

Module 1 - Course Objectives & Content



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Reference Information

- NOAA Shoreline Assessment Manual: <http://response.restoration.noaa.gov/oilaid/pdfs/SAM.pdf>
- NOAA Shoreline Countermeasures Manual: <http://response.restoration.noaa.gov/counter/oilcounter.html>

SCAT - *definition*

The *Shoreline Cleanup Assessment Techniques* (SCAT)* process is a systematic and comprehensive approach used during an oil spill to provide timely information on shoreline oiling conditions.



“Shoreline” for inland oil spills refers to river and lake shores and associated wetlands / back-channels

SCAT - *principles*

The SCAT process uses standardized references, procedures and terminology for documenting field information and communicating the results to the Incident Management (Response) Team.



A SCAT objective is for field data to be consistent, comparable, and useful to meet agency, client and stakeholder acceptance.

SCAT - *benefits*

The SCAT process benefits include:

- ❑ Ensures field information has been collected and documented;
 - ❑ Expedites decisions on establishing priorities for cleanup and determining cleanup methods;
 - ❑ Reduces response costs and supports reasonable cost;
 - ❑ Mitigates secondary impacts to the environment;
 - ❑ Lessens amounts of oily waste generation, and
 - ❑ Fosters agency and stakeholder confidences and acceptance on spill response performance.
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SCAT - *mission*

The mission of SCAT is to strive for both *environmentally-sound* and *cost-effective* response activities to achieve an overall “net environmental benefit”.**

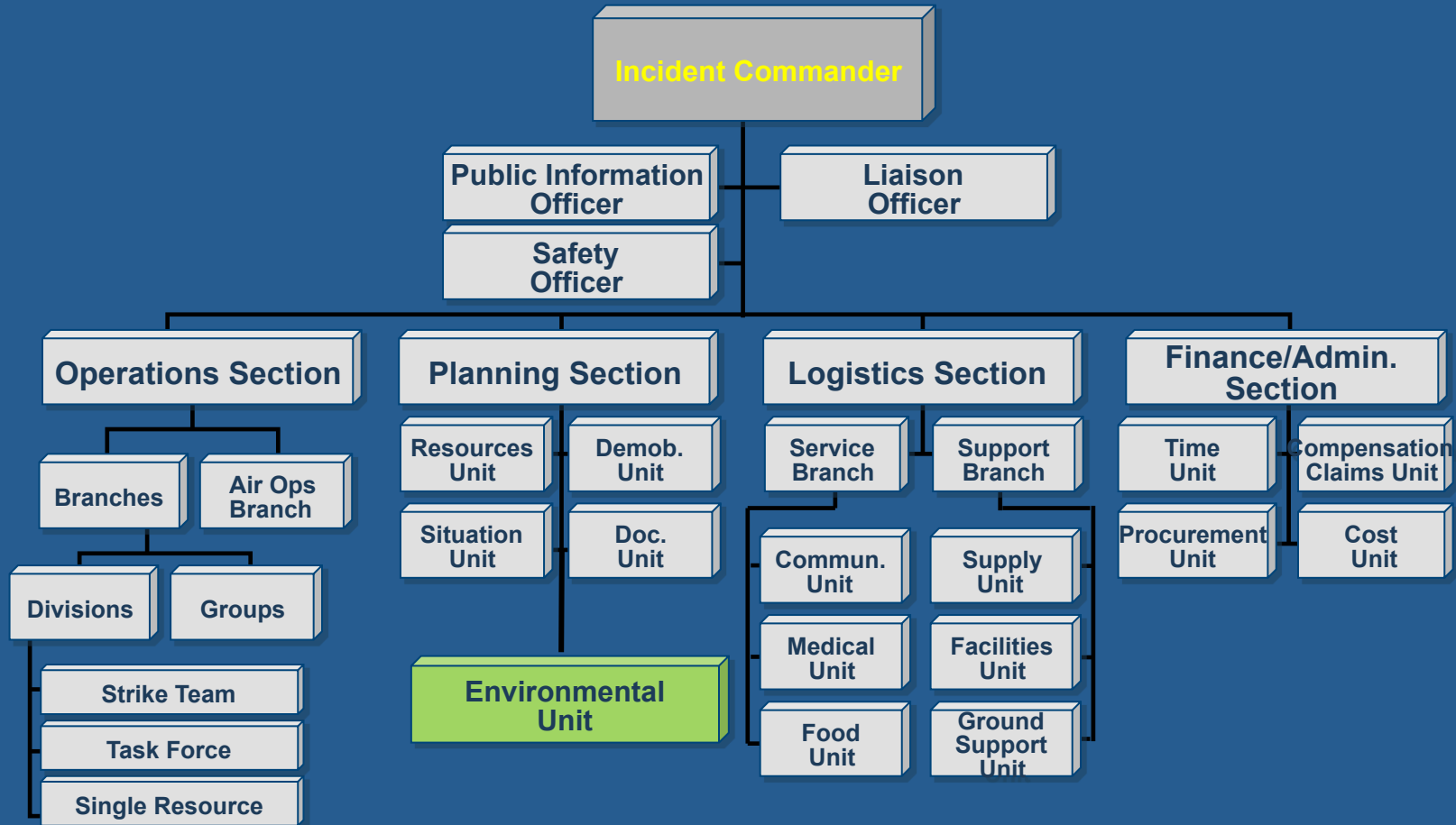


SCAT MISSION

Maximize the recovery of oiled environments and resources while minimizing the risk of further ecological injury from cleanup efforts

*** Module 3 examines the concept of “net environmental benefit”*

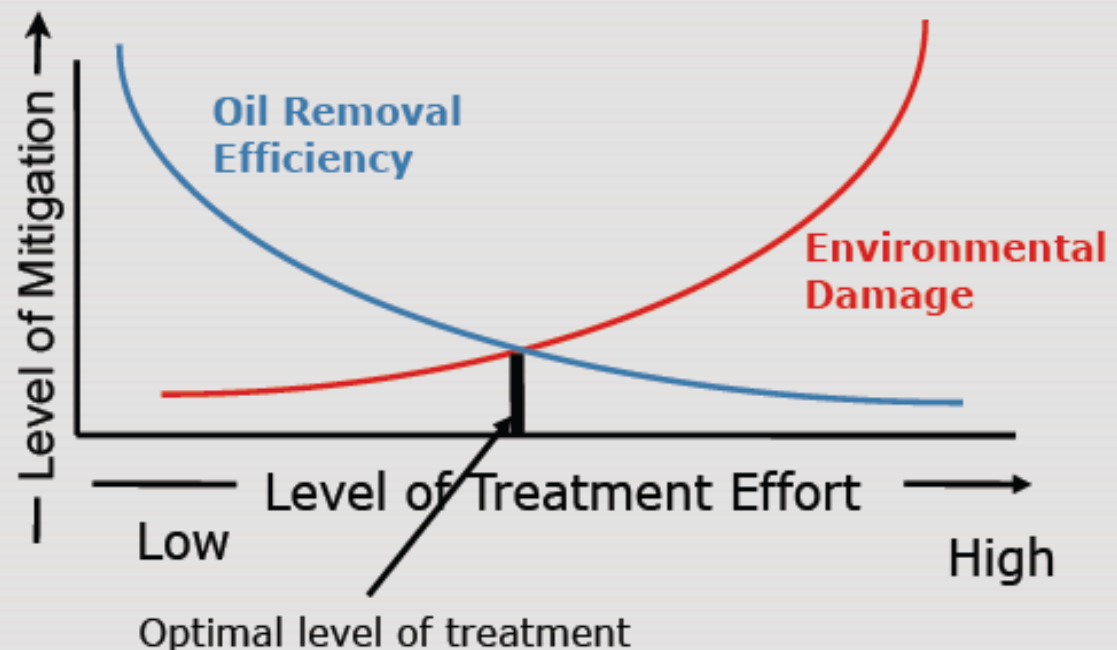
ICS Organization: Review



SCAT – NEBA limits

The NEBA process also involves knowing what to do (**response options**), what not to do (**response constraints**), defining when the job is done (**end points**), and determining when the job is done (**sign-off**).

The Recovery Rule
“The more effort to remove oil, the greater the degree of environmental intrusion”



SCAT – *net environmental benefit analysis*

The SCAT process is a form of *Net Environmental Benefit Analysis* (NEBA) that assists in:

- Making decisions about the options available for clean-up so that environmental and socio-economic impacts are kept to the minimum;
 - Getting the correct balance to meet all stakeholder interests in the best practicable manner, and
 - Weighing up and comparing tactical response options with the advantages and disadvantages of natural clean-up.
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SCAT – *impact of cleanup operations*

Cleanup activities do cause additional damages to freshwater environments, **over and above** the impact of the oiling. These impacts can include:

- ❑ Retarding re-growth of shoreline vegetation
 - ❑ Entraining oil into river and marsh sediments,
 - ❑ Increasing bank erosion from woody debris/vegetation removal, and
 - ❑ Damaging habitats from access and egress of equipment and cleanup crews.
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SCAT – *phases of a spill*

REACTIVE PHASE: Aerial reconnaissance to track oil spread and to determine vulnerable resources/interests.

Field Observer functions begins with reviewing resource inventory and oil sensitivity mapping and imagery to identify resources at risk relative to the oil's anticipated weathering behaviour and modelled trajectory.



Field observations are undertaken by Operations and other personnel experienced in identifying and documenting oil on water.

SCAT – *phases of a spill cont..*

TRANSITION PHASE: Spill response focus becomes on the retrieval of pockets of mobile oil trapped along shoreline recesses to reduce re-oiling of shore areas.

The objective of this phase is to shift the response focus from reactive on-water oil recovery towards a protracted, systematic shore cleanup process.



Generally the start of SCAT process when the trapped oil can be linked to shore units.

SCAT – *phases of a spill cont..*

PROTRACTED SHORELINE CLEANUP PHASE: There is no re-oiling of shores. This phase gathers field data to guide the long-term, protracted cleanup and remediation of oil shores and infrastructures.

This process is systematic and undertaken on a shore unit-by-unit basis. SCATs are deployed ahead of cleanup work teams to gather information to develop shore work plans.



SCAT personnel and process are fully engaged

SCAT – *phases of a spill cont..*

POST IMPACT MONITORING AND ASSESSMENT PHASE:

There is no re-oiling of shore and shoreline cleanup has been completed.

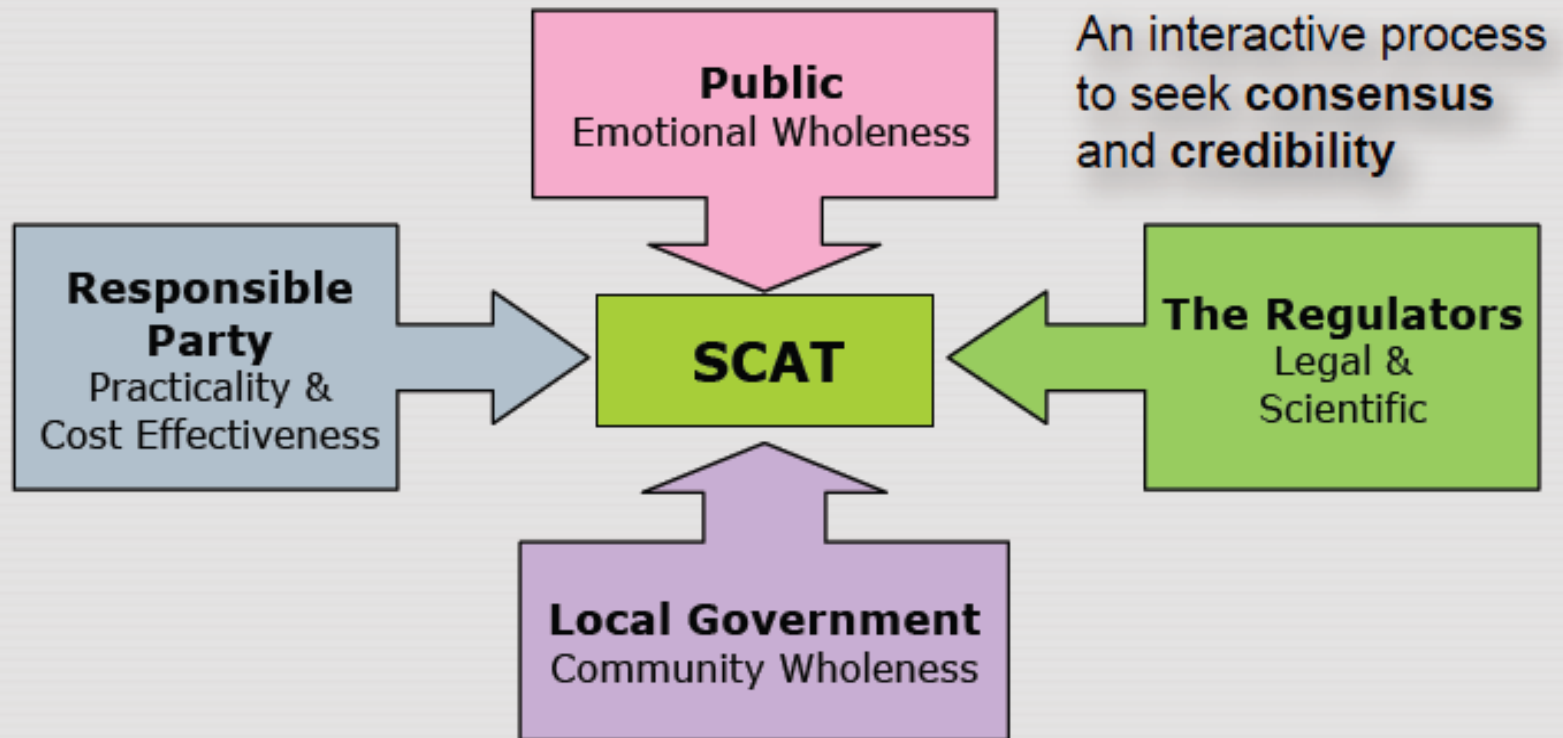
This process whereby special SCAT teams are established: to determine the efficacy of treatment; to assess if net environmental benefits have been achieved; and to measure residual (unmitigated) ecological impacts.



Over the years, the SCAT has expanded from the on-set of a spill (reconnaissance) to post impact monitoring - an evolving process.

SCAT –NEBA drivers

The SCAT process involves key players and stakeholders within the spill response community as follows:



SCAT – *clean versus net environmental benefit*

Oil spill incidents in freshwater environments tend not to have comprehensive follow-up impact monitoring of spill cleanup procedures.

Where impact of cleanup has been considered, it was largely in the context of effectiveness of oil removal, and rarely to determine any negative environmental impact that the cleanup itself might have.

An effective oil removal and a clean shore does not necessarily equate to a net environmental benefit

SCAT – NEBA summary

SCAT members need a plan that **maximizes** the recovery of oiled habitats and resources, while **minimizing** the risk of injury from cleanup efforts. Consideration needs to be given to:

- ❑ Potential for human exposure;
- ❑ Extent and duration of environmental impacts;
- ❑ Potential for remobilized oil to affect other sensitive resources;
- ❑ Likelihood of cleanup to cause greater harm than the oil alone, and
- ❑ Opportunities to use natural process to hasten recovery.

**Rule of “Minimum Regret” of never having to say:
“We should have not done that” or “Sorry”**

SCAT – *tasks*

The SCAT tasks consist of:

- Identifying sensitive ecological resources at risk;
- Mapping the character of the oiled shores;
- Documenting the nature of the oiling conditions;
- Identifying environmental concerns;
- Making cleanup recommendations, and
- Suggesting operational constraints.

This field information must be effectively compiled, analyzed and communicated to incident management so as to guide field tactical operations on the removal of stranded oil on shores.

SCAT – *establishing SCAT field teams*

Two SCAT teams are generally established: 1) a **primary** SCAT and 2) a **stakeholder** SCAT. The first does most of the long-term field work, whereas the latter may be temporarily or permanently established to foster agency /stakeholder understanding and acceptance of the SCAT process.

BOTH WORK TOGETHER ON AN INTERIM BASIS

Primary SCAT are qualified (trained and experienced) personnel*:

- A geomorphologist
- A biologist
- A archeologist

Stakeholder SCAT are personnel representing local interests such as:

- First Nations
- Local Government
- Parks

* Recommended by primary resource agencies and approved by Command

SCAT – a stakeholder SCAT

**Stakeholder
(Land Owner's
Representative)**

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(Land Owner's
Representative)**



**Stakeholder
(First Nations)**

**SCAT Leader
(Agency)**

SCAT – undertaking field SCAT

The SCAT teams are deployed to:

- Standardize field measurements particularly in oiling characteristics, oil coverage, and biological indicators;
- Work with agency and local stakeholder interests for process clarification and indoctrination, and
- Undertake SCAT data collection on assigned shore units.

Meanwhile, the SCAT coordinator at the Incident Command Post continues to design a field survey presentation and packaging for operations, planning, and command.

SCAT- The Type of Shoreline

- Wide variety of Shoreline
- Oil Impacts are different to the shoreline
- Clean up efforts: evaluate what will be successful
- Clean up efforts: evaluate what actions will be least damaging and be Net Environmental Benefit

Questions??

