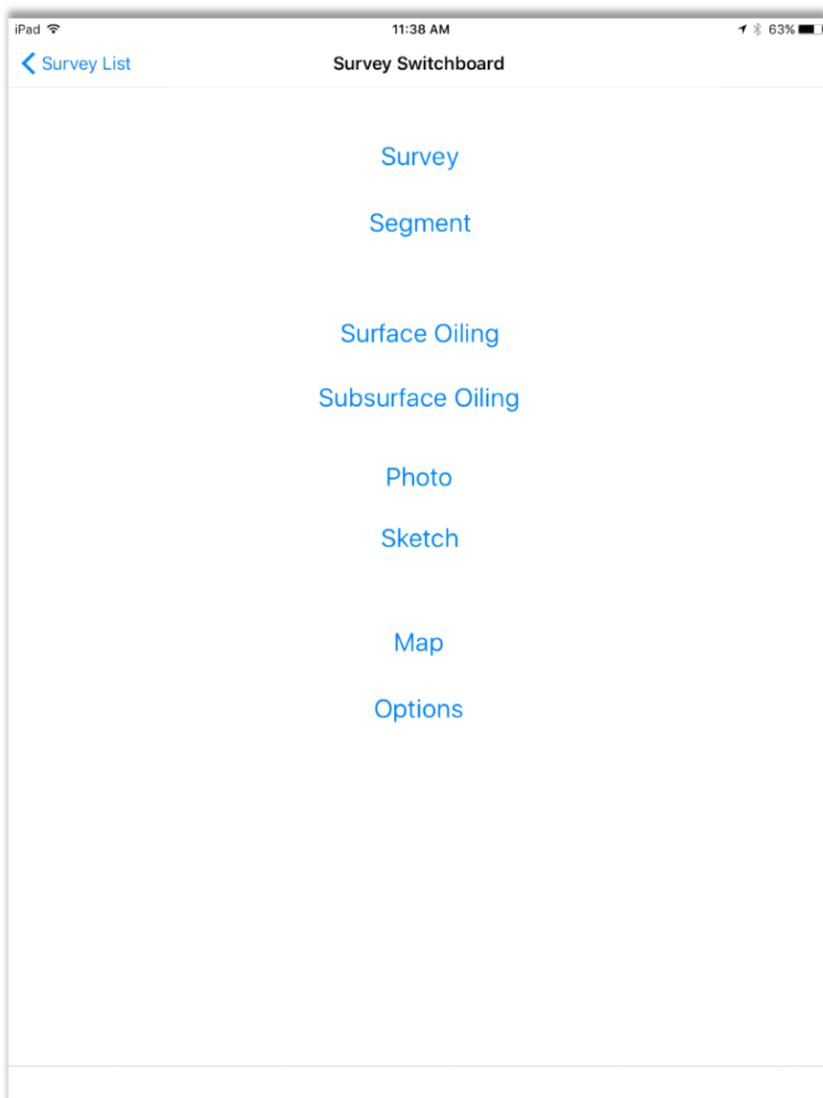
SCATalogue guides a user during the initial data entry for a new survey. It does so by restricting access to just the form(s) and button(s) the user needs in order to initialize a survey. Afterwards, all forms are available. Not all data fields are required to initialize a survey but there is a minimum. See the appendix for more information.

Each item in the Survey List is a unique survey. Each one contains data collected that would be on separate SOS forms, except digitally. The “Status” column indicates the survey’s status. A survey can be either “active”, “completed”, or “exported”.

There can be many “exported” and “completed” surveys, but only one survey can be “active”.

When the user taps an individual survey on the list, the survey’s status determines which of the five buttons are enabled or disabled. Items/words in blue, are buttons. If the button is greyed out then it has been disabled.

Switchboard Form



The Switchboard form allows the user to navigate to any of the main data forms. The status of the selected survey will determine which of these buttons are enabled or disabled. The navigation button on the top right of the form allows the user to navigate back.

Survey Form

iPad 11:38 AM 63%

Survey

GPS Available (65.0)
38.57648/-121.48393 **active**

...

Spill ID:

Segment ID:

Segment Name:

Date:

Start Time:

End Time: (automatic)

Tide:

Survey By:

Primary Weather:

Secondary Weather: Sun Clouds Fog Rain Snow Windy Calm

Team:

Kyra Mills-Parker Oiled Wildlife Ca... (530) 752-3318

Cancel Next >

The Survey Form corresponds to sections one and two of the NOAA SOS form.

1. GENERAL INFORMATION		Date (dd/Month/yyyy) (please use month name)	Time (24h standard/daylight) (00:00 to 00:00)	Tide Height L / M / H Rising / Falling
Segment ID:				
Segment Name:				
Survey By: Foot / ATV / Boat / Helicopter / Overlook / Other			Weather: Sun / Clouds / Fog / Rain / Snow / Windy / Calm	
2. SURVEY TEAM	Name	Organization	Name	Organization
Team Number				

The data entry fields in SCATologue utilize picklists, checkboxes, and other mechanisms to make data entry easier and less prone to error. The user tapping the “Survey By” field, which provides a picklist, is shown below.

The screenshot shows the SCATologue mobile application interface on an iPad. At the top, it displays 'Survey Switchboard' and 'Survey'. The main content area shows the following details for survey 'LS-M-S000':

- GPS Available (65.0)
- 38.57649/-121.48393
- active
- Spill ID: 2017-SPILL-1
- Segment ID: LS-M-S000
- Segment Name: (empty field)
- Date: 08/16/2017
- Start Time: 12:09:08
- End Time: (empty field) (automatic)
- Tide: L M H (selected) Rising Falling
- Survey By: ATV
- Primary Weather: Windy
- Secondary Weather: Sun Clouds Fog Rain Snow Windy Calm (Windy is selected)
- Team: 1
- Contact: David Beveridge CDFW (916) 324-9815

At the bottom, a picklist is shown for the 'Survey By' field, with options: Foot, ATV, Boat, Helicopter, Overlook, and Remote. 'ATV' is currently selected.

Team Subform

The Team Subform is accessed by tapping the “Team” button on the Survey Form. This subform manages the team numbers and their constituent team members.

Download Team Assignments

Lookup Contact

Ad Hoc Entry:

Firstname: Lastname:

Organization: Email:

Phone: Team:

↓ Save to Team Lookup Table ↓

Team	Firstname	Lastname	Organization	Phone	UUID
1	David	Beveridge	CDFW	(916) 324-9815	3343...
1	Kyra	Mills-Parker	Oiled Wildlife...	(530) 752-3318	954D...
2	Judd	Muskat	CDFW	(916) 324-3411	7BDA...
2	Isaac	Oshima	CDFW	(916) 323-4664	1BC9...
3	Martin	Amezcuca	CDFW	(916) 324-7994	998F...
3	Anna	Burkholder	CDFW	(916) 322-1195	E876...

Delete Selected Member Clear All Members

Team members are added to the teams (number) in one of three ways.

“Download Team Assignments” is currently unavailable, but this would essentially be from your organization’s cloud. The SCAT coordinator predetermines team assignments.

“Lookup Contact” allows the user to add a member to a team from their iPad’s contact list.

“Ad Hoc Entry” allows the user to add a member to a team using free text entry.

Note: A member added using “Lookup Contact” initially populates into the “Ad Hoc Entry” fields, allowing the user to edit as necessary and to assign the member to a specific team number. Tapping the member in the lookup table also will add the member to the “Ad Hoc Entry” fields, allowing the team member entry to be edited.

Segment Form

The screenshot shows the 'Segment' form on an iPad. At the top, it displays the segment ID 'AL-A-S013' in red, the status 'active' in red, and GPS coordinates '38.57649/-121.48394'. Below this, there are input fields for 'START SURVEY' (38.5765020..., -121.4839458..., 65) and 'Segment Length (m):'. A 'Start GPS:' link is present. The 'Primary Backshore Character:' is set to 'Beach'. The 'Secondary Character:' section includes checkboxes for Cliff-Slope, Lowland, Beach (checked), Man-Made, Dune, Lagoon, Delta, Channel, and Wetland. The 'Primary Shoreline ESI Type:' is '3A'. The 'Secondary ESI Type:' section has a grid of checkboxes for types 1A through 10E, with 3A and 3B checked. Below this are 'Operational Features' (1024), 'Access/Restrictions', 'Oiled Debris' (Type and Amount), 'Backshore Access', 'Alongshore Access' (checked), and 'Staging'. There are two text input fields for 'STR & Notes'. At the bottom, there are 'Entire Segment Surveyed' and 'NOO' checkboxes, 'End GPS' input fields, and 'Length Surveyed (m):' (0) with an '(auto)' option and an 'END SURVEY' button. The bottom navigation bar shows 'Cancel', a camera icon, and 'Save'.

The Segment Form corresponds to sections three, four, five, and eight of the NOAA SOS form. **Note, the “End GPS” button should only be tapped when you are at the end of the segment, have collected all your data, and want to end the survey. This is the last button to be tapped.**

3. SEGMENT		Total Length: _____ m	Length Surveyed: _____ m	Datum: WGS84
Survey Start GPS: WP:	LAT:	LONG:		
Survey End GPS: WP:	LAT:	LONG:		
4a. BACKSHORE CHARACTER: Indicate only ONE Primary type and ALL Secondary types				
Cliff/Slope	Lowland	Beach	Dune	Wetland
Lagoon	Delta	Channel	Man-Made	:
4b. ESI SHORELINE TYPE: Indicate only ONE Primary (P) and ANY Secondary (S) types. CIRCLE those oiled.				
Primary:	Secondary:			
5. OPERATIONAL FEATURES		Oiled Debris? Yes / No	Type: _____	Amount: _____ (bags)
Direct backshore access? Yes / No	Alongshore access from next segment? Yes / No	Suitable for backshore staging? Yes / No		
Access Description / Restrictions:				

Note, on the Segment form, to indicate presence of the secondary ESI type; tap once to check. To indicate that this ESI type is oiled, tap again highlight. To uncheck, tap a third time. See figure #, 3A, 3B, 3C respectively.

Note, on the bottom of the Segment form, the camera icon/button. The numbers zero and four on either side of the camera icon indicates zero of four photos available have been taken. The camera icon and numbering appear on any form that allows photos. The maximum number of available photos will vary depending on the form.

8. COMMENTS: Cleanup Recommendations; Ecological/Recreational/Cultural Issues; Wildlife Observations; Oiling Descriptions	
Sketch: Yes / No	Photos: Yes / No
Photo Numbers: (-)	Photographer Name: _____

Section eight data is shown on the SCATalogue Segment form as “STR & Notes”. Tapping “STR & Notes” will open the Shoreline Treatment Recommendations subform. After entering data into the STR subform and returning the Segment form, the data will appear below in the textboxes below the “STR & Notes” button. (See the “Shoreline Treatment Recommendations Subform” section below.)

Photos

You can record up to four photos per segment. Tap, the camera icon at the bottom center of the Segment form. (See the “Photo Form/Subform” section below.)

Shoreline Treatment Recommendations Subform

iPad 11:47 AM 66%

< Surface Oiling Cleanup Recommendation

ZoneID = A2 Characteristic Coastal Habitats Job Aid

Notes (1012)

Snowy plovers

Shoreline Treatment Recommendations

Ambient-Water Flushing
Debris Removal

Clear Notes Clear STR Delete Selected STR

Tapping on the “Shoreline Treatment Recommendations” button will activate a picklist. Each selection from the picklist will add to the table. The Shoreline Treatment Recommendations (STR) subform can be called by either the Segment, Surface Oiling, and Subsurface Oiling forms. The Notes textbox is free text and allows for 1024 characters. The STR table allows for as many entries as needed. In the screenshot above, the navigation button on the top left indicates the Surface Oiling form opened this instance of the STR subform.

Zones

On SCATologue's Surface Oiling Form below the "Save Zone" button is the zone table. This table's rows represent the same data as the rows on the NOAA SOS form section six. Each zone record begins with its Zone ID.

On the Surface Oiling form, the area above the "Save Zone" button is the currently selected zone's "editing workspace".

To start recording a new oiling zone, tap "Start GPS". Then at minimum fill in, Zone ID, ESI Type, Tidal Zone, and Width. Then tap, "Save Zone". This will add a new zone record to the zone table at the bottom of the Surface Oiling form. You would then walk this zone, assess and record the conditions. At the end of the zone tap, "End GPS".

To edit or update an existing oiling zone, tap its zone table record. The data for this selected zone will populate into the "editing workspace". After making any necessary edits/updates, tap, "Save Zone".

No Oiling Observed Zones (NOO) may be either explicit or implicit. Explicit: NOO zone data is collected as if any other type of oiling zone data. Implicit: SCAT coordinator must agree and communicate with SCAT teams that beach surveyed but without any positive oiling zone data will be considered and processed as a NOO zone.

It has not been decided which protocol CDFW OSPR will follow as of yet.

STR & Notes

You can record a shoreline treatment recommendation for each zone. Tap its zone table record, then tap, "STR & Notes" at the bottom right of the Surface Oiling form. Fill out the STR & Notes, then navigate back to the Surface Oiling Form. (See the "Shoreline Treatment Recommendations Subform" section above.)

Photos

You can record up to two photos per zone. Tap its zone table record, then tap, camera icon at the bottom center of the Surface Oiling form. (See the "Photo Form/Subform" section below.)

Subsurface Oiling Form

iPad 11:46 AM 65%

Survey Switchboard **Subsurface Oiling**

AL-A-S013 GPS Available (65.0) 38.57646/-121.48393 **active**

GPS: 38.5764890... -121.483928... 65

Primary Oil Character: OR

Secondary Oil Character:

OP PP OR OF TR

TB SR AP %

Water Table (cm): 4

Sheen Color: R

Clean Below:

Pit / Trench ID: 2

Surface Type: 6A (ESI Type)

Subsurface Type: 6A

Tidal Zone: UI

Depth (cm): 5 NOO

Bottom Interval (cm): 3

Top Interval (cm): 2

STR

Show NOAA Job Aid

↓ Save Pit ↓

PitID	SurfaceType	Tidezone	Depth	OilCharacter	WaterTable	Degree of Oiling
1	4	LI	4	OP	3	Moderate
2	6A	UI	5	OR	4	Light

Delete Selected Pit/Trench 0 2 STR & Notes

STR & Notes

You can record a shoreline treatment recommendation for each zone. Tap its zone table record, then tap, "STR & Notes" at the bottom right of the Surface Oiling form. Fill out the STR & Notes, then navigate back to the Subsurface Oiling Form. (See the "Shoreline Treatment Recommendations Subform" section above.)

Photos

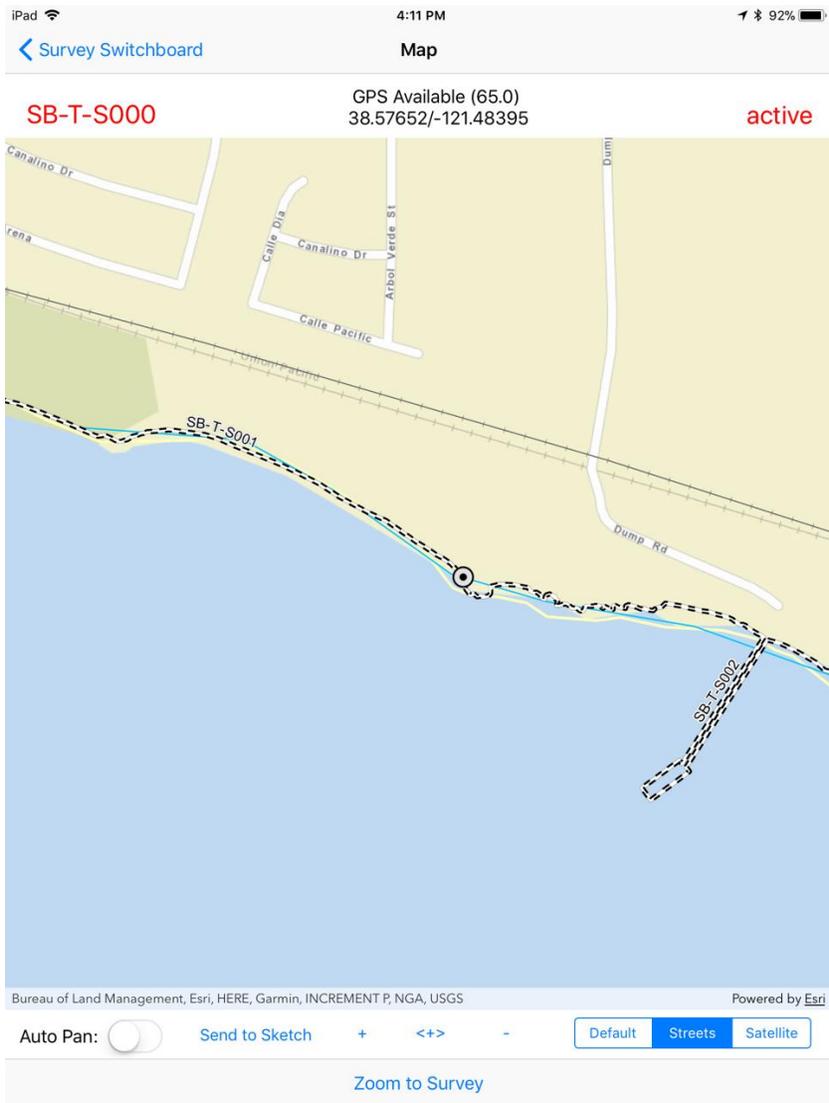
You can record up to two photos per pit/trench. Tap its pit/trench table record, then tap, camera icon at the bottom center of the Subsurface Oiling form. (See the “Photo Form/Subform” section below.)

Map Form

The map form can be shown prior to the start of a new survey to help the user locate which segment(s) they are near. Since, SCATologue is designed to be used offline; it has some mapping data built-in. The layers include: California counties, county seats, selected cities/towns, major highways, major rail, major waterways, coastal points of interest, and SCAT segments. Map layers have scale dependency.



If you have WiFi access, you will have ESRI streets and Satellite as background options.



Note, the photo form has a “Send to Sketch” button which will copy the current displayed map and send that to the Sketch form to be used as a background to your sketch.

Sketch Form

Note, the sketch form only supports one sketch per survey. This may change in the future. Also, note that team members may sketch on paper then take a photo of the

paper sketch using SCATalogue's Photo form. This also applies to any survey notes, etc... written on paper.

Note, team members may sketch on paper then take a photo of the paper sketch using SCATalogue's Photo form. This also applies to any survey notes, etc... written on paper.

Photo Form/Subform

As shown in the previous sections, photos form can be opened from a number of the other forms. When this is done, these photos become associated with that data type (zone, pit, segment, etc...). If you open the photo form directly then the data type is "incidental photo".



Note you can annotate any photo.

If an incidental photo, part of the metadata you can record if it is a photo associated with oiled wildlife.

Photo Metadata Subform

iPad 11:26 AM 63%

< Incidental Photo PhotoMetadata

SA-C-S000

photo notes / description ... (1024)

Oiled Wildlife? exported

Alive?

Date: 08/23/2017 Time: 08:13:47 GPS: 38.60352 -121.50675 Heading: 139.0

38.60352 -121.50675 139
08/23/2017 08:13:47

Test

Brush: xFine Fine* Bold Chisel xChisel

Opacity: 5 15 30 60 100*

Clear Reset

Data Accuracy & Completeness Subform

iPad 12:07 PM 73%

[Survey List](#)

AL-A-S013 **completed**

Data Accuracy and Completeness Acknowledgement

Team Member	Date	Time	Signature
Kyra Mills-Parker			

To the best of my knowledge, at the time of submission, all of the information reported for this survey is accurate and complete.

To the best of my knowledge, all this information was collected in accordance with accepted SCAT (Shoreline Cleanup Assessment Technique) procedure and processes.

I agree

Sign here: [Clear](#)



Signature of: Kyra Mills-Parker on 08/16/2017 at 12:07:05

[Confirm](#)

SCAT Data Transfer

Data may be transferred from SCATologue / your iPad via: email, flash drive, iTunes, via local WiFi, or other means dependant on your particular information technology setup.

Data Collection Protocols

To ensure completeness, if you have surveyed the entire length of your assigned segment, on the Segment Form check the “Entire Segment Surveyed” checkbox next to the “NOO” checkbox.

Before ending the survey, go to the map and verify that the oiling zones, pit/trenches, etc... are depicted correctly. If there are any discrepancies, correct what you can. If you cannot correct, include corrective instructions to OSPR GIS within your transfer email or separate email.

No Oiling Observed Zones (NOO) may be either explicit or implicit. Explicit: NOO zone data is collected as if any other type of oiling zone data. Implicit: SCAT coordinator must agree and communicate with SCAT teams that beach surveyed but without any positive oiling zone data will be considered and processed as a NOO zone.

It has not been decided which protocol CDFW OSPR will follow as of yet.

Appendix

GPS

SCATologue uses the onboard GPS of the iPad. However, you may also utilize any Bluetooth GPS as long as it is compatible with the iPad.

Photos

Image Naming Convention

COUNTY_DIVISION_SEGMENT_YYYYMMDD_HHMMSS_type<_ID><_PHOTONUM>.ext

type = incidental, segment, surfoil, suboil, signature, sketch

<_ID> = ZONEID (A1, A3), PITID# (1,4)]

<_PHOTONUM> = (1, 2, 3), NOT needed with signature

ext = jpg, png (jpg = photo, png = annotation)

HM_G_S034_20170718_140355_incidental_1.jpg

HM_G_S034_20170718_140355_incidental_1.png

LA_H_S005_20170525_143438_segment_3.jpg

LA_H_S005_20170525_143438_segment_3.png

HM_G_S034_20170718_140355_surfoil_A2_1.jpg

HM_G_S034_20170718_140355_surfoil_A2_1.png

OR_A_S005_20170606_132554_suboil_1_1.jpg

OR_A_S005_20170606_132554_suboil_1_1.png

AL-B-S000_20170511_102514_signature.jpg

AL-B-S000_20170511_102514_sketch_1.jpg

AL-B-S000_20170511_102514_sketch_1.png

Customization

See SCATalogue Customization Guide document.

Form Operations

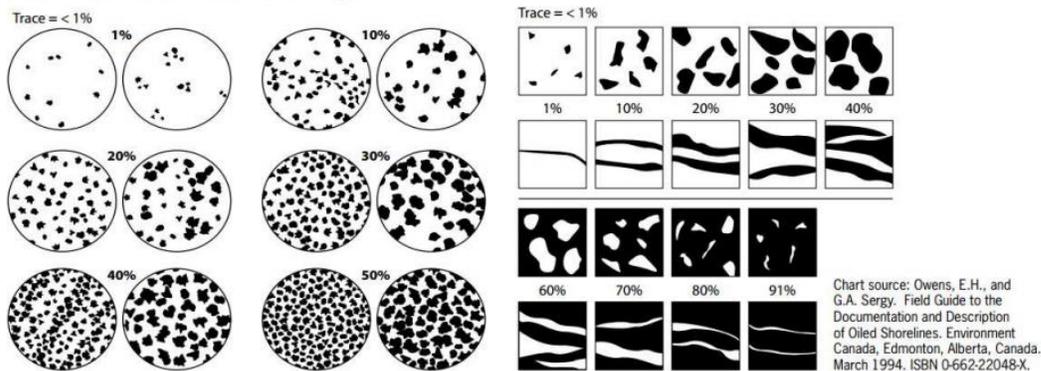
Items/words in blue, are buttons. If the button is greyed out then it has been disabled.

Some of the buttons show job aids. For example, “Show NOAA Job Aid” will show the NOAA’s Shoreline Assessment Job Aid PDF. On the Surface Oiling form, the “Distribution (%)” button will show the Percent Coverage Chart below.

Note, on all forms that contain a primary and secondary data type such as Primary Backshore Character and Secondary Character as on the above Segment form. The primary is presented as a picklist and the secondary as checkboxes. If you tap the Secondary checkbox before you have tapped the primary, the secondary value will automatically populate into the primary.

PERCENT COVERAGE CHART

This chart is an aid to help you determine the percent of oil coverage in the area you are observing. When determining the coverage of an oil spill on the water, estimate the percentage of clean water and subtract from 100 to calculate the percentage of oil. Try to picture all the oil in one corner of the area you are observing and determine the clean water remaining.



Minimum Data Requirements

When creating a new survey-segment; **The Survey form and Segment form need a minimum of information filled out.**

SCATalogue's Survey and Segment forms encompass NOAA SOS sections:

1. General Information
2. Survey Team
3. Segment
4. a) Backshore Character
b) ESI Shoreline Type
5. Operational Features

That's quite a bit of information on the NOAA form in these sections.

However, in SCATalogue most are in pick lists or checkboxes and/or semi or fully automated; you do not have to do much free text entry if at all.

And, of that; there only EIGHT items that are actually required.

The others you can defer until later as you will need to assess the segment before recording the as needed data.

The Survey form minimums (five items) are listed below, followed by an example value.

Spill ID: 2017-SPILL-6

Segment ID: ALA-A-S001

Date: 01/30/2017 (remember, "**Date:**" is blue so is a button. Tap that to automatically fill in today's date and time)

Start Time: 13:05:16

Team: 2

TAP "**Next>**"

On the bottom right of form.

The Segment Form minimums (three items) are listed below, followed by an example value.

Start GPS: 38.57654 -121.48397

Primary Backshore Character: Beach

Primary Shoreline ESI Type: 3A

TAP “Save”

On the bottom right of form.

NAVIGATION BACK USING “< Survey” before tapping “Save>” will cause you to lose data.

“Save>” saves your entered data and guides you back to the Switchboard Form.

From here you will have access to all the forms.

(Survey, Segment, which at this point you have filled out the minimums)

(Surface Oiling, Subsurface Oiling, Photo, Sketch)

For further information about SCATalogue, please contact CDFW OSPR GIS at osprgis@wildlife.ca.gov A link to the [SCATalogue website](#).

Information about Shoreline Cleanup and Assessment Technique (SCAT) at the [NOAA website link describing SCAT](#).

12/5/2017