

SCAT Team Member Course Curriculum

DAY 1

0800 – 0830	Introductions and Objectives of the SCAT Team Member Training
0830 – 0915	Role of the SSC and ERD in Spill Response; History of Science of Oil Spill Response and Shoreline Assessment
0915 – 0930	BREAK
0930 – 1015	Introduction to Environmental Sensitivity Index (ESI) Atlases; ESI Map Exercise
1015 – 1030	BREAK
1030 – 1100	Introduction to Physical Processes (Coastal or Riverine)
1100 – 1130	Oil Fate and Behavior
1130 – 1230	LUNCH
1230 – 1400	SCAT Process Part 1: SCAT Process, Roles, Terminology, and Forms; Sketches; Simple Case Study; Photography, Prep for Field Trip
1400 – 1700	Field Trip #1: Nearby, Simple, Field Sketch, “Answer” SCAT Provided

DAY 2

0800 – 0830	Review of Previous Days Topics/Quiz Game
0830 – 0930	Shoreline Cleanup Methods
0930 – 0945	BREAK
0945 – 1045	Behavior and Cleanup of Oil in a dominant shoreline type in the area, e.g., Sand Beaches, Gravel Beaches, or Rocky Shores
1045 – 1100	BREAK
1100 – 1130	Determining Cleanup Endpoints
1130 – 1230	LUNCH
1230 – 1630	Field Trip #2: More Complex; Debrief in the Field if Possible

DAY 3

0800 – 0830	Review of Previous Days Topics/Quiz Game
0830 – 0930	Behavior and Cleanup of Oil in a dominant shoreline type in the area, e.g., Marshes or Mangroves
0930 – 0945	BREAK
0945 – 1045	SCAT Process Part II: Field Data Submittal, (use field data from trip #2?); SCAT Products; Writing STRs; Sampling Methods; eSCAT
1045 – 1100	BREAK
1100 – 1130	Section 106 (NHPA) and Section 7 (ESA) Issues as Applied to SCAT
1130 – 1230	LUNCH
1230 – 1315	Complex Case Study: <i>Cosco Busan</i> or Other
1315 – 1445	Shoreline Countermeasure Exercise/Team Presentations
1445 – 1515	Evaluations and Closing Discussions

Course: SCAT Team Member Training
 Lesson Title: **Introductions and Objectives of the SCAT Team Member Training**
 Instructor: Various
 Time: 30 Minutes
 Method: Participation, Lecture, and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Through this course, students will gain a basic understanding of the methods for conducting shoreline assessments and incorporating the results in the decision-making process for shoreline cleanup at oil spills.</p> <p>Upon completion of this course, students will be certified as a SCAT Team Member.</p> <p>When spilled oil contaminates shoreline habitats, responders must survey the affected areas to determine the appropriate response. Specific clean-up recommendations must integrate field data on shoreline habitats, type and degree of shoreline contamination, and spill specific physical processes. Cleanup endpoints must be established so that appropriate cleanup methods can be selected to meet cleanup objectives. Shoreline surveys must be conducted systematically because they are crucial components of effective decisions.</p> <p>This curriculum will provide students with the methods and skills needed to conduct effective shoreline assessments.</p>	<p>Introductions and Objectives of the Course</p> <ol style="list-style-type: none"> I. Introduce instructors and students: Class to introduce themselves and state their expected role during a response II. Class to indicate their response experience (to help the instructors scale the lectures appropriately) III. Objectives of the Course – Technical expertise in the following topics: <ol style="list-style-type: none"> a. NOAA ERD roles, services, products b. The use of ESI for planning and response c. Fate and behavior of different types of oil spills d. The Shoreline Assessment process, team roles, field methods, and products e. Shoreline cleanup methods and when they should be applied f. Oil behavior and cleanup methods for different shoreline types g. Identification of shoreline types, processes, and ecological resources during field exercises h. Implementation of shoreline assessments, field sketches, completion of SCAT forms i. Shoreline cleanup endpoints j. Selection of appropriate cleanup methods for different shoreline types and oil types k. Application of all these topics through case studies 	<p>Sign-in Sheet PPT</p>

Course: SCAT Team Member Training
 Lesson Title: **History of Science of Oil Spill Response and Shoreline Assessment**
 Instructor: Various
 Time: 45 min
 Method: Participation, Lecture, and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Historical Responses have lead to some of the products and procedures used in modern day responses</p> <p>Make sure students know what NOAA brings to spill response</p> <p>ERD provides scientific support for oil and chemical spill response in coastal and inland waters</p> <p>SSCs primarily serve as principal advisors to the FOSC for: Coordinating Scientific Issues; Leading a scientific team (i.e. Env. Unit Leader); Providing scientific support for operational decisions; Coordinating on-scene scientific activities; Evaluating the risks of releases and response strategies; Integrates response with damage assessment; Coordinating consultations for protected resources</p>	<ol style="list-style-type: none"> I. Objective: Introduction to Oil Spill Response and Shoreline Assessment. Provide historical framework for the understanding of how oil behaves on shorelines through review of some of the largest or most significant spills in the world (<i>Metula, Amoco Cadiz, Ixtoc, Exxon Valdez, Gulf War Spill, etc.</i>) II. Introduce NOAA’s Emergency Response Division (ERD) and the Role of the Scientific Support Coordinators (SSCs) and the services/products they provide. III. NOAA organizations involved in emergency response IV. What are NOAA SSCs? V. NOAA ERD services and products (ERMA) 	<p>PPT</p> <p><i>NOTE: Nexus for coordinating scientific communities, regional flavor if applicable, put in intro, or provide a preamble</i></p>

Course: SCAT Team Member Training
 Lesson Title: **Introduction to the Environmental Sensitivity Index (ESI)**
 Instructor: Various
 Time: 45 minutes
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Understand what information is contained in the ESI atlases and how this information is used during spill response.</p> <p>Be able to identify and utilize the three primary components of the ESI</p> <p>Know how to obtain ESI data products</p>	<ol style="list-style-type: none"> I. Objectives of the lesson II. Introduction of the ESI shoreline ranking concept – basis for many response guidance documents and decision making III. Description of ESI shoreline types – key features, photographic examples, short explanation of how oil behaves on each type IV. Biological resources on ESI maps <ol style="list-style-type: none"> a. Each type (e.g., birds, marine mammals) b. Symbology c. RAR Number and data tables V. Human-use resources on ESI maps (types and symbology) <ol style="list-style-type: none"> a. High-use recreational areas/access sites b. Resource management areas c. Resource extraction sites d. Cultural and historical sites VI. Example ESI map and digital products VII. Q&A on ESI Maps Shoreline type exercise (show different photographs of all shoreline types and ask the class to name the shoreline type) VIII. ESI exercise using ESI maps from the local area and a spill scenario. Divide the class into groups and have them prepare a “resources at risk” assessment for the ESI map they are assigned. 	<p>ESI Maps (either printed out or digital)</p> <p>PPT</p> <p>One ESI map sheet for each group to use in preparation of a RAR assessment</p>

Course: SCAT Team Member Training
 Lesson Title: **Introduction to Physical Processes (Coastal and Riverine)**
 Instructor: Various
 Time: 30 minutes
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Explain how coastal processes affect oil behavior and oil interaction with the shoreline</p> <p>Students should be able to observe and interpret what is causing oil behavior in the field</p> <p>Understand the importance of tides in planning SCAT surveys</p> <p>Explain how oil behaves in rivers</p>	<p>I. Objectives of the lesson</p> <p>II. Types of waves and wave transformation (diffraction and refraction) and how they affect oil and sediment transport</p> <p>III. Wave-induced currents and how they affect oil and sediment transport</p> <p>IV. Tides – importance of lunar tides and diurnal inequality to SCAT surveys and oil behavior on the shoreline</p> <p>V. Tidal currents</p> <p>VI. Wind-induced currents and water-level changes</p> <p> a. Bays, lagoons, and lakes</p> <p> b. Onshore/offshore winds</p> <p>VII. Riverine processes</p> <p> d. Current flow patterns in rivers</p> <p> e. Entrainment into the water column</p> <p> f. Interaction with suspended sediments</p> <p> g. Issues with changing water levels</p> <p>VIII. Review and Discussion</p>	<p>PPT</p>

Course: SCAT Team Member Training
 Lesson Title: **Oil Fate and Behavior**
 Instructor: Various
 Time: 30 minutes
 Method: Participation, Lecture and PPT
 Materials: Computer, projector, screen, flip chart, handouts, teaching aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Understand the differences between crude & refined oils</p> <p>Understand concepts of key oil properties</p> <p>Understand key oil weathering mechanisms</p> <p>Understand behavior of each oil group</p>	<p>I. Objectives of the lesson</p> <p>II. What is "oil"?</p> <p>a. Complex mixture with differing properties & behaviors</p> <p>b. Overview of crudes oils, refined products & refining</p> <p>III. Key oil properties for response</p> <p>a. Density</p> <p>b. Viscosity</p> <p>c. Pour point</p> <p>d. Others</p> <p>IV. Introduction of Oil Groups I-V</p> <p>a. Group 1 – Gasoline</p> <p>b. Group 2 -- Light Refined Products and Light Crudes</p> <p>c. Group 3 – Medium Crudes</p> <p>d. Group 4 – Heavy Refined Products and Heavy Crudes</p> <p>V. Oil weathering</p> <p>a. General concepts</p> <p>b. Key processes & timelines (evaporation, dissolution, emulsification, dispersion, sedimentation, and biodegradation)</p> <p>VI. For each Group discuss & show photos (if available):</p> <p>a. Example types of oil</p> <p>b. Physical characteristics (API gravity, viscosity, pour point)</p> <p>c. Behavior on water</p> <p>d. Weathering using ADIOS2 plots (e.g. evaporation, emulsification, etc.)</p>	<p>Teaching Aids:</p> <ul style="list-style-type: none"> - PPT - ERD one-pagers for different oil types (e.g. ANS, No. 6 fuel oil, Small diesel spills, Tarballs) <p>Optional:</p> <ul style="list-style-type: none"> - Pass around oil samples or surrogate liquids of different viscosities for viewing - Demonstration of oil viscosity and substrate type

Course: SCAT Team Member Training
 Lesson Title: **SCAT Process Part 1: SCAT Process, Roles, Terminology, and Forms**
 Instructor: Various
 Time: 60 Minutes
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Gain a basic understanding of the process and the role of SCAT during an incident.</p> <p>Learn the individual roles and functions of team members</p> <p>Understand the terminology and methodology as well as the forms used during a SCAT survey</p> <p>Gain an understanding of the importance of systematic shoreline assessments and the critical decisions made based upon the outcome of SCAT surveys.</p>	<p>I. Role of SCAT in the Incident Command System</p> <ul style="list-style-type: none"> a. Planning Section/Environmental Unit b. Providing input to Ops c. Application for future use of NRDA, foundation of what is to follow beyond the response phase <p>II. SCAT Process</p> <p>III. SCAT Team Roles and Responsibilities</p> <ul style="list-style-type: none"> a. Coordinator b. Team Leader c. Agency Reps d. Operations Reps e. Landowners/Other f. Data Manager <p>IV. SCAT Activities (overview, then details through “conduct surveys”)</p> <ul style="list-style-type: none"> a. Reconnaissance survey b. Segment the shoreline c. Develop spill-specific cleanup guidelines and endpoints d. Conduct surveys <p>V. SCAT Forms</p> <ul style="list-style-type: none"> a. Shoreline Assessment Forms <p>VI. Terminology, Codes</p> <ul style="list-style-type: none"> a. Surface Oil b. Subsurface Oil c. Sediment Types <p>VII. Photo documentation/Sketching</p> <ul style="list-style-type: none"> a. Standard locations/perspectives b. Framing the photo c. Use of scales (human and close-up) d. Photo labeling, time/date records, downloading, file organization b. Sketch Form and how to complete a sketch <p>VIII. Review of Process/Discussion</p>	<p>PPT SCAT Manual SCAT Job Aid SCAT Forms</p> <p>NOTE: Part 1 is for a general familiarization to show where SCAT fits into the ICS structure, the SCAT process, and the different activities and terms</p> <p>SCAT Process Flow Chart– Poster Size version to hang on the wall</p>

Course: SCAT Team Member Training
 Lesson Title: **Simple Case Study: Westchester, Mississippi River**
 Instructor: Various
 Time: 30 min
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
Use a real example to show the SCAT process, shoreline types, clean-up techniques, and clean-up endpoints.	<ol style="list-style-type: none"> I. Overview and Scenario II. Shoreline types III. Cleanup techniques IV. Cleanup Endpoints V. SCAT Process <ol style="list-style-type: none"> a. SCAT Products b. Information flow in the command post, how is it used in decision making 	Teaching Aids: -Shoreline Assessment Job-Aid/Products, -Maps, tables, etc.

Course: SCAT Team Member Training
 Lesson Title: **Review of Previous Days Topics**
 Instructor: Various
 Time: 30 min
 Method: Participation and Jeopardy Game / Quiz
 Materials: Computer, projector, screen, rewards for winning team

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Review some topics and terms from each of the previous day's lessons to reinforce their use and application</p>	<ol style="list-style-type: none"> I. Review Previous Days Topics (general talk, reinforcing the relationships among the topics) II. Q&A from the Class III. Jeopardy Game or Quiz List 	<p>Teaching Aids:</p> <ul style="list-style-type: none"> - Jeopardy Game - List of quiz questions on PPT <p>Have the "teams" from the previous day sit together to be able to discuss the answers</p> <p>Offer an award for the winning team (something that they all can share)</p>

Course: SCAT Team Member Training
 Lesson Title: **Shoreline Cleanup Methods**
 Instructor: Various
 Time: 60 mins
 Method: Participation, Lecture, and PPT
 Materials: computer, projector, screen, teaching aids (see Resources column)

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <ul style="list-style-type: none"> - Develop a basic understanding of common cleanup methods and appropriate guidelines on when and where they should be used - Understand how SCAT can make recommendations and place constraints on cleanup - Know of several job-aids available to SCAT for making cleanup recommendations - Understand how oil type, quantity, shoreline type, habitat sensitivity, and certain other factors effect selection and use of countermeasures - Understand the potential that countermeasures may cause collateral injuries to the environment 	<ol style="list-style-type: none"> I. Context of why SCAT needs to know about countermeasures. Re-emphasize who on the Team has the job and where to note recommendations/ constraints on the SOS form. II. Introduction of shoreline cleanup manuals and job-aids <ol style="list-style-type: none"> a. Shoreline Assessment Manual with Objectives, Description, When to Use, etc. for each method b. Shoreline habitat matrices with “grades” for each method and oil group c. Shoreline cleanup job aid (Characteristics of Coastal Habitats) <ol style="list-style-type: none"> I. Description (using photographs) of various shoreline cleanup methods (ref. SAM App. B) II. Provide detailed review of appropriate habitat types, when to use, oil behavior, environmental effects/tradeoffs, etc. (ref. SAM App. C) III. Review and Discussion 	<p>Teaching Aids:</p> <ul style="list-style-type: none"> -PPT w/good photos -SAM -SCAT Job Aid -Charac of Coastal Habitats - Charac of Response Strategies <p>Possibly have types of boom (sorbent, rubberizer, harbor, pom-poms)</p>

Course: SCAT Team Member Training
 Lesson Title: **Behavior and Cleanup of Oil in Sand Beaches**
 Instructor: Various
 Time: 60 min
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Be able to accurately recognize sand beaches</p> <p>Be able to use the proper terminology for the different parts of a sand beach</p> <p>Be familiar with the key fauna of sand beaches</p> <p>Understand how oil interacts with sand beaches, and the importance of sand grain size on oil penetration, burial, and ease of cleanup</p> <p>Be able to select appropriate cleanup methods based on oiling conditions on sand beaches</p> <p>Be able to describe how porosity of a substrate influences oil behavior</p> <p>Describe how the physical characteristics of an oil, (viscosity, pour point etc.) influence penetration</p>	<ol style="list-style-type: none"> I. Objectives of the Lesson II. Sand Beach Morphology, Processes, and Terminology <ol style="list-style-type: none"> a. What is a beach? b. The beach cycle of erosion and deposition <ol style="list-style-type: none"> i. Storms ii. Tides III. Brief Introduction to the Ecology of Sand Beaches (modify for local fauna) IV. Differences between Fine-grained Sand Beaches and Coarse-grained Sand Beaches <ol style="list-style-type: none"> a. Slope b. Grain size (which affects oil penetration, trafficability, and ease of cleanup) c. Rate of change and potential for oil burial V. Differences between Fine-grained Sand Beaches and coarse-grained Sand Beaches <ol style="list-style-type: none"> a. Slope b. Grain size (thus oil penetration) VI. Oil Behavior and Cleanup of Fine-grained Sand Beaches (through case studies) <ol style="list-style-type: none"> a. Tampa Bay case study b. Other local case studies can be added VII. Oil Behavior and Cleanup of Coarse-grained Sand Beaches (through case studies) VIII. Review Cleanup Matrix for Sand Beaches IX. Cleanup Endpoints for Sand Beaches X. Review and Discussion 	<p>Teaching aids: PPT</p> <p>Matrix For Cleanup Methods for Sand Beaches</p> <p>(Add a few slides that are general discussion for oil behavior and cleanup)</p>

Course: SCAT Team Member Training
 Lesson Title: **Determining Cleanup Endpoints**
 Instructor: Various
 Time: 30 minutes
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Understand the process by which clean up endpoints are developed.</p> <p>Learn the importance of SCAT identification of constraint and environmental tradeoffs.</p> <p>Guide Operations in conducting a specific cleanup method to minimize adverse environmental impacts.</p> <p>Provide Operations with environmental and safety constraints on conducting cleanup activities in a specific habitat.</p> <p>Identify (resource) constraints on cleanup activities.</p>	<p>Provide technical basis for selecting appropriate cleanup endpoints, which are an essential part of the SCAT Process.</p> <ol style="list-style-type: none"> I. Hierarchy of endpoints: define, describe, case study examples II. Develop spill-specific cleanup objectives, guidelines, and target endpoints III. Evaluate proposed cleanup methods for potential habitat or resource effects IV. Identify time-critical and degree-of-use issues to be combined with cleanup methods V. Identify sensitive resources associated with the oiled shorelines that maybe adversely affected by the proposed treatment methods VI. Note archaeological or cultural resources along the shoreline that could be disturbed by cleanup activities VII. Write operational guidelines to minimize adverse impacts VIII. Develop plans to monitor the effectiveness and/or biological effects of cleanup methods IX. SCAT to observe cleanup operations X. Modify cleanup guidelines as conditions change: weathering; unacceptable impacts; ineffective cleanup methods. XI. Case study examples for appropriate shoreline types in the region XII. Review and Discussion 	<p>PPT SCAT Manual</p> <p>Tradeoffs; Natural Recovery;</p> <p>Loop back to ESI, Cleanup Strategies, and Environmental Trade off issues. Use this section to reinforce the collection of these data and why it is important</p>

Course: SCAT Team Member Training
 Lesson Title: **Review of Previous Days Topics**
 Instructor: Various
 Time: 30 min
 Method: Participation and Jeopardy Game / Quiz
 Materials: Computer, projector, screen, rewards for winning team

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Review some topics and terms from each of the previous day's lessons to reinforce their use and application</p>	<p>IV. Review Previous Days Topics (general talk, reinforcing the relationships among the topics)</p> <p>V. Q&A from the Class</p> <p>VI. Jeopardy Game or Quiz List</p>	<p>Teaching Aids:</p> <ul style="list-style-type: none"> - Jeopardy Game - List of quiz questions on PPT <p>Have the "teams" from the previous day sit together to be able to discuss the answers</p> <p>Offer an award for the winning team (something that they all can share)</p>

Course: SCAT Team Member Training
 Lesson Title: **Behavior and Cleanup of Oil in Marshes**
 Instructor: Various
 Time: 60 min
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Be able to accurately recognize the different types of marshes</p> <p>Be able to use the proper terminology for marsh vegetation</p> <p>Be familiar with the key fauna of marshes</p> <p>Understand how oil affects marshes, with emphasis on evaluating tradeoffs between natural recovery and active cleanup</p> <p>Be able to select appropriate cleanup methods based on oiling conditions of marshes</p> <p>Be able to describe how porosity of a substrate influences oil behavior</p> <p>Describe how the physical characteristics of an oil, (viscosity, pour point etc.) influence penetration</p>	<p>I. Objectives of the lesson</p> <p>II. Marsh Types, Species, and Terminology</p> <ul style="list-style-type: none"> a. Salt- to freshwater marshes b. High to low marshes <p>III. Brief Introduction to the Ecology of Salt Marshes (modify for local fauna)</p> <p>IV. Factors Affecting the Impacts of Oil on Marshes (via case studies)</p> <ul style="list-style-type: none"> a. Oil type b. Extent of contamination on the vegetation c. Sediment contamination d. Exposure to waves and currents e. Time of year f. Species sensitivity <p>V. Appropriate Cleanup Methods for Marshes</p> <ul style="list-style-type: none"> a. Natural recovery b. Sorbents c. Flooding/Flushing d. Shoreline cleanup agents e. Vegetation cutting f. In-situ burning <p>VI. Review Cleanup Matrix for Marshes</p> <p>VII. Cleanup Endpoints for Marshes</p> <p>VIII. Review and Discussion</p>	<p>Teaching aids: PPT</p> <p>Matrix For Cleanup Methods for Marshes</p> <p>(Add a few opening slides that are general statements about behavior and Cleanup)</p>

Course: SCAT Team Member Training
 Lesson Title: **SCAT Process Part II: Field Data Submittal, SCAT Products, STRs, Sampling Methods, eSCAT**
 Instructor: Various
 Time: 60 Minutes lecture
 Method: Participation, Lecture and PPT
 Materials: Flip chart, computer, projector, screen, training aids

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Gain an understanding of the SCAT field process and the flow of information in the command post</p> <p>Appreciate the importance of and "How to" sketch</p> <p>Know the importance of using the proper technology for data collection, and how that data is incorporated into the SCAT process through the different products that are generated</p> <p>Understand transition from SCAT to the monitoring and sign off phase during a response</p>	<p>I. Objectives of lecture</p> <p>II. SCAT Products and Data Management</p> <ul style="list-style-type: none"> a. SCAT data capture b. Shoreline Treatment Recommendations and Priorities c. Shoreline Oiling Maps, Tabular Summaries d. Sites of Special Concern (maps, lists) e. Shoreline Inspection Report <p>III. SCAT Team Equipment Needs (SAM App. A) (have sample equipment for students to see)</p> <p>IV. eSCAT Introduction (Knowledge that something is being developed)</p> <p>V. Sample Collection Methods, Chain of Custody Requirements</p>	<p>PPT Lecture</p> <p>Shoreline Assessment Manual, Job-Aid</p> <p>SCAT primary focus for sample collection is fingerprinting; can be assigned to collect other (e.g., NRDA) samples as long as it is does not slow the process</p> <p>Provide examples of SCAT Products for different types (3, 2, 1) of incidents to show range of complexity</p>

Course: SCAT Team Member Training
 Lesson Title: **Section 106 (NHPA) and Section 7 (ESA) as Applied to SCAT**
 Instructor: Various
 Time: 30 min
 Method: Lecture
 Materials: Computer, projector, screen

Objectives & Teaching Points	Presentation Outline	Resources & Notes
Provide guidance for how these required consultations apply to SCAT	I. Intro to Section 106 of the NHPA II. Intro to Section 7 of ESA III. Options based on spill complexity for application to SCAT	Teaching Aids: - PPT

Course: SCAT Team Member Training
 Lesson Title: **Complex SCAT Case Study – M/V Cosco Busan**
 Instructor: Various
 Time: 45 minutes
 Method: Participation, Lecture and PPT
 Materials: Computer, projector, screen

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>At the end of this lesson, students will:</p> <p>Understand how SCAT was applied to a major spill with many challenges</p> <p>Learn how SCAT activities were organized</p> <p>Learn what endpoints were developed, what SCAT products were produced and how cleanup status was tracked</p> <p>Learn how cleanup recommendations were made & implemented</p> <p>Understand how the use of SCAT might evolve throughout a response</p>	<ol style="list-style-type: none"> I. Overview of initial marine casualty and spill II. Shoreline types III. Access challenges IV. SCAT process <ol style="list-style-type: none"> a. Segmenting and access b. Examples of SCAT documentation c. Cleanup Endpoints d. SCAT Recommendations and constraints V. Products & results (e.g. maps, status tracking) VI. Cleanup techniques (e.g. manual labor, surf washing) VII. Evolution of SCAT throughout response VIII. Before & after photos of some key segments IX. Final timelines and outcomes 	<p>Reinforce topics covered in previous modules and introduce upcoming topics (e.g. cleanup endpoints)</p> <p>Reinforce the concepts of SCAT's flexibility & scalability, perhaps by discussing and highlighting differences between the two case studies</p>

Course: SCAT Team Member Training
 Lesson Title: **Shoreline Countermeasure Exercise**
 Instructor: Various
 Time: 90 min
 Method: Introduction of Exercise, Group Participation, Group Presentation
 Materials: Exercise forms, computer, projector, screen, overhead projector, Choosing Spill Response Alternatives Job-Aid

Objectives & Teaching Points	Presentation Outline	Resources & Notes
<p>Students will apply the skills learned throughout the course about:</p> <p>How the type of oil influences both the appropriate cleanup methods and the effectiveness of each method</p> <p>What cleanup methods are both effective and have minimal effects on a shoreline type</p> <p>How to apply tradeoffs between oil removal and potential impacts of a cleanup method</p> <p>Building consensus among stakeholders during the evaluation of cleanup alternatives</p>	<ol style="list-style-type: none"> I. Introduce the Objectives of the Exercise II. Introduce the Spill Scenario <ol style="list-style-type: none"> a. Type of spilled oil b. Time of year c. Other issues as appropriate III. Explain the “codes” or “grades” used to compare the relative environmental impact of each response method, by Oil Category IV. Have the class organize into their Groups V. Hand out a blank Cleanup Matrix with each Group being assigned to a shoreline type VI. Monitor each Group to answer questions, guide them towards the proper discussions and decisions VII. Have a representation from each Group present their results VIII. Have the class volunteer to comment on the results of each Group; The Instructor also comments, pointing out inconsistencies or concerns IX. Have each Group compare their results with those in the “Choosing Spill Response Alternatives” Job-Aid and discuss any differences 	<p>Show the “codes” on the screen throughout the exercise so the students can refer to it</p> <p>It is important to fully explain that the codes are assigned based on two considerations:</p> <ol style="list-style-type: none"> 1) The impact of the cleanup method, assuming that it is being implemented correctly; AND 2) The effectiveness of the method in removing the oil (e.g., low-pressure, ambient temperature flushing will be less effective on a Group IV oil compared to a Group III oil and thus have more adverse impact because of the higher amount of oil remaining) <p>If an overhead projector is available, print the matrices on transparency sheets and handout sharpies; if not, use paper and the results will have to be entered onto a form on the computer for the presentation.</p> <p>For Group presentations, they should explain the basis for the codes assigned, not to just read them. To summarize the discussion of the tradeoffs and issues.</p>