Proposed NOAA SCAT Data Standard

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SCAT for Tomorrow Workshop

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Components

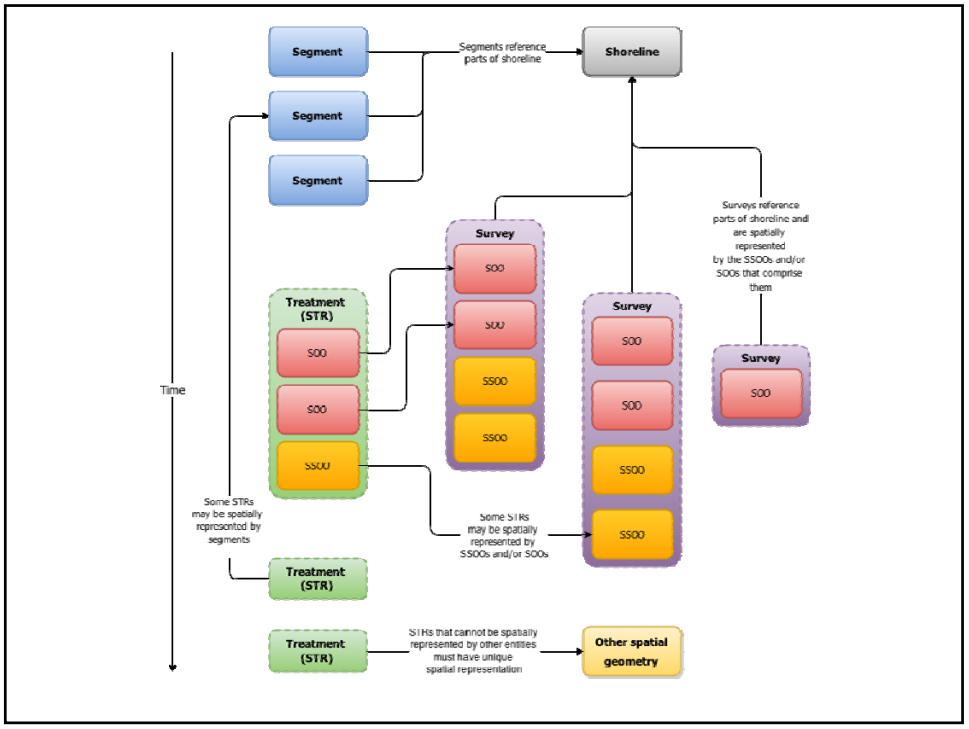
- Conceptual entities
- Spatial representations
- Tabular attributes
- Logical relationships
- Spatial relationships
- Documentation

Overview

- Facilitates interoperability, clarity, and transparency for digital SCAT data
- ***Not*** an application, database, data structure, or entity-relationship model
- Includes ***simple, core elements*** only
- ***Extensible*** for requirements of different specific incidents
- Standard is ***software agnostic***
- ***Only parts may apply*** to individual data digital data collection or storage applications
- Applies to digital data across ***full range*** of incident and software complexity, and dataset sizes

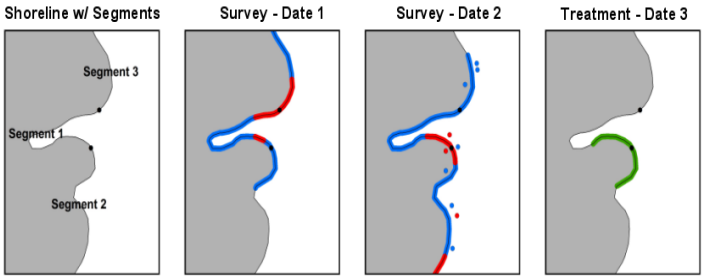
Conceptual Entities

- Shoreline
- Segments
- Surveys
- Surface Oiling Observations (Zones)
- Subsurface Oiling Observations (Pits)
- Shoreline Treatment Recommendations (STRs)
- Additional elements required for a specific incident



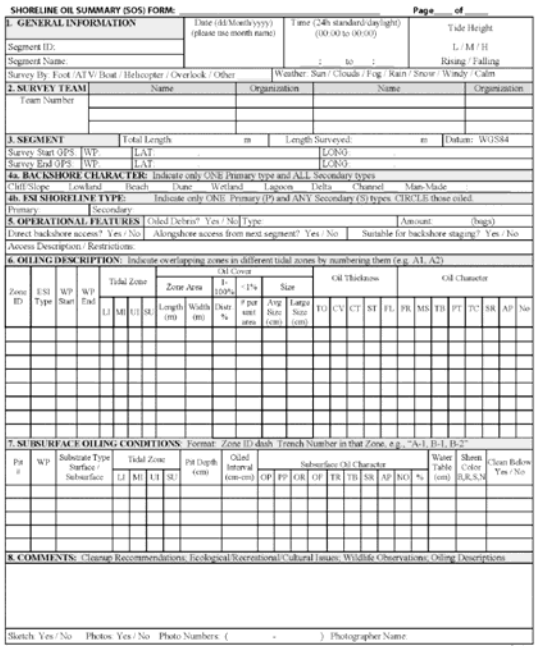
Spatial Representation

- Shoreline
- Segments
- Surface Oiling Observations (Zones)
- Subsurface Oiling Observations (Pits)



Tabular Attributes

- Replicate NOAA CSOS form
- Add elements from wetland form



SHORELINE OIL SUMMARY (SOS) FORM: _____ Page ___ of ___

1. GENERAL INFORMATION	Date (dd/Month/yyyy) (please use month name)	Time (24h standard/daylight) (00:00 to 00:00)	Tide Height
Segment ID:			L / M / H
Segment Name:		: to :	Rising / Falling

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				

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:

6. OILING DESCRIPTION: Indicate overlapping zones in different tidal zones by numbering them (e.g. A1, A2)

Zone ID	ESI Type	WP Start	WP End	Tidal Zone				Oil Cover				Oil Thickness					Oil Character								
								Zone Area		1-100%	>1%	Size													
				UI	MI	UI	SL	Length (m)	Width (m)	Distr. %	# per unit area	Avg. Size (cm)	Large Size (cm)	TO	CV	CT	ST	FL	PR	MS	TB	PT	TC	SR	AP	No

7. SUBSURFACE OILING CONDITIONS: Format: Zone ID dash Trench Number in that Zone, e.g., "A-1, B-1, B-2"

Pit #	WP	Substrate Type Surface / Subsurface	Tidal Zone				Pit Depth (cm)	Oiled Interval (cm-cm)	Subsurface Oil Character									Water Table (cm)	Sheen Color R,K,S,N	Clean Below Yes / No
			UI	MI	UI	SL			OP	FP	OR	OF	TR	TB	SR	AP	NO	%		

8. COMMENTS: Cleanup Recommendations; Ecological/Recreational/Cultural Issues; Wildlife Observations; Oiling Descriptions

Sketch: Yes / No Photos: Yes / No Photo Numbers: (-) Photographer Name:

Tabular Attributes

- Adds:
  - Surface oiling substrate (sediment, vegetation canopy, or both)
  - Height of oiling on plants (slightly changed from NOAA wetland form)
- Extensible (can add attributes and codes)
- No required field naming conventions
- Subset of attributes required to be collected by survey personnel at time of survey

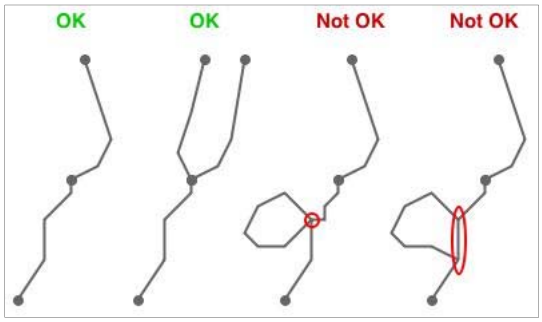
Logical Relationships

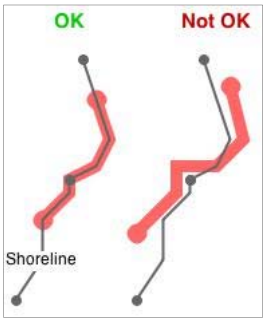
- Base requirements:
  - Spatial features describing zones/pits should have corresponding record in the data tables & vice versa
  - All tabular records describing zones/pits should have a parent record in the data tables describing survey
  - All tabular records describing surveys are required to have at least one child record in the data table describing zones/pits (at least NOO)
- Extensible (may be added for robust QAQC)
- Standard does not specify when/where these are enforced

Spatial Relationships

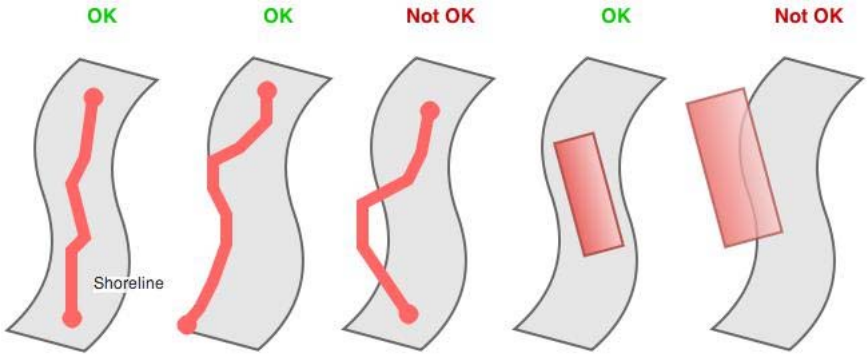
- Spatial topology – may seem like technical detail, but is critical for calculation of basic SCAT metrics and products
- Examples:
  - Linear features must not self-cross or self-overlap
  - Linear features must overlap with a linear shoreline
  - Linear features must not cross other linear features of the same type but may overlap other linear features of the same type.
- Extensible – can add rules to meet need of response
- Standard does not specify when/where these are enforced – but generally needs to be done routinely for basic SCAT functions

Spatial Relationships





Spatial Relationships



Documentation

- Documentation sufficient for external users is required
- But, no format is specified
- Suggested:
  - Federal Geospatial Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (FGDC, 1998)
  - ISO 19115 (ISO, 2014)
  - Project Open Data Metadata Schema v1.1 (POD, 2015)

Questions for Discussion

- Attributes to remove as required (e.g. backshore character, etc.)?
- Missing core attributes?
- Should STRs be a required entity?
- Role of segments, and potential efforts to decouple segments from oiling, status tracking, etc.
- Still a case for non-spatial pits/zones?